



CITY OF HOBART

AGENDA

Special City Planning Committee Meeting

Open Portion

Monday, 10 May 2021

at 4.00 pm

Council Chamber, Town Hall

THE MISSION

Working together to make Hobart a better place for the community.

THE VALUES

The Council is:

People	We care about people – our community, our customers and colleagues.
Teamwork	We collaborate both within the organisation and with external stakeholders drawing on skills and expertise for the benefit of our community.
Focus and Direction	We have clear goals and plans to achieve sustainable social, environmental and economic outcomes for the Hobart community.
Creativity and Innovation	We embrace new approaches and continuously improve to achieve better outcomes for our community.
Accountability	We are transparent, work to high ethical and professional standards and are accountable for delivering outcomes for our community.

ORDER OF BUSINESS

Business listed on the agenda is to be conducted in the order in which it is set out, unless the committee by simple majority determines otherwise.

APOLOGIES AND LEAVE OF ABSENCE

- 1. CO-OPTION OF A COMMITTEE MEMBER IN THE EVENT OF A VACANCY 4**
- 2. INDICATIONS OF PECUNIARY AND CONFLICTS OF INTEREST 4**
- 3. COMMITTEE ACTING AS PLANNING AUTHORITY 4**
 - 3.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 20155**
 - 3.1.1 21B Enterprise Road and 21A Enterprise Road, and 26 Edith Avenue (CT 169835/105) and 35 Enterprise Road, and Adjacent Road Reserve, Sandy Bay - 20 Multiple Dwellings and Associated Works5**

Special City Planning Committee Meeting (Open Portion) held Monday, 10 May 2021 at 4.00 pm in the Council Chamber, Town Hall.

This special meeting of the City Planning Committee is held in accordance with a Notice issued by the Premier on 3 April 2020 under section 18 of the *COVID-19 Disease Emergency (Miscellaneous Provisions) Act 2020*.

COMMITTEE MEMBERS

Deputy Lord Mayor Burnet (Chairman)
Briscoe
Harvey
Behrakis
Dutta
Coats

Apologies:

Leave of Absence: Nil.

NON-MEMBERS

Lord Mayor Reynolds
Zucco
Sexton
Thomas
Ewin
Sherlock

1. CO-OPTION OF A COMMITTEE MEMBER IN THE EVENT OF A VACANCY

2. INDICATIONS OF PECUNIARY AND CONFLICTS OF INTEREST

Ref: Part 2, Regulation 8(7) of the *Local Government (Meeting Procedures) Regulations 2015*.

Members of the committee are requested to indicate where they may have any pecuniary or conflict of interest in respect to any matter appearing on the agenda, or any supplementary item to the agenda, which the committee has resolved to deal with.

3. COMMITTEE ACTING AS PLANNING AUTHORITY

In accordance with the provisions of Part 2 Regulation 25 of the *Local Government (Meeting Procedures) Regulations 2015*, the intention of the Committee to act as a planning authority pursuant to the *Land Use Planning and Approvals Act 1993* is to be noted.

In accordance with Regulation 25, the Committee will act as a planning authority in respect to those matters appearing under this heading on the agenda, inclusive of any supplementary items.

The Committee is reminded that in order to comply with Regulation 25(2), the General Manager is to ensure that the reasons for a decision by a Council or Council Committee acting as a planning authority are recorded in the minutes.

3.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

3.1.1 21B ENTERPRISE ROAD AND 21A ENTERPRISE ROAD, AND 26 EDITH AVENUE (CT 169835/105) AND 35 ENTERPRISE ROAD, AND ADJACENT ROAD RESERVE, SANDY BAY - 20 MULTIPLE DWELLINGS AND ASSOCIATED WORKS PLN-20-740 - FILE REF: F21/40460

Address: 21B Enterprise Road and 21A Enterprise Road and 26 Edith Avenue (CT 169835/105) and 35 Enterprise Road Sandy Bay and Adjacent Road Reserve

Proposal: 20 Multiple Dwellings and Associated Works

Expiry Date: 10 May 2021


Extension of Time:


Author: Richard Bacon


RECOMMENDATION


Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for 20 multiple dwellings and associated works at 21B Enterprise Road, 21A Enterprise Road, 26 Edith Avenue CT 169835/105 and 35 Enterprise Road and adjacent road reservation Sandy Bay TAS 7005 for the following reasons:

1. The proposal does not meet the Acceptable Solution or the Performance Criterion with respect to Clause E5.5.1 A3 or P3 because the increase in vehicular traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less will not be safe and will unreasonably impact on the efficiency of the road, having regard to the increase in traffic caused by the use and the traffic impact assessment submitted with the planning application.

Attachment A: PLN-20-740 - 21B ENTERPRISE ROAD SANDY BAY TAS 7005 - Planning Committee or Delegated Report ↓ 

Attachment B: PLN-20-740 - 21B ENTERPRISE ROAD SANDY BAY TAS 7005 - CPC Agenda Documents ↓ 

Attachment C: PLN-20-740 - 21B ENTERPRISE ROAD SANDY BAY TAS 7005 - Planning Referral Officer Environmental Development Planner Report ↓ 

Attachment D: PLN-20-740 - 21B ENTERPRISE ROAD SANDY BAY TAS 7005 - Planning Referral Officer Development Engineering Report ↓ 

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report:	Committee
Council:	10 May 2021
Expiry Date:	10 May 2021
Application No:	PLN-20-740
Address:	21B ENTERPRISE ROAD , SANDY BAY 21A ENTERPRISE ROAD , SANDY BAY 26 EDITH AVENUE (CT 169835/105) , SANDY BAY 35 ENTERPRISE ROAD , SANDY BAY ADJACENT ROAD RESERVE
Applicant:	Brian Richardson 7 Ruthwell Street
Proposal:	20 Multiple Dwellings and Associated Works
Representations:	213
Performance criteria:	General Residential Zone Development Standards, Road and Railway Assets Code, Parking and Access Code, Landslide Code, Biodiversity Code, Waterway and Coastal Protection Code, Stormwater Code, Inundation Prone Areas Code

1. Executive Summary

- 1.1 Planning approval is sought for 20 multiple dwellings and associated works at 21B Enterprise Road, 21A Enterprise Road, 26 Edith Avenue CT 169835/105 and 35 Enterprise Road and adjacent road reservation Sandy Bay TAS 7005.
- 1.2 More specifically the proposal includes:
 - A total of 20 detached multiple dwellings, with central accessway, at 21B Enterprise Road.
 - A bushfire hazard management plan that also includes 21A Enterprise Road, 26 Edith Avenue (CT 169835/105) and 35 Enterprise Road.
 - The proposal relies on stormwater works at 26 Edith Avenue (CT 169835/105).
 - The Enterprise Road road reservation forms part of the site due to sewer infrastructure.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:

- 1.3.1 General Residential Zone - Setbacks and Building Envelope, Lot Coverage, Privacy
 - 1.3.2 Parking and Access Code - Number of Parking Spaces and Design of Vehicular Accesses
 - 1.3.3 Landslide Code - Major Works in a Landslide Hazard Area
 - 1.3.4 Biodiversity Code - Building and Works
 - 1.3.5 Waterway and Coastal Protection Code - Building and Works
 - 1.3.6 Road and Railway Assets Code - Existing Road Accesses and Junctions, Sight Distances at Access and Junctions,
 - 1.3.7 Stormwater Code - Stormwater Drainage and Disposal
 - 1.3.8 Inundation Prone Areas Code - Riverine, Coastal Investigation Area, Low, Medium, High Inundation Hazard Areas
- 1.4 A total of 213 representations objecting to the proposal were received within the statutory advertising period between the 14th and 28th April 2021.
- 1.5 The proposal is recommended for refusal.
- 1.6 The final decision is delegated to the Council, because in excess of five objections have been received and the recommendation is for refusal.

2. Site Detail

- 2.1 The site is a large steeply sloping vacant lot within the General Residential Zone. There are smaller residential lots to the north east of the site (23 to 35 Enterprise Road), and larger residential lots to the east (26 Edith Avenue) and south west (part of 21A Enterprise Road). A small portion of the site adjoins a large portion of Environmental Living zoned bushland to the south west (the balance of 21A Enterprise Road), which itself connects into the Ridgeway Skyline Council reserve to its south west. The site is currently vegetated. Refer to Figures below.
- 2.2 The site was visited previously and again on the 30th April 2021. Representatives/neighbours were also met on site.



Figure 1 above: partial site plan with 21B Enterprise Road in the centre of the image.



Figure 2 above: location plan showing the subject site 1,2,3, 4 and 5 as follows.

1. 21B Enterprise Road.
2. 21A Enterprise Road.
3. 26 Edith Avenue (CT 169835/105).
4. 35 Enterprise Road (CT 169834/39).



Figure 3 above: site plan outline (total site).



Figure 4 above: site shown in centre of image, and showing extent of General Residential Zone (in red).



Figure 5 above: site highlighted in centre right of aerial photograph, with Nelson Road to left and Marlborough Street/Aotea Road to right.



Figure 6 above: distant view in the direction of Enterprise Road, from Marieville Esplanade.



Figure 7 above: further distant view from Marieville Esplanade, with site in approximate centre of image.



Figure 8 above: view towards site from the vicinity of No.3 Marlborough Street. The dwelling at No.33 Enterprise Road is to the centre left of the image.



Figure 9 above: view of site from right of way behind No.23 Enterprise Road, looking southeast.



Figure 10 above: view of access strip from Enterprise Road.

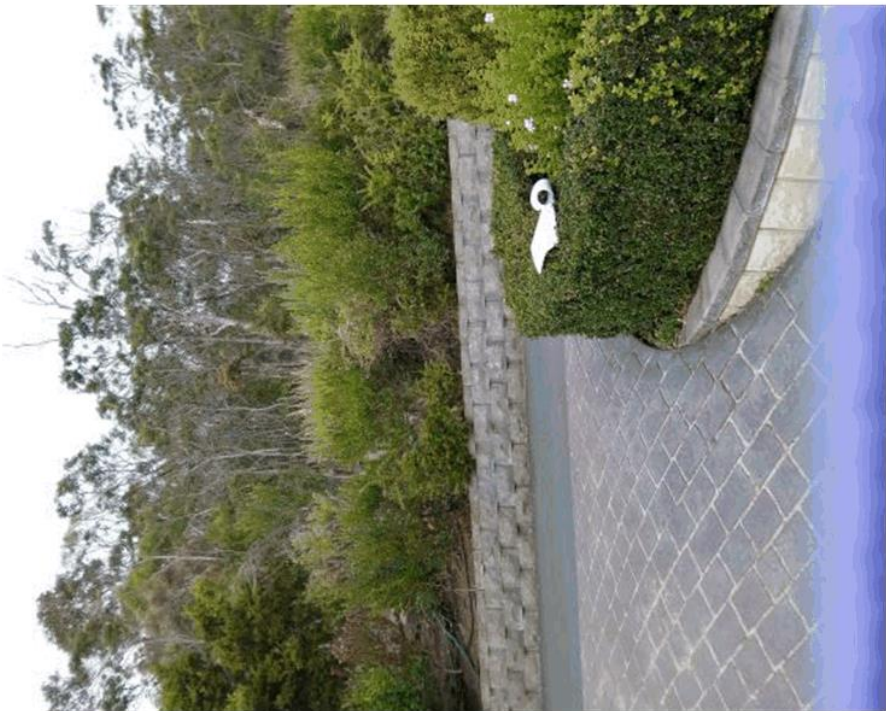


Figure 11 above: view from rear of No. 25 Enterprise Road.



Figure 12: view from rear of Nop.25 Enterprise Road, looking toward No.27 Enterprise Road.



Figure 13: view from rear of No.27 Enterprise Road.



Figure 14 above: southeastern end of Enterprise Road, looking towards site at No.35 Enterprise Road.



Figure 15 above: view from Marlborough Street (above Aotea Road junction).

3. Proposal

- 3.1 Planning approval is sought for 20 multiple dwellings and associated works.
- 3.2 More specifically the proposal is for:
- A total of 20 detached multiple dwellings, with central accessway, at 21B Enterprise Road.
 - A bushfire hazard management plan that also includes 21A Enterprise Road, 26 Edith Avenue (CT 169835/105) and 35 Enterprise Road.
 - The proposal relies on stormwater works at 26 Edith Avenue (CT 169835/105).
 - The Enterprise Road road reservation forms part of the site due to sewer infrastructure.

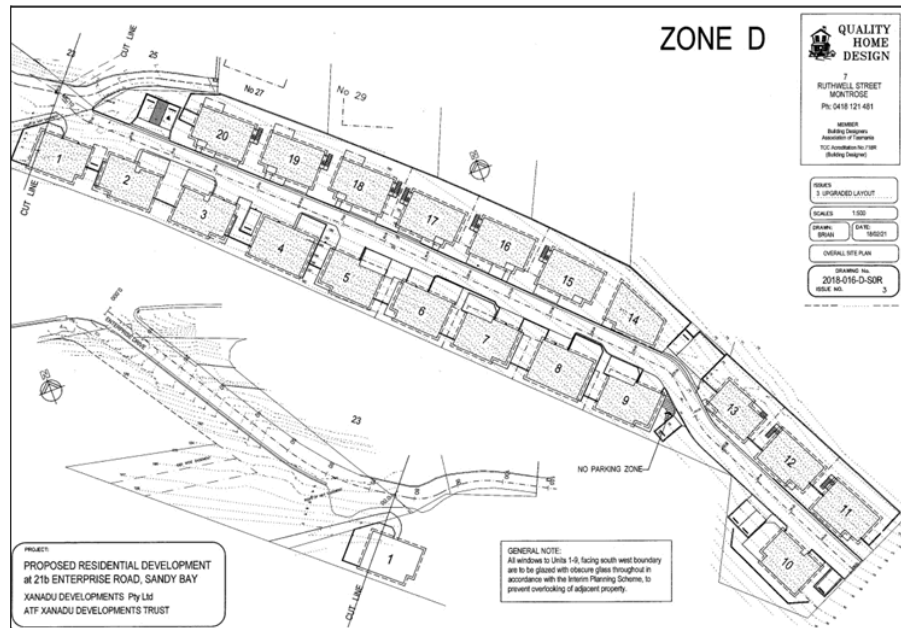


Figure 16: Proposed site layout.

4. Background

- 4.1 A previous similar application under PLN-19-314 was withdrawn on the 21st October 2020. It had been advertised and received 123 representations. The withdrawal was as a consequence of the recent Supreme Court decision, which has effectively proscribed Councils' ability to re-advertise planning applications, particularly where representations have been received. The application was required to be re-advertised because it had failed to include 23 Enterprise Road, which formed part of the driveway works. As a consequence, the applicant submitted the current application, with an amended driveway design that no longer relies on 23 Enterprise Road.

4.2 Further background on the basis of Council files (Trim) is as follows.

- PLN-16-00440 for vehicular access and associated works at 26 Edith Avenue (also known as 21, 21a and 21b Edith Avenue), accessed from Enterprise Road, was issued planning approval by Council dated 6 September 2016.
 - The site was otherwise known as 21A Enterprise Road (26 Edith Avenue CT175780/1).
 - The works appear to have been undertaken.
- PLN-18-200 for a dwelling at No.26 Edith Avenue, and accessed from Enterprise Road, was issued planning approval by Council dated 15th November 2018.
 - The site is otherwise known as 21 Enterprise Road with access across the adjacent 21A Enterprise Road (previously known as 26 Edith Avenue CT175780/1).

5. Concerns raised by representors

- 5.1 A total of 213 representations objecting to the proposal were received within the statutory advertising period between the 14th and the 28th April 2021.
- 5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

Density
<p>-the proposal fails to satisfy clauses 10.4.1 A1 or 10.4.1 P1 and is prohibited;</p> <p>-concern at high density development;</p> <p>-the development site is incompatible with high density usage and the plans are also contrary to the values embodied in the Hobart Interim Planning Scheme 2015 General Residential Zone, Zone Purpose Statement 10.1.14 that promises "To encourage residential development that respects the neighbourhood character". There is no precedent for this density of housing in this area nor elsewhere on the hills of Hobart;</p> <p>-This development would significantly alter the nature of housing in Enterprise Road and surrounding streets. It is of a far higher density than what is presently the case and what was the case when residents of the area purchased their properties here. Purchasers of residential property should be able to feel secure that the nature their</p>

neighbourhood will not significantly change so suddenly;

- concern at high density housing on the edge of bushland;
- This D.A. proposal is classified as multiple dwellings, and they appear to meet the requirement of 10.4.1 of a minimum lot size of 325m² per dwelling on the surface of the calculations, i.e. $8030/20 = 401.5$, however one must remove the common area of the driveway and access from the site footprint which is about 50% therefore we must apply $8030/2 = 4015\text{m}^2 / 20 \text{ units} = 200.75\text{m}^2$ as the approximate land parcel each unit is squeezed into. Therefore it is argued that the proposal is actually in violation of the acceptable solution. The reason this approach is valid is because of the wording in P1 performance criteria in 10.4.1, which states that "multiple dwellings must only have a site area per dwelling". Per dwelling is the key phrase, given the proposal does not allow any more land than approximately 200m² per dwelling this is not compatible with the density of the 6 of 12 surrounding area and will exceed the capacity of the infrastructure, and does not provide any significant social or community benefit to offset the damage caused;
- My primary concern is the density of the housing in the proposal. It is wholly out of character with the neighbourhood which consists of individual homes on reasonable lot sizes;
- Almost every building in the area above Churchill Avenue is a detached residential dwelling and the original access to this area was planned and approved on the basis of this assumption. Today it is common for a 2 bedroom unit to be rented by up to 4 people each with independent transport amounting to 4 cars. For example there is one set of 6 units in Weymouth Avenue. Opposite this is a residence that has been converted into 3 units. The available and approved off street parking is not sufficient for medium density housing. The result of these 2 sets of units is a very congested road, very limited on street parking and extended lengths of dangerous single lane roadway. This is obviously inconvenient for residents but also dangerous for the visibility and utility by young children;
- Such a high-density housing development is totally inappropriate in this beautiful bush land;
- I understand the tract of land at 21.B sold in 2018/2019 and was described as suitable for four to eight residences which suggests would be in keeping with the current land size of established houses in the area;
- concern at precedent for future inappropriate development;
- Council needs to stop approving high density units in suburban areas;
- concern at desire to 'cram' as many units as possible on the site thus

maximising profit rather than amenity;

- at 20 dwellings, the proposal is significantly overdeveloping the site. Whilst the property has an area of 8030m², a significant proportion of it is taken up by the access meaning each dwelling has a land area of less than 300² which is well below the requirements of the planning scheme. In addition, the site has a very steep gradient and as such should warrant a lower density;
- As a homeowner in the immediate area of the proposed high density, cheaply constructed development I strongly oppose the development application. It is obvious from examination of the aerial photos of the surrounding neighborhood that this development of 20 units would forever compromise the amenity and character of the high-value, quality single family homes that dominate the area (with a few regrettable instances of medium-density townhouses that have been approved in recent times). This development is characteristic of inner-city high density living or student accommodation. What a unconscionable thing to propose in a residential neighborhood!;
- In other parts of Hobart where the council has permitted high-density accommodation there is often insufficient parking for permanent residents and others who must park on the street. A ghetto situation can develop with cars parked on footpaths and garbage bins left permanently on the street. Nobody, apart from the council which collects the revenue involved, benefits from this. Trailers and boats add to this problem. Although the council specifies off street parking be provided, each gutter crossing reduces available on street parking, resulting in no available street parking;
- The proposed multiple-dwelling development does not appear to meet the minimum lot size (per dwelling) of the general residential zone, and this development is not aligned with the established and valued lifestyle and environment of this quiet residential area. In addition, the proposed development is on the edge of the Skyline reserve (Bicentennial Park) which is an important biodiversity and recreational area for Hobart residents, and areas adjacent to that reserve promote low density living, with most of those areas zoned as environmental living or low density residential. Further, I understand that the plans for the proposed development contain technical inaccuracies, primarily with regard to natural ground lines. As a result, the building envelopes, shadow diagrams, privacy measures and elevations specified in the plans are inaccurate and most of the proposed dwellings protrude from their building envelope;
- This development is not "suburban density" as stipulated in 10.1 Zone purpose within the planning scheme and is therefore in violation

of that point within the scheme. The developer is creating an area within this zone that is much higher in density than the existing suburban density and this contravenes the planning scheme. This squeezing of as many, almost identical looking, houses with virtually no space between them will put a further strain on already existing infrastructure. The proposed houses are not optimized for energy efficiency. Further to 10.1 this Development Application (D.A.) is not making efficient use of existing services but will place a huge encumbrance on services already under stress. Services such as roads, stormwater, sewerage, water supply and the electricity grid are already under strain in this area. The cumulative effect on the water way in the valley below will also have consequences for lower lying areas starting at the end of Maning Avenue Sandy Bay and down to the River Derwent;

-To put the density into context, the lot is 8030m² with 20 three and two storey units proposed and a large access road. This equates to a lot area of 401.5m² if 8030/20 is applied, however the development area is significantly smaller than this 8030 in its actual footprint therefore effectively creating a high density zone within the overall lot. Most lots in this existing neighbourhood with a single house vary from 500 to 1000m² and above with lots of space for planting between the houses with mature trees and habitat in place, approximately 50% of the footprint of the proposed development, 8030m², is taken up with the access road, which pushes all the 20 units closer together;

-The proposed development lies on the crest of Mt. Nelson adjacent to one of Hobart's most popular bushland reserves, Bicentennial Park. The use area and the proposed area to be developed can be viewed from most parts of the city. I am strongly against this high density development proposal by Zanadu;

-a. The application is in violation of the intent of the planning scheme in that this site is in a transitional zone between a General Residential zone and the bushland reserve Bicentennial Park. The pattern of development should therefore follow a reduction in density of the established neighbourhood if it is to serve as a transition to the bushland zone. The proposal does the opposite and greatly increases the average density and conflicts with neighbourhood character and patterns. The elevated terrain and visual prominence of this site from many parts of Hobart makes the importance of adhering to this transitional principle even more apparent and important.

b. The application is in violation of 10.1 Zone Purpose, in that it is not a "suburban density" that is being proposed. The project is a higher density use than that

prevalent in the neighbourhood and does not respect the neighbourhood character as the scheme requires.

c. This D.A. proposal is classified as multiple dwellings, and they do not meet the requirement of 10.4.1 of a minimum lot size of 325m² per dwelling using the standard calculation method, the resulting lot size per dwelling is 309.25m². It is therefore categorically too dense for the zone and HIPS (Hobart Interim Planning Scheme) requirements;

-The proposal does not meet planning scheme Zone Purpose Statement 10.1.1.4 as the proposal is for high density development which is completely out of character with the neighbourhood. The vast majority of lots in Enterprise Road and Birngana Avenue are large lots containing a single detached dwelling.

Council have encouraged larger lots which allow the retention of trees, as the hill face above Enterprise Road is visually prominent from many parts of Hobart. The proposed development will require the removal of nearly all vegetation on the proponents title. In addition a large amount of vegetation will need to be removed from two adjoining titles, including on land above the proposed development;

-In summary it is my assessment that the proposal is an overdevelopment of the site and conflicts with the density, height, siting, amenity, access, stormwater management and environmental provisions of the planning scheme. The proposal is not compatible with the density of the surrounding area and does not respect the neighborhood character on this steep and exposed skyline site;

-Having regard to the above I calculate that the Site area for the purpose of the density calculation under the planning scheme is approximately 6200m² (= 8030m²- 1830m²).

Based on this calculation the proposal for 20 dwellings on the 6200m² site equates to a density of 310m². This exceeds the permitted density under A1 of Clause 10.4.1.

Adopting the relevant tests under previous RMPAT precedents, the proposal would involve a density far in excess of the density of dwellings within a 100m radius of the site and therefore not compatible with the surrounding area as required by P1(a) of 10.4.1. The recent Boland Supreme Court decision (TASFC 5) has confirmed that comparison with the potential impact of a development that complies with the acceptable solution is not irrelevant. However, in this case the proposal shows clear non conformance with the performance criteria and objective for the standard and cannot be supported;

-This is not a project for the Hobart fringe in a sensitive and very difficult area on which to build. This high density intensely populated

series of units. They are suited to an inner City CBD area, not the virgin bushland fringe of Hobart remote from transport services, so close to a bushland recreational area;
 -no precedent for this scale and density of housing in the neighbourhood.

Townscape and Landscape character and amenity

-major intrusion into the surrounding tree line/skyline of Hobart by these 2 to 3 storey units;
 -the development site is incompatible with high density useage and the plans are also contrary to the values embodied in the Hobart Interim Planning Scheme 2015 General Residential Zone, Zone Purpose Statement 10.1.1.4 that promises "To encourage residential development that respects the neighbourhood character". There is no precedent for this density of housing in this area nor elsewhere on the hills of Hobart;
 -The proposed dwellings are ugly and will be an eyesore that shall detract from the aesthetic integrity;
 -concern at bulk of proposal;
 -concern at loss of transition between residential neighborhood and bushland;
 -would be highly visible and out of character with surrounding structures;
 -loss of appealing look of bushland;
 -loss of neighbourhood character;
 -Appearance and Character : the available information strongly indicates that there will be a uniform 'sameness' about the 20 Units. Diversity is much more desirable, and can probably only be achieved in this location through allowing only a very small number of discrete dwellings, each with different design and colour (and hopefully more empathic to the surrounding bushland);
 -the skyline would be greatly altered and the visual impact for Hobart residents would be significant;
 -This DA is in violation of 10.1 (10.1.1.4 and 10.1.1.5) in so far as it does not respect neighbourhood character, nor does it provide a high standard of residential amenity, as far as the plans tell us these are "minimum standard" at best, cheap and nasty buildings. Certainly not "high standard" as required by 10.1.1.5. In addition due to the way the units are designed they rely on small decks for private open space which again is a minimum standard approach. This creates a crowded development with lots of decks overlooking each other and the surrounding neighbours in the valley. Privacy considerations have been very much lacking in the overall site concept plan, and

development of the design;

- Additionally, it will significantly degrade the natural beauty of surrounding area and will negatively impact the view for a large part of Hobart. Its bushland hills are a unique and iconic feature of the city;
- disruption of peaceful and tranquil area;
- When we purchased our land at Enterprise Road we were told council would not permit any future development into the bush land above our street. However this development has been submitted;
- loss of peace, quiet and beauty;
- would destroy the ambience of the place;

-The major problems with the proposed development are the massive visual and environmental impacts that this development will have on the surrounding neighbourhoods. The intention to construct 20 2 and 3 storey houses with absolutely no consideration on the impact on the environment, amenity of the surrounding neighbourhoods, modern sustainable design, privacy, lack of sunlight to many of the proposed and existing houses and access to and from an already congested small suburban road system is an example of an unacceptable solution to the planning scheme. I believe it is an attempt by the developers to maximise profit from this development and perhaps a future development in a neighbouring plot at the cost of lack of amenity to existing properties and the skyline of Hobart;

-Last but not least the development is ugly, it will be an eye sore, and the buildings are designed to be constructed in a quick and easy fashion with little consideration of material usage, energy efficiency and visual amenity and will lower the overall quality of housing in the neighbourhood. It is another case of mainlanders coming in and imposing their ideas on our community in order to make a quick dollar at the expense of local residents. There is arrogance about this development that demonstrates a lack of respect for our city and what the people have tried and are trying to achieve in protecting and enhancing the amenity of our environment. The council should reject this proposal based on the lack of adherence to the planning scheme and lack of respect for the natural values of the local area;

-Last but not least the development is ugly, it will be an eye sore, and the buildings are designed to be constructed in a quick and easy fashion with little consideration of material usage, energy efficiency and visual amenity and will lower the overall quality of housing in the neighbourhood. It is another case of mainlanders coming in and imposing their ideas on our community in order to make a quick dollar at the expense of local residents. There is arrogance about this development that demonstrates a lack of respect for our city and what the people have tried and are trying to achieve in protecting and

enhancing the amenity of our environment. The council should reject this proposal based on the lack of adherence to the planning scheme and lack of respect for the natural values of the local area;

- concern that proposal out of character with predominant building typology for the area, which is large detached dwellings on lot sizes of 600sqm or larger, set back from the street by established gardens.

This proposal for a complex of much smaller and more dense dwellings risks being out of character with its neighbours and a detriment on the value residents hold for a sense of place;

- the development is ugly, it will be an eye sore, the buildings have very unattractive proportions and material choices and will lower the overall quality of housing in the neighbourhood;
- I object to the aesthetic spoiling of the residential environment - it will destroy the green tree belt on the ridge with what will appear like a solid linear building - visual pollution!;
- The proposal highlights a major weakness in the City's land zoning. The General Residential Zoning currently applied to the land conflicts with its location on the urban fringe beside untouched bushland devoted to passive recreation and nature conservation. The very high density of the development proposal is something we expect in an inner-City location, not on the elevated urban fringe remote from public transport on very steep terrain. The proposed DA application for 20 dwellings does not allow for the transition into Mt. Nelson bushland reserves and our recreational walking areas. A significant concern for me is that the developer owns the lot 21a enterprise road and is accessible from their new proposed development access road. It is obviously forms a medium term plan to clear fell the whole hill side to construct bigger high density projects to encroach on the Bicentennial Park recreation reserve. This will be done by systematically removing bush and large scale excavation of this water catchment area. Visually this is a critical hillface zone for Hobart and Tasmania. It will completely destroy the environment that Tasmanians and tourists value so greatly about this highly popular recreational area;
- The development is unattractive, it will be an eye sore, the buildings have very unattractive proportions and material choices and will lower the overall quality of housing in the neighbourhood. The wall of taller buildings placed along the "front row" N.E. boundary completely block the views and a lot of sunlight to the 10 units along the "back" up slope S.W. boundary and all these new residents will be exposed to unacceptable bush fire risks, as there is no way to enforce management of the bushfire hazard zone on multiple neighbouring properties, particularly after these 20 units have been strata titled. The

residents will be exposed to significant risk of flooding, damp and mold issues due to all the building-envelope connected retaining walls proposed, which is a highly risky system of construction;

-The proposal shows 20 units that are all of the same dwelling type. They resemble cookie-cutter dwelling types and are monotonous and repetitive. The exterior finishes do not resemble a high standard of residential dwelling;

-an example of poor planning and development;

-A Greenfield, virgin bushland site in the skyline zone, in a water catchment area, is a totally inappropriate location for this type of development at a macro planning level;

-lack of transition from existing dwellings to the adjoining bushland reserves;

-Apart from the Proposal being totally incompatible with the steep fringe Residential/ Bushland area it appears to be risky on a number of counts. It is risky to the safety of local residents, it is risky to the environment and infrastructure, it is a risk in that there must be doubt whether this can even be built without major construction problems and it must be a risk that the whole community's reputation as an attractive area in which to live is at stake;

-occupants of the units will be strongly separated from the rest of the neighbourhood. There is to be a retaining wall and fence around the boundary that will give the impression of a gated community or a jail. And the units are arranged around the central access lane, all looking inward and impervious to any connections with the wider neighbourhood;

-This project is not suitable for the Hobart fringe in a sensitive and very difficult steep area. It is more suited to an inner city CBD area, not the virgin, steep bushland fringe of Hobart, remote from Public Transport services and so close to the bushland recreational area of Bicentennial Park.

Visual impact and skyline impact

-It is important that if such a development was to go ahead Council should require the buildings to be clad in a colour co-ordinating and reflecting the colour of the surrounding bushland to be used, we would not want to see a big "white blob" or bright other colour dominating the landscape, the style of these proposed buildings are ugly enough by themselves;

-The suggested heights of the units at two or three stories would be a detriment to the visual skyline to the nature reserve;

-if approved, proposal would be 'gateway' for the degradation of of Hobart's western shore skyline, and to the permanent loss of visual

amenity, wildlife habitat and passive recreation opportunities;

- The shocking bulk of the development contrasts markedly with surrounding housing, and if approved would provide precedent for further incursions into what we all enjoy as a quiet, low density area;
- In conclusion I can not object enough to the totally inappropriate development that if passed by the Hobart City Council would be a scar on our skyline and would also show that the HCC despite all it's claims about protecting the skyline really does not care about the skyline or it's rate payers;
- Whilst there are factual deficiencies relating to the development there are also numerous other deficiencies which may be considered value judgements. These include the aesthetics of an overcrowded development which is not in keeping with the existing lower density dwellings of the neighbouring properties and the area in general. The buildings themselves appear to be poorly designed with the main criteria being maximising the number of dwellings as opposed to any thought given to the sensitivity of the site and the neighbouring area.;
- The visual amenity of the hillside will be spoiled with this high density development that will stand out like a sore thumb;
- In addition to the harm done to the immediate neighbourhood, the proposed development will have a negative impact on a broader scale. This is particularly so as the development will be on a uniquely prominent site. Currently, when one looks up at the neighbourhood from, say, Sandy Bay Road or even the eastern shore, one sees houses behind which is bush all the way to the skyline. Though not impacting the skyline per se, the proposal will nonetheless significantly degrade the vistas, one of Hobart's unique features. In addition to incursion into the bushland, there will be a loss fauna and flora habitat;
- The proposed development lies on the crest of Mt. Nelson adjacent to one of Hobart's most popular bushland reserves, Bicentennial Park. I use area and the proposed area to be developed can be viewed from most parts of the city. I am strongly against this high density development proposal by Zanadu;
- approval will degrade Hobart's western shore skyline;
- As an Eastern Shore resident, (Rosny Esplanade), we have clear views across the River Derwent to the Sandy Bay hill side and have witnessed a gradual decline in the areas of native bushland across the hillside as development extends upward towards the Mt Nelson ridgeline.

We are very concerned with the extent of vegetation that is being proposed to be removed to facilitate the construction of this development. With the site area being cleared, plus the significant

additional area to be cleared to reduce the project's BAL rating, all for the Developer's gain, the sandy bay skyline will be changed significantly forevermore. Under a lower density model, such as single dwellings, generally there significant trees and some vegetation are retained as can be witnessed in the areas surrounding the site in question.

We cannot understand how this development could possibly be seen to fall in line with the current neighbourhood character? If this development proceeds, the extensive cut into the hill side, long and high retaining walls, and two rows of identical looking boxes will be an unsightly blemish on Hobart's skyline for all to dwell on for many years to come.

Indigenous and historically significant land

- Loss and damage to indigenous and historically significant land in the Kriwalayti (meaning little Sandy Bay) area for the Palawa people including the Nununi and Muwinina tribes;
- Loss and damage risk to the Truganini conservation area through nearby developments. This is land of significant historical importance and is protected native bushland. The area should not be risked for a mass residential development.

Setbacks and Building Envelope

- My area of concern is the proposed setbacks, particularly unit 20 which appears to have a setback from the front boundary of less than 3 metres with a wall height well over 5 metres. This would also appear to be very much outside the parameters of the planning scheme and would have a significantly detrimental impact on all the neighbouring properties in Enterprise Road(*);
- Most of the units are outside the prescribed building envelope and are not compliant;
- Setbacks between units and the boundary are non conforming;
- The most significant way in which the documents provided by the developer are misleading is that they imply that the buildings are within the building envelope when it is simple to demonstrate that this is not the case. The proposal therefore does not comply with 10.4.2 A1 and therefore should be rejected by Council;
- many of the 20 units are well outside of the building envelope. Council should force the developer to 3D model the natural ground plane, as existing, and make an accurate 3D building envelope and place all the buildings in the 3D model to their correct level and it will be shown that the vast majority of the 20 units are well outside of the building envelope. This means that the proposal will cause an

unreasonable loss of amenity by overshadowing and visual impacts caused by the apparent scale, bulk or proportions when viewed from adjoining lots. Furthermore the proposal does not provide separation between dwellings compatible with that prevailing in the surrounding area; this is all covered under 10.4.2 P3 in the planning scheme;

-Inaccurate ground levels makes assessment difficult. The misrepresentation affects the illustration of all 20 units' elevations. The protrusions demonstrated clearly demonstrates the inappropriateness of the development in terms of height, setbacks, bulk and appearance;

-The majority of the proposed 20 units are well outside of the permitted building envelope, in violation of 10.4.2 A3(a) and furthermore no attempt to meet the performance criteria has occurred, and the proposal is not supported by an independent planner. The 10 units along the N.E. boundary are well outside of and above the building envelope, and therefore create an inappropriate bulk, apparent scale and visual impact on the neighbourhood and additional overshadowing (depicted inaccurately in the developers documents) loss of sunlight, including to proposed units, and provides insufficient separation between existing dwellings. Furthermore the impacts are misrepresented in the form of inaccurate drawings presented by the developer, which incorrectly depict the natural ground line, and therefore the building envelope and make the units appear more compliant than they are. To demonstrate this I have carefully 3D modelled all of the dwelling units in question and the 3D building envelope and natural ground plane in order to show the discrepancies. Based on the inaccuracies in the documents alone this application should be rejected by Council, as it cannot be assessed correctly without correct and accurate documents;

-The proposal relates to an internal lot (Diagram 10.4.2D of the planning scheme) which applies a 4.5m setback along the northern boundary with the properties fronting Enterprise Road (Nos 25-35)1. The permitted building envelopes shown on the submitted section drawings are incorrect. Height dimensions for the building envelopes shown on the sections should be measured vertically not on an angle as shown on the submitted drawings.

Units 14,15,16, 18, 19 & 20 do not comply with the 4.5m setback under A3 and are to be assessed under P3 of 10.4.2. Consistent with Clause 7.5.4 of the planning scheme Council can have regard to the Objective of the Standard;

-In this case the relative height and close siting to the rear of properties fronting Enterprise Road (Nos. 25-33) is likely to cause significant apparent scale, bulk and proportions that are inconsistent

with the established pattern of development in the surrounding hillside area. In addition to the proposed dwelling, the proposed retaining walls and boundary fencing along the northern boundary of the site and adjoining the rear of the Enterprise Road properties (Nos. 23-35) will greatly exceed the maximum 9m length for a structure within 1.5m of the boundary under A3. This retaining wall and fencing will also create a significant overbearing appearance when viewed from the neighbouring properties;

-The proposal is not accompanied by a proper visual impact assessment, adequate sections, elevations, photo montages or details of the use and arrangement of adjoining properties to allow a proper assessment against this standard. In my assessment the performance criteria of 10.4.2, P3 are not met;

-non-compliance with 10.4.2(a)(iv) 10 dwellings are proposed to be setback between 2.2m

and 4m from the rear boundary of 23, 25, 27, 29, 30, 31, 33 and 35 Enterprise Road. These dwelling would have a maximum height of 8.4m and would present as an almost continual wall the length of the property. The visual impacts of having such a large, dense and high development when viewed from the adjacent lots is considered unreasonable. The proposal is completely out of character with the surrounding area and would appear as a dominant element in the environment. The proposal is not considered to satisfy clause 10.4.1P3(a)(iv);

-The proposal violates the acceptable solution principle of wall length along a boundary (9m normally accepted or one third boundary length as 10.4.2 A3(b)(ii)) in that a retaining wall is shown along the entirety of the NE boundary in the documents, albeit depicted inaccurately in terms of levels and heights, with a 1.8m to 1.5m fence on top of the retaining wall, presenting, what will be in reality, a 3m wall approximately, running the entire length of this very long boundary.

Planners note:

There is concern that slope has been under-estimated under the submitted plans, resulting in doubt as to the potential compliance of dwellings with the building envelope.

In particular, the potential impact of the lower row of dwellings, Nos. 11-20, is assessed in the relevant part of the report.

Dwelling 20 is adjacent to a side property boundary as assessed under the Planning Scheme. It would be setback 4 metres from that boundary. The submitted northwest elevation indicates the dwelling would meet the side boundary setback envelope Acceptable Solution under Clause 10.4.2 A3 of the Scheme.

Under the submitted plans, dwellings 11, 12, 13 and 14 require side boundary setback discretion.

See also 'inaccuracies' heading under this list, including discussion of slope on the submitted plans, and slope under Council's Geocortex mapping system.

Privacy

-What the sectional study of Unit 14 also reveals is that there is a proposed concrete deck, shown on the floor plans and elevations that is within 100mm of the side boundary, and is at an elevation of at least 4m above natural ground level at its edge. This creates privacy discretion under 10.4.6 A1. It also creates a setback discretion not shown on the site plans, of less than 1.5m. this is an unreasonable loss of privacy for the adjoining buildings;

-The omitted lower level decks for U11, U12, U15, U16, and U17 should be illustrated on the Site Setback/Layout Plans so that their impact on neighbouring properties and be considered;

-The upper level deck for U10 is incorrectly illustrated in Site Setback/Layout Plans;

-no screens facing nearby units 3, 6, 7 and 9;

-no screens facing neighbour private open space units 11, 15, 16, 19 and 20;

-driveway within 1.7 metres of bedroom window of dwelling 10;

-concern at retaining walls within 1.5 metres of the property boundary at Nos. 1-9;

-j. The proposal violates the acceptable solution principle of wall length along a boundary (9m normally accepted or one third boundary length as 10.4.2 A3(b)(ii)) in that a retaining wall is shown along the entirety of the NE boundary in the documents, albeit depicted inaccurately in terms of levels and heights, with a 1.8m to 1.5m fence on top of the retaining wall, presenting, what will be in reality, a 3m wall approximately, running the entire length of this very long boundary.

Retaining walls are viewed as structures and impact site coverage measurements, and change the hydrology of the site. Furthermore I cannot see in the plans how all the ag. Drains from these retaining wall collecting points for sub-surface water will be adequately drained on this highly sensitive site. This includes all the drainage required to the retaining walls behind and upslope of all of the 20 proposed units.

k. Due to the above mentioned retaining wall, boundary works notifications would be required and the consent of all the neighbours required to work on said NE boundary to build this long retaining wall, which would be difficult to achieve given the total lack of community consultation and animosity towards this development prevalent in the

local community. These retaining walls are required if the private open space is to achieve the required gradients (1 in 10) to make them usable and compliant with the acceptable solution. As such, taking the view that this retaining wall is non-compliant with multiple provisions of the scheme and would be, in reality, very difficult to build with neighbour cooperation, it follows that the private open space areas shown on the site plans will be insufficient to comply with the acceptable solution in 10.4.3. A2. These retaining wall private open space areas, as they are above natural ground at the boundary they are therefore in the same category as decks in terms of creating privacy discretions along the entire length of the N.E. boundary;

- The proposal violates the acceptable solutions for privacy in that decks, retaining walls and buildings are located up to and closer than 2m from the side boundary with elevated deck levels well above the 1m limit above natural ground levels. This will create overlooking and loss of privacy for neighbours and is a result of placing too many houses onto a long narrow block. In many cases the dwellings along the NE boundary have decks outside the building envelope with 1m glass railing and therefore no privacy mitigation to the existing neighbours down slope. The acceptable solution for 10.4.6 A1 is not met and in terms of the performance criteria there is no mitigation of overlooking existing neighbour private open space;
- The proposal involves terraced areas on the boundary along the bottom of units 11-20. There is insufficient information shown on the drawings such as detailed sections to confirm the height of these terraced areas (ie the boundary retaining walls) above NGL. The required 1.7m high screening of these areas above any terraced area higher than 1m above NGL could not be accommodated without an unacceptable visual impact to the neighbouring properties to the north in contravention of P3 under Clause 10.4.2;
- loss of privacy to neighbours;
- These retaining wall private open space areas, as they are above natural ground at the boundary they are therefore in the same category as decks in terms of creating privacy discretions along the entire length of the N.W. (means NE) boundary.

Planners note:

The submitted plans received dated 15th March 2021 indicate no deck (that is, exceeding one metre in height) within 4 metres of the side property boundary.

Were such decks to be in excess of one metre above ground level, then screening would be required in accordance with clause 10.4.6 A1(a) (side boundary).

Visual intrusion

-visually intrusive to neighbours;

--non-compliance with 10.4.2(a)(iv) 10 dwellings are proposed to be setback between 2.2m and 4m from the rear boundary of 23, 25, 27, 29, 30, 31, 33 and 35 Enterprise Road. These dwelling would have a maximum height of 8.4m and would present as an almost continual wall the length of the property. The visual impacts of having such a large, dense

and high development when viewed from the adjacent lots is considered unreasonable. The proposal is completely out of character with the surrounding area and would appear as a dominant element in the environment. The proposal is not considered to satisfy clause 10.4.1P3(a)(iv);

-These retaining walls are required if the private open space is to achieve the required gradients (1 in 10) to make them usable and compliant with the acceptable solution. As such, taking the view that this retaining wall is non-compliant with multiple provisions of the scheme and would be, in reality, very difficult to build with neighbour cooperation, it follows that the private open space areas shown on the site plans will be insufficient to comply with the acceptable solution in 10.4.3. A2.

Site coverage

-site coverage concern, including impervious surfaces;
-site coverage by impervious surfaces cannot be met, due to building coverage, impervious decks, driveways, turning areas and retaining wall tops, all combined exceeding 50% of the site area;
-The proposal does not meet acceptable solution A1 of clause 10.4.3 "Site coverage & private open space for all dwellings" and therefore must be assessed against performance criteria P1 . Part (a) of P1 states that Dwellings must have " site coverage consistent with that existing on established properties in the area". Clearly the proposal for a high density development is completely out of character with other development in this area and therefore the proposal does not comply with P1(a);
-The proposal plans show relatively flat private open space areas that purport to comply with the maximum acceptable solution grade of 1:10. The impact of the creation of these level areas on this steeply sloping land is understated in the application material and there is insufficient information to determine the feasibility or impact of such cut and fill.
The detail is inadequate to demonstrate the extent of the cut and fill or retaining walls necessary to achieve such a grade.

Open Space

-PLN-20-740 does not provide a high standard of residential amenity, either for potential occupants or for neighbours in the adjacent residential area. The most serious deviation from residential amenity for potential occupants arises from the crowding together of the 20 units and the total lack of usable ground-level open space in the design. The units are large in terms of floor area (193 to 255 m² not including decks) and have enough bedrooms to comfortably accommodate families with two or three children. However, there is no "backyard" (or front yard) on any of the units, only decks. Neither is there any shared open space or park area. Apart from the decks, all the open space is contained in driveways and the central access lane which are dangerous, sloping, sealed, not sheltered and without vegetation. The decks overlook each other and adjacent lower floors, and so cannot be considered alternatives to open space at ground level. In addition, there is very little privacy for occupants except when they are right inside the units;
-no allocation for children to play.

Sustainability

-Many south west facing habitable rooms will encounter issues relating to dampness, condensation due to their location, retaining walls & room use. The designs do not consider sustainability and energy efficiency mechanisms. No evidence of thought or provisions for reducing power consumption and water usage. The 20 units will be requiring heating of rooms, and the complex is likely to end up with numerous outdoor units for heat pumps. The provision for solar panels is not evident in this proposal;
-no awareness of designing for climate change or sustainability.

On site amenity

-The development's internal street does not encourage its own active frontage. It is merely a road with garage doors on either side. The units are monotonous in design style and finishes and together with the "cookie cutter" stamp style layout makes the development unappealing in appearance. More unappealing is the internal street that makes the development "turn its back" on the existing neighbourhood community that it sits in. The design of the development suggests that it is its own entity, its own complex, separate from the community. This is not an attempt to embrace the beauty of Hobart's way of life and Hobart's unique identity.

The dwellings themselves do not address today's issues of climate change and there is no evidence of any sustainable design means. Hobart's residential properties often face issues with poor heating and issues with condensation which relates to poor health and wellbeing.

Community consultation & inclusion would have been have benefitted the proposal for better design outcome;

-The narrow gaps between the northern units allow very limited views from the living spaces of units 1-10. Many of the units' POS are screened with 1.7m high balustrading due to their poor designs that overlooks into other dwellings. These screens, while act to provide privacy, will obstruct views to the Derwent for the respective dwellings as well as for other nearby dwellings.

Additional screens / balustrading (not shown) will be required to prevent falls where there is a big drop in levels.

The whole of the development proposed will result in great lengths of unappealing retaining walls, high balustrading & privacy screens throughout, fencing around all units, and barrier fences to (unit10-14);

-The proposal does not meet planning scheme clause 10.1.1.5 as it does not provide a high standard of residential amenity. The proposal lacks elements which contribute positively to the overall character of the area, in fact, it detracts from the bushland character of the area by obliterating the natural vegetation over most of the site.

Social impact

-As a clinical psychologist, my passion is helping people live healthier, happier lives and the development will impact the way community members experience the peaceful, undisturbed areas of this space, integral part of their health and wellbeing routine e.g., exercise, mindfulness, nature-therapy, relaxation, stress reduction etc;
 -Given the increased number of Hobart community members seeking psychological support and reporting increased stress, anxiety and other mental health concerns, taking away from residents the tranquility and stability that is needed during these uncertain times is an important factor to consider for the long-term wellbeing of individuals and families already struggling.

Tourism

-loss of natural beauty, will detract from tourism.

Traffic volume and traffic danger

-This development will significantly increase traffic volume on Birngana Av., Niree Heights, Beddome St. and Cheverton Parade. These streets are currently at near capacity with a number of difficult bends to negotiate plus having to navigate around increased kerb side parking.
 Although the supportive traffic report/study focuses on traffic movement around Enterprise Road, the report/study should have considered the likely hood of increased traffic movement and the conceivable traffic flow issues to/from feeder streets Birngana Av. Beddome St. Niree Heights and Cheverton Parade.
 These streets at times are nightmarish particularly on Beddome and Niree Heights. It is dangerous and often cars are forced to stop, even reverse to let other vehicles pass around kerb side parking. Council seem to give little consideration how these types of developments effect traffic management in an already saturated neighbourhood.
 -road access inadequate, particularly in an emergency;
 -traffic impact during construction is of concern;
 -Another 20 dwellings in this area will worsen the existing traffic congestion in the area due to the number of vehicles having to enter/exit using the one & only route via Beddome St - Niree Heights. These roads are narrow with several blind spots. The hilly section of Beddome St is already dangerous because cars are frequently parked either side thus reducing it to a one-way street. At the top or bottom of the hill you can't see if any vehicle is already in the one-way section thus forcing one of the vehicles to reverse out of the way.
 Allowing traffic from another 20 dwellings will create a major traffic

problem at busy times of the day;

- Given there is currently no public transport in the area, this would necessitate the need for 'new residents' to have their own cars, thus increasing traffic, noise and pollution in a currently fairly quiet area, especially as adjoining roads, such as Edith Avenue, are not suitable for more traffic;
- public transport is distant from site;
- Residents as situated under this proposal are unlikely to access public transport on any regular basis due to the hilly terrain.

A high density development in this situation will only add a considerable car load to existing road infrastructure.

Such high density developments should have ready access to the public transport network;

- worsened traffic jams on Churchill Avenue in peak hours;
- There are major issues with the extra vehicular traffic that would arise from this and other planned developments in the area if they proceed.

The area is not served by buses and is probably unsuitable for that given the road layouts.

It is predictable that a significant percentage of vehicles from Enterprise Rd will choose to access Churchill Ave via Birngana Avenue, to Beddome St and thence to Edith Avenue. However this will aggravate road safety issues. I would rate the junction of Edith Avenue with Churchill Avenue as one of the more dangerous in Hobart, given the blind spot caused by a dip in Churchill Ave to the south of the intersection, as it drops down to Maning Rivulet. There have been a number of near misses as southbound cars turn right into Edith Avenue, and an oncoming car suddenly emerges from the dip. A roundabout may be a solution - but perhaps the cost of that should be borne by the developer?

Considering the traffic issue more broadly, Hobart is rapidly sinking into a traffic quagmire and I applaud efforts of the Council to try and resolve those in ways that do not simply exacerbate the demand for wider roads.

But adding significantly greater numbers of residents to areas such as Enterprise Road - where car usage is virtually unavoidable - is not going to help Hobart's longer term problems.

Already over the last 10 years we have seen an increase in congestion along our street (with more cars parked in the local streets than ever, thanks to many houses now being rental properties with multiple tenants). This is also leading to more frequent problems with the Beddome - Edith Ave intersection;

- Beddome Street frequently has vehicles parked on both sides of the road pavement, some permanently. Vehicular congestion has

become increasing worse every year over the last 40+ years that we have lived in this area. The remaining road space is effectively reduced to one lane in a number of places, which makes the passing of opposing vehicles very difficult and potentially dangerous. Also, as there are a couple of bends in the steep road alignment, one approaching 90 degrees, sight distance is significantly reduced and road conditions dangerous. The addition of at least 696 traffic movements per day would be totally unacceptable;

- the road infrastructure is not designed for the traffic;
- Almost every building in the area above Churchill Avenue is a detached residential dwelling and the original access to this area was planned and approved on the basis of this assumption. Today it is common for a 2 bedroom unit to be rented by up to 4 people each with independent transport amounting to 4 cars. For example there is one set of 6 units in Weymouth Avenue. Opposite this is a residence that has been converted into 3 units. The available and approved off street parking is not sufficient for medium density housing. The result of these 2 sets of units is a very congested road, very limited on street parking and extended lengths of dangerous single lane roadway. This is obviously inconvenient for residents but also dangerous for the visibility and utility by young children;
- Road access is very limited with one one road accessing the development;
- Having experienced many "near misses" with Tradesman Vehicles that have been working on house renovations in the area, I can't imagine the traffic chaos if the large scale development is approved. This is a very real fear because the roads accessing Enterprise Road are very narrow and winding with sharp corners. The prospect of permanent residents in 20 or more apartments commuting up and down the hill is incomprehensible;
- The road up to enterprise road is already dangerous, the corner of birngana and niree heights is shocking the slope of it shouldn't have been allowed. If someone is over on the road and someone is coming up the road it has a dangerous slope and often vehicles are falling over into the oncoming lane;
- People speed up niree heights and birngana avenue all the time I would love police to check it out. I get annoyed with the dangerous speeding ; they don't give a dam , they just want to get from a to b with no respect for the noise as they rev up their engines to go up the steep roads;
- Council needs to provide another road access to the area eg via Edith avenue, or Aotea Rd, so that residents can live safely;
- The additional cars on the narrow windy residential roads will make it

not safe for residents and children who live further down the slope;

- Emergency Access: The steep topography, sharp bends and winding streets are of particular concern with respect to access by fire fighting vehicles and other emergency vehicles not only to meet an emergency in the proposed development, but also in the bush behind it and the existing houses. With an access road so narrow and on a steep grade and a sharp turn to reach the development, this seems inherently dangerous. With emergency vehicles in place, residents are unlikely to have a means to escape other than on foot;
- The volume of traffic that would utilise the existing shared laneway connecting the proposal to Enterprise Rd will affect both the safety and convenience of 5 properties already utilising that road. Furthermore, a road some 700m+ distant from the site (Niree Heights), and particularly the Niree Heights and Beddome St intersection, form an extremely constrained and potentially dangerous 'bottle-neck' through which there would ultimately be more than 2100 traffic movements per day. Refer to Appendix G;
- In the event of an accident or incident blocking this narrow road, neither Ambulance nor Fire Trucks would be able to access the more than 210 homes beyond this intersection;
- this development and possible future developments if this is approved will cause more traffic issues in the neighbourhood. It is already dangerous for our kids and many other kids walking to and from the local schools and this would make it much more dangerous;
- concern at impact on pedestrian traffic, which in this area is significant as it is in close proximity to the important bushland reserve areas. There is only 1% pathways to accommodate existing pedestrian traffic. Pedestrian traffic is growing and our children have to unnecessarily cross roads to get to a footpath as footpaths become non existent. This is a safety consideration of enormous concern;
- Council's attention should be drawn to the high risk of adding more traffic to an already overloaded, one way in/out unique road network that already has issues of congestion, road safety, bushfire safety and the ability of this network to not only safely handle a estimated 4 to 5 year industrial scale operation with its inevitable heavy construction traffic, but the issue of the road infrastructure crumbling under this loading with its inevitable consequences;
- The access to the units from the ROW has been shifted slightly outside the ROW owned by No. 23 Enterprise Rd., however this has made almost no difference to the safety of people emerging from the ROW owned by No.25/No27 and the residents of the units for that matter. Traffic from the units would enter out of eye line and at right

angles to the Residents emerging from the No.25/no.27 ROW(simulated photograph attached).This would be an assured accident waiting to happen and likely to lead to protracted disputation. This was raised in the last Representation. The Proponent appears to have disregarded his responsibility for the safety of residents of the units and in particular residents of No. 25 and 27 Enterprise Rd.

Traffic and parking

-My sole means of vehicular access is via the 70m+ long shared private laneway off Enterprise Rd that the proposed 20 unit development would also use;

-The proposal will create traffic congestion in an already bottle-necked suburb as well as parking issues. Parking is already at a premium in the area and streets are full of parked cars due to insufficient onsite parking options;

-Beddome Street frequently has vehicles parked on both sides of the road pavement, some permanently. Vehicular congestion has become increasing worse every year over the last 40+ years that we have lived in this area. The remaining road space is effectively reduced to one lane in a number of places, which makes the passing of opposing vehicles very difficult and potentially dangerous. Also, as there are a couple of bends in the steep road alignment, one approaching 90 degrees, sight distance is significantly reduced and road conditions dangerous. The addition of at least 696 traffic movements per day would be totally unacceptable;

-People park on both sides of the road on the corner of the niree heights road as it approaches Birngana Ave narrowing the actual driving space on the road here its a nervous drive up due to this sort of stuff going on;

-The parking space provided for visitors on the site appears to be inadequate. Apart from this it can be expected that units with mostly 4 bedroom and some three bedroom units, are going to consist of a number of units hosting at least 3 and 4 car owner/drivers, particularly in this area remote from public transport up a very steep hill. If we assume only one extra car driver per unit over the two car garage, that is 20 extra cars to be parked. This means a lot of cars to be parked off site, and that almost certainly means people parking on the sides of the already inadequate ROW access road! We all know they are not going to walk 70 metres up a steep slope along the ROW, let alone another 200 metres to the end units. Obviously they are going to take up all of the visitor parking and then park on the narrow ROW. You only have to observe the situation outside far far smaller complexes on Churchill Avenue (the largest being one eighth the size of this proposal) to realise this. This of course only makes all of the traffic and bushfire issues alluded to earlier even more deadly.

Bushfire danger including access

-Genuine concerns on the event of bushfire emergency evacuation regarding the safety and egress from the main single road access being Birngana Av. and side streets plus the ability of emergency

vehicles trying to access at the same time;

- 'huge' amount of trees would have to be removed to achieve bushfire safety;
- The above traffic problems could have tragic consequences in the event of a catastrophic bushfire for residents trying to escape via the one & only road out. The same would apply for fire-fighters/ police trying to enter the area. Traffic from another 20 dwellings will only heighten the existing fire escape hazards;
- The development site coincides within an area of high bushfire hazard. The route in for emergency vehicles, and out for residents, comprises steep, narrow winding streets, already at their limit for traffic flow. In such an emergency, the consequences could be disastrous;
- Already there are a considerable number of houses above the junction of Beddome St. and Niree Heights, (The only way in and out for those houses). In a bushfire emergency residents above this point may well become trapped, especially if congestion is made worse by this development;
- I note the recommended Hazard management strategies by Lark & Creese consultants relies upon bush clearing but also ongoing maintenance by private landholders to regularly clear away bush debris. How realistic is that?

I also have concern that the plans, as far as I can tell, do not provide for access by firefighting vehicles to get up into the bush behind the proposed dwellings to put out any spot fires. The Units appear to be crammed close together without consideration for that potential issue;

- Emergency escape routes non existent or not sufficient.

This development will potentially double the population of Enterprise Road. The only access road already has definite pinch points at Niree Heights and Cheverton and this proposal will add one at Enterprise Road. We also need to think of emergency situations and in particular a major bush fire. An important safety aspect in that case would be to have good escape routes. According to experts and common sense a bush fire will most likely be fueled by northerly winds. The only road in and out for all the residents above Niree Heights is Birngana Avenue which is quite narrow and leads north which will be into a fire and not away from it. Also there is not a second option. If a vehicle breaks down or a powerline or tree falls on the road it could quickly become a deadly situation and more people living up the bush won't help.

By the way the recommendation of Mr Creese that the road needs a turning circle at the end does not show in the plan. Quote "Site access must have a minimum carriageway width of 4 metres, passing bays at maximum 100 metres intervals and either a circular, "T" or "Y" turning

area at the building site in compliance with Part 4.2, The Determination."

Page 18 Lark & Creese Bushfire Assessment (equals to page 187 of 393);

- in the event of bushfire, only one access for properties above Churchill Avenue;
- Bush fires are a real concern and emergency vehicles would not be able to reach the area;
- If Council approves the proposed high-density housing scheme above Enterprise Road despite it not complying with the scheme in numerous ways, it will be unable to avoid responsibility for the potential outcome of a major fire emergency when evacuating traffic coming down the hill blocks emergency trucks/ambulances/police etc. from reaching the proposed site;
- Registered on the land title associated with the proposal site (CT Ref 169834/40) is an Agreement entered into pursuant to Section 71 of the Land Use Planning and Approvals Act 1993 (Dealing No. E11345) in July 2015 requiring that certain measures be taken and maintained to meet bushfire safety requirements into the future. These requirements include prohibitions that affect units 8 to 16;
- The northern crest of Mount Nelson has long been recognised as a location with an extreme bushfire hazard and now even more so with climate change. The proposed development lies close to the City's most high-risk bushfire areas and would place us at high risk in the evacuation of our neighbourhood with the 25% increase in traffic. There is very limited traffic access for emergency vehicles and resident's vehicles plus the extra residents that would occupy the 73 bedroom 51 bathroom, high density units.

This would not only particularly endanger new residents, but would endanger all residents below the bushland hillside reserves of Bicentennial Park. The one road out is very narrow, cars are always required to "squeeze through" (quote the developers traffic assessment) parked out roads. Several severe bends and the extra traffic would push the lower busier roads up to and beyond their environmental limit. This has caused us considerable concern as long term residents of this area. The traffic situation would be hugely exacerbated by the 5 stage 4 to 5 year building program with the creation of a quarry by removing 1000's of tonnes of rock and dirt removed. We are also concerned about the mental and physical health aspects of 4 to 5 years of rock hammering noise that will invade the whole hillside, in this steep hard rock terrain. Concrete trucks, cranes, delivery trucks and trades vehicles will contribute to unsafe traffic movements and the significant increased risk of accidents. The

high traffic volumes using inadequate road will adversely affect access our home. The existing road access to this site is extremely constrained due to highly problematic narrow road networks in existing which will cause a very high degree of risk to life in an emergency preventing me and my family to safely escape a bush fire or medical emergency as an example;

-Issue No. 1 Life Threatening Firestorm

There is much concern for the many residents living on this hillside, located in a high risk fire area should a wildfire occur and how they will escape with their lives all trying to exit this very congested, steep hillside at the same time. There is only one way out down the hill to Churchill Avenue on narrow, winding roads. The proposed development of 13, three storey units and 7 two storey units, most with 4 bedrooms, could house an estimated 90 -120 people. How will all these people exit the unit development, firstly via a narrow road between the units, then down the very steep slope to a narrow Private Road which also provides the only access out of there for residents of No. 23, No. 25 & No. 27 Enterprise Road?. After entering Enterprise Rd. all of this traffic will meet residents from Lower & Upper Enterprise Road, Glover Drive and all traffic will then converge on Birngana Avenue, meeting other residents' vehicles as they all flee the fire exiting side streets off Birngana Avenue (Acushla Court, Waymouth Avenue & Cartela Road}, then Niree Heights, Niree Lane, Beddome Street, Cheverton Parade, then Churchill Avenue. How will they escape with their lives trying to come down this congested, steep hillside all at the same time? What hope have Fire Brigade & Ambulance vehicles of accessing the hillside to fight the fire & attend to injured people? None,I would say.!!!

This could well be a real-life scenario.

Who will have to take responsibility for an unspeakable tragedy.?.

Construction

-High impact of heavy construction equipment on local access and egress during a construction period that could be months and years;
-The number of units proposed and the time it will take to construct them on a steep, dolerite rock base would turn the neighbourhood into an industrial zoning for many years. Already concrete trucks, in low gear, make excessive noise as they grind slowly up the hill. Seemingly several every day, even for just the occasional single house construction. Then there are the excavator rock breakers that often work for many weeks for a single house in this area. The noise they make is horrendous. Then there are the articulated low loaders bringing and taking the excavators and cranes, they regularly have great difficulty negotiating the Bedome/Niree junction, often blocking it for a considerable time. Did we buy houses in an industrial suburb? or when, and by whose authority was our zoning changed?;
-increased noise pollution from construction;
-noise impact from rock breaking;

-Issue No.2 Protracted Rock Hammering**Highly Dangerous to Residents' Physical & Mental Health**

During the construction of the proposed 200 metre long, 5 stage, 4 units at a time construction period, lasting possibly 4 - 5 years, up to an estimated 50,000 tonnes of rock will have to be removed from the block requiring deep excavations to dig the foundations.

The foundations will be dug out of solid, dolerite rock which will require continual use of rock hammering machinery which emit highly dangerous noise levels of up to 113 decibels. This will endanger and permanently damage the hearing of numerous residents. Noise above 85 decibels for one day only, in a workplace situation will result in permanent hearing damage, let alone years of rock hammering at 113 decibels. The effect of this protracted noise will also cause mental health problems for the residents in this long established community.

Infrastructure

- the infrastructure supporting the proposed extra residences, building works and increased population is inadequate. The existing road network consists of steep, narrow, winding streets with blind corners and sharp bends that would be gravely inadequate at the best of times, let alone during peak times, bad weather and bushfires.

Loss of natural environment and impact on wildlife, flora and fauna

-The proposed dwellings are ugly and will be an eyesore that shall

detract from the aesthetic integrity of an area which is primarily bushland used for passive recreation opportunities and as the rightful home of numerous native animals. There is no precedent for this development but, if the latter is approved, the loss for everyone in Hobart to interstate interests will be permanent;

- further incursion into the natural beauty of this part of Hobart;
- proposal would scar the hillside;
- loss of wildlife habitat;
- loss of habitat to endangered species;
- The dwellings along Enterprise Road - while many are large - stand alone from one another and most importantly provide for glimpse of the bush beyond. (We are regular walkers in this area, and very frequently make use of the Bicentennial track up Mt Nelson to the Signal Station. Our amenity along this walk and track will be adversely affected;
- The units and their associated loss of vegetation will be starkly visible from afar - detracting further from the unique Hobart skyline that is enjoyed by so many, including those on the Derwent and visiting cruise ships - who need to be impressed not saddened by a spoilt environment as they make their entrance up the Derwent;
- The type of land use is not appropriate. In this area, on the edge of rather beautiful native bushland, the land use needs to be sympathetic to the adjoining forest and the habitat it provides for many animals. The residential area should provide for a gradual transition into the bush - not an abrupt harsh and confronting line from this proposed over-development;
- We have lived in this neighborhood adjacent to the Bicentennial Reserve for a number of years now and it is a fairly small community. We strongly feel that the appeal of this area comes from the bushland garden suburb character as described in the Tolmans Hill plan. - We are aware that plan is not directly applicable to this area but the similarity in location up the hill and the proximity to Bush Reserve is striking. The industrial scale of high density multiple dwellings in this proposal is unprecedented for this area;
- amenity of park compromised;
- Many native birds live and breed in the area I fear for their future with so much of their habitat to be destroyed;
- I noted that the flora and fauna report did not include Echidnas which have been often seen in the area and Blue Tongue Lizards that live in the area;
- The endangered species Tasmanian Devil had been observed in the vicinity in years gone by;
- There is a lot of wildlife up here why disrupt their habitat;

-The loss of bushland and a large number of Australian gum trees providing habitat for Tasmanian species of wallabies, possums and birds should be considered;

-I believe this development will seriously impact the character of this neighbourhood. I do not believe this type of development should be located right on the border of the much used and loved Bicentennial Park bushland reserve, the place for this type of high density project is not on the edge of Hobart's nationally and internationally acclaimed parks and bushland;

-The necessary fire setbacks would be an unacceptable incursion into the parkland;

-The proposed development will increase pressure on the Skyline reserve and the bushland's biodiversity and environment. The development's biodiversity survey was limited in scope and did not take account of interconnections between the proposed development site and the adjoining Skyline reserve, and the cumulative impact of such developments on the environment. Removal of vegetation and habitat on the site and clearing of the required bushfire hazard management area beyond the development site, will impact the adjacent area of the reserve and may lead to further reduction of biodiversity. The reserve provides a valuable biodiversity refuge which contributes to the maintenance of biodiversity in the Hobart area. The reserve's popularity and extensive recreational use reflects the growing demand and appreciation of such valuable spaces in Hobart and the proposed high-density living on the edge of the Skyline reserve will increase this pressure further. The Skyline reserve is also vital in maintaining the treed skyline around Hobart;

-I strongly object to the development proposal for its potential impact on the natural environment of Manning Rivulet Valley, its high density nature and the risk to the current inadequate infrastructure in the area;

-The Manning Rivulet which runs through Lot 105 and in the cleared land/forest zone is important to the local community. We see it as a community asset and strongly object to its degradation as appears will happens with development. Erosion of its banks will occur. There is no public shared space allowed in this development with little or no outdoor recreation space;

-I enjoy living here due to the peaceful setting, the abundance of native birds, lizards and bettongs. Everyday we walk Churchill Avenue return. We do not want construction vehicles to endanger our necessary walk to catch our bus. I do not want the land to be cleared as this will remove all areas for parrots, wallabies and reptiles to live. This is a very sensitive area that is adjacent to the Mt Nelson bushland reserve and it needs to be

kept that way;

-It is important to acknowledge the impact on the Biodiversity Protection Area and prompts the question why do we have a protection area if it's not going to be protected? There are 14 different threatened fauna on the list of species potentially impacted by the development. The report ignores that there have been sightings of several of the species on the list;

-The total clearing of the building site will eliminate the habitat for local fauna such as the bettongs, sheoak and white lipped skinks, blue tonged lizards, bronze winged pigeons, masked owls and parrots. Below is an image that is marked to be cleared (coloured areas). This clearing will impact with Hobart's skyline protection zones and the Bicentennial park and views of Hobart from almost any direction due to the prominence of the location;

-Having been involved in a number of large industrial wildlife and environmental studies during my professional career, I can only say that the wildlife survey seems to be cursory, lacking in inquisitiveness and historical. There seems to have been no attempt to make any contact with local residents regarding this study, which seems to have been the characteristic of everything that the Proponent has done during this DA preparation. Perhaps he is aware of how destructive this Proposal would be to the local community.

As local residents backing onto the bushland both myself and my wife have seen owls and we constantly hear their calls during different times of the year. During the process of this second DA, I have seen a White bellied Sea Eagle overfly my house. We have also seen on several occasions in our back yard, late at night, the near endangered Tasmanian Bettong (photographed in my back yard, attached) not mentioned in the environmental report.

The study has also focussed on what is not in the forest rather than what is in this vibrant forest . We have sighted on many occasions Yellow Tail Black Cockatoos, Currawongs, ,Mountain Dragons, Blue Wrens, Robins, various species in the Raptor Class, Green Rosellas, Echidnas, various species in the Honey Eater class, various small birds like white eyes and so the list goes on and of course large numbers of wallabies and possums;

-I wish to strongly object to the Proposal to build 20 very high density multiple dwellings at 21b Enterprise Road, Sandy Bay. Due to a total incompatibility with such a sensitive bushland area of Hobart. This massive, out of character Proposal which will cause huge loss of habitat for native animals and birds should not be allowed as these animals are also residents of Hobart and will be displaced from their homes. I am a wildlife carer and know that brushtail and ringtail

possums cannot be relocated as they are not accepted by other possums, if, by necessity, they have to leave their original home. All these naive possums, wallabies and reptiles will become road kill or be killed by the animals in the areas they try to move to. Did you know this? Do you care?.

Erosion

- erosion concern due to loss of vegetation;
- Why build so high up that far on the side of a hill it could end up undermining our land;
- erosion of banks of Manning Rivulet concern;
- Removing the trees will lead to alteration of the natural drainage (surface runoff and groundwater runoff) and could cause water erosion and water infiltration problems to residents lower down the slope.

Servicing

- The development would also place a big burden on existing services, such as stormwater, sewer systems and water supply as well as on the electricity grid as many of the surrounding residences were not built for energy efficiency;
- concern at water supply.

Stormwater and flooding

- increased runoff from the rooftops, bitumen and concrete of this large development will be exacerbated during high rainfall events, and the track across Maning Rivulet near its top end may get washed out after the proposed stormwater pipe discharges to the surface (This track is a right of way running between Edith Avenue and Aotea Rd, that provides a very pleasant little walk and is frequently used by ourselves and dog-walkers and others) - works required to remedy this will lead to more costs for Council;
- I am also concerned with the risk of flooding. We experienced considerable flood damage in May 2018. While there is information in the application on this issue I am not at all satisfied. In fact, the area that has already been cleared for the development, has shown signs of flooding in heavy rains;
- concern at potential damage from additional stormwater runoff;
- Weather issues is another factor which is a concern. In recent years very heavy rain has caused flooding to houses in Enterprise Road. I am very concerned that such a large development with exacerbate this problem.

Conservation and bush fire assessment

-(see FIG on Page 191 of 393): Huge area of adjoining land in "Forest" to be cleared to BAL 12.5 level on land that is not owned by the developer so they can reduce their bush fire risk from BAL FZ (Flame Zone) the highest level of bush fire risk, down to BAL12.5. This clearing will impact skyline protection zones and the Bicentennial park and views of Hobart from almost any direction due to the prominence of the location. Taken from page 191 of the DA document, the clearing width is 32m in width for almost as long as the site, meaning approximately 8000m² of Bushland habitat clearing on land the developer does not own, this is totally unacceptable especially during the global climate crisis. The devaluing of the neighbourhood alone would be reason enough to stop this. The developer will also have to clear a very large area of land on the 3.172ha Lot 105 block right through the middle of the protected waterway. In summary, how can Council allow the clearing of more than 20,000m² of land 2HA in this pristine valley?;

-The necessary fire setbacks would be an unacceptable incursion into the parkland.

Waste collection

-Council Waste Collection report outlines that a rear waste loading vehicle would need to be used to collect household waste from the site because of the turning restrictions. These vehicles are more expensive to operate and it has not been established whether the cost of the use of that vehicle type will NEVER be passed on to other property owners in the area;

-waste bins for individual dwellings and communal waste bin area not adequately shown on plans.

Loss of property value

- I fear that developments like this will devalue the existing properties that are in the area NOT increase them;

-decrease in property values as a result of development.

Affordable housing demand

-proposal would be for expensive houses and would not address affordable housing demand.

Precedent for future development

-Currently the neighbourhood has only been supplied with the development proposals for 21B. It appears highly likely that a similar proposal will be submitted in the near future for 21A and for 35

Enterprise Rd. If the plans for 21B are approved then it would be difficult to refuse these other similar developments. The consequence will be to magnify the problems outlined earlier to an even greater degree;

-This proposal would set a very bad precedent for future developments in quality residential neighborhoods. I understand that the developer owns additional property in the immediate area that could then be developed in a similar high-density manner;

-The very big concern for local residents is that the developers of the proposed development also own the lot identified at 105, (see below FIG 1) this is a parcel of land 3.172ha which is directly accessible from their new development access road and could potentially be part of a long term plan to develop the whole hill side.

If this proposal is successful in its present form there is the potential in the future for another 79 houses to be constructed in addition to the already proposed 20 (See FIG 1 below). The existing proposal is concerning enough without the threat of such a massive construction program in this area with all the impacts that it will have on the already stressed existing infrastructure, roads and potential environmental degradation. The potential for the detrimental effects; monetarily, environmentally and socially, that this development proposal has cannot be understated. It will not only affect existing residents of the area but also the people of Hobart;

-A careful analysis of the developers plans leads to the conclusion that this is an initial stage of a much larger development, essentially paving the way for many new houses and massive removal of bushland and increase of density in this valley if this "gateway" proposal is permitted to move forward;

-The proposed development fails to respect the neighbourhood character. Further an inspection of the area reveals recent civil works undertaken by the developer indicate an intention to massively extend the development, estimated to be more than sixty dwelling units on the site, all serviced by the single narrow access roadway at 21b Enterprise Road;

-The Council should also be aware of the precedence that approval of this project would lead to, as the Proponent also owns 21A Enterprise Rd., and this current Proposal 21B and a similar Proposal at 21A would both be close to sensitive bushland and totally out of character with their surroundings.

Landslip concern

-The proposed development site is prone to flooding and landslip. The development site's high gradient, the proposed removal of vegetation, including in the bushfire HMA beyond the development site, and laying of large impervious surfaces will increase the risk of local flooding and landslip. The existing stormwater infrastructure has limited capacity to cope with such increase and the diversion of excess run off to the local rivulet will extend the geographic range of the flood and erosion risks. Land slip and instability also has the potential to degrade the quality of habitat and vegetation cover in the adjacent biodiversity protection area;

-12. Units 10, 11, 12 and 13 appear to be in a landslip area, and clearing this area of vegetation further destabilizing the slope, may cause risks of landslides impacting adjoining land, property and assets, creating an unacceptable risk. Refer to FIG 9 page 237 of their report. Dislodged dolerite boulders up to 2m in diameter rolling down the slope would be a significant risk to injury, damage to property and even death. Very significant protection works would need to be put in place to mitigate these risks.

Inaccuracies

-The plans have been examined by professionals and contain inaccuracies with privacy, shadowing and elevations;

-The most significant way in which the documents provided by the developer are misleading is that they imply that the buildings are within the building envelope when it is simple to demonstrate that this is not the case. The proposal therefore does not comply with 10.4.2 A1 and therefore should be rejected by Council;

-The shadow diagrams on drawing 2018-016-C-S8, and indeed all the shadow diagrams in the developer's documents, are inaccurate and not remotely close to the reality;

- contraventions and the deleterious impacts upon my property; the neighbourhood; and Greater Hobart as a whole. It is important to note that the proposal plans and supporting documentation contain a significant number of inaccuracies and discrepancies.

These discrepancies lead to a misrepresentation (particularly in illustrations of the proposal) of the extent of works to be undertaken; the locations in which work will be performed; and the subsequent impact (particularly in terms of their scale) of the buildings once they are built. They made the exercise of appraising the impact of the proposal more difficult.

It is submitted that the misrepresentation of the proposed

development should be sufficient to warrant that approval not be granted;

- there are at least fifty-three (53) contraventions of the HIPS Acceptable Solutions (AS) applicable for such a development on this site. Furthermore, there has been no attempt made by the proponent to justify why many of the contraventions can be considered allowable;
- The omitted lower level decks for U11, U12, U15, U16, and U17 should be illustrated on the Site Setback/Layout Plans so that their impact on neighbouring properties and be considered;
- The upper level deck for U10 is incorrectly illustrated in Site Setback/Layout Plans;
- Inaccurate ground levels makes assessment difficult. The misrepresentation affects the illustration of all 20 units' elevations. The protrusions demonstrated clearly demonstrates the inappropriateness of the development in terms of height, setbacks, bulk and appearance;
- The Author of this report has made a living as a property developer, builder and Architect, and is clearly not anti-development. That said, in order for Council to assess whether to recommend approval or refusal of a planning permit, with so many discretionary aspects, it must rely on accurate documentation of said impacts that are in the realm of the performance criteria or where the developer claims conformity with the acceptable solutions these must be checked and verified. The issue with this development is the documentation provided is full of fundamental and critical errors, the ground lines on every section and elevation are wrong, consequently all the building envelope lines are wrong (and do not interpret the building envelope clauses correctly) and all the shadow diagrams are wrong along with many other errors or omissions. Simply put it is not possible for the Council's officers to assess this development against the criteria in the planning scheme as the documents cannot be relied upon, it should therefore be rejected on this principle alone;
- All the shadow diagrams in the developers documents, are inaccurate and vary greatly from the reality, see details below. This causes non compliance issues with the acceptable solution in 10.4.4. Again no offsets or explanations or support from an independent planner are provided to demonstrate meeting the performance criteria, and the subsequent loss of amenity is unreasonable;
- All natural ground lines shown on the elevations are incorrect based on the detailed analysis in this representation, therefore at the very least the developer should provide more information and revised drawings that are accurate and third party reviewed for verification. If

this proceeds to the Tribunal, the developers documents will not stand up as accurate evidence and will be open to attack from 3rd party professional checking and validation. As such Council is opening itself up to liability and risk if it accepts or recommends approval based on the documents provided which cannot be relied upon as accurate;

-The standard of information provided with the application is of poor quality and make it

extremely difficult if not impossible to make a proper assessment of the application against the planning scheme;

-The proposal is not accompanied by a proper visual impact assessment, adequate sections, elevations, photo montages or details of the use and arrangement of adjoining properties to allow a proper assessment against this standard. In my assessment the performance criteria of 10.4.2, P3 are not met.

Planners note:

The slope on some submitted elevational plans appears to be underestimated. With regard to dwelling 14, the Council's contour plan (Geocortex) indicates a slope of approximately 23 degrees.

The submitted elevational plan for dwelling 14 indicates a slope of around 19 degrees. Stated slopes for other proposed dwellings 11 to 20, also appear under estimated by a similar amount (in those cases, approximate 20 degree slope on submitted plan, approximate prevailing 23 degree slope on Geocortex).

The concern that slope has been under-estimated under the submitted plans, results in doubt as to the potential compliance of dwellings with the building envelope.

In particular, the potential impact of the lower row of dwellings, Nos. 11-20, is assessed in the relevant part of the report.

Advice on any planning permit is warranted as follows.

It appears that the slope of the land on some submitted plans is underestimated. In the event of any planning approval of the submitted plans, at building approval stage any departure resulting in any new or increased discretion may result in the requirement for the lodgment of a new planning application.

In addition, it should be noted that the applicant is adamant the plans are accurate, and the proceeding assessment is of all dwellings, not just those dwellings that are outside of the prescribed building envelope.

Legal matters

-Issues Relating to Part V Agreements & Applicable Planning

Scheme: Please see the attached letter from my solicitor, Simmons Wolfhagen, dealing with Part V Agreements and the applicable planning scheme. The Part V Agreements may limit the number of units that can be built.

1. Part V restriction

-The 21B Enterprise Road is subject to three Part 5 agreements, which includes E11345 dated 17 July 2015. A copy of this agreement is attached and marked with the letter "A" (with Weed Management Plan removed)(*included in the representation in Council's Trim*);

-In our view when reading the agreement E11345 as a whole it is clear that Council intended to prohibit and/or restrict the type of use and development that can occur on these properties, including preventing the construction of dwellings on part of the 21B Enterprise Road. This is particularly clear when one has regard to condition 28 of the planning permit attached to the agreement and the legend of the development plan;

-We have attached a marked up copy of the area (shaded orange) that is that part of the 21B Enterprise Road that is within the "Fuel Modified Buffer Zone" where no dwellings are to be constructed in accordance with the Development Management Plan dated August 2006 (Drawing No. F493M-31B). This attachment is marked with the letter "B"(*included in the representation*)

2. Applicable version of Planning Scheme

-The Scheme was recently amended by Interim Planning Directive No. 4 – Exemptions, Application Requirements, Special Provisions and Zone Provisions ('Planning Directive'). The Planning Directive imposed mandatory amendments to the Scheme. These amendments coming into force on 22 February 2021;

-The development application is to be assessed against the applicable provisions of the Scheme on the date that the development application was lawfully submitted to the Council. My enquiries with Hobart City Council have confirmed that this date is 28 October 2020;

-Accordingly, it is my advice that the development application is to be assessed against version 36 of the Scheme. The amendments that were made to the Scheme by the Planning Directive will not be considered by the Council in its assessment of the proposal;

-Registered on the land title associated with the proposal site (CT Ref 169834/40) is an Agreement entered into pursuant to Section 71 of the Land Use Planning and Approvals Act 1993 (Dealing No. E11345) in July 2015 requiring that certain measures be taken and maintained to meet bushfire safety requirements into the future. These requirements include prohibitions that affect units 8 to 16.

Legal Officer Note:

Non-compliance with a Part 5 agreement is not relevant to the exercise of any specific discretion and therefore does not give rise to a basis to refuse a proposal. Similar with representations, while there is an obligation to take them into account when determining an application, failure of a proposal to comply with or address anything raised in a representation in and of itself does not give rise to a basis to refuse a proposal.

It is perhaps something more relevant to the exercise of discretion to grant a permit subject to conditions. Indeed the Planning Authority often grants a permit subject to the condition that a person enter into or amend a Part 5 agreement.

Environmental Development Planner note: see officer report.

ReZoning Warranted

The land should be rezoned Low density Residential. The zone purpose statement accords with the neighbour character and amenity of the surrounding area and zoning the land Low Density Residential is also considered to be an excellent alternative zoning. The proposed rezoning is considered to present an excellent strategic opportunity for Hobart City Council to protect the neighbourhood character and amenity of the area and deliver an improved long term outcome for the future development of Hobart City.

The proposal by Zanadu, a Victorian Company to build a high density, twenty two-and three-storey units, in a double row, on Hobart's western shore Mt. Nelson bushland reserves and recreational walking areas has been submitted to the Hobart City Council. This proposal is asking for numerous relaxations of the Hobart Interim Planning Scheme development standards. This proposal is not compatible with surrounding buildings as required under H.I.P.S for a residential area.

This proposal is not compatible with the nearby (45 metres) Environmental Living Zone and does not provide a transition to that zone, which is required under H.I.P.S..

There are no high density dwellings in our wider area that set a precedent for this DA to be approved. This DA is in violation of 10.1 (10.1.1.4 and 10.1.1.5) and does not respect neighbourhood character, nor does it provide a high standard of residential amenity. This DA fails to take into account the existing dwellings in our area and does not maintain the character of existing houses. There is no attempt for the high density 20 dwelling application to blend in with the existing character of our neighbourhood ie the existing dwellings are on separate allotments

not packed in, demonstrate excellence in building and construction materials and are not quality designed or architecturally considered apartments;

-The root cause of this situation in which a proposal to build 20 units in bushland on a prominent, steep, bushfire prone slope is being considered is the General Residential Zoning applied to the land.

It is important to state that this zoning did not exist prior to 2011. Before 2011, this area was zoned as Hills Face Zone in recognition of the sensitive landscape and being topographically difficult to develop (City of Hobart Planning Scheme 1982 – Planning Scheme Amendment – Hills Face Zone Sandy Bay – 1/2011 Amendment).

The reason for the change in zoning above Enterprise Road is obscure. The change in zoning went ahead without adequate community consultation or awareness.

The fact is that the sensitive landscape, the bushfire hazard and steep slope in this area have not changed even though the zoning has changed;

-It is suggested that the land be zoned Landscape Conservation under the new Hobart Local Provision Schedule;

-If the land was to be compulsorily acquired by Hobart City Council it could be added to the Hobart Bicentennial Park, significantly adding to the parks usability and amenity. Access to the park from the north would be significantly improved allowing people to walk directly from the end of Birngana Road and Lower Sandy Bay.

The proposed rezoning is considered to present an excellent strategic opportunity for Hobart City Council to protect the neighbourhood character and amenity of the area and deliver an improved long term outcome for the future development of Hobart City.

Environmental Management and Pollution Control Act 1994

-The project is a level 2 activity under the Environmental Management and Pollution Control Act 1994, and as such needs a range of other permits and approval processes not currently being sought;
-any measure the volume of extraction far exceeds the 5,000m³.
For those not aware with typical quantity surveying methods, once the existing solid volume is calculated, 19,710.25m³ this must be multiplied by 4 to calculate volume of for trucking, as rock breaks it is in irregular shapes that do not perfectly fit together and therefore volume expands significantly. To the 78,841m³ figure, even if spread over years it would still well exceed the Level 2 activity issues. Even if one uses a more conservative swell factor of 1.72 this still far exceeds the level 2 activity requirements. This finding further opens up Hobart City Council to legal challenges if they recommend this proposal for approval. What is clearly missing from the traffic analysis is the truck movements required simply to remove this kind of material from the proposal site. Each truck has to go up to site and then out to a dumping site, therefore the total truck movements are likely to be at least 26,280 large heavy truck movements.

Validity

-Our client "EBCO Developments (TAS) Pty Ltd" as the owner of 26 Edith Avenue, Sandy Bay (FR 169835/105) has not been notified of this application as required by the Land Use Planning and Approvals Act 1993. We can confirm that no discussions were had or any correspondence received in relation to this proposal;

-The Bushfire Hazard Management Plan "Attachment 2" by Lark & Creese requires that a Bushfire Hazard Management Area be provided over 26 Edith Avenue. Our client does not consent to this arrangement and will not permit the registration of an Agreement under Part 5 of the Land Use Planning and Approvals Act 1993 on their title in support of this proposal;

-A section of stormwater pipe, headwall, associated scour protection, discharge of stormwater into the existing water course and registration of 4m wide Drainage easement for the benefit of 21B Enterprise Road is shown on "General Arrangement Stormwater" plan by Pitt & Sherry over land at 26 Edith Avenue. Our client does not consent to the construction of this infrastructure on their land, as well as the registration of a burdening Drainage Easement upon their title;

-The additional "concentrated" flows that are proposed to run through this watercourse and downstream over our client's land will also impact the design and sizing of stormwater pipework proposed to be constructed as part of our client's approved subdivision of 26 Edith Avenue. The design of stormwater infrastructure of Stage 18B of the subdivision has already been approved by Council and construction is imminent. Our client does not agree to any additional changes and costs that might be incurred to provide any additional capacity for the proposal at 21B Enterprise Road;

-Given the reasons stated above, as well as the proponent's non-existent consultation or notification to our client, we strongly believe that Council is compelled to reject this application as it does not meet the requirements for validity under Sections 51 & 52 of the Land Use Planning and Approvals Act 1993.

Planners note:

The applicant lodged a declaration received dated the 28th October 2020, stating notification of the owner of No. 26 Edith Avenue, 'EBCO Investments (TAS) PL', of the lodgment of the application. The applicant submitted a then current property title for the site received dated the 3rd November 2020, with owner stated as "EBCO Investments (Tas) PL".

Tasmania Fire Service

The application seeks approval for the use and development of 20 multiple dwellings and associated works. The proposed buildings will be located on 21B Enterprise Road with associated vegetation removal extending over adjoining properties.

The development must conform to bushfire requirements that are applicable through Tasmanian building legislation. While not directly relevant to the provisions of the Hobart Interim Planning Scheme 2015, there are some planning implications associated with aspects of the bushfire requirements. As such, a bushfire hazard management plan and supporting report (prepared by Lark & Creese, 3/03/2021) has been included with the application material.

1. Vegetation removal required for hazard management area

The proposal includes vegetation removal over a number of titles to establish a hazard management area that will be managed in perpetuity. The proposed hazard management area would extend into the Environmental Living Zone and Biodiversity Protection Area Overlay to the south and the Landslide Hazard Area (Medium) Overlay to the southeast and northeast. It will also require removal of vegetation from a natural drainage line.

The application contains minimal information about how the proposed hazard management areas will be established, the amount of vegetation removal that is proposed or what will be retained. Notably, the supporting Slope Stability Risk Assessment (prepared by Pitt & Sherry) does not consider the effect of the proposed vegetation removal on slope stability. The supporting Natural Values Assessment (prepared by North Barker) does consider hazard management areas but – in the absence of detail about the proposed vegetation removal – is reliant on assumptions about what may or may not be removed.

TFS is concerned that without clearer detail about the level of disturbance that is proposed there is the potential for conflicting permit conditions to be imposed (i.e. limiting vegetation removal) meaning the resultant hazard management area may not perform as intended. It will also be difficult for Council to verify whether works are compliant with the approved bushfire hazard management plan.

2. Implementation of hazard management area

The bushfire report is silent with respect to when the required hazard management area is required to be implemented. There is no reference to staging the development, which suggests all vegetation removal will occur in a single stage.

TFS has seen many cases whereby hazard management areas have not been properly established or verified prior to building work being completed and seeks to avoid these situations from occurring in future. It is therefore recommended that Council condition the permit to require an amended report be provided that specifies when the hazard management area on adjoining properties must be implemented so there is a clear point at which verification can occur.

3. Landscaping within hazard management area

The proposed landscaping plans include the planting of various native and introduced shrubs and small trees as well as areas to be covered with bark mulch.

TFS is concerned with the proposed massing of flammable plants and mulch where they will directly adjoin proposed dwellings. This landscaping concept will likely increase vulnerability to ember attack and is inconsistent with the required function of a hazard management area in an urban interface area.

It is recommended that Council condition its approval on a revised landscape plan being provided to reduce vulnerability to bushfire. Ways in which this could be achieved might include using less flammable species and providing greater separation between clumps of vegetation and between garden beds and buildings. Bark mulch could be replaced with a non-flammable alternative or limited in its application.

4. Formalisation of hazard management area

Formalising a legal right of access to hazard management areas on adjoining properties together with an obligation to maintain them is critical for long term maintenance. The bushfire report identifies the need for a Part 5 Agreement to be entered into with the adjoining landowners for the purpose of maintaining hazard management areas but does not specify when this must be formalised.

TFS has seen example whereby these types of title restrictions have

not been formalised prior to building work occurring, which has resulted in non-enforceable (or non-existent) hazard management areas. For this reason, it is recommended that the required Part 5 Agreements (or alternative mechanisms) be formalised and implemented prior to commencement of any building work.

5. Maintenance of hazard management area

The bushfire hazard management plan includes a requirement for the hazard management areas to be maintained at all times however it does not provide any direction about who is responsible for this.

In situations whereby multiple lots (strata or freehold) rely on a shared hazard management area, there needs to be clear direction about who is expected to undertake maintenance. In our experience, relying on multiple owners to individually undertake maintenance of parts of the shared hazard management area is not a practicable long-term solution.

In this situation the most appropriate approach is for maintenance to be undertaken by the development's strata corporation. To ensure this occurs, it is recommended that Council condition the permit to require the future strata plan include a provision obligating the strata corporation to undertake the required maintenance within specified timeframes.

6. Private access

The bushfire report seeks to justify reducing the carriageway width from the Deemed-to-Satisfy standard required for building compliance. For building compliance purposes, this would require the preparation and approval of a Performance Solution.

The proposed Performance Solution has not been prepared in accordance with the National Construction Code 4-step process and as such, TFS has not been consulted in its design. Please be aware that should the developer be unsuccessful in gaining TFS support for the Performance Solution, the access design would likely need to be revised, which may then affect the site layout.

Other comments

I wish to oppose the proposed development on the basis of:
A. Its building density is contrary to that of the neighbourhood in which it is to be located.

B. The local road infrastructure is not adequate to handle the considerable increase in traffic which would result from the development both during construction and on completion.

C. Fire threat.

If there is to be development in this area it should be of single family homes similar to what is already there.

A total of four to eight dwellings would be suitable for the site.

Of huge concern for local residents is that the development is only the beginning of something much bigger, intruding on precious bush land that should be preserved.

I am a senior citizen and have lived in this area for more than 20 years, as have many of my neighbours, because we value living close to nature yet close to the city. Whilst I have no objections to the development of single dwellings that are in keeping with current residences and do not intrude on/destroy natural settings, I am strongly opposed to the type of high density development proposed in this DA.

The type of land use is not appropriate. In this area, on the edge of rather beautiful native bushland, the land use needs to be sympathetic to the adjoining forest and the habitat it provides for many animals. The residential area should provide for a gradual transition into the bush - not an abrupt harsh and confronting line from this proposed over-development.

The Hazard Management Area plan notes that vegetation will need to be significantly cleared in the vicinity of the proposed dwellings to ensure fire safety - therefore the approval of these dwellings will also create an onus upon Council to approve vegetation clearing well beyond this development, that will further accentuate the loss of visual amenity and habitat.

Fire management is an issue for houses on the fringe of forest, but solving it using concrete and bitumen is not an appropriate answer. I also repeat my previous comment about the inappropriateness of further eroding the visual amenity provided by the retention of bush along the hillscape and skyline. The anguish caused by ongoing piecemeal loss of the bush should not be underestimated - Hobartians are losing pride in their environment and that in turn leads

to negative consequences that the Council should not wish to be responsible for.

We have experienced this sense of loss of amenity with the (ongoing) development of Aotea Rd across the valley from our house over the past 12 or more years, and don't wish to see any more of it.

There are future developments slated to occur at 26 Edith Avenue and in an adjoining Enterprise Road property - it is vital that no precedent for medium to high density development be created.

I finish by thanking you for giving these issues your consideration; and re-iterating that this is an appalling development application with far more negatives than positives.

As already mentioned we strongly object to the planning proposal of 20 Multiple Dwellings and Associated Works in the advertised form. We feel this proposal is not appropriate for the chosen location due to its industrial scale and quality. Our solution to this would be to stick with the current typical density of building for this particular area which would probably accommodate 4 to 6 houses on a site of this size. Also we suggest the council should look into the traffic situation and create an alternative escape route in case of a bush fire or another emergency before construction commences. This could be done by linking the southern end of Enterprise Road with either Aotea Crt or Edith Avenue.

Hobart needs additional housing and I am prepared to accept new development. But it should be of single family homes similar in character to what is already there and on lot sizes consistent with the existing properties. What this proposal offers is cheaply built, high density housing on a huge scale in what is currently a fine Sandy Bay community.

I am not opposed to development of single dwellings or small unit developments that are in keeping with what is currently in the area and our streetscapes. I am opposed to large scale unit development and the density of the dwellings that is proposed in this application. I fear that developments like this will devalue the existing properties that are in the area NOT increase them.

I understand there is significant concern amongst other residents in the area and, whilst I generally encourage development, I think that this proposal would be considered by any impartial person to be excessive in its scale, density and negative impact on the existing

neighbourhood, particularly in relation to traffic movement and safety.

I would like to see development that is consistent with the existing character of the neighborhood, not this corruption of the intent of the planning scheme and existing homeowners in the area.

If Council approves the proposed high-density housing scheme above Enterprise Road despite it not complying with the scheme in numerous ways, it will be unable to avoid responsibility for the potential outcome of a major fire emergency when evacuating traffic coming down the hill blocks emergency trucks/ambulances/police etc. from reaching the proposed site.

The proposed development fails to meet multiple criteria specified by the planning scheme, and this development should not be allowed to proceed. The assessment of such high-density developments must consider the broader implications of these developments on the local area including multiple, cumulative impacts on residents, established lifestyles and the sustainability and long-term management of the Skyline reserve's biodiversity and recreational use. There is also a duty of care to minimise downstream traffic impacts and associated risks; the feeder roads are the only way in and out for local residents.

The major problems with the proposed development are the massive visual and environmental impacts that this development will have on the surrounding neighbourhoods. The intention to construct 20 2 and 3 storey houses with absolutely no consideration on the impact on the environment, amenity of the surrounding neighbourhoods, modern sustainable design, privacy, lack of sunlight to many of the proposed and existing houses and access to and from an already congested small suburban road system is an example of an unacceptable solution to the planning scheme. I believe it is an attempt by the developers to maximise profit from this development and perhaps a future development in a neighbouring plot at the cost of lack of amenity to existing properties and the skyline of Hobart.

Last but not least the development is ugly, it will be an eye sore, and the buildings are designed to be constructed in a quick and easy fashion with little consideration of material usage, energy efficiency and visual amenity and will lower the overall quality of housing in the neighbourhood. It is another case of mainlanders coming in and imposing their ideas on our community in order to make a quick dollar at the expense of local residents. There is arrogance about this

development that demonstrates a lack of respect for our city and what the people have tried and are trying to achieve in protecting and enhancing the amenity of our environment. The council should reject this proposal based on the lack of adherence to the planning scheme and lack of respect for the natural values of the local area.

This representation information has been prepared by Sandy Bay Resident, who is a Registered Architect with 25years experience and a qualified builder. The author is therefore suitably qualified to make the determinations in this document.

I trust Council's officers will take note of the manifold discretions in this proposal, which is clearly stretching the metaphorical elastic band beyond breaking point, and the myriad errors in the documents which at the very least should be a cause for concern. The failure of the proposal to even attempt to work within the parameters of the planning scheme, without any justification, is anathema to me. If Council does not refuse this application it creates a very unlevel playing field for all those in the profession who make serious efforts to comply with the planning scheme and if discretions do occur in our work at the very least we provide accurate information and some form of justification as to why we could not meet the acceptable solution. This type of reliable approach is entirely lacking in the developers proposal.

Many of the residents in the area impacted by this proposal, including this author, have put in many hours of unpaid time to essentially provide expert evidence to assist Council to have the evidence and information it needs to robustly recommend refusal.

I am appalled by the total lack of effort by the developer to fit within the guiding principles of the scheme and massive impact this will have on clearing bushland in a landslip, water catchment zone and on such a visually prominent site. It is a totally inappropriate development for the area and far too dense.

It is my assessment that the proposal is an overdevelopment of this constrained hillside site and does not satisfy the requirements of the planning scheme including matters of density, height and siting. The density, siting and low standard of construction of the development also requires approximately 3000m2 of clearing/disturbance outside the site within a Biodiversity Protection Area as well as associated impacts on a Wetland and Waterway Protection Area of the Manning tributary.

I consider that the density of the proposal should be reduced. The proposal should also be revised to minimise apparent bulk as viewed from adjoining properties and so that dwellings are sited to be compatible with the established development in the surrounding area and avoids impacts on the adjacent environmentally sensitive areas. A reduced density would also assist to improve the residential amenity of the dwellings as well as reduce impacts on neighbouring properties.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the General Residential Zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 The site is an existing vacant residentially zoned lot. The proposed use is multiple dwellings. The existing use is a permitted use in the zone. The proposed use is a permitted use in the zone.
- 6.4 The proposal has been assessed against:
 - 6.4.1 Part D - 10 General Residential Zone
 - 6.4.2 E6.0 Parking and Access Code
 - 6.4.3 E7.0 Stormwater Management Code
 - 6.4.4 E1.0 Bushfire Prone Areas Code
 - 6.4.5 E3.0 Landslide Code
 - 6.4.6 E10.0 Biodiversity Code

- 6.4.7 E11.0 Waterway and Coastal Protection Code
- 6.4.8 E5.0 Road and Railway Assets Code
- 6.4.9 E15.0 Inundation Prone Areas Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
 - 6.5.1 General Residential Zone:
 - Setbacks and Building Envelope – Part D 10.4.2 P3*
 - Privacy - Part 10.4.6 P1 and P2*
 - 6.5.2 Parking and Access Code:
 - Parking - Part E6.6.1 P1*
 - Design of Vehicular Accesses - Part E6.7.2 P1*
 - 6.5.3 Landslide Code:
 - Major Works in a Landslide Hazard Area - E3.7.3 P1*
 - 6.5.4 Biodiversity Code
 - Building and Works - E10.7.1 P1*
 - 6.5.5 Waterway and Coastal Protection Code
 - Building and Works - E11.7.1 P1, P4*
 - 6.5.6 Road and Railway Assets Code
 - Design of Vehicular Accesses - E5.6.4 P1*
 - Existing Road Accesses and Junctions - E5.5.1 P3*
 - 6.5.7 Stormwater Code
 - Stormwater Drainage and Disposal - E7.7.1 P1*
 - 6.5.8 Inundation Prone Areas Code
 - Riverine, Coastal Investigation Area, Low, Medium, High Inundation*

Hazard Areas - E15.7.5 P1

- 6.6 Each performance criterion is assessed below.
- 6.7 Setback and Building Envelope Part D 10.4.2 P3
- 6.7.1 The acceptable solution at clause 10.4.2 A3(a) requires that development meets building envelope acceptable solutions.
- 6.7.2 The proposal includes dwellings 11, 12, 13 and 14 that are outside the prescribed building envelope.
- 6.7.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.7.4 The performance criterion at clause 10.4.2 P3 provides as follows:
- The siting and scale of a dwelling must:*
- (a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:*
 - (i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;*
 - (ii) overshadowing the private open space of a dwelling on an adjoining property;*
 - (iii) overshadowing of an adjoining vacant property; or*
 - (iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property;*
 - (b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area; and*
 - (c) not cause an unreasonable reduction in sunlight to an existing solar energy installation on:*
 - (i) an adjoining property; or*
 - (ii) another dwelling on the same site.*
- 6.7.5 As a preliminary matter, there is concern that slope has been under-estimated under the submitted plans, resulting in doubt as to the potential compliance of dwellings with the building envelope. The stated slope on submitted plans is of the order of 19 to 20 degrees. The applicant is adamant the plans are accurate. Under Council's Geocortex mapping system, the prevailing slope of the site is of the order of 23 degrees. The potential under-estimate will have implications for the building envelope compliance of all dwellings, and more significantly, the potential impact of the lower row of dwellings, Nos. 11-20.

While there may remain some potential for excavation or other measures to ensure the building envelopes remain as shown, there remains some doubt with regard to assessment. The potential impact of all dwellings is considered below.

Advice on any planning permit is warranted as follows:

"It appears that the slope of the land on some submitted plans is underestimated. In the event of any planning approval of the submitted plans, at building approval stage any departure resulting in any new or increased discretion may result in the requirement for the lodgment of a new planning application."

6.7.6 Assessment of the performance criterion follows.

Impact on 23 Enterprise Road.

This property is a residential lot downslope to the northwest of the site. No building envelope discretion is generated with respect to this neighbouring property (the proposed dwelling No.1 would be the closest to this neighbouring property and incurs no discretion in terms of front boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwelling No.1 would be the closest to this neighbouring property and incurs no discretion in terms of front boundary setback. Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwelling No.1 being either further excavated into the site, or being higher above natural ground level than shown. Given the substantial setback of dwelling No.1 to this neighbouring property, impact is likely to remain within acceptable limits.

Impact on 25 Enterprise Road.

This property is a residential lot downslope to the northwest of the site. No building envelope discretion is generated with respect to this neighbouring property (the proposed dwelling No.20 would be the closest to this neighbouring property and incurs no discretion in terms of side boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwelling No.20 would be the closest to this neighbouring property and incurs no discretion in terms of side boundary setback. Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwelling No.20 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 27 Enterprise Road.

This property is a residential lot downslope and to the north of the site. No building envelope discretion is generated with respect to this neighbouring property (the proposed dwellings 19 and 20 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwellings 19 and 20 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback. Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwellings No.19 and 20 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 29 Enterprise Road.

This property is a residential lot downslope and to the north of the site. No building envelope discretion is generated with respect to this neighbouring property (the proposed dwellings 17, 18 and 19 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwellings 17, 18 and 19 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback. Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwellings 17, 18 and 19 being

either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 31 Enterprise Road.

This property is a residential lot downslope and to the north of the site. No building envelope discretion is generated with respect to this neighbouring property (the proposed dwellings 16 and 17 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwellings 16 and 17 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback. Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwellings 16 and 17 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 33 Enterprise Road.

This property is a residential lot downslope and to the northeast of the site.

No building envelope discretion is generated with respect to this neighbouring property (the proposed dwellings 15 and 16 would be the closest to this neighbouring property and incur no discretion in terms of side boundary setback).

The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual and overall impact, as stated the proposed dwellings would not incur a discretion in terms of side boundary setback.

Notwithstanding this, it is not considered that the proposal's visual impact will cause an unreasonable loss of amenity to this property.

The actual slope of the site would result in dwellings 15 and 16 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 35 Enterprise Road.

This property is a residential lot downslope and to the northeast of the site.

The proposed dwelling No.14 would incur side boundary setback discretion with relation to this neighbouring property. The submitted sunshade diagrams indicate there would be no winter overshadowing of this neighbouring property.

In terms of visual impact, the proposed dwelling No.14 would be setback from 4.000 to 4.080 metres from the side property boundary, and would have a height ranging from two to three storeys. The maximum height from natural ground level on the downslope side would be approximately 7.8 metres. The maximum side wall length would be of the order of 12 metres, but due to a level 3 deck the wall length of the third level would be 7.640 metres. There would be visual impact on the neighbouring lot. On the other hand, the slope of the site is very steep as demonstrated by the full storey of height difference above natural ground level over the approximate six metre width of the dwelling, with the downhill elevation measuring three storeys and the uphill elevation being of two storeys only. Other dwellings in the vicinity are in the range of two to three storeys in height, again largely dictated by the very steep prevailing slope. In this case, the main northerly aspect and sun of the neighbouring downhill lot would not be effected. The likely impact of this component of the proposal is not considered such as to warrant either a recommendation to modify or refuse. On balance, in terms of building envelope Performance Criteria, this component of the proposal is considered reasonably acceptable.

The actual slope of the site would result in dwelling 14 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan requires building envelope discretion.

Impact on 21A Enterprise Road (CT175780/1).

This large mainly bushland property is to the southwest of and uphill of the applicant site.

Dwellings 1 to 10 would comply with the side boundary setback acceptable solution with relation to this property.

There would be some winter overshadowing of the adjacent edges of this property, from dwellings 1 through to 10. Overall impact of the dwellings which would range from one to two storeys in height on their uphill facing sides, is not considered likely to be excessive.

In terms of visual impact, the proposed dwellings 1 to 9 would have side boundary setbacks ranging from 1.5 to 1.6 metres. Dwelling heights would range from 4.0 to 5.5 metres above natural ground level on their

upslope sides. Wall lengths would generally be of the order of 12 metres. There would be visual impact on the adjoining lot. On the other hand, the steep slope of the site offers some mitigation. Dwellings 1 and 6 would total three storeys in height, while all of the other dwellings on the upper side (dwellings 2, 3, 4, 5, 7, 8 and 9) would total two storeys in height. Due to the slope, the effective upslope height above natural ground level would be around one storey for the majority of those dwellings, with a two storey upslope height for dwellings 1 and 6. Dwelling 10 would have a rear setback at its closest point of 4.0 metres. The dwelling would total three storeys in height but would be of effective two storey height on its uphill rear. The angle of the dwelling with relation to this portion of the rear boundary is considered likely to reduce impact. The neighbouring lot is of large size, steeply sloping and occupied by bushland. The likely impact of this component of the proposal is not considered excessive.

The actual slope of the site would result in dwellings 1-10 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan complies.

Impact on 26 Edith Avenue (CT169835/105).

This large mainly bushland property is to the east/northeast of and mainly downhill of the applicant site.

The proposed dwellings 11, 12 and 13 would incur side boundary setback discretion with relation to this neighbouring property.

The submitted sunshade diagrams indicate there would be some winter afternoon overshadowing of the adjacent parts of the property from proposed dwellings 10 and 11, with the greatest extent reached at around 3pm. Overall impact from the two to three level dwellings is not considered likely to be excessive.

In terms of visual impact, as stated dwellings 11, 12 and 13 would incur side boundary setback discretion with relation to this neighbouring property.

Dwellings 11, 12 and 13 would have side setbacks ranging from 4.0 to 4.2 metres. They would each be of three storeys in height, with the topmost level in each case being reduced floor area with large deck. The maximum dimensioned heights of dwellings 1 and 12 would be 8.4 metres, and for dwelling 13, 8.5 metres. Side wall lengths would be of the order of in excess of 12 metres, with reduced wall lengths for the third levels due to the decks. There would be visual impact on this lot from dwellings 11, 12 and 13. On the other hand, some mitigation is considered with regard to the steep prevailing slope. Again in this case, the main northerly aspect and sun of the neighbouring downhill lot would

not be effected. The likely impact of this component of the proposal is not considered such as to warrant either a recommendation to modify or refuse. On balance, in terms of building envelope Performance Criteria, this component of the proposal is considered reasonably acceptable. Dwellings 10 and 11 would be setback respectively 4.0 metres and 5.7 metres from the rear boundary of the site, with respect to the same neighbouring property. The dwellings would each be a maximum of 8.4 metres in height as dimensioned on the plans. In each case, the dwellings would be 'end on' to the rear boundary with wall lengths of approximately 8.5 metres. Further, the upper third level of each dwelling would be setback from the rear boundary. While there would be a degree of visual impact, it is noted that the neighbouring lot is of large size and comprises bushland. On balance, this component of the proposal is considered reasonably acceptable.

The actual slope of the site would result in dwellings 11, 12 and 13 being either further excavated into the site, or being higher above natural ground level than shown. As stated, the submitted plan requires building envelope discretion.

On balance, the proposal is considered acceptable in terms of building envelope Performance Criteria under the Scheme.

- 6.7.7 On balance, the proposal is considered acceptable in terms of building envelope Performance Criteria under the Scheme.
- 6.7.8 The proposal complies with the performance criterion subject to advice.
- 6.8 Setback and Building Envelope Part D 10.4.2 P3
 - 6.8.1 The acceptable solution at clause 10.4.2 A3 (b)(ii) requires that a wall only have a setback of less than 1.5m from a side or rear boundary if the dwelling does not exceed a total length of 9m or one third the length of the side boundary (whichever is the lesser).
 - 6.8.2 The proposal includes a retaining wall along the northeastern side boundary that together with any screening fences would exceed one metre in height.
The proposal also includes a parking deck to the northwest of dwelling No.20, and a turning deck between dwellings 13 and 14. The respective side setbacks of those components would be 1.5 metres as stated on the submitted plan, and 0.8 of a metre as measured on the plan.

6.8.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.8.4 The performance criterion at clause 10.4.2 P3 provides as follows:

The siting and scale of a dwelling must:

(a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:

(i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;

(ii) overshadowing the private open space of a dwelling on an adjoining property;

(iii) overshadowing of an adjoining vacant property; or

(iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property;

(b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area; and

(c) not cause an unreasonable reduction in sunlight to an existing solar energy installation on:

(i) an adjoining property; or

(ii) another dwelling on the same site.

6.8.5 Assessment of the performance criterion follows.

The proposed retaining wall would extend for the entire north eastern side boundary of the site, for a length exceeding 200 metres.

In terms of privacy (Clause 10.4.6 A1 under part 6.11 of this report), a condition is recommended that would limit the proposed retaining wall to a maximum of one (1) metre above natural ground level.

On the basis that the wall would not exceed one (1) metre in height, the provision of a screening fence above it of a standard 1.7 metres in height, would result in a total height of 2.7 metres. There is the potential for a loss of amenity to neighbouring properties from Nos. 27 to 35 Enterprise Road, particularly in terms of visual impact. On the other hand, such a boundary fence arrangement to a degree is considered reasonable on a residential site on a steep slope, were the concern is to provide a degree of 'rear' garden amenity on the development site. The main northeasterly aspect, sun and views of neighbouring properties would not be effected.

The proposed parking deck would have a side boundary setback as stated on the plan, of 1.5 metres from the side boundary of the

neighbouring property at No.25 Enterprise Road. The height of the deck has not been specified on plan but is considered likely to be of the order of three (3) metres high. With a 1.7 metre high screen atop that, the proposal would exceed the building envelope. There is likely to be some impact including visual intrusion to the neighbouring property. Impact to a degree would be reduced given that the main northeasterly aspect, sun and views of the neighbouring property would not be effected.

The proposed turning deck would have a side boundary setback of an estimated 0.8 metres from the side boundary of the neighbouring property at No.35 Enterprise Road. Again, the height of the deck has not been specified on plan but is considered likely to be of the order of three (3) metres high. Again, with a 1.7 metre high screen atop that, the proposal would exceed the building envelope. There is likely to be some impact including visual intrusion to the neighbouring property. This property is currently undeveloped and remains bushland. The deck would be on the relative southwest side of this neighbouring property. Impact to a degree would be reduced given that the main northeasterly aspect, views and northerly sun of the neighbouring property would not be effected.

On balance, impact in terms of setback and building envelope relating to the retaining wall, parking and turning decks is not considered likely to be excessive, and is not considered such as to warrant modification or refusal of the proposal.

6.8.6 The proposal complies with the performance criterion subject to condition.

6.9 Privacy Part D 10.4.6 P1

6.9.1 The acceptable solution at clauses 10.4.6 A2 (a)(iii) and (iv) require, in relation to dwellings on the same site, a 6 metre separation between habitable room windows of dwellings, and a 6 metre separation from dwellings and adjacent private open space.

6.9.2 The proposal includes dwellings not meeting the above acceptable solution as follows:

Dwellings 17 and 18 have habitable rooms facing each other with a less than 6 metre separation.

Dwellings 11 to 20 do not have a 6 metre separation from dwellings and adjacent private open space.

6.9.3 The proposal does not comply with the acceptable solution; therefore

assessment against the performance criterion is relied on.

- 6.9.4 The performance criterion at clause 10.4.6 P2 provides as follows:

A window or glazed door to a habitable room of a dwelling that has a floor level more than 1m above existing ground level, must be screened, or otherwise located or designed, to minimise direct views to:
(a) a window or glazed door, to a habitable room of another dwelling; and
(b) the private open space of another dwelling.

- 6.9.5 Assessment of the performance criterion follows.

Dwellings 17 and 18 have habitable rooms facing each other with a less than 6 metre separation.

In the case above it would be the level 3 livingroom of dwelling 17, looking towards the level 3 dining room of dwelling 18. The respective window would be separated by approximately 5 metres, and approximately one half of their respective 2 metre widths would coincide (that is, the windows would not be directly opposite of each other). Further, dwelling 18 would be in an uphill position relative to dwelling 17.

On balance, the separation of the upper level windows of dwellings 17 and 18 are considered reasonably acceptable in terms of the Performance Criteria.

Dwellings 11 to 20 do not have a 6 metre separation from dwellings and adjacent private open space.

The setback of the above dwellings from the private open space of the adjacent dwellings would generally be of the order of 4 metres, with some dwelling setbacks of slightly greater than that. In all cases, the main side facing windows would be on the upper levels of the respective dwellings, looking diagonally toward the downhill side garden areas*.

Please note: the proposed upper level decks of the dwellings mentioned above would generally have 1.7 metre high side screening balustrades.

On balance, the proposed side facing windows would generally be well elevated above neighbouring ground level garden areas, and are not considered to directly overlook. The proposal is considered acceptable in this regard.

On balance, the separation of the upper level windows of dwellings 17 and 18 are considered reasonably acceptable in terms of the Performance Criteria.

On balance, the proposed side facing windows would generally be well elevated above neighbouring ground level garden areas, and are not

considered to directly overlook. The proposal is considered acceptable in this regard.

6.9.6 The proposal complies with the performance criterion.

6.10 Privacy Part D 10.4.6 P1

6.10.1 The acceptable solution at clause 10.4.6 A1 requires decks to have a 3 metre side boundary setback, otherwise screened.

6.10.2 The proposal includes a retaining wall on the north eastern side boundary, and decks for dwellings 11-13 and 16-20 within 3 metres of the north eastern side boundary.

6.10.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.10.4 The performance criterion at clause 10.4.6 P1 provides as follows:

A balcony, deck, roof terrace, parking space or carport for a dwelling (whether freestanding or part of the dwelling) that has a finished surface or floor level more than 1m above existing ground level, must be screened, or otherwise designed, to minimise overlooking of:

(a) a dwelling on an adjoining property or its private open space; or

(b) another dwelling on the same site or its private open space.

6.10.5 Assessment of the performance criterion follows.

There is concern that slope has been under-estimated under the submitted plans, as detailed above. The under-estimate will have implications for the assessment of the decks and retaining wall.

With regard to the decks to dwellings 11-13 and 16-20, the submitted plans indicate a height of below one (1) metre above ground level. At that height they would be exempt in their own right. Were the decks to remain at the respective lower floor level of those dwellings, and taking into account the likelihood of a steeper slope than shown, there is the potential for those decks to be above the one (1) metre height threshold and therefore subject to Clause 10.4.6 A1.

Likewise with the retaining wall that would extend the entire north eastern

side boundary of the site, below dwellings 11 to 20. The submitted plan 2018-016-B-S10 provides a height for the retaining wall of less than one (1) metre as measured, and further states (on plan 2018-016-B-S3R) 'Each unit to be developed with retaining walls/fences to achieve maximum grade of 1:10'.

There would also be two decks related to parking and turning. To the northwest of dwelling 20 at the entrance to the site, would be a parking bay setback 1.8 metres from the boundary with No.25 Enterprise Road. The height of the deck is not specified on the plan, but is likely to considerably exceed one (1) metres in height.

The second of the decks would be for vehicular turning, and would be positioned between dwellings 13 and 14 with a side boundary setback of an estimated 0.8 of a metre. The turning deck would be adjacent to the boundary of the vacant lot at No.35 Enterprise Road. Again, height of the deck is not specified on the plan, but is likely to considerably exceed one (1) metres in height.

The proposed decks blow dwellings 11-13 and 16-20 would have side boundary setbacks of approximately 2 metres. Were the decks to maintain a maximum height one (1) metre above natural ground level, then a previously stated they would be exempt in their own right. For the avoidance of any doubt as to the height of the decks, a condition of approval is considered warranted that would restrict their height to a maximum of one (1) metre, or a minimum side boundary setback of three (3) metres.

The proposed retaining wall on the sole elevation plan provided (2018-016-B-S10) indicates a height of less than one (1) metre. This is for a wall the entire boundary length of the site, exceeding a length of 200 metres. In considering that the actual slope may be greater than that shown, the height may exceed one (1) metre. A condition of approval is considered warranted that would restrict the height of the retaining wall to a maximum of one (1) metre.

The proposed parking and turning decks would have a likely height in excess of one (1) metre. As stated, to the northwest of dwelling 20 at the entrance to the site, would be a parking bay setback 1.8 metres from the boundary with No.25 Enterprise Road. The height of the deck is not specified on the plan, but is likely to considerably exceed one (1) metres in height.

The second of the decks would be for vehicular turning, and would be positioned between dwellings 13 and 14 with a side boundary setback of

an estimated 0.8 of a metre. The turning deck would be adjacent to the boundary of the vacant lot at No.35 Enterprise Road. Again, height of the deck is not specified on the plan, but is likely to considerably exceed one (1) metres in height.

There would be some potential for loss of privacy to neighbouring properties at Nos. 25 and 35 Enterprise Road.

A condition of any approval is considered warranted, that the parking and turning decks each have screening in accordance with Clause 10.4.6 A1, of a permanently fixed screen to a height of not less than 1.7m above the finished surface or floor level, with a uniform transparency of not more than 25%, along the sides facing a side boundary.

On balance, conditions of any approval issued, are considered warranted as follows.

A condition of approval is considered warranted that would restrict the height of the retaining wall to a maximum of one (1) metre.

A condition of any approval is considered warranted, that the parking and turning decks each have screening in accordance with Clause 10.4.6 A1, of a permanently fixed screen to a height of not less than 1.7m above the finished surface or floor level, with a uniform transparency of not more than 25%, along the sides facing a side boundary.

6.10.6 The proposal complies with the performance criterion subject to condition.

6.11 Parking Part E 6.6.1 P1

6.11.1 The acceptable solution at clause E6.6.1 A1 states provision of no more and no less than the required number of on site spaces, which is 45 spaces.

6.11.2 The proposal includes a total provision of 54 spaces.

6.11.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.11.4 The performance criterion at clause E6.6.1 P1 provides as follows:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

- (a) car parking demand;*
- (b) the availability of on-street and public car parking in the locality;*
- (c) the availability and frequency of public transport within a 400m*

walking distance of the site;
 (d) the availability and likely use of other modes of transport;
 (e) the availability and suitability of alternative arrangements for car parking provision;
 (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;
 (g) any car parking deficiency or surplus associated with the existing use of the land;
 (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;
 (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;
 (j) any verified prior payment of a financial contribution in lieu of parking for the land;
 (k) any relevant parking plan for the area adopted by Council;
 (l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;
 (m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.

6.11.5 Assessment of the performance criterion by Council's Development Engineer follows.

It is noted that the discretion in this case is the result of a surplus of on site parking provision.

Council's Development Engineer states the development meets the minimum requirement of two (2) car parks per dwelling. Five (5) visitor car spaces are required. Seven (7) visitor spaces are proposed plus one (1) DDA space. Visitor spaces are located at opposing ends of the development. The parking discretion due to the parking excess would be beneficial to the site and is no reason for refusal.

The Development Engineer recommends that the proposal is acceptable in terms of on-site parking provision.

6.11.6 The proposal complies with the performance criterion.

6.12 Landslide Code Part E3.7.3 P1

- 6.12.1 There is no acceptable solution for Clause E3.7.3 A1.
- 6.12.2 The proposal includes major works within an area of landslide risk.
- 6.12.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.12.4 The performance criterion at clause E13.7.3 P1 provides as follows:

Major works must satisfy all of the following:

- (a) no part of the works is in a High Landslide Hazard Area;*
- (b) the landslide risk associated with the works is either:*
 - (i) acceptable risk; or*
 - (ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.*

- 6.12.5 Assessment of the performance criterion by Council's Environmental Development Planner follows.

The Code applies because development is proposed within a landslide hazard area (medium landslide hazard area). The area has been modelled as having some susceptibility to debris flow.

The relevant standards are under clause E3.7.3 as 'major works' are proposed within the landslide hazard area.

There is no acceptable solution for E3.7.3 A1. Performance criterion P1 states the following:

Major works must satisfy all of the following:

- (a) no part of the works is in a High Landslide Hazard Area;*
- (b) the landslide risk associated with the works is either:*
 - (i) acceptable risk; or*
 - (ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.*

No works are proposed within a High Landslide Hazard Area.

A slope stability risk assessment was submitted with the application.

The assessment concludes that the debris flow risk is 'very low' and risk mitigation measures are not required (i.e. risk is 'acceptable').

The assessment also concludes that the risk of rock roll during construction works is 'low' and 'acceptable'. However it also states that due care should be taken:

During excavation and construction works it is possible that rocks could be dislodged and roll downslope. Currently there is a deep ditch at the base of the property that is likely to intercept such rocks, however it is clear that this will need to be filled to complete the development as planned. As such, due care should be taken during construction. Large rocks that are moved should be placed such that they are stable and sitting on the largest, flattest face available. Where possible rocks that are moved should be placed on the shallowest available slope. If a large (>500mm minimum dimension) rock is excavated and has no flat faces such that it can be placed in a stable position locally, it should be moved to an area where it can be placed in a stable position. With suitable care being taken the risk posed by boulder roll during construction is assessed to be low.

It is recommended that a condition be applied to any permit granted requiring implementation of the recommended measures to ensure the risk is 'tolerable'.

The assessment also includes the following comments regarding runoff management:

It is likely that during periods of heavy rainfall runoff will sheet down the slopes, potentially causing damage. Drainage should be designed to intercept and divert this water; however, care should be taken not to increase the volume of water in the stream line to the east of the property as this would then raise the level of hazard for people downstream of the development.

The proposed stormwater system for the development has been designed to capture all 5% AEP flows, and would not significantly increase the volume of water in the drainage line as an existing cut-off drain currently captures and directs surface runoff to the drainage line.

With regard to vegetation removal for bushfire hazard management, the assessment report states the following:

With regard to bushfire management, it will be important when removing trees that the root systems are not removed so that the extra disturbance associated with rapid removal of root systems does not occur. Keeping scattered groups of trees as recommended in the bushfire report will assist in retaining support for the slopes and reduce the risk of any large ground movement. These scattered clumps and any retained low vegetation will assist in reducing the risk of rocks rolling down slope and will also provide barriers that may slow or stop rolling rocks. The general intent and detail of the bushfire plan is not at odds with the landslide risk management measures for this area.

Conditions are recommended to give effect to these recommendations.

Based on the submitted Slope Stability Assessment, the landslide risk is considered tolerable in accordance with P1(b)(ii) and the exercise of discretion is recommended subject to the recommended conditions.

6.12.6 The proposal complies with the performance criterion.

6.13 Biodiversity Code Part E10.7.1 P1

6.13.1 The acceptable solution at clause E10.7.1 A1 requires as follows.

Clearance and conversion or disturbance must comply with one of the following:

(a) be within a Building Area on a plan of subdivision approved under this planning scheme.

(b) the development is for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and:

(i) clearance and conversion or disturbance is confined to Low Priority Biodiversity Values;

(ii) the area of clearance and conversion is no more than 3,000 m²;

(iii) the area of disturbance is no more than 3,000 m²;

(c) the development is other than for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and:

(i) clearance and conversion or disturbance is confined to Low Priority Biodiversity Values;

(ii) the area of clearance and conversion is no more than 1,000 m²;

(iii) the area of disturbance is no more than 1,000 m².

6.13.2 The proposal includes works not complying with the Acceptable Solution.

6.13.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.13.4 The performance criterion at clause E10.7.1 P1 provides as follows:

Clearance and conversion or disturbance must satisfy the following:

(a) if low priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

(b) if moderate priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

(iii) remaining moderate priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values;

(c) if high priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

(iii) remaining high priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values;

(iv) special circumstances exist.

6.13.5 Assessment of the performance criterion by Council's Environmental Development Planner follows.

The Code applies because the removal of native vegetation is proposed within a biodiversity protection area. Approximately 2000m² of the

proposed upslope bushfire hazard management area is within a biodiversity protection area.

The submitted bushfire hazard management plan includes the following prescriptions for the hazard management area:

Remove trees and shrubs within HMA. Retain individual mature eucalypts or clusters of mature eucalypts not exceeding 20m in dimension with minimum 20m separation to other areas of vegetation. Trim lower branches of retained trees to minimum 2m above ground level. Slash grasses, remove ground fuels including branches, bark, leaves and dead vegetation regularly. Plant bushfire resisting plants where appropriate... Establish garden and hardstand areas within development site. Ensure any flammable materials such as dead branches, leaves and bark are cleared regularly.

The submitted natural values determination includes the following comment regarding the proposed bushfire hazard management within the biodiversity protection area (BPA) and the waterway protection area for the nearby watercourse:

The bushfire management plan does not require all the trees to be removed thus the majority of impact is to the tall shrub layer and below. It is estimated that 5 small to medium sized white peppermints (dbh less than 70 cm) may be impacted in order to meet the requirements of the bushfire management plan, in addition to the removal of the shrub layer.

The relevant standards are under clause E10.7.1. The proposal does not comply with A1(a) because no building area has been approved for this site on a subdivision plan. The proposal does not comply with A1(b) because the development is not for a single dwelling. The development doesn't comply with A1(c) because an area of more than 1000m² would be disturbed. The development must therefore comply with the related performance criterion, P1.

The submitted natural values determination describes the vegetation as follows:

The vegetation within the search area is dominated by Eucalyptus pulchella dry forest and woodland (DPU) (Figure 1). The grassy/shrubby Eucalyptus pulchella forest is widespread on the hills of Mt Nelson. The canopy is dominated by white peppermint Eucalyptus pulchella, with the occasional white gum Eucalyptus viminalis (Plates 1-3). Understorey

shrubs and small trees include hop bush Dodonaea viscosa, black wattle Acacia mearnsii, Tasmanian blanketleaf Bedfordia salicina, bull oak Allocasuarina littoralis, silver wattle Acacia dealbata and native cherry Exocarpos cupressiformis. The shrub and herb layer is species poor and prominent species are peach berry heath Lissanthe strigosa; variable saw sedge Lepidosperma laterale, velvet tussockgrass Poa rodwayi and native cranberry Astroloma humifusum.

To the east of the property and within the bushfire hazard management area is an ephemeral upper tributary to Maning Rivulet. It is expected that water will only flow into this during high rainfall events, and for short periods. A small increase in Lepidosperma laterale is evident here.

The main findings of the NVD are:

- the native vegetation community within the study area is 'Eucalyptus pulchella dry forest and woodland' (DPU);
- no threatened flora species were observed;
- no mature trees were observed;
- no potential trees hollows were observed;
- one location with large dolerite boulders has some potential for use by native mammals as a lay-up, but no signs of recent usage was evident and the site is unlikely to be used for breeding purposes;
- no threatened fauna were recorded, however eastern-barred bandicoots may use the land and masked owls may hunt in the area; and
- one declared weed species (boneseed) was recorded.

While section 4 of the NVD makes reference to 'moderate priority biodiversity values', this is a typographical error as the report doesn't identify any significant habitat values and doesn't address the part of the performance criterion related to moderate priority biodiversity values. In addition, an amended NVD was submitted for the previous application on this site that clarified that only low priority biodiversity values were present.

With regard to low priority biodiversity values, performance criterion P1 states the following:

Clearance and conversion or disturbance must satisfy the following:

(a) if low priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the

particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings...

The only element of the proposed development that would have a direct impact upon vegetation within the BPA is the bushfire hazard management area. There could also be some impact on the root zones of vegetation within the BPA from excavation works for Unit 10.

If no dwellings were proposed in this southern section of the lot (i.e. units 10, 11 and 12 were deleted), the hazard management area within the BPA could be reduced by approximately 1400m² to 600m². If house 10 only was deleted, the hazard management area encroachment into the BPA would be reduced by approximately 1000m² to 1000m².

Unit 10 could not realistically be sited elsewhere on the lot and has a relatively compact footprint, so it is difficult to see how the hazard management area for Unit 10 could be reduced without a higher level of bushfire-resistant construction. The proposed bushfire hazard management area (HMA) is based on the dwellings being constructed to BAL-12.5, which is the lowest level of fire-resistant construction under the Australian Standard.

If the next-highest level of bushfire-resistant construction (BAL-19) was adopted for dwellings 4-10 on the south-western side of the proposed internal driveway, the extent of the HMA within the BPA would be reduced by approximately 1275m² to 725m². If BAL-29 were adopted for these units, the extent of the HMA within the BPA would be reduced to approximately 350m².

If only Unit 10 was constructed to BAL-19, the area of the HMA within the BPA would be reduced by approximately 700m² to 1300m².

In my opinion, BAL-12.5 construction does not minimise impacts as far as reasonably practicable. Higher levels of bushfire-resistant construction (BAL-19 and BAL-29) could be adopted that would comply with the deemed-to-satisfy solutions for the building regulations for bushfire-prone areas. BAL-19 construction requirements are not particularly onerous, and only add a relatively small additional cost to overall construction costs (estimated at \$5-10K per dwelling). BAL-29 construction adds significant additional costs per dwelling (estimated to be around \$40K).

It is recommended that a condition be applied to any permit granted limiting vegetation clearing within the biodiversity protection area to that required to achieve BAL-12.5 for Units 1-3 and 11-20 and BAL-19 for Units 4-10 (which would have hazard management areas extending into the BPA at BAL-12.5). This would reduce the area of the BPA affected from approximately 2000m² to 725m². In my opinion this minimises impacts as far as reasonably practicable given:

- the biodiversity significance of the vegetation;
- the additional construction costs associated with BAL-19 and BAL-29 construction; and
- the fact that the proposed level of vegetation clearing would be 'permitted' under the standard if the proposal were for a single dwelling (E10.7.1 A1(b)).

Not all vegetation needs to be removed within the bushfire HMA and a condition is recommended to ensure the minimum vegetation necessary is removed

6.13.6 The proposal complies with the performance criterion.

6.14 Waterway and Coastal Protection Code E11.7.1 P1, P4

6.14.1 The acceptable solutions at clauses A1 and A4 state as follows.

A1

Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.

A4

Development must involve no new stormwater point discharge into a watercourse, wetland or lake.

6.14.2 The proposal includes works not meeting the acceptable solutions.

6.14.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.14.4 The performance criteria at clauses E11.7.1 P1 and P4 provide as follows:

P1

Building and works within a Waterway and Coastal Protection Area must

satisfy all of the following:

- (a) avoid or mitigate impact on natural values;*
- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (c) avoid or mitigate impacts on riparian or littoral vegetation;*
- (d) maintain natural streambank and streambed condition, (where it exists);*
- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;*
- (f) avoid significantly impeding natural flow and drainage;*
- (g) maintain fish passage (where applicable);*
- (h) avoid landfilling of wetlands;*
- (i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.*

P4

Development involving a new stormwater point discharge into a watercourse, wetland or lake must satisfy all of the following:

- (a) risk of erosion and sedimentation is minimised;*
- (b) any impacts on natural values likely to arise from erosion, sedimentation and runoff are mitigated and managed;*
- (c) potential for significant adverse impact on natural values is avoided.*

6.14.5 Assessment of the performance criteria by Council's Environmental Development Planner follows.

The Waterway and Coastal Protection Code applies because development is proposed within a waterway protection area (WPA). There is a small watercourse passing to the south-east of the dwelling lot, which is a tributary of Maning Rivulet. The watercourse starts as a drainage line near the proposed house lot and gradually increases in size moving downstream below Edith Avenue where it takes on the form of a more significant watercourse with a deeper, wider channel and banks and exposed bedrock bed.

A small part of the WPA is located within the house lot and would be directly impacted by the development. The remainder is outside the house lot and would only be impacted by the proposed bushfire hazard management area.

There is also a cut-off drain that runs the length of the house lot that

technically meets the definition of a 'watercourse' under the Scheme. This was constructed to address runoff issues for the down-slope properties fronting Enterprise Road.

The relevant standards are under clause E11.7.1. The proposal does not comply with acceptable solution A1 because there is no approved building area for the land on a subdivision plan. Performance criterion P1 states the following:

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values;*
- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (c) avoid or mitigate impacts on riparian or littoral vegetation;*
- (d) maintain natural streambank and streambed condition, (where it exists);*
- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;*
- (f) avoid significantly impeding natural flow and drainage;*
- (g) maintain fish passage (where applicable);*
- (h) avoid landfilling of wetlands;*
- (i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.*

It is important to note that most of the vegetation within the WPA has already been approved for removal under planning permits PLN-06-00175-01 and PLN-14-00572-01 that approved the subdivision of 26 Edith Avenue. Under that approval, all of the WPA within the proposed HMA for the 21B Enterprise Road proposal would either be developed as a public road, a private dwelling/garden, bushfire building protection zone and/or bushfire fuel modified buffer zone. If that development proceeds,

less vegetation is likely to be retained within the WPA than under the current proposal for 21B Enterprise Road. The 26 Edith Avenue subdivision is being developed in stages, and I am not aware of any decision by the developer to not proceed with those stage sin the future.

The natural values of the waterway protection area are fairly limited, and are only marginally more significant than the vegetation in the area generally. It is an ephemeral watercourse that is only likely to carry surface flows during, or immediately following, periods of rain. As such, there is little riparian vegetation in the true sense (i.e. adapted to higher ground moisture levels or inundation). There is no standing water that provides aquatic habitat and few other habitat features that are not present in the surrounding forest.

The vegetation within the WPA only needs to be reduced to satisfy the HMA prescriptions of the bushfire hazard management plan, and some vegetation can be retained. However, the majority of the shrubs and some of the trees would be removed, and groundcovers such as grasses will need to be slashed. The vegetation affected isn't considered to be particularly significant from a biodiversity conservation perspective.

The volume of water entering the watercourse is likely to be similar pre- and post-development as the existing cut-off drain collects up-slope water and directs it to the watercourse slightly further down than the proposed stormwater outfall for the development. Scour protection is proposed for the outfall, and pre-treatment of the stormwater is proposed to reduce pollutant loads. The proposed detention system would also reduce peak flows, minimising erosion. There may be a slight increase in water volumes in the watercourse during rain as a result of the proposed vegetation removal as there would be less vegetation drawing water from the soil, meaning the soil will become saturated more quickly.

The proposed stormwater system would incorporate pit traps and a filtration system to reduce pollutant loads prior to discharge. The submitted stormwater report estimates a 92% reduction in total suspended sediments, 70% reduction in phosphorus, 46% reduction in nitrogen and a 95% reduction on gross pollutants would be achieved by the proposed system. These values exceed the recommended targets in the State Stormwater Strategy. It is likely that sediment loads being introduced to the watercourse from the proposed stormwater system would be reduced under the proposal because the existing cut-off drain is un-lined and would be subject to erosion.

In addition to the rock pitching scour protection proposed for the stormwater outfall, the submitted stormwater report makes the following recommendation for plantings to stabilise the area around the outfall:

It is recommended in addition to the rock pitching and within the creek bank area that native grasses, sedges and sags be planted throughout. Species such as tussock grass and common wallaby grass recommended as a minimum. Planting is recommended for a minimum of 8m past the culvert outlet, subject to detailed design and associated investigations.

A condition requiring Council-approval of the scour protection design and landscaping design has been recommended by Council's Stormwater Unit.

Erosion within the WPA can also be minimised by careful implementation of the bushfire hazard management area. The root systems of trees should be kept in-situ (as per the recommendations of the slope stability assessment) and ground disturbance should be minimised with the use of hand tools rather than machinery. This would also ensure the potential animal 'lay-up' identified in the natural values determination would not be destroyed. A condition to this effect is recommended.

Impacts to riparian vegetation would be limited to the minimum necessary to achieve an adequate bushfire hazard management area. It should be noted that the 'riparian vegetation' in this instance is basically the same as the vegetation throughout the remainder of the site, and is not considered particularly significant from a biodiversity conservation perspective. Conditions are recommended for any permit granted requiring a vegetation management plan identifying vegetation to be removed and retained, and any revegetation, to ensure impacts upon riparian vegetation are minimised.

Natural streambed and streambank condition would not be significantly altered by the proposal, as flow volumes will be similar pre- and post-development, and no physical changes to the stream are proposed or are necessary. The submitted natural values determination states *'there will be some minor impacts in the surrounding area of the waterway for bushfire hazard management however retaining trees in this section combined with erosion and sediment planning will ensure natural streambank/bed processes continue to function'*. A condition is recommended to ensure the physical form of the watercourse is not impacted during establishment of the bushfire HMA.

There is little in-stream habitat of significance in this section of the watercourse, and the habitat within the watercourse is largely the same as the surrounding habitat. There may be a few more rocks within the channel, however rocks are common throughout the area. Fallen branches and leaves will be removed however as part of the bushfire HMA. The submitted natural values determination states the following:

In stream habitat is largely a 1m lower lying area within the bushfire hazard area and contains water only at high rainfall times where it quickly disperses downstream. The level of vegetation removal is not anticipated to affect instream natural habitat as long as minimal clearing in this area is implemented as discussed.

The proposed development will not impede the flow of water in the watercourse.

Fish passage is not applicable in this section of this watercourse.

No wetlands would be filled.

Works can be carried out in accordance with the Waterways and Wetlands Works Manual, and the soil and water management plan for establishment of the HMA should reflect this.

The cut-off drain is a relatively-recent, artificial feature with few natural values. Removal of the cut-off drain would not lead to increased erosion or sedimentation. The vegetation adjacent the drain is not significant and isn't really riparian vegetation in the true sense of the word. The drain isn't a natural feature so does not have natural streambank and streambed condition or 'natural flow and drainage' and it doesn't have any habitat features of significance.

On balance, the proposal is considered consistent with E11.7.1 P1, subject to the recommended conditions, and the exercise of discretion is recommended.

Acceptable solutions A2 and A3 are not applicable.

The proposal does not comply with acceptable solution A4 because a new stormwater point source discharge is proposed within the watercourse. Performance criterion P4 states the following:

Development involving a new stormwater point discharge into a

watercourse, wetland or lake must satisfy all of the following:

- (a) risk of erosion and sedimentation is minimised;*
- (b) any impacts on natural values likely to arise from erosion, sedimentation and runoff are mitigated and managed;*
- (c) potential for significant adverse impact on natural values is avoided.*

The proposal will comply with this performance criterion subject to my recommended conditions and the related conditions recommended by Council's Stormwater Unit.

6.14.6 The proposal complies with the performance criterion.

6.15 Road and Railway Assets Code - Design of Vehicular Accesses - Part E 5.6.4 P1

6.14.1 The acceptable solution at clause E5.6.4 A1 states as follows.

Sight distances at:

(a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1.

6.15.2 The proposal does not comply with the acceptable solution.

6.15.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.15.4 The performance criterion at clause 5.6.4 P1 provides as follows:

The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles, having regard to:

- (a) the nature and frequency of the traffic generated by the use;*
- (b) the frequency of use of the road or rail network;*
- (c) any alternative access;*
- (d) the need for the access, junction or level crossing;*
- (e) any traffic impact assessment;*
- (f) any measures to improve or maintain sight distance; and*
- (g) any written advice received from the road or rail authority.*

6.15.5 Assessment of the performance criterion follows.

The Council's Development Engineer recommends conditional approval of the proposal.

6.15.6 The proposal complies with the performance criterion.

6.16 Design of Vehicular Accesses Part E6.7.2 P1

6.16.1 The acceptable solution at clause E6.7.2 A1 states as follows.

Design of vehicle access points must comply with all of the following:

(a) in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 – “Access Facilities to Off-street Parking Areas and Queuing Areas” of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking.

6.16.2 The proposal does not comply with the acceptable solution.

6.16.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.16.4 The performance criterion at clause E6.7.2 P1 provides as follows:

Design of vehicle access points must be safe, efficient and convenient, having regard to all of the following:

(a) avoidance of conflicts between users including vehicles, cyclists and pedestrians;

(b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;

(c) suitability for the type and volume of traffic likely to be generated by the use or development;

(d) ease of accessibility and recognition for users.

6.16.5 Assessment of the performance criterion follows.

The Council's Development Engineer recommends conditional approval of the proposal.

6.16.6 The proposal complies with the performance criterion.

6.17 Stormwater Code Part E7.7.1 P1

- 6.17.1 The acceptable solution at clause E7.7.1 A1 states as follows.

Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.

- 6.17.2 The proposal does not comply with the acceptable solution.

- 6.17.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

- 6.17.4 The performance criterion at clause E7.7.1 P1 provides as follows:

Stormwater from new impervious surfaces must be managed by any of the following:

- (a) disposed of on-site with soakage devices having regard to the suitability of the site, the system design and water sensitive urban design principles*
- (b) collected for re-use on the site;*
- (c) disposed of to public stormwater infrastructure via a pump system which is designed, maintained and managed to minimise the risk of failure to the satisfaction of the Council.*

- 6.17.5 Assessment of the performance criterion follows.

The Council's Technical Officer Environmental recommends conditional approval of the proposal.

- 6.17.6 The proposal complies with the performance criterion.

6.18 Inundation Prone Areas Code Part E15.7.5 P1

- 6.18.1 The acceptable solution at clause 15.7.5 A1 states as follows.

For landfill, or solid walls greater than 5 m in length and 0.5 m in height, there is no acceptable solution.

- 6.18.1 There is no acceptable solution in this case.

- 6.18.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.

- 6.18.4 The performance criterion at clause E15.7.5 P1 provides as follows:

Landfill, or solid walls greater than 5 m in length and 0.5 m in height, must satisfy all of the following:

- (a) no adverse affect on flood flow over other property through displacement of overland flows;*
- (b) the rate of stormwater discharge from the property must not increase;*
- (c) stormwater quality must not be reduced from pre-development levels.*

6.18.5 Assessment of the performance criterion follows.

The Council's Technical Officer Environmental recommends conditional approval of the proposal.

6.18.6 The proposal complies with the performance criterion.

6.19 Road and Railway Assets Code - Existing Road Accesses and Junctions - E5.5.1 P3

6.19.1 The acceptable solution at clause E5.5.1 A3 is as follows.

The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater.

6.19.2 The proposal results in an increase of more than 20%/40 vehicles per day to and from the site.

6.19.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.19.4 The performance criterion at clause E5.5.1 P3 provides as follows:

Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:

- (a) the increase in traffic caused by the use;*
- (b) the nature of the traffic generated by the use;*
- (c) the nature and efficiency of the access or the junction;*
- (d) the nature and category of the road;*
- (e) the speed limit and traffic flow of the road;*
- (f) any alternative access to a road;*
- (g) the need for the use;*

- (h) any traffic impact assessment; and*
- (i) any written advice received from the road authority.*

6.19.5 Assessment of the performance criterion by the Council's Development Engineer is as follows:

(a) the increase in traffic caused by the use;

Assessment: The increased traffic generated by the proposed development is likely to be 428 vehicles per day based on 10.7 trips per dwelling when all units are fully developed and occupied based on the TIA.

The entry/exit into the site is approximately half way along Enterprise Road. The only entry/exit onto Enterprise Road is via Birngana Avenue. These two entry exit points oppose each other by thirty (30) meters. This section that cuts Enterprise Road will receive all of the through traffic generated from the site. This impact of this could result in a choke point restricting access to the Southern Side residents of Enterprise Road and Glover Drive. Parking is available in this section of road which will reduce the width of the road considerably increasing the choke point by narrowing this small road section (Figure 2). The increases in vehicle movement in this area may also result in a concentrated conflict zone between vehicles moving and parked.

(b) the nature of the traffic generated by the use;

Assessment: All traffic generated by the proposed development will be residential in nature.

(c) the nature and efficiency of the access or the junction;

Assessment: The driveway access servicing the site will operate at a high level of service based on the relatively low traffic volumes.

(d) the nature and category of the road;

Assessment: Enterprise Road is a minor collector road that has a relatively low traffic volume near the site. It provides access to a residential catchment that is relatively stable and closed in nature.

(e) the speed limit and traffic flow of the road;

Assessment: The general urban speed limit of 50-km/h applies to

Enterprise Road. This speed limit is appropriate for the residential nature of the development.

(f) any alternative access to a road;

Assessment: No alternative access is possible for the proposed development.

(g) the need for the use;

Assessment: The need for the use has not been assessed in this report. Housing shortfall is TIA's justification for the need.

(h) any traffic impact assessment;

Assessment: Traffic Impact Assessment was submitted. TIA does not satisfactorily address the implications that an extra 214 vehicle/per day will have on the surrounding road network. On this basis Refusal is recommended.

The TIA's effort to address this performance criteria states "This Traffic Impact Assessment has been prepared for the proposed development and identifies that it is not expected to have any major impacts on the safety and operation of the surrounding road network". The report does not provide detail on how the only one access to Enterprise Road, starting at the intersection of Niree Heights and Beddome St have the capacity to absorb another 214 vehicles per day.

(i) any written advice received from the road authority.

Assessment: Written advice was requested by the road authority (Council) relating to the access.

A TIA was provided to aid assessment. The TIA is reasonably well written and professionally presented. However the TIA is limited in scope and omits key assessment areas such as the impact on the surrounding road network(s), Local area intensification and choke points/conflict areas.

6.19.6 The proposal does not comply with the performance criterion.

7. Discussion

- 7.1 Planning approval is sought for 20 multiple dwellings and associated works at 21B Enterprise Road, 21A Enterprise Road, 26 Edith Avenue CT 169835/105 and 35 Enterprise Road and adjacent road reservation Sandy Bay TAS 7005.
- 7.2 The application was advertised and received 213 representations. The representations raised concerns including density, traffic, townscape and landscape impact, and bushfire matters and associated risk.

- 7.3 With respect to density it is noted that within the General Residential Zone, Clause 10.4.1 A1 provides:

Multiple dwellings must have a site area per dwelling of not less than:
(a) 325m².

Site area per dwelling is defined by the planning scheme as *the area of the site (excluding any access strip) divided by the number of dwellings.*

The size of the subject lot is 8,030 square metres in area.

Legal opinion was obtained by Council to help ascertain the correct extent of the 'access strip' for the purposes of determining what the site area is. The access strip has been assessed as amounting to a total of 765 square metres, being only those areas occupied by existing pavement. Therefore, the site area available for development (8,030 - 765) is 7,265 square metres in area.

A site plan based on the legal opinion is provided below:



Figure 17: The extent of the access strip.

The submitted plan provides for a total of 20 multiple dwellings. The 20 dwellings divided by 7,265 square metres results in a total of 363.25 square metres per dwelling.

The proposal complies with the Residential Density Acceptable Solution under Clause 10.4.1 A1 within the General Residential Zone under the Hobart Interim Planning Scheme 2015.

- 7.4 The following comments are made in relation to the zone purposes statements, which state as follows:

10.1.1.1 To provide for residential use or development that accommodates a range of dwelling types at suburban densities, where full infrastructure services are available or can be provided.

10.1.1.2 To provide for compatible non-residential uses that primarily serve the local community.

10.1.1.3 To provide for the efficient utilisation of services.

10.1.1.4 To encourage residential development that respects the neighbourhood character.

10.1.1.5 To provide a high standard of residential amenity.

The applicant has provided a photographic submission which states:

'The development is below the skyline and will have a visual impact similar to the existing houses that presently front Enterprise Road.

Many sites have multiple dwellings constructed on them.

The height of this development is below adjacent residential developments.

The proposed development will not be on the top of the hill as it is on Nelson Road.

The development will be below the top of the hill and will have trees above the development'.

In terms of elevation, the development on the subject site would reach a maximum contour of 190 metres above sea level (dwelling 3) with dwelling 10 (at the far east of the site) at a slightly lower contour height of 189 metres.

A comparison with development with existing development on hillside spurs to the northwest (Nelson Road bends) and southeast (Nicholas Drive) is as follows.

Contiguous development effectively reaches the Nelson Road/Olinda Grove junction at a contour of approximately 280 metres.

Contiguous development at Nicholas Drive reaches a contour of approximately 230 metres (No.56 Nicholas Drive).

In the vicinity, the maximum elevation along Enterprise Road is the dwelling (at No. 1 Enterprise Road) at a height of approximately 211 metres.

In summary, proposed development at the site would be at a lower elevation than the maximum existing along Enterprise Road, and would be lower than existing development on the adjacent Nelson Road and Nicholas Drive hillside spurs.

Uphill of the development site at a distance of from 110 to 140 metres, the Bicentennial Park (Hobart City Council) begins at effectively the 230 to 240 metre contour and extends to the top of the ridgeline. The vegetated ridgeline above the site would therefore be retained.

In terms of multiple dwelling development, the immediate vicinity along Enterprise Road and extending down Birngana Avenue appears to comprise predominantly single dwelling development. Further afield particularly along Aotea Road and Marlborough Street are examples of multiple dwelling development.

As stated above (under part 7.6) the proposal complies in terms of residential density provisions within the General Residential Zone, given the large size of the site.

The proposed development would comprise detached dwellings of contemporary design and ranging from two to three storeys. The slope of the land is such that dwellings would generally have a heights of one to two storeys only on their uphill sides. Subject to development standards being met, the proposal is considered reasonable in terms of its overall compatibility with the character and amenity of the existing residential area to which it would adjoin.

Development standards are considered met, in terms of Performance Standards with relation to building envelope.

On balance, in terms of Zone Purpose Statements, with regard to the provision of residential development that respects the neighbourhood character, and which provides a high standard of residential amenity, the proposal is considered reasonably within acceptable limits.

- 7.5 In relation to private open space, dwellings 1 to 10 would have decks measuring approximately 24 to 32 square metres in area, together with albeit narrow side open space and further again albeit narrow open space between dwellings. The amount of space per dwelling would achieve the 60 square metre requirement. Dwellings 11 to 20 would have open space on their north east sides in excess of 60 square metres each, and in addition would have upper level decks. As such, the Acceptable Solution 10.4.3 A1(b) is met. Further, all 20 dwellings would have private open space in the form of decks of at least 24 square metres each, in accordance with the Acceptable Solution 10.4.3 A2.
- 7.6 The matter of validity with regard to declaration the owner has been notified under Section 52 of the Act, has been raised in a representation from the owner of No.26 Edith Avenue. It is noted that the applicant lodged a declaration received dated the 28th October 2020, stating notification of the owner of No. 26 Edith Avenue, 'EBCO Investments (TAS) PL', of the lodgment of the application. The applicant submitted a then current property title for the site received dated the 3rd November 2020, with owner stated as 'EBCO Investments (Tas) PL'.

- 7.7 In relation to the accuracy of the plans, there is concern that slope has been underestimated under the submitted plans, resulting in doubt as to the potential compliance of dwellings with the building envelope. The stated slope on submitted plans is of the order of 19 to 20 degrees. The applicant is adamant the plans are accurate. Under Council's Geocortex mapping system, the prevailing slope of the site is of the order of 23 degrees. The potential under-estimate will have implications for the building envelope compliance of all dwellings, and more significantly, the potential impact of the lower row of dwellings, Nos. 11-20. While there may remain some potential for excavation or other measures to ensure the building envelopes remain as shown, there remains some doubt with regard to assessment. Notwithstanding this, all dwellings have been assessed against the relevant performance criteria, not just those that are shown to be outside the envelope. In addition, advice on any planning permit is warranted as follows: "It appears that the slope of the land on some submitted plans is underestimated. In the event of any planning approval of the submitted plans, at building approval stage any departure resulting in any new or increased discretion may result in the requirement for the lodgment of a new planning application."
- 7.8 The proposal has been assessed against the relevant provisions of the planning scheme and is considered conditionally acceptable in terms of the zone development standards.
- 7.9 The proposal has been assessed by other Council officers, including the Council's Development Engineer, Environmental Development Planner, and surveying, environmental, roads, traffic and open space sections of Council. Council's Development Engineer recommends refusal on traffic grounds. The other officers have raised no objection to the proposal, subject to conditions.
- 7.10 The applicant has granted a very short extension of time to the 10th May 2021, to allow consideration of the application at a special City Planning Committee meeting and subsequent Council meeting on that date.
- 7.11 The proposal is recommended for refusal on traffic grounds.

8. Conclusion

- 8.1 The proposed 20 multiple dwellings and associated works at 21B Enterprise Road, 21A Enterprise Road, 26 Edith Avenue CT 169835/105 and 35 Enterprise Road and adjacent road reservation Sandy Bay TAS 7005 does not satisfy the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for refusal.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for 20 multiple dwellings and associated works at 21B Enterprise Road, 21A Enterprise Road, 26 Edith Avenue CT 169835/105 and 35 Enterprise Road and adjacent road reservation Sandy Bay TAS 7005 for the following reasons:

- 1 The proposal does not meet the Acceptable Solution or the Performance Criterion with respect to Clause E5.5.1 A3 or P3 because the increase in vehicular traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less will not be safe and will unreasonably impact on the efficiency of the road, having regard to the increase in traffic caused by the use and the traffic impact assessment submitted with the planning application.



(Richard Bacon)

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Ben Ikin)

Senior Statutory Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 5 May 2021

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Planning Referral Officer Environmental Development Planner Report

Attachment D - Planning Referral Officer Development Engineering Report

PROPOSED DEVELOPMENT
at
No.21b ENTERPRISE ROAD
SANDY BAY

for XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ZONE A
REVISED DOCUMENTATION



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481
BRIAN RICHARDSON
TCC Accreditation No.718R
(Building Designer)
MEMBER
Building Designers
Association of Tasmania

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	1-A	24/01/21	5	LEVEL 1 FLOOR PLAN
2018-016	1-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	1-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	1-D	24/01/21	5	ELEVATIONS
2018-016	2-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	2-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	2-A	18/02/21	5	ELEVATIONS
2018-016	3-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	3-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	3-C	18/02/21	5	ELEVATIONS
2018-016	4-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	4-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	4-C	18/02/21	5	ELEVATIONS
2018-016	5-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	5-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	5-C	18/02/21	5	ELEVATIONS
2018-016	6-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	6-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	6-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	6-D	05/02/20	4	ELEVATIONS
2018-016	7-A	06/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	7-B	06/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	7-C	06/10/19	2	ELEVATIONS
2018-016	8-A	18/02/21	6	LEVEL 1 FLOOR PLAN
2018-016	8-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	8-C	18/02/21	6	ELEVATIONS
2018-016	9-A	18/02/21	3	LEVEL 1 FLOOR PLAN
2018-016	9-B	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	9-C	18/02/21	3	ELEVATIONS
2018-016	10-AR	18/02/21	2	LEVEL 1 FLOOR PLAN
2018-016	10-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	10-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	10-DR	18/02/21	2	ELEVATIONS
2018-016	11-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	11-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	11-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	11-DR	18/02/21	3	ELEVATIONS
2018-016	12-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	12-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	12-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	12-DR	18/02/21	3	ELEVATIONS
2018-016	13-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	13-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	13-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	13-DR	18/02/21	3	ELEVATIONS

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	14-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	14-BR	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	14-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	14-DR	18/02/21	3	ELEVATIONS
2018-016	15-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	15-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	15-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	15-DR	24/01/21	2	ELEVATIONS
2018-016	16-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	16-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	16-CR	30/07/20	1	ELEVATIONS
2018-016	17-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	17-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	17-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	17-DR	24/01/21	2	ELEVATIONS
2018-016	18-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	18-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	18-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	18-DR	24/01/21	2	ELEVATIONS
2018-016	19-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	19-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	19-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	19-DR	24/01/21	2	ELEVATIONS
2018-016	20-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	20-BR	24/01/21	2	LEVEL 2 FLOOR PLAN
2018-016	20-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	20-DR	24/01/21	2	ELEVATIONS

NOTE Additional drawings - UNITS 10-14 Building Envelopes - 10-E example

TITLE REFERENCE - VOLUME 175593 FOLIO 6
 OWNER - XANADU DEVELOPMENTS Pty Ltd ATF XANADU DEVELOPMENTS TRUST
 PROPERTY ID 3904782

TOTAL FLOOR AREA OF EACH RESIDENCE - SEE DRAWINGS

DESIGNED WIND SPEED - N3 (50m/s)

SOIL CLASSIFICATION - CLASS - M
 ASSESSED BY J.P. Cumming

CLIMATE ZONE 7 FOR THERMAL DESIGN

CORROSION ENVIRONMENT - NO

BUSHFIRE PRONE AREA - YES - See REPORT

ALPINE AREA - NO ASSESSMENT REQUIRED

SITE ASSESSMENT - NO KNOWN HAZARDS

GENERAL NOTE:

All windows to Units 1-9, facing south west boundary are to be glazed with obscure glass throughout in accordance with the Interim Planning Scheme, to prevent overlooking of adjacent property.

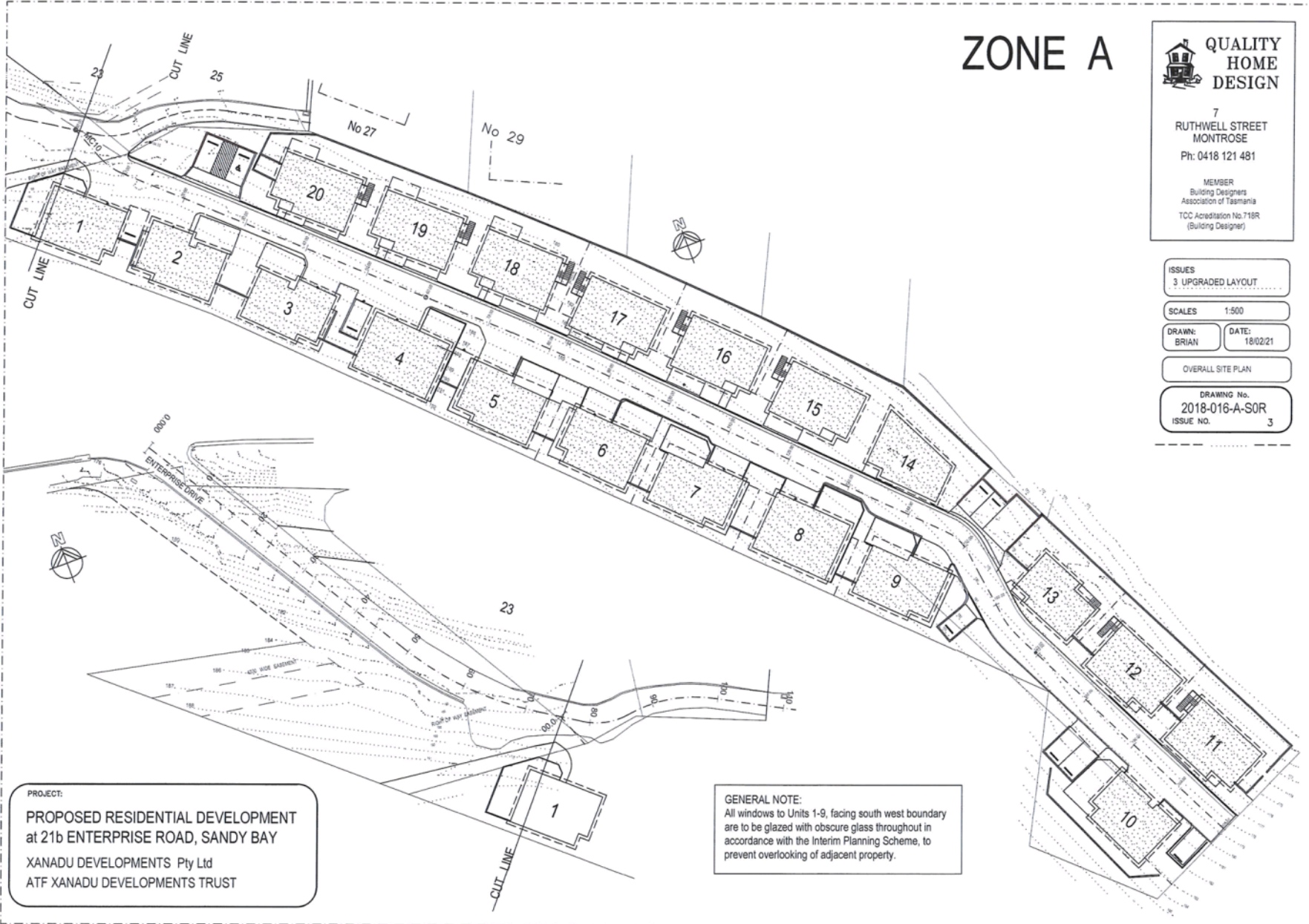


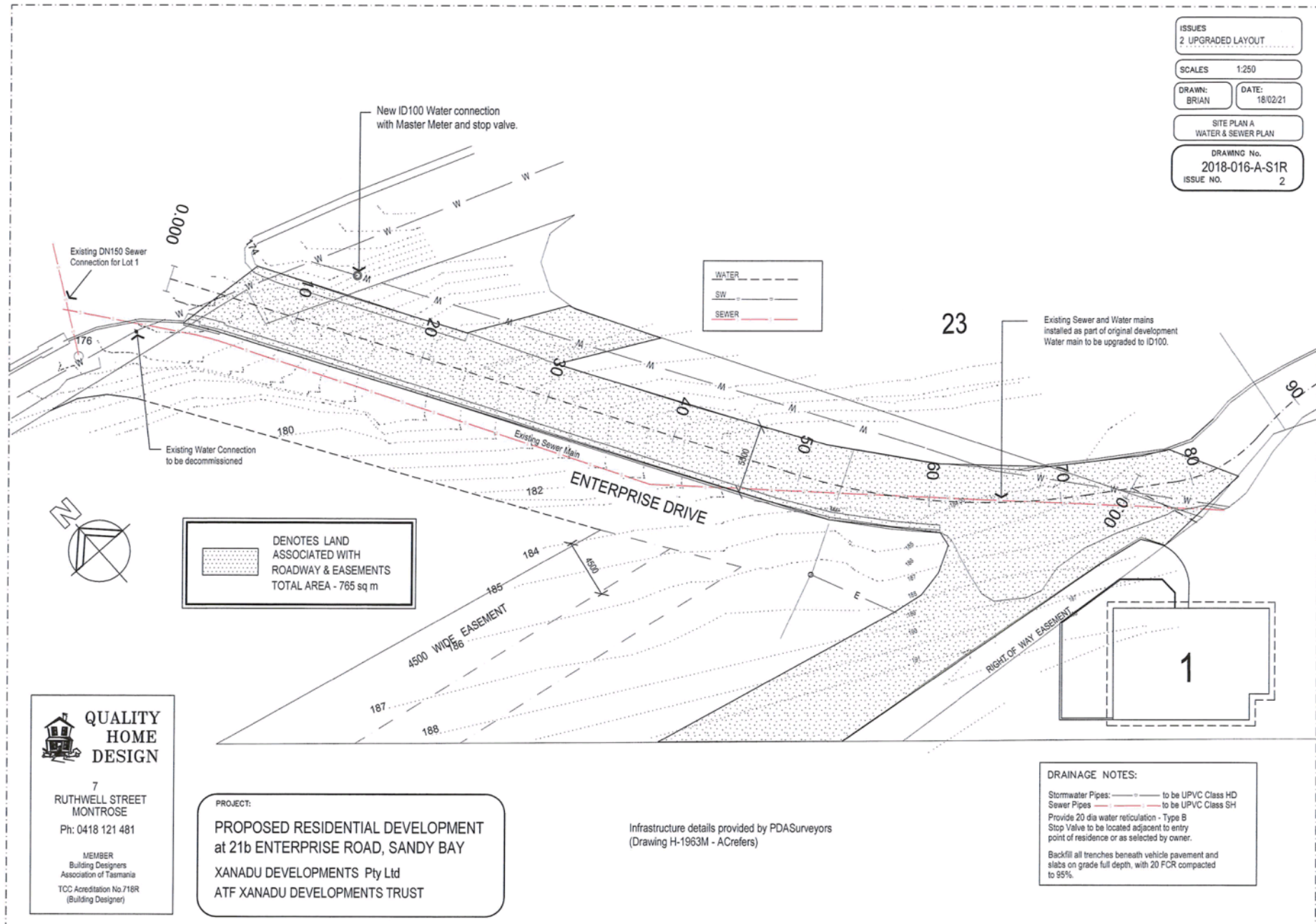
**QUALITY
HOME
DESIGN**

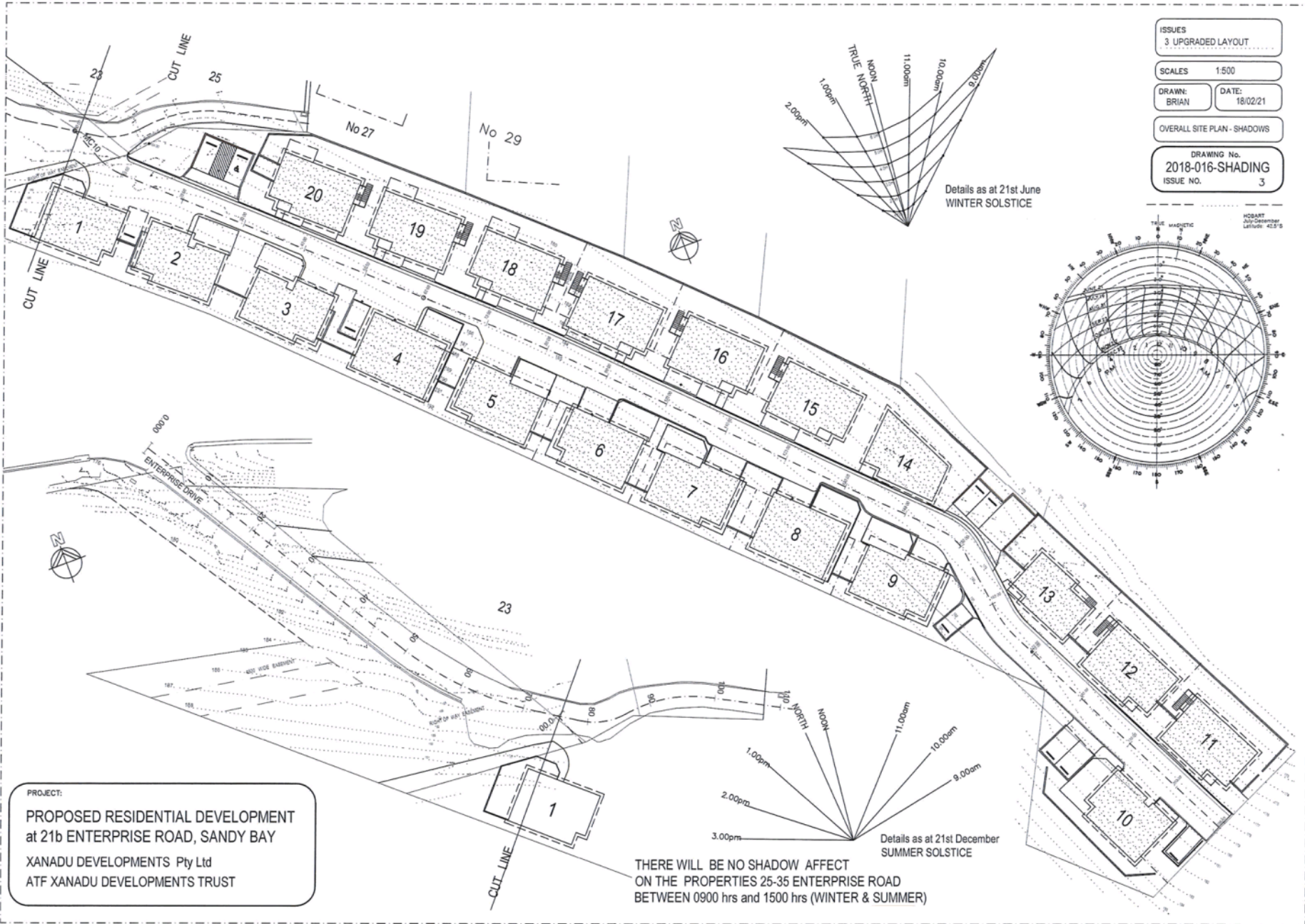
7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

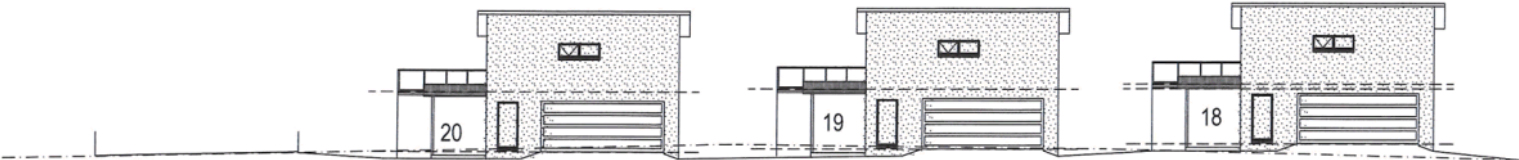
BRIAN RICHARDSON
 TOC Accreditation No.718R
 (Building Designer)
 MEMBER
 Building Designers
 Association of Tasmania

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	SOR	18/02/21	3	OVERALL SITE PLAN
2018-016	A-S1R	18/02/21	2	SITE LAYOUT PLAN - ZONE A
2018-016	SHADOW	18/02/21	3	SITE LAYOUT PLAN - ZONE A
2018-016	LS-R	18/02/21	3	LONGITUDINAL SECTION
2018-016	PHOTOS	03/09/20	1	LOCATION PHOTOS
2018-016	B-SOR	18/02/21	3	ZONE B SITE PLAN
2018-016	B-S1R	18/02/21	3	ZONE B SETOUT PLAN
2018-016	B-S2R	18/02/21	3	ZONE B POS PLAN
2018-016	B-S3R	18/02/21	3	ZONE B LANDSCAPE PLAN
2018-016	B-S3a	18/02/21	3	LANDSCAPE NOTES
2018-016	B-S3-ST	18/02/21	3	ZONE B STRATUM BOUNDARIES
2018-016	B-S4R	18/02/21	3	CROSS SECTION LOCATIONS
2018-016	B-S4-1R	18/02/21	3	CROSS SECTION - UNIT 1
2018-016	B-S4-2R	18/02/21	3	CROSS SECTION - UNITS 3-20
2018-016	B-S4-3R	18/02/21	3	CROSS SECTION - UNITS 4-19
2018-016	B-S4-4R	18/02/21	3	CROSS SECTION - UNITS 5-18
2018-016	B-S4-5R	18/02/21	3	CROSS SECTION - UNITS 6-17
2018-016	B-S4-6R	18/02/21	3	CROSS SECTION - UNITS 7-16
2018-016	B-S4-7R	18/02/21	3	CROSS SECTION - UNITS 8-15
2018-016	B-S4-8R	18/02/21	3	CROSS SECTION - UNIT 14
2018-016	B-S4-9R	18/02/21	3	CROSS SECTION - UNIT 9
2018-016	B-S4-10R	18/02/21	3	CROSS SECTION - UNITS 10-11
2018-016	B-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	B-S6R	18/02/21	3	ZONE B - 0900 hrs SHADOWS
2018-016	B-S6R	18/02/21	3	ZONE B - 1200 hrs SHADOWS
2018-016	B-S8R	18/02/21	3	ZONE B - 1500 hrs SHADOWS
2018-016	B-S9R	18/02/21	3	TYPICAL CROSS SECTION
2018-016	B-S10R	18/02/21	3	TYPICAL BUILDING FOOTPRINT
2018-016	C-SOR	18/02/21	3	ZONE C SITE PLAN
2018-016	C-S1R	18/02/21	3	ZONE C SETOUT PLAN
2018-016	C-S2R	18/02/21	3	ZONE C POS PLAN
2018-016	C-S3R	18/02/21	3	ZONE C LANDSCAPE PLAN
2018-016	C-S3Ra	18/02/21	3	ZONE C Typical Wheelie Bin location
2018-016	C-S3-ST	18/02/21	3	ZONE C STRATUM BOUNDARIES
2018-016	C-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	C-S6R	18/02/21	3	ZONE C - 0900 hrs SHADOWS
2018-016	C-S7R	18/02/21	3	ZONE C - 1200 hrs SHADOWS
2018-016	C-S8R	18/02/21	3	ZONE C - 1500 hrs SHADOWS
2018-016	D-SOR	18/02/21	3	ZONE D SITE PLAN
2018-016	D-S1R	18/02/21	3	ZONE D SETOUT PLAN
2018-016	D-S2R	18/02/21	3	ZONE D POS PLAN
2018-016	D-S3R	18/02/21	3	ZONE D LANDSCAPE PLAN
2018-016	D-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	D-S6R	18/02/21	3	ZONE D - 0900 hrs SHADOWS
2018-016	D-S7R	18/02/21	3	ZONE D - 1200 hrs SHADOWS
2018-016	D-S8R	18/02/21	3	ZONE D - 1500 hrs SHADOWS

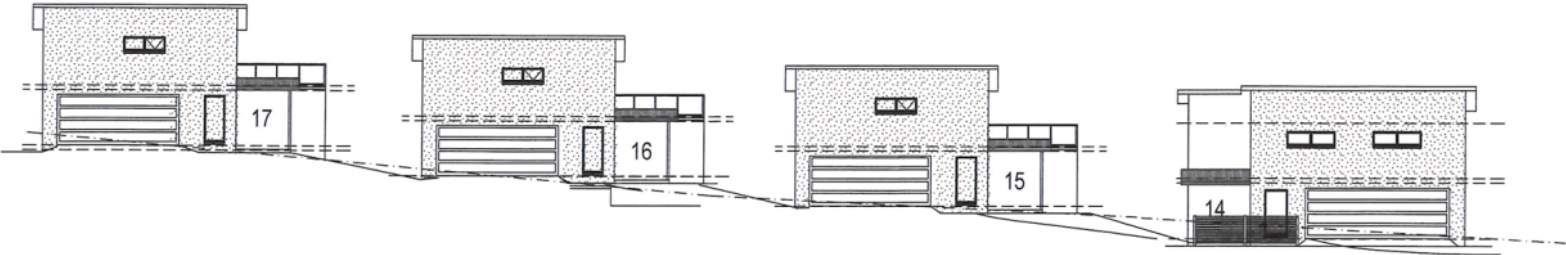




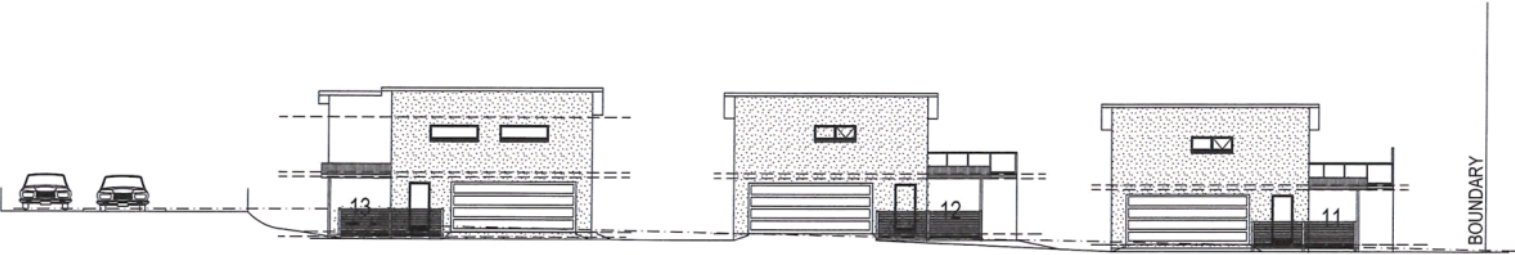




LONGITUDINAL SECTION UNITS 18-20



LONGITUDINAL SECTION UNITS 14-17



LONGITUDINAL SECTION UNITS 11-13

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

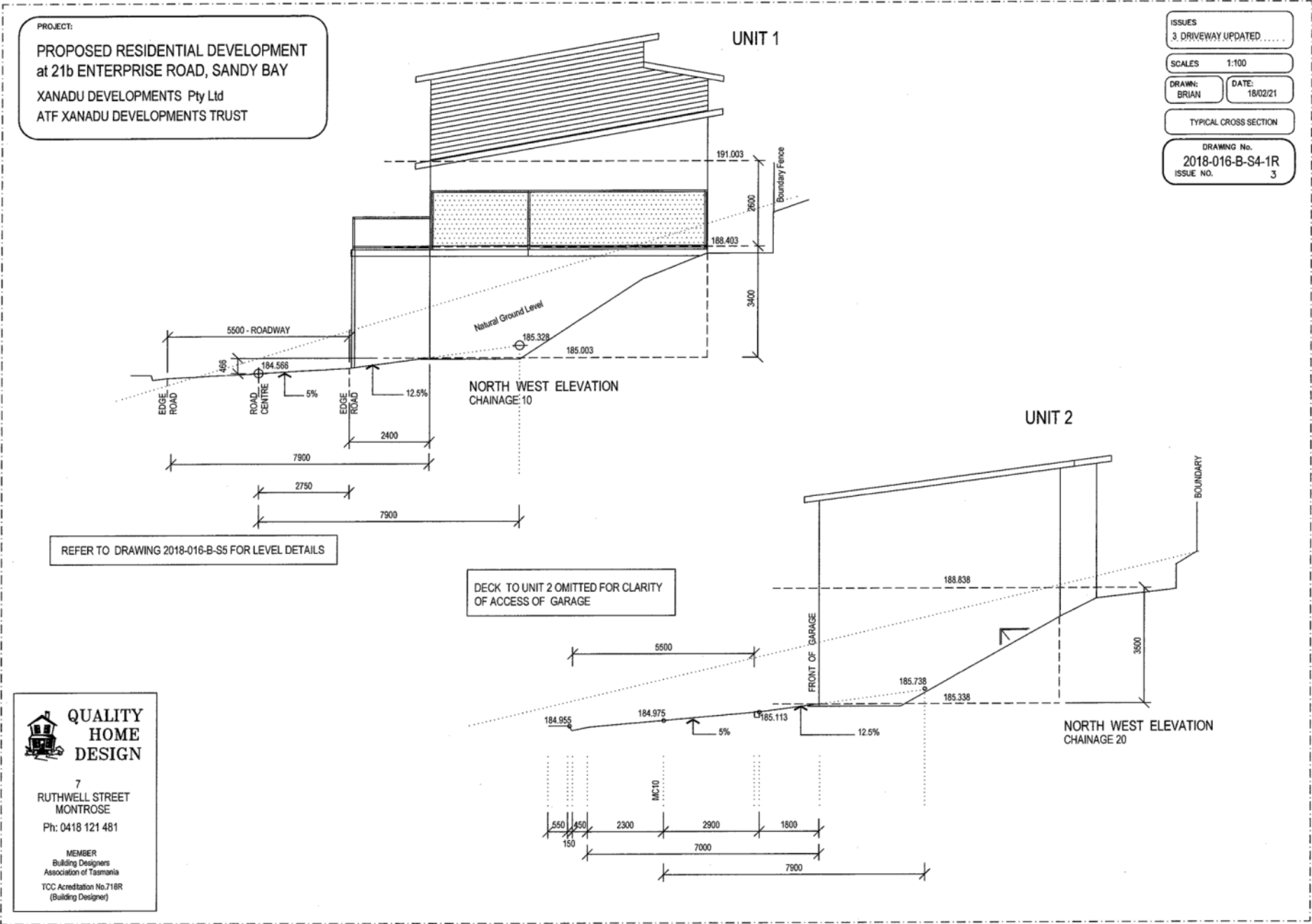
ISSUES
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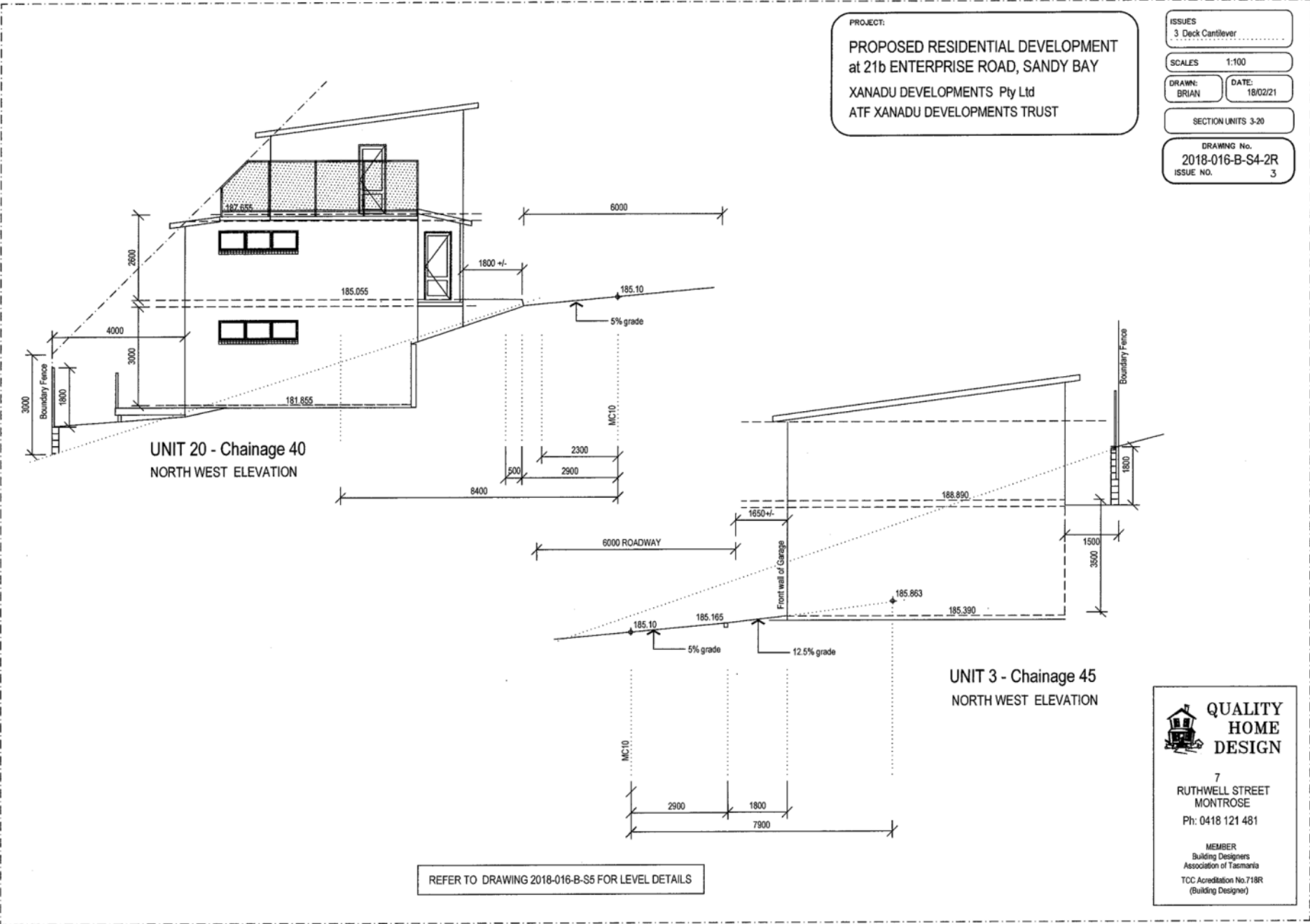
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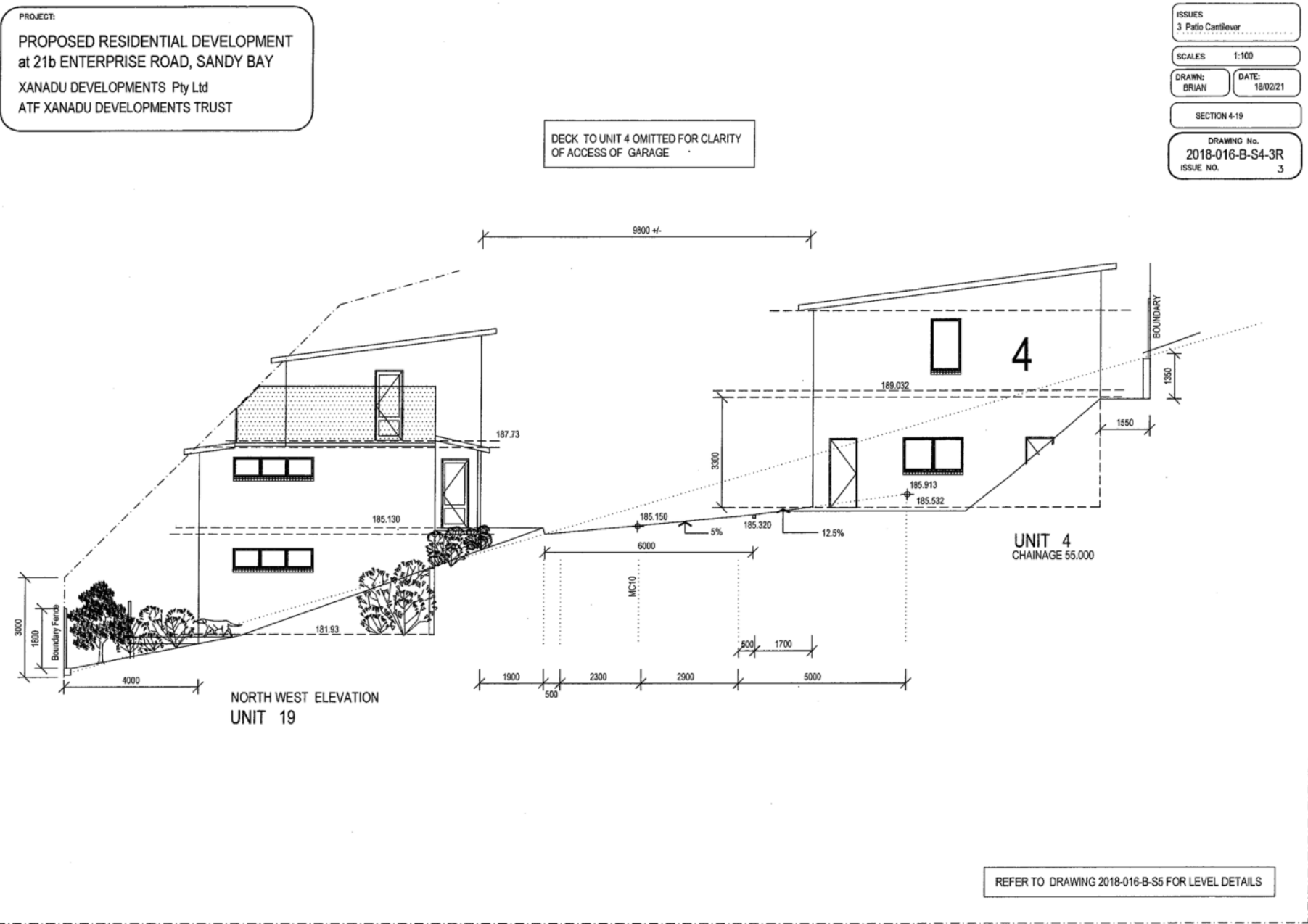
DRAWN: BRIAN DATE: 18/02/21

LONGITUDINAL SECTION

DRAWING No. 2018-016-LSR
ISSUE NO. 2

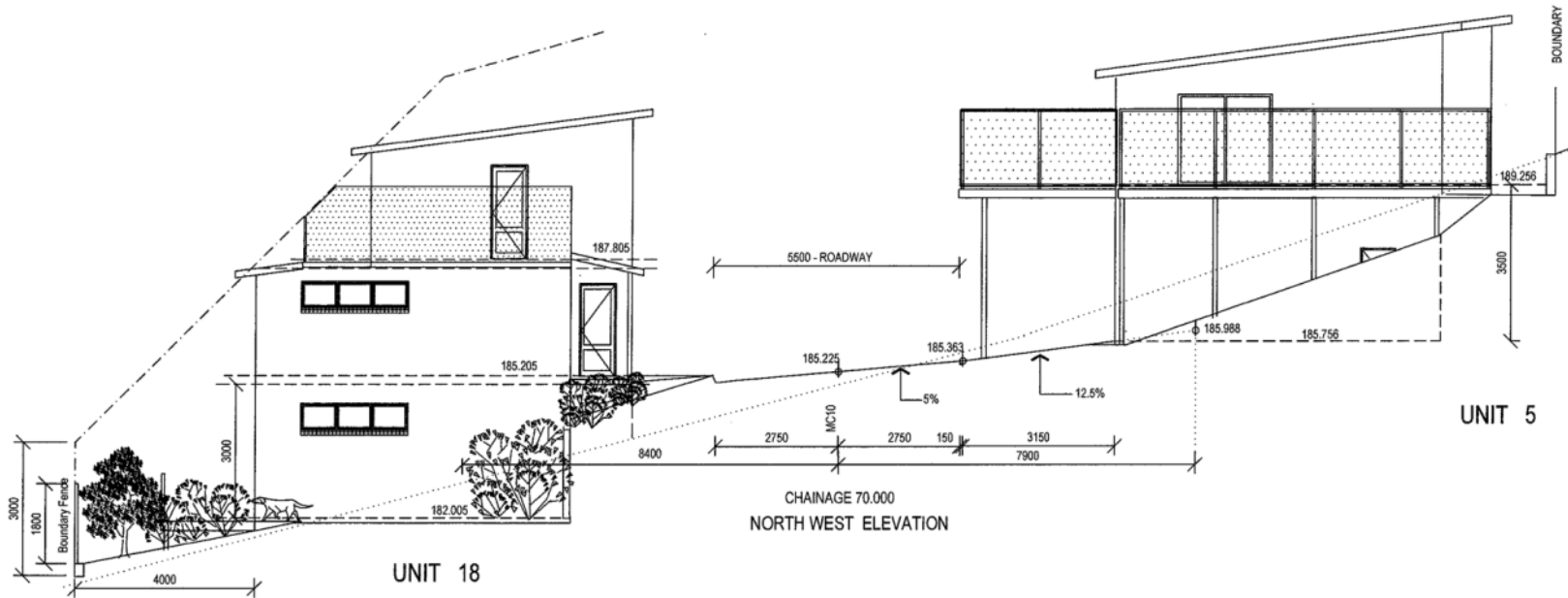






PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

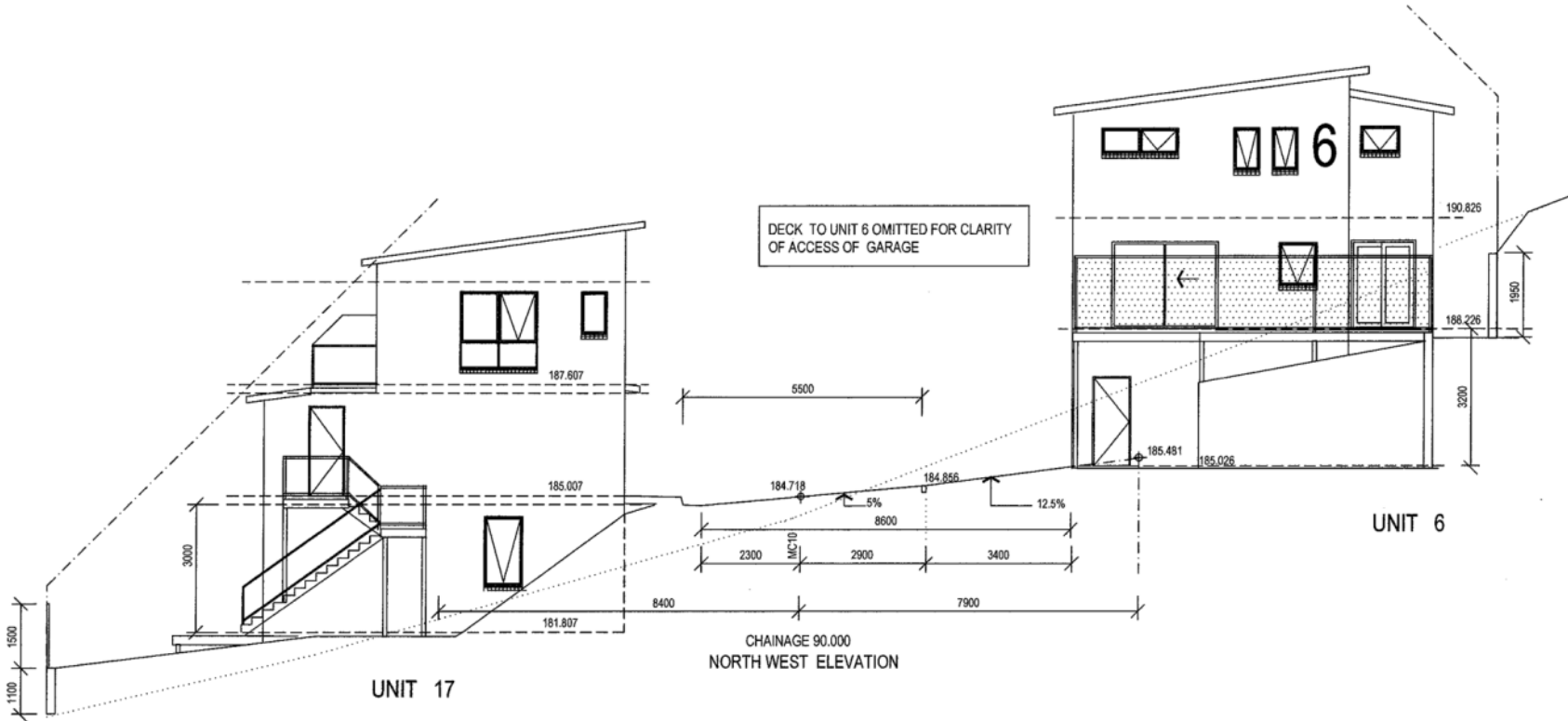
ISSUES
3 Driveway updated
SCALES 1:100
DRAWN: BRIAN DATE: 18/02/21
SECTION 5-18
DRAWING No.
2018-016-B-S4-4R
ISSUE NO. 3



REFER TO DRAWING 2018-016-B-S5 FOR LEVEL DETAILS

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

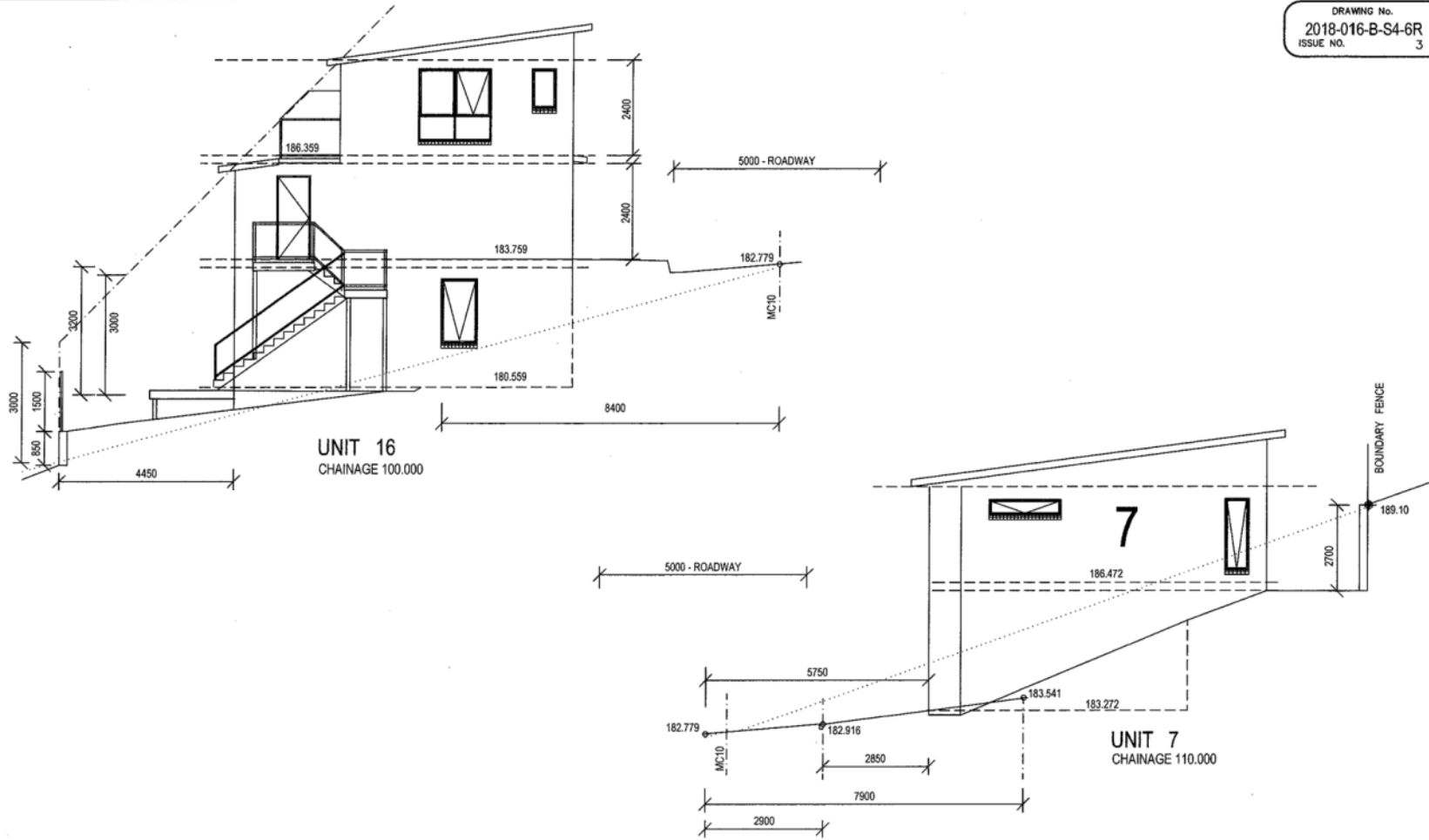
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SCALES 1:100
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SECTION 6-17
DRAWING No.
2018-016-B-S4-5R
ISSUE NO. 3



REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES	
SCALES	1:100
DRAWN: BRIAN	DATE: 18/02/21
SECTION 7-16	
DRAWING No. 2018-016-B-S4-6R ISSUE NO. 3	



NORTH WEST ELEVATION

REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

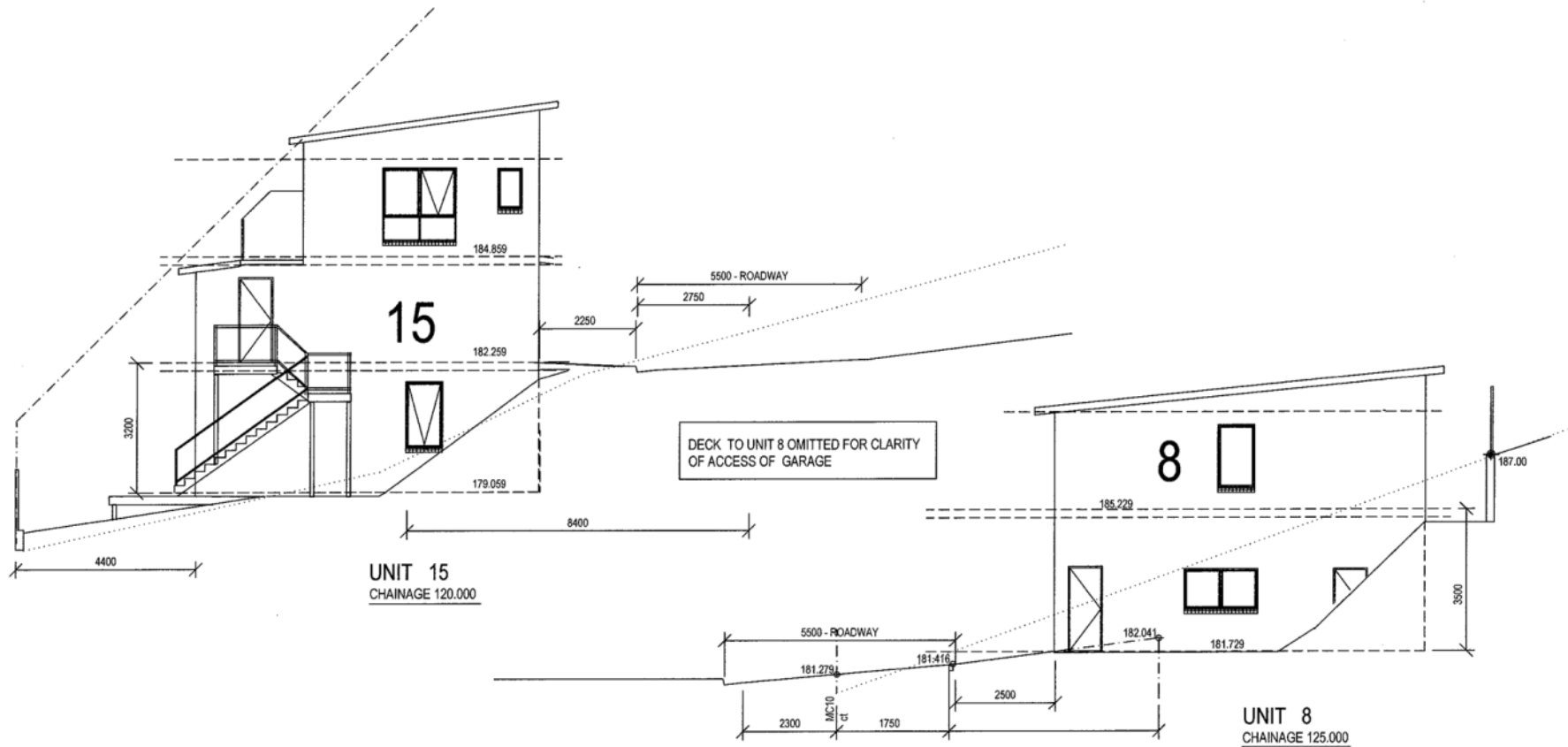
ISSUES
3 Deck Cantilever.....

SCALES 1:100

DRAWN: BRIAN DATE: 18/02/21

CROSS SECTION 7
SECTIONS - Unit 8 & Unit 15

DRAWING No.
2018-016-B-S4-7R
ISSUE NO. 3



NORTH WEST ELEVATION

REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

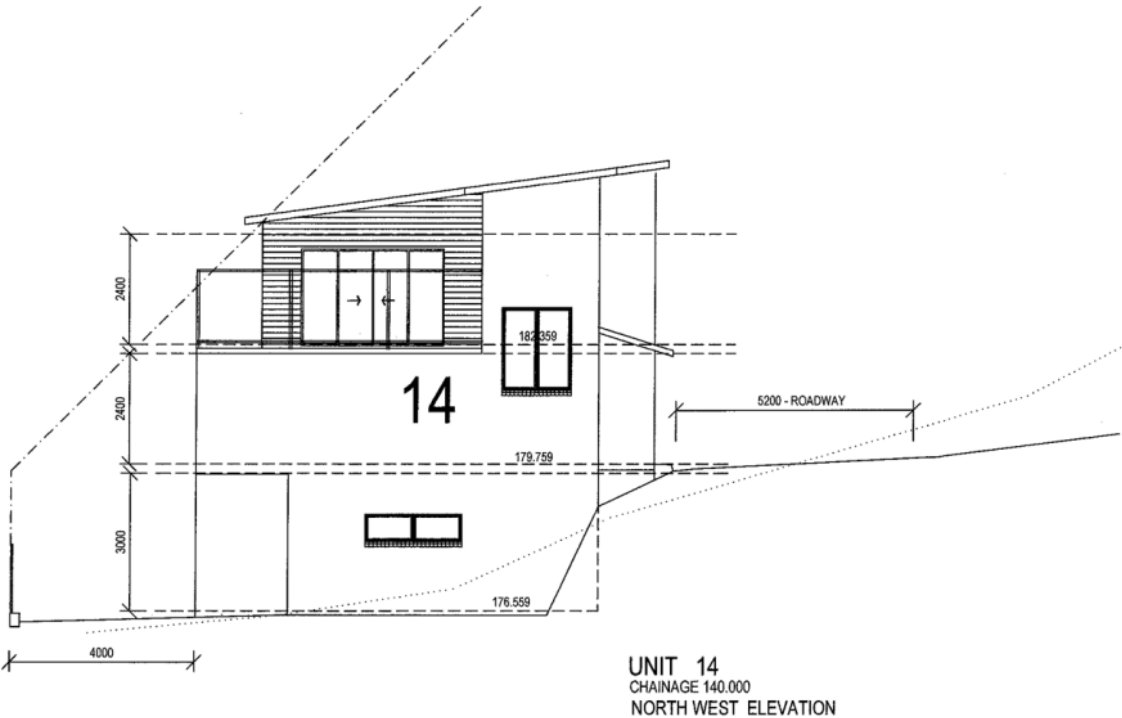
ISSUES
3 FLOOR LEVEL CHANGES

SCALES 1:100

DRAWN: BRIAN DATE: 18/02/21

SECTION 8

DRAWING No.
2018-016-B-S4-8R
ISSUE NO. 3

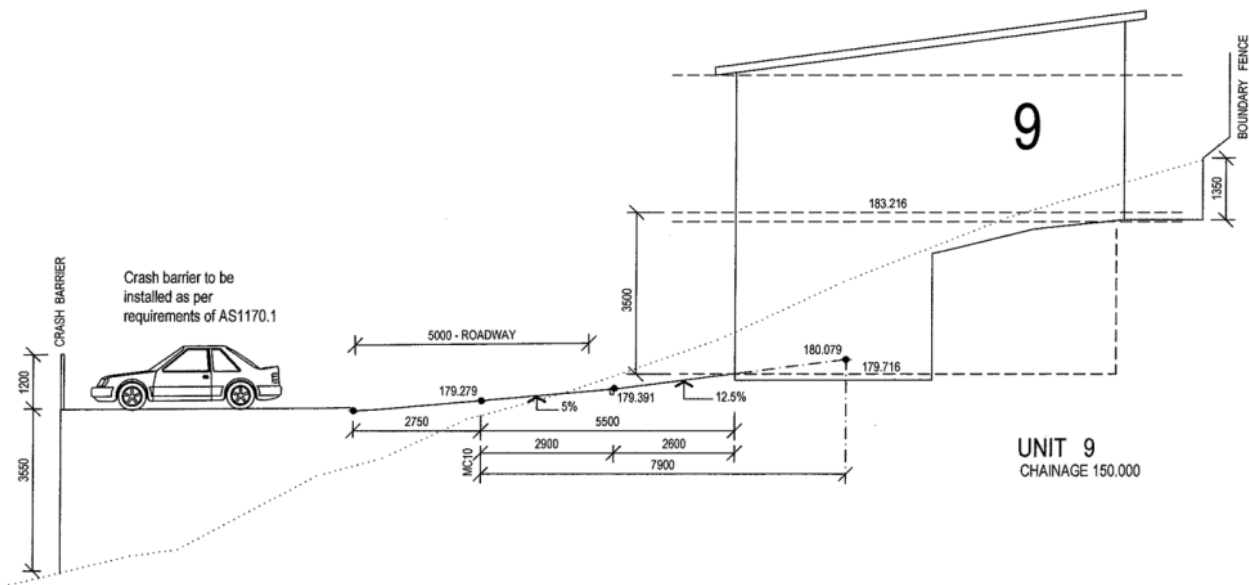


UNIT 14
CHAINAGE 140.000
NORTH WEST ELEVATION

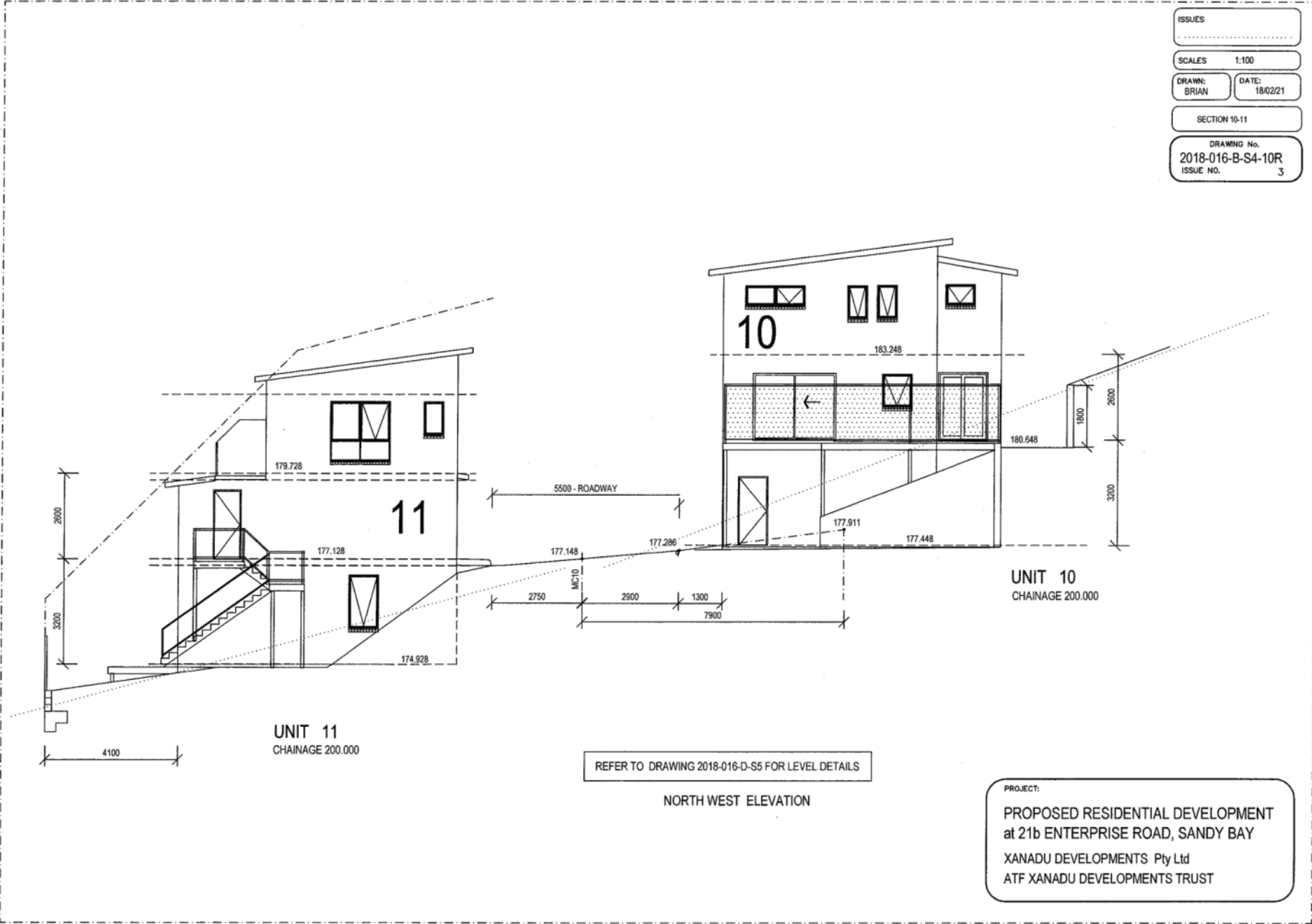
REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES	
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DRAWN: BRIAN	DATE: 18/02/21
SECTION 9	
DRAWING No. 2018-016-B-S4-9R	
ISSUE NO. 3	



REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS



PROPOSED DEVELOPMENT
at
No.21b ENTERPRISE ROAD
SANDY BAY
for XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ZONE B
REVISED DOCUMENTATION



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

BRIAN RICHARDSON
TDC Accreditation No.718R
(Building Designer)
MEMBER
Building Designers
Association of Tasmania

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	1-A	24/01/21	5	LEVEL 1 FLOOR PLAN
2018-016	1-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	1-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	1-D	24/01/21	5	ELEVATIONS
2018-016	2-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	2-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	2-A	18/02/21	5	ELEVATIONS
2018-016	3-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	3-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	3-C	18/02/21	5	ELEVATIONS
2018-016	4-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	4-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	4-C	18/02/21	5	ELEVATIONS
2018-016	5-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	5-B	09/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	5-C	18/02/21	5	ELEVATIONS
2018-016	6-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	6-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	6-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	6-D	05/02/20	4	ELEVATIONS
2018-016	7-A	06/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	7-B	06/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	7-C	06/10/19	2	ELEVATIONS
2018-016	8-A	18/02/21	6	LEVEL 1 FLOOR PLAN
2018-016	8-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	8-C	18/02/21	6	ELEVATIONS
2018-016	9-A	18/02/21	3	LEVEL 1 FLOOR PLAN
2018-016	9-B	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	9-C	18/02/21	3	ELEVATIONS
2018-016	10-AR	18/02/21	2	LEVEL 1 FLOOR PLAN
2018-016	10-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	10-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	10-DR	18/02/21	2	ELEVATIONS
2018-016	11-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	11-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	11-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	11-DR	18/02/21	3	ELEVATIONS
2018-016	12-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	12-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	12-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	12-DR	18/02/21	3	ELEVATIONS
2018-016	13-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	13-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	13-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	13-DR	18/02/21	3	ELEVATIONS

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	14-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	14-BR	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	14-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	14-DR	18/02/21	3	ELEVATIONS
2018-016	15-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	15-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	15-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	15-DR	24/01/21	2	ELEVATIONS
2018-016	16-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	16-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	16-CR	30/07/20	1	ELEVATIONS
2018-016	17-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	17-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	17-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	17-DR	24/01/21	2	ELEVATIONS
2018-016	18-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	18-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	18-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	18-DR	24/01/21	2	ELEVATIONS
2018-016	19-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	19-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	19-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	19-DR	24/01/21	2	ELEVATIONS
2018-016	20-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	20-BR	24/01/21	2	LEVEL 2 FLOOR PLAN
2018-016	20-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	20-DR	24/01/21	2	ELEVATIONS

NOTE Additional drawings - UNITS 10-14 Building Envelopes - 10-E example

TITLE REFERENCE - VOLUME 175593 FOLIO 6
 OWNER - XANADU DEVELOPMENTS Pty Ltd ATF XANADU DEVELOPMENTS TRUST
 PROPERTY ID 3604782

TOTAL FLOOR AREA OF EACH RESIDENCE - SEE DRAWINGS

DESIGNED WIND SPEED - N3 (50m/s)

SOIL CLASSIFICATION - CLASS - M
 ASSESSED BY J.P. Cumming

CLIMATE ZONE 7 FOR THERMAL DESIGN

CORROSION ENVIRONMENT - NO

BUSHFIRE PRONE AREA - YES - See REPORT

ALPINE AREA - NO ASSESSMENT REQUIRED

SITE ASSESSMENT - NO KNOWN HAZARDS

GENERAL NOTE:
 All windows to Units 1-9, facing south west boundary are to be glazed with obscure glass throughout in accordance with the Interim Planning Scheme, to prevent overlooking of adjacent property.



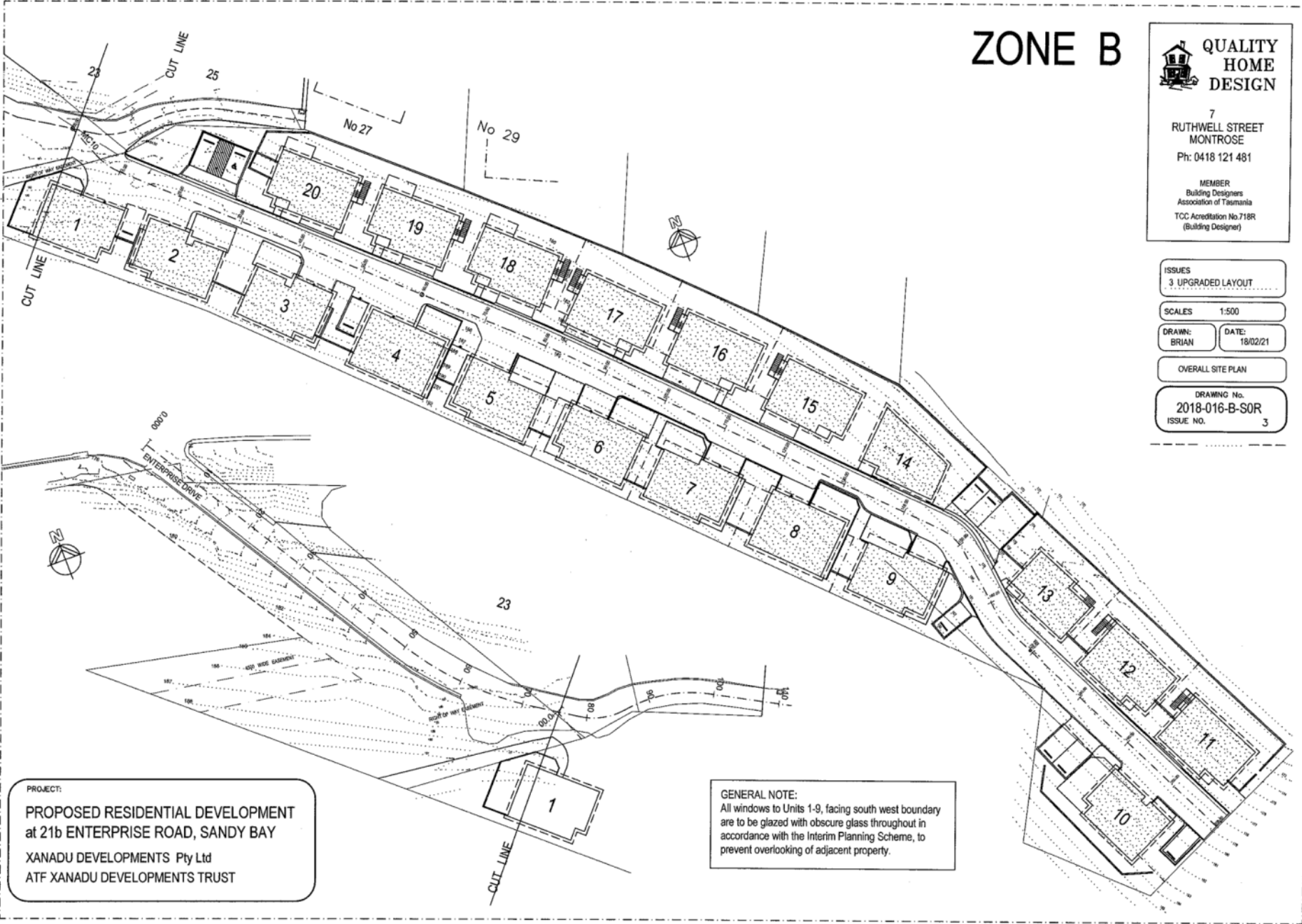
**QUALITY
HOME
DESIGN**

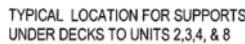
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RUTHWELL STREET
MONTROSE

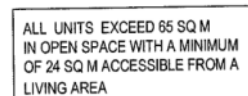
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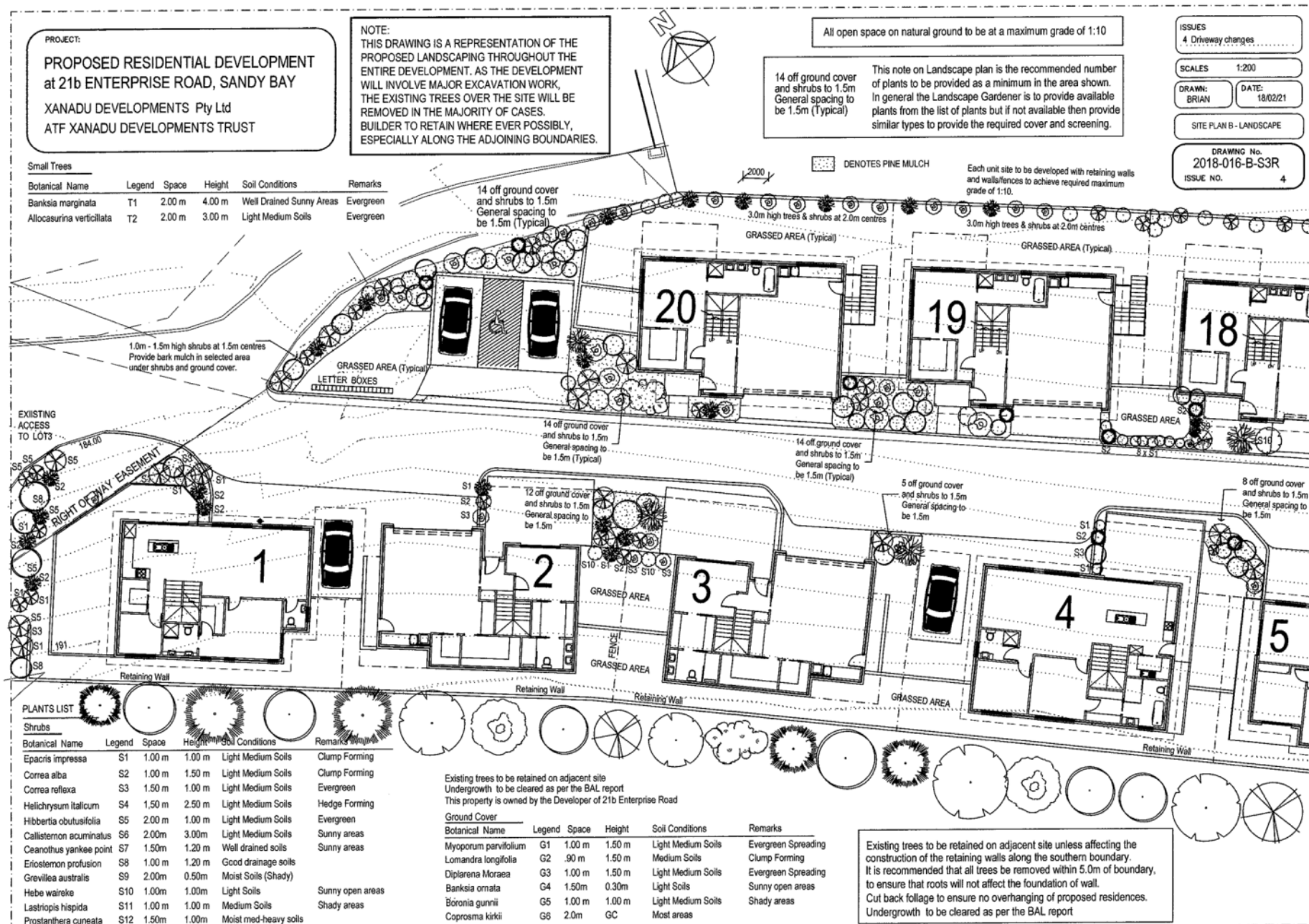
BRIAN RICHARDSON
 TCC Accreditation No. 716R
 (Building Designer)
 MEMBER
 Building Designers
 Association of Tasmania

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	SOR	18/02/21	3	OVERALL SITE PLAN
2018-016	A-S1R	18/02/21	2	SITE LAYOUT PLAN - ZONE A
2018-016	SHADOW	18/02/21	3	SITE LAYOUT PLAN - ZONE A
2018-016	LS-R	18/02/21	3	LONGITUDINAL SECTION
2018-016	PHOTOS	03/09/20	1	LOCATION PHOTOS
2018-016				
2018-016	B-S0R	18/02/21	3	ZONE B SITE PLAN
2018-016	B-S1R	18/02/21	3	ZONE B SETOUT PLAN
2018-016	B-S2R	18/02/21	3	ZONE B POS PLAN
2018-016	B-S3R	18/02/21	3	ZONE B LANDSCAPE PLAN
2018-016	B-S3a	18/02/21	3	LANDSCAPE NOTES
2018-016	B-S3-ST	18/02/21	3	ZONE B STRATUM BOUNDARIES
2018-016	B-S4R	18/02/21	3	CROSS SECTION LOCATIONS
2018-016	B-S4-1R	18/02/21	3	CROSS SECTION - UNIT 1
2018-016	B-S4-2R	18/02/21	3	CROSS SECTION - UNITS 3-20
2018-016	B-S4-3R	18/02/21	3	CROSS SECTION - UNITS 4-19
2018-016	B-S4-4R	18/02/21	3	CROSS SECTION - UNITS 5-18
2018-016	B-S4-5R	18/02/21	3	CROSS SECTION - UNITS 6-17
2018-016	B-S4-6R	18/02/21	3	CROSS SECTION - UNITS 7-16
2018-016	B-S4-7R	18/02/21	3	CROSS SECTION - UNITS 8-15
2018-016	B-S4-8R	18/02/21	3	CROSS SECTION - UNIT 14
2018-016	B-S4-9R	18/02/21	3	CROSS SECTION - UNIT 9
2018-016	B-S4-10R	18/02/21	3	CROSS SECTION - UNITS 10-11
2018-016	B-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	B-S6R	18/02/21	3	ZONE B - 0900 hrs SHADOWS
2018-016	B-S6R	18/02/21	3	ZONE B - 1200 hrs SHADOWS
2018-016	B-S8R	18/02/21	3	ZONE B - 1500 hrs SHADOWS
2018-016	B-S9R	18/02/21	3	TYPICAL CROSS SECTION
2018-016	B-S10R	18/02/21	3	TYPICAL BUILDING FOOTPRINT
2018-016				
2018-016	C-S0R	18/02/21	3	ZONE C SITE PLAN
2018-016	C-S1R	18/02/21	3	ZONE C SETOUT PLAN
2018-016	C-S2R	18/02/21	3	ZONE C POS PLAN
2018-016	C-S3R	18/02/21	3	ZONE C LANDSCAPE PLAN
2018-016	C-S3Ra	18/02/21	3	ZONE C Typical Wheelie Bin location
2018-016	C-S3-ST	18/02/21	3	ZONE C STRATUM BOUNDARIES
2018-016	C-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	C-S6R	18/02/21	3	ZONE C - 0900 hrs SHADOWS
2018-016	C-S7R	18/02/21	3	ZONE C - 1200 hrs SHADOWS
2018-016	C-S8R	18/02/21	3	ZONE C - 1500 hrs SHADOWS
2018-016				
2018-016	D-S0R	18/02/21	3	ZONE D SITE PLAN
2018-016	D-S1R	18/02/21	3	ZONE D SETOUT PLAN
2018-016	D-S2R	18/02/21	3	ZONE D POS PLAN
2018-016	D-S3R	18/02/21	3	ZONE D LANDSCAPE PLAN
2018-016	D-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	D-S6R	18/02/21	3	ZONE D - 0900 hrs SHADOWS
2018-016	D-S7R	18/02/21	3	ZONE D - 1200 hrs SHADOWS
2018-016	D-S8R	18/02/21	3	ZONE D - 1500 hrs SHADOWS









PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY

XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

6 Revised notes

SCALES

1:200

DRAWN:

BRIAN

DATE:

30/11/20

LANDSCAPE NOTES

DRAWING No.

2018-016-B-S3a

ISSUE NO.

6

Sign to be provided at front of site advising of visitor parking available.
All visitor parks to be clearly nominated with painted lines indicating parks.

Private open space to be levelled and landscaped to achieve maximum 1:10 fall across allocated space in accordance with Council planning scheme requirements

All pavement throughout to be 100mm thick concrete unless otherwise selected

All parts of site except for driveways, paths and building area are to be levelled and covered with 50mm of loam and sown with lawn seed.
In selected areas, barked ground covers to be provided in conjunction with specified trees, shrubs and ground cover planting.
(Refer plant list)

All existing trees are to be retained if they do not affect the proposed building and pavement layout. Some trees may need to be trimmed.

--- DENOTES 1800 HIGH PALING FENCE

OWNER TO MAINTAIN LANDSCAPING UNTIL
SETTLEMENT OF DWELLINGS WHEN NEW
OWNERS CAN TAKE RESPONSIBILITY.

14 off ground cover
and shrubs to 1.5m
General spacing to
be 1.5m (Typical)

This note on Landscape plan is the recommended number of plants to be provided as a minimum in the area shown.
In general the Landscape Gardener is to provide available plants from the list of plants but if not available then provide similar types to provide the required cover and screening.

Existing trees to be retained on adjacent site unless affecting the construction of the retaining walls along the southern boundary.
It is recommended that all trees be removed within 5.0m of boundary, to ensure that roots will not affect the foundation of wall.
Cut back foliage to ensure no overhanging of proposed residences.
Undergrowth to be cleared as per the BAL report

GENERAL NOTE:

WHERE WINDOWS FACE EACH OTHER FROM ADJOINING
UNITS, SHRUBS/SCREEN FENCING IS TO BE PROVIDED
TO AFFORD PRIVACY TO OCCUPANTS.

Owners require privacy to the front area of the property.
Planting will be provided in front of fence to soften the
timber of the proposed fence.

PLANTS LIST

Botanical Name	Legend	Space	Height	Soil Conditions	Remarks
<u>Small Trees</u>					
<i>Banksia marginata</i>	T1	2.00 m	4.00 m	Well Drained Sunny Areas	Evergreen
<i>Allocasurina verticillata</i>	T2	2.00 m	3.00 m	Light Medium Soils	Evergreen
<u>Shrubs</u>					
<i>Epacris impressa</i>	S1	1.00 m	1.00 m	Light Medium Soils	Clump Forming
<i>Correa alba</i>	S2	1.00 m	1.50 m	Light Medium Soils	Clump Forming
<i>Correa reflexa</i>	S3	1.50 m	1.00 m	Light Medium Soils	Evergreen
<i>Helichrysum italicum</i>	S4	1.50 m	2.50 m	Light Medium Soils	Hedge Forming
<i>Hibbertia obtusifolia</i>	S5	2.00 m	1.00 m	Light Medium Soils	Evergreen
<i>Callistemon acuminatus</i>	S6	2.00m	3.00m	Light Medium Soils	Sunny areas
<i>Ceanothus yankee point</i>	S7	1.50m	1.20 m	Well drained soils	Sunny areas
<i>Eriostemon profusion</i>	S8	1.00 m	1.20 m	Good drainage soils	
<i>Grevillea australis</i>	S9	2.00m	0.50m	Moist Soils (Shady)	
<i>Hebe waireke</i>	S10	1.00m	1.00m	Light Soils	Sunny open areas
<i>Laetropis hispida</i>	S11	1.00 m	1.00 m	Medium Soils	Shady areas
<i>Prostanthera cuneata</i>	S12	1.50m	1.00m	Moist med-heavy soils	
<u>Ground Cover</u>					
<i>Myoporum parvifolium</i>	G1	1.00 m	1.50 m	Light Medium Soils	Evergreen Spreading
<i>Lomandra longifolia</i>	G2	.90 m	1.50 m	Medium Soils	Clump Forming
<i>Diplazena Moraea</i>	G3	1.00 m	1.50 m	Light Medium Soils	Evergreen Spreading
<i>Banksia ornata</i>	G4	1.50m	0.30m	Light Soils	Sunny open areas
<i>Boironia gunnii</i>	G5	1.00 m	1.00 m	Light Medium Soils	Shady areas
<i>Coprosma kirkii</i>	G6	2.0m	GC	Most areas	

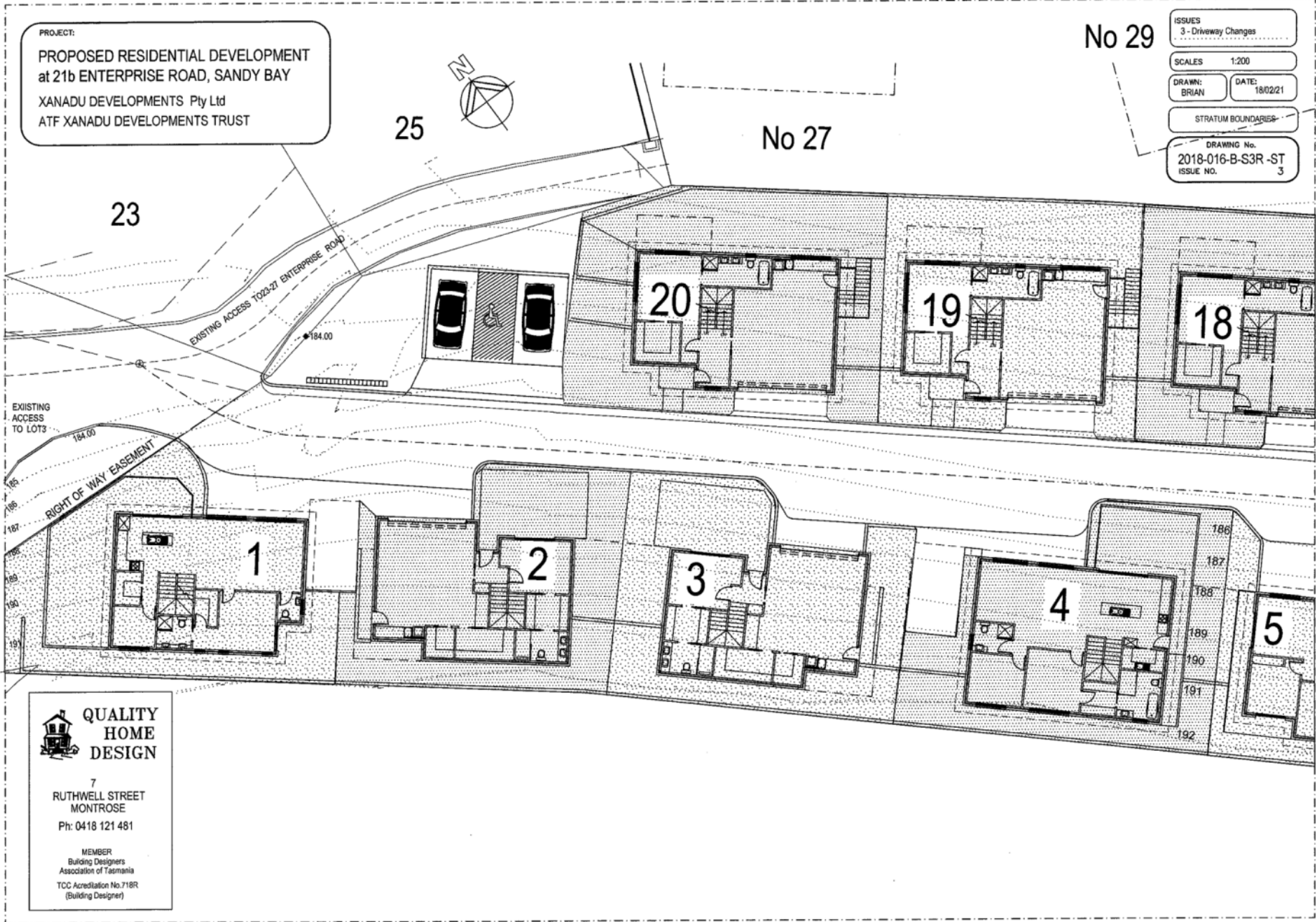
Builder to ensure the maximum difference between the concrete pavement and the finished ground level of the Open Space is not greater than 300mm.

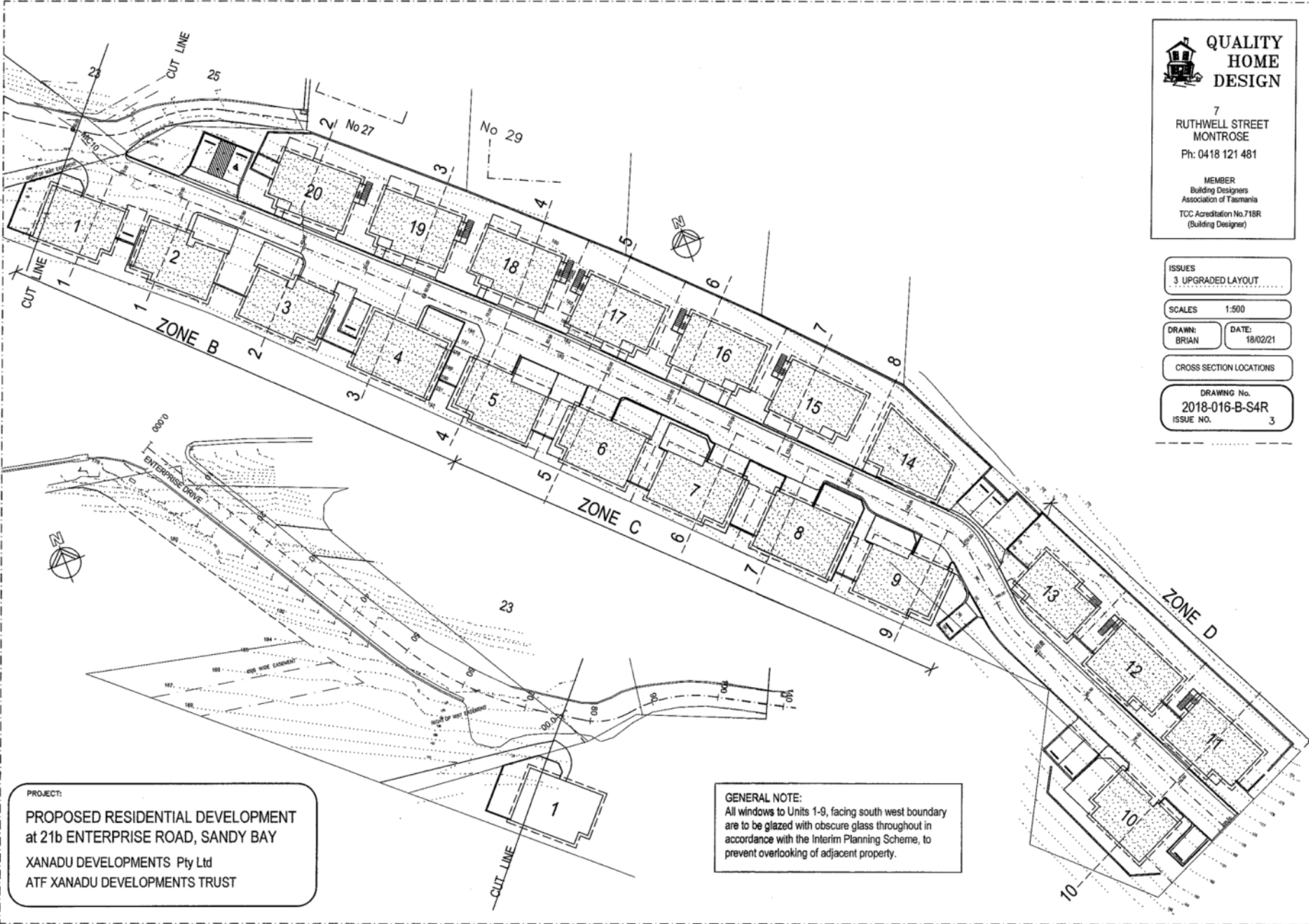


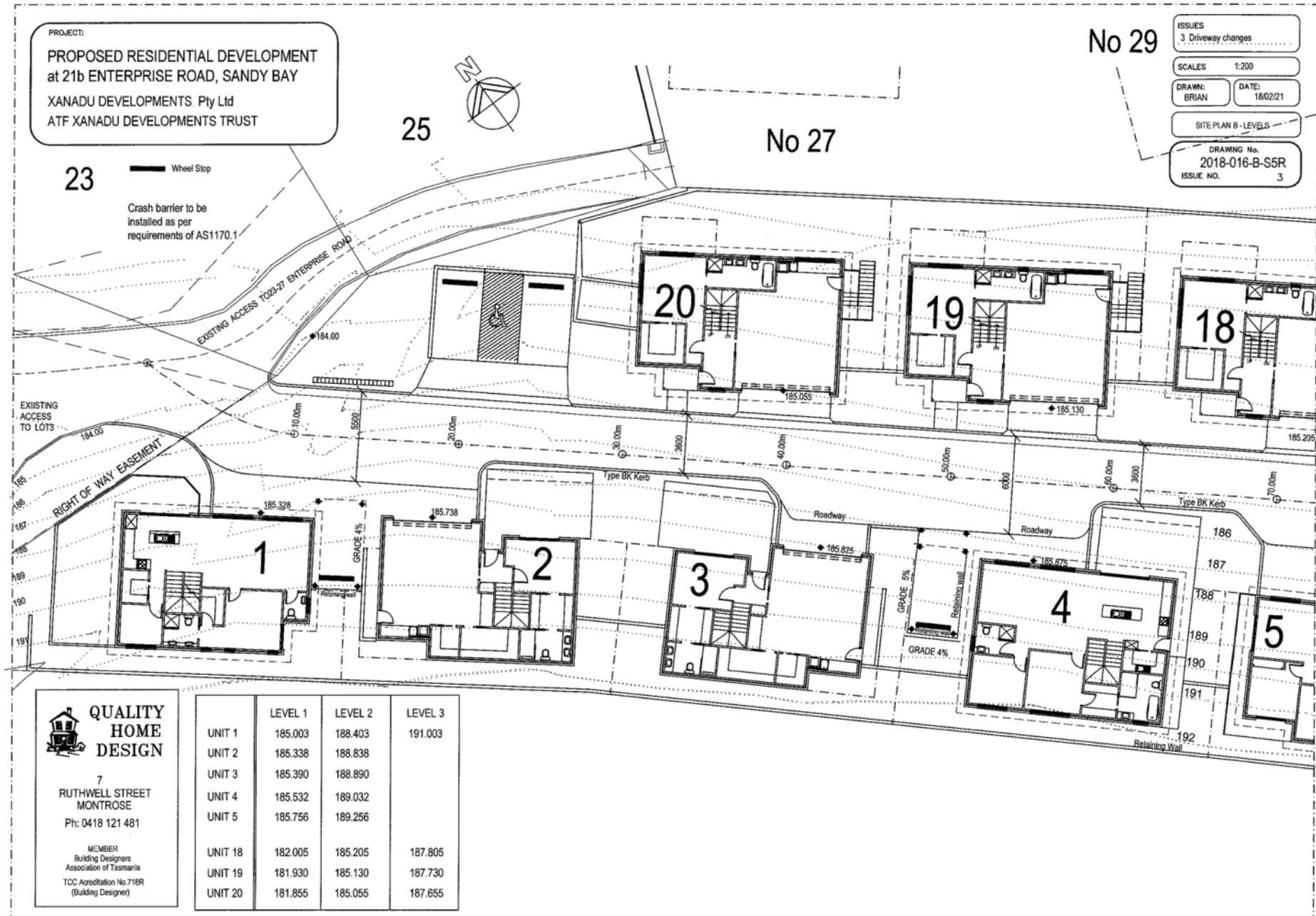
**QUALITY
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DESIGN**

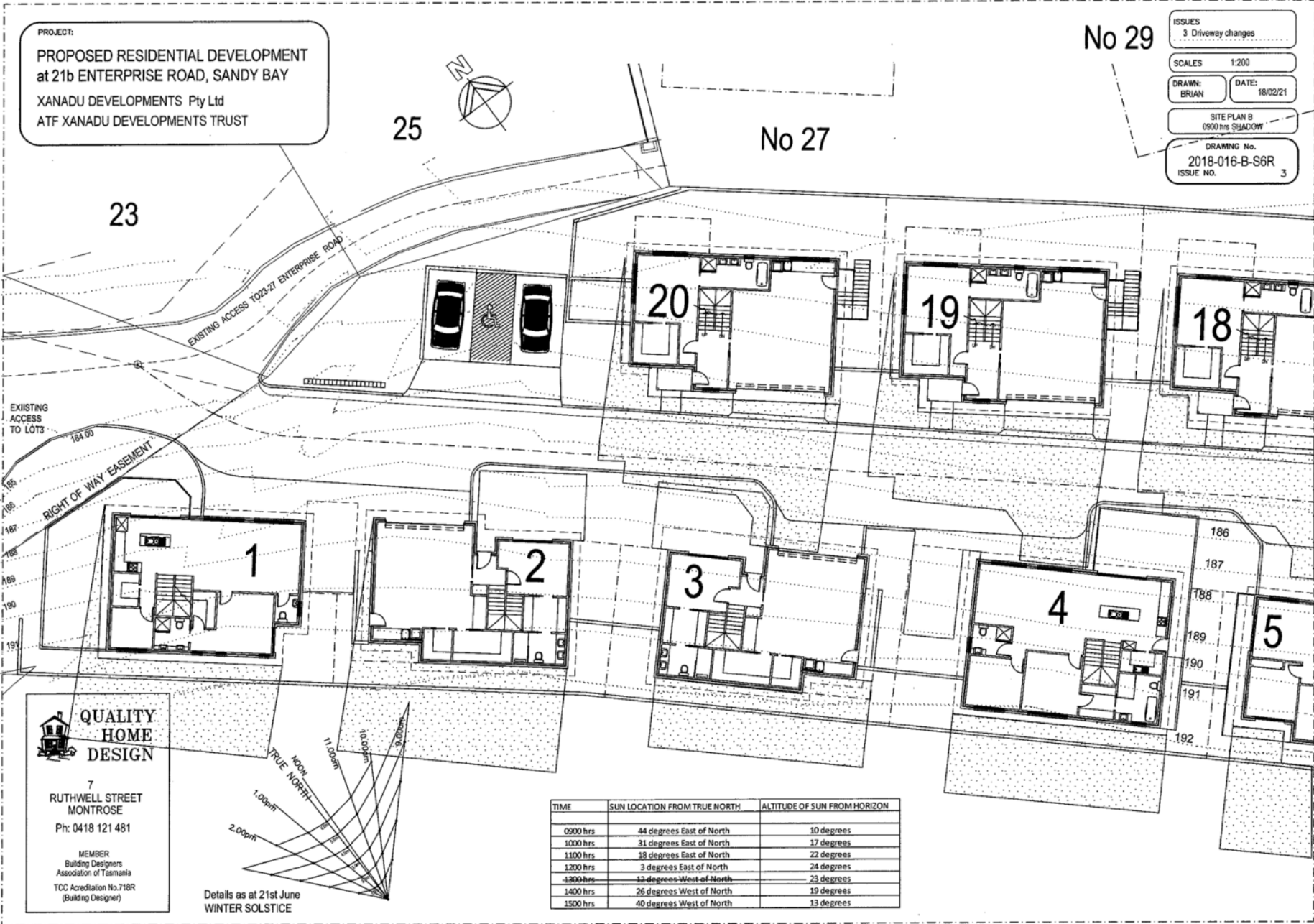
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Ph: 0418 121 481

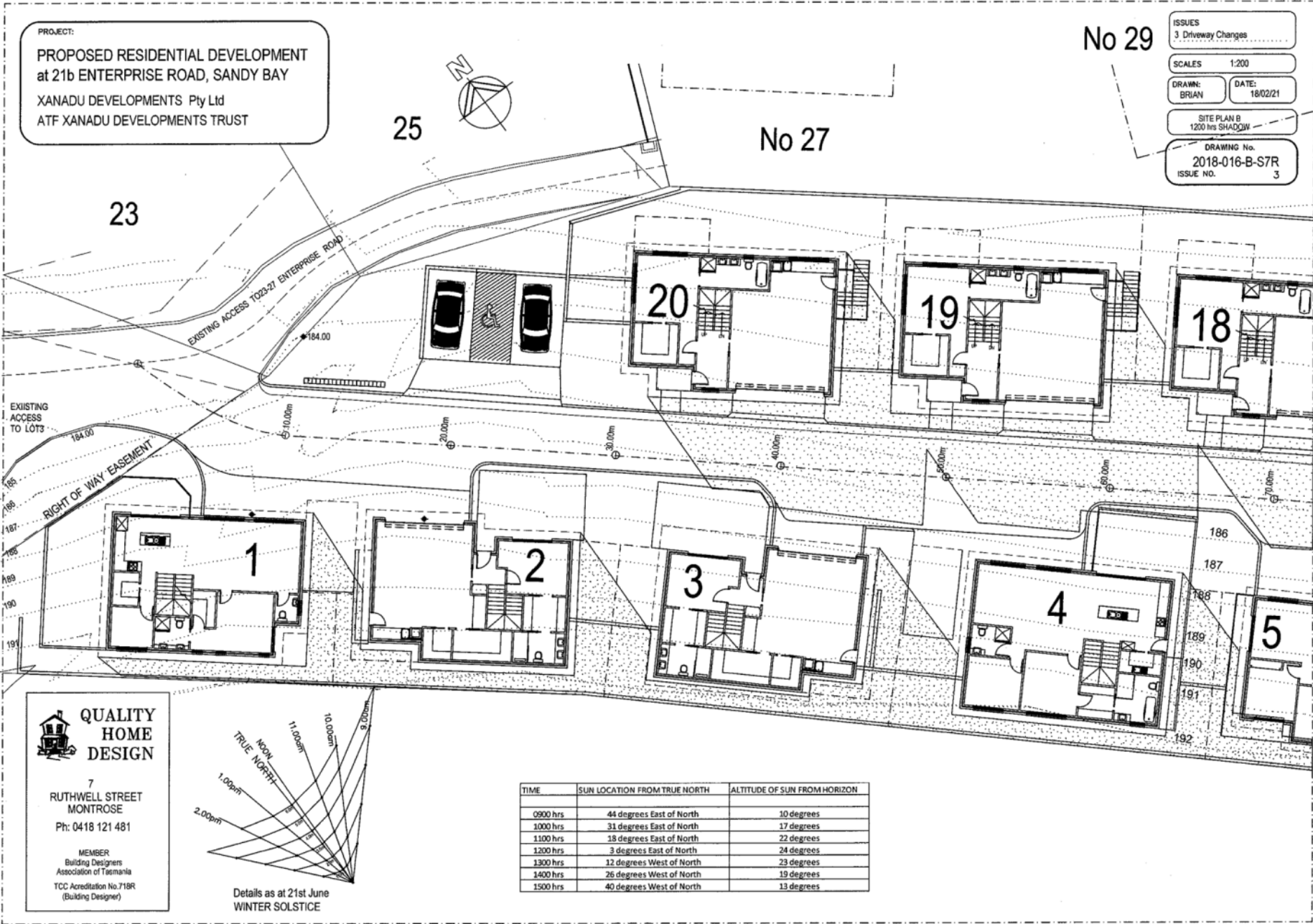
MEMBER
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TCC Accreditation No.718R
(Building Designer)

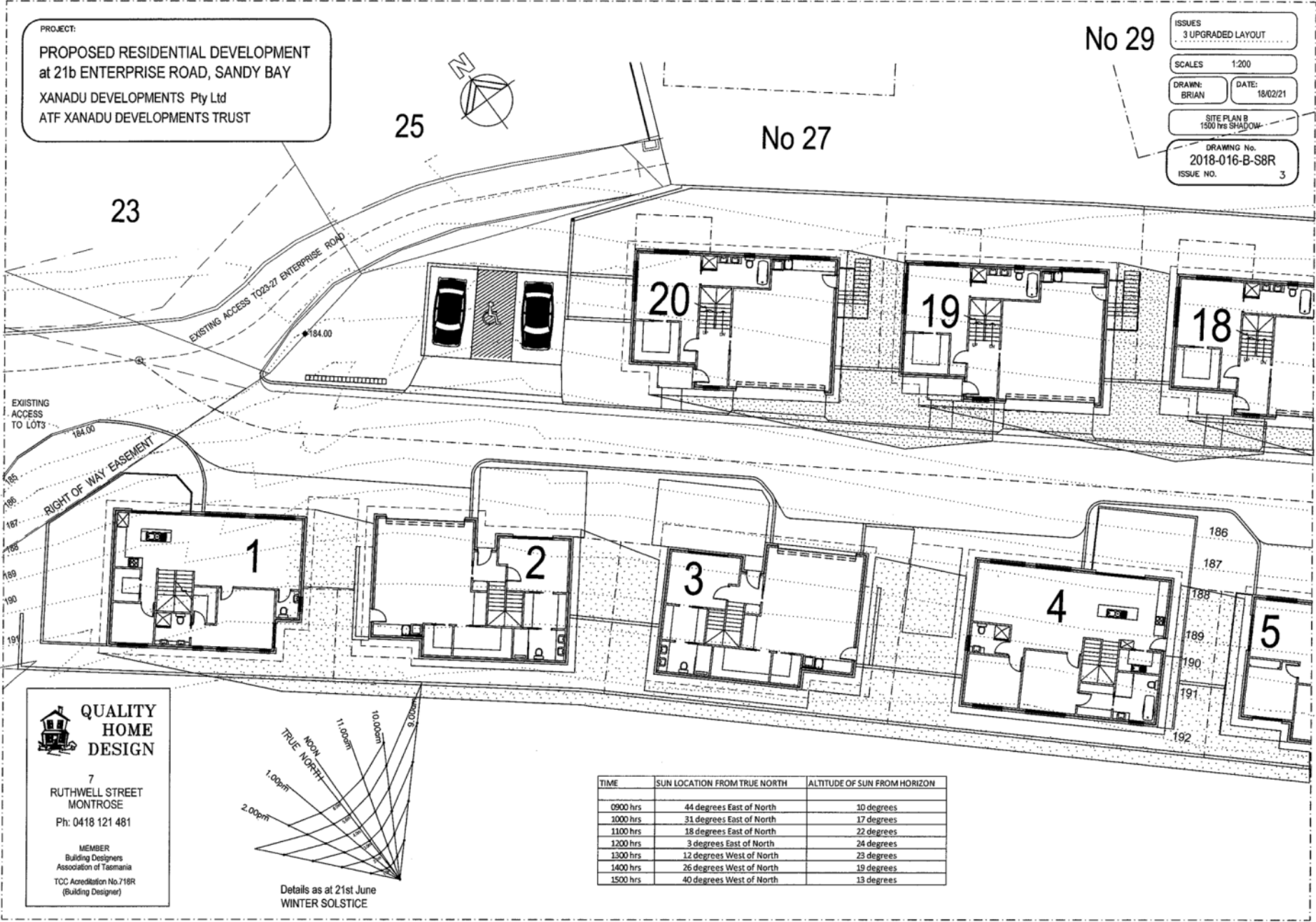


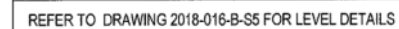


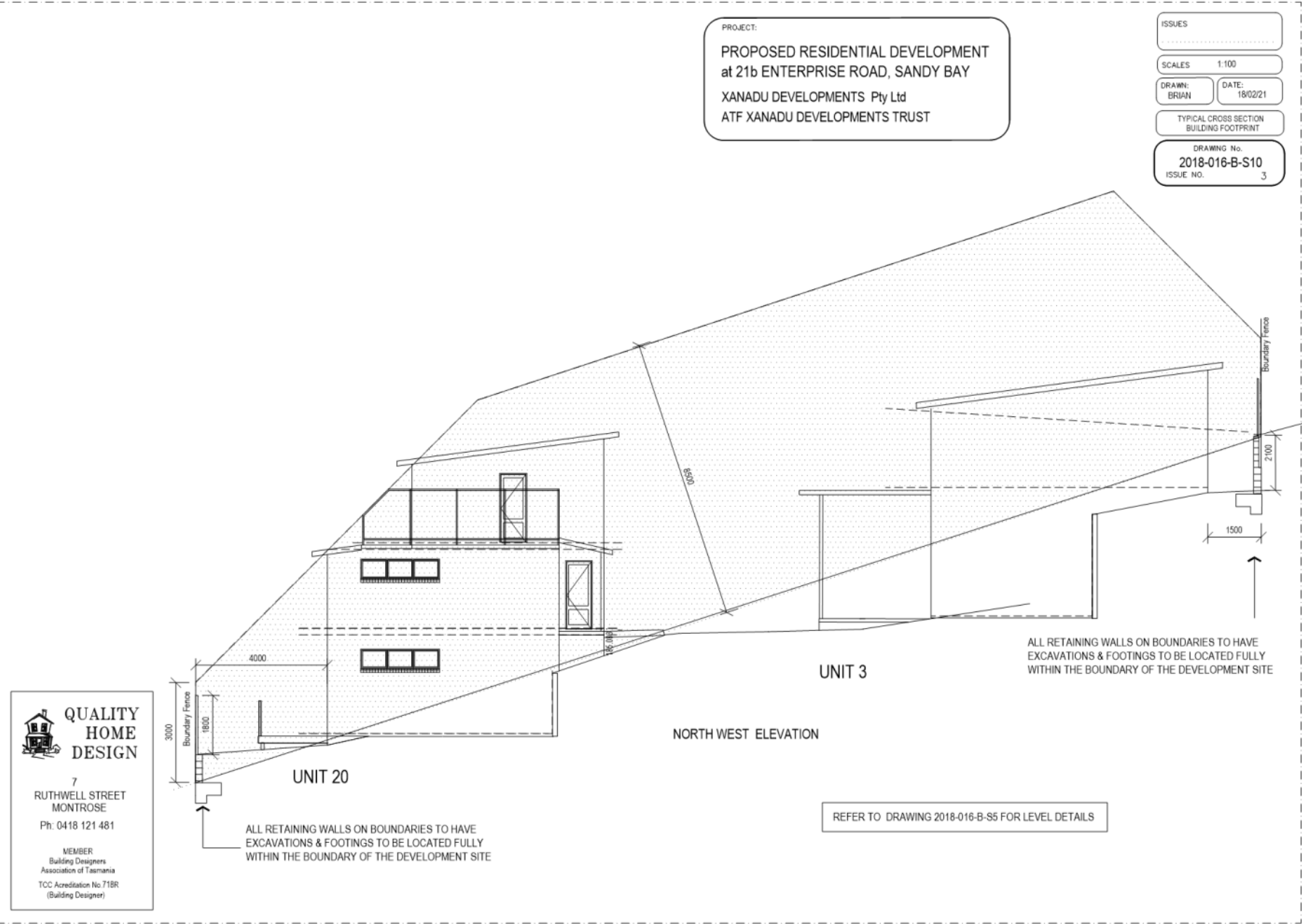












PROPOSED DEVELOPMENT
at
No.21b ENTERPRISE ROAD
SANDY BAY

for XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ZONE C
REVISED DOCUMENTATION



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TCC Accreditation No.718R
(Building Designer)
MEMBER
Building Designers
Association of Tasmania

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	1-A	24/01/21	5	LEVEL 1 FLOOR PLAN
2018-016	1-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	1-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	1-D	24/01/21	5	ELEVATIONS
2018-016	2-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	2-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	2-A	18/02/21	5	ELEVATIONS
2018-016	3-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	3-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	3-C	18/02/21	5	ELEVATIONS
2018-016	4-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	4-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	4-C	18/02/21	5	ELEVATIONS
2018-016	5-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	5-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	5-C	18/02/21	5	ELEVATIONS
2018-016	6-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	6-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	6-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	6-D	05/02/20	4	ELEVATIONS
2018-016	7-A	06/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	7-B	06/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	7-C	06/10/19	2	ELEVATIONS
2018-016	8-A	18/02/21	6	LEVEL 1 FLOOR PLAN
2018-016	8-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	8-C	18/02/21	6	ELEVATIONS
2018-016	9-A	18/02/21	3	LEVEL 1 FLOOR PLAN
2018-016	9-B	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	9-C	18/02/21	3	ELEVATIONS
2018-016	10-AR	18/02/21	2	LEVEL 1 FLOOR PLAN
2018-016	10-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	10-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	10-DR	18/02/21	2	ELEVATIONS
2018-016	11-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	11-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	11-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	11-DR	18/02/21	3	ELEVATIONS
2018-016	12-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	12-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	12-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	12-DR	18/02/21	3	ELEVATIONS
2018-016	13-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	13-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	13-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	13-DR	18/02/21	3	ELEVATIONS

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	14-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	14-BR	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	14-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	14-DR	18/02/21	3	ELEVATIONS
2018-016	15-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	15-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	15-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	15-DR	24/01/21	2	ELEVATIONS
2018-016	16-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	16-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	16-CR	30/07/20	1	ELEVATIONS
2018-016	17-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	17-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	17-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	17-DR	24/01/21	2	ELEVATIONS
2018-016	18-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	18-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	18-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	18-DR	24/01/21	2	ELEVATIONS
2018-016	19-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	19-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	19-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	19-DR	24/01/21	2	ELEVATIONS
2018-016	20-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	20-BR	24/01/21	2	LEVEL 2 FLOOR PLAN
2018-016	20-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	20-DR	24/01/21	2	ELEVATIONS

NOTE Additional drawings - UNITS 10-14 Building Envelopes - 10-E example

TITLE REFERENCE - VOLUME 175593 FOLIO 6
 OWNER - XANADU DEVELOPMENTS Pty Ltd ATF XANADU DEVELOPMENTS TRUST
 PROPERTY ID 3604782

TOTAL FLOOR AREA OF EACH RESIDENCE - SEE DRAWINGS

DESIGNED WIND SPEED - N3 (50m/s)

SOIL CLASSIFICATION - CLASS - M
 ASSESSED BY J.P. Cumming

CLIMATE ZONE 7 FOR THERMAL DESIGN

CORROSION ENVIRONMENT - NO

BUSHFIRE PRONE AREA - YES - See REPORT

ALPINE AREA - NO ASSESSMENT REQUIRED

SITE ASSESSMENT - NO KNOWN HAZARDS

GENERAL NOTE:
 All windows to Units 1-9, facing south west boundary
 are to be glazed with obscure glass throughout in
 accordance with the Interim Planning Scheme, to
 prevent overlooking of adjacent property.

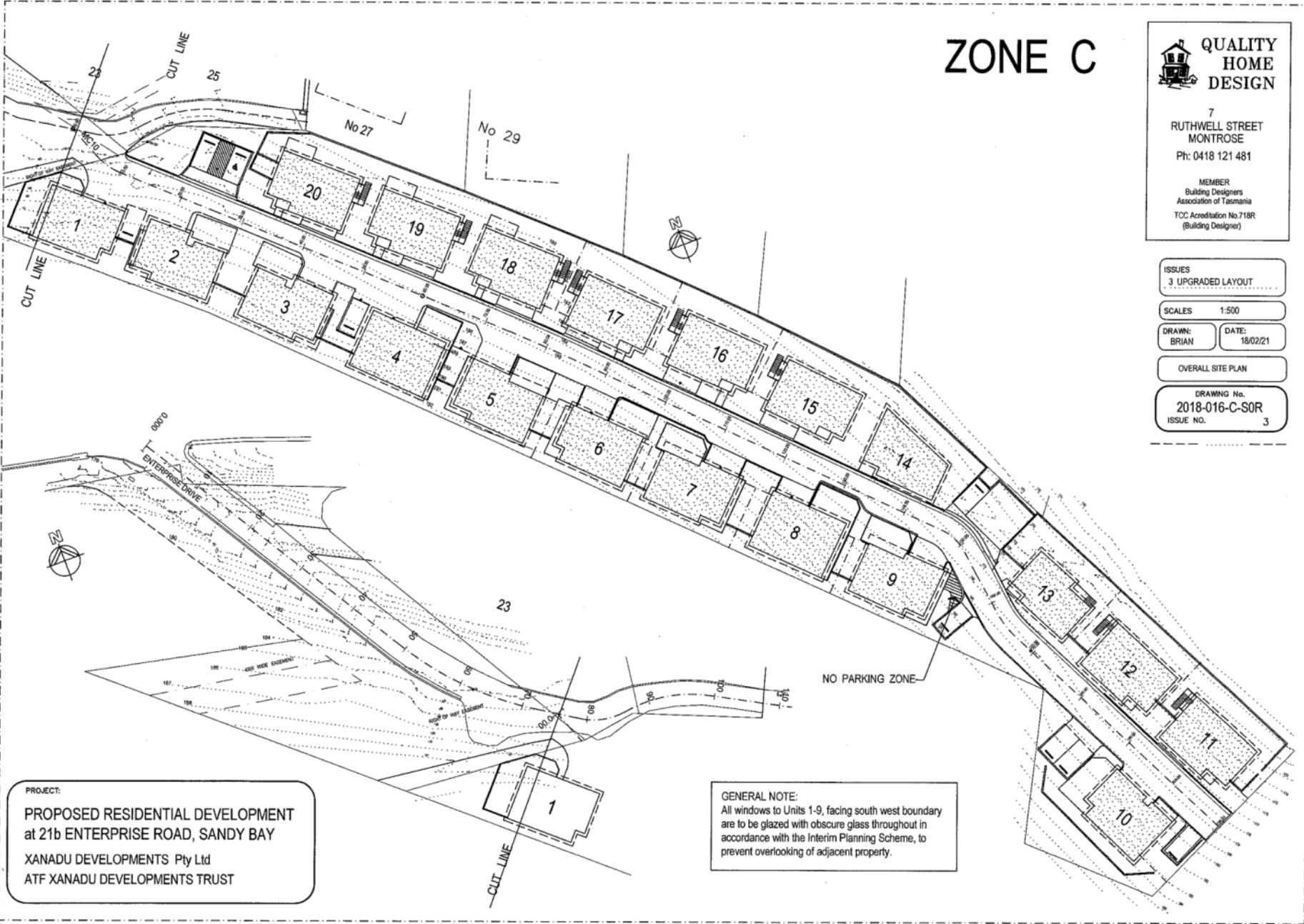


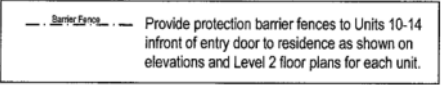
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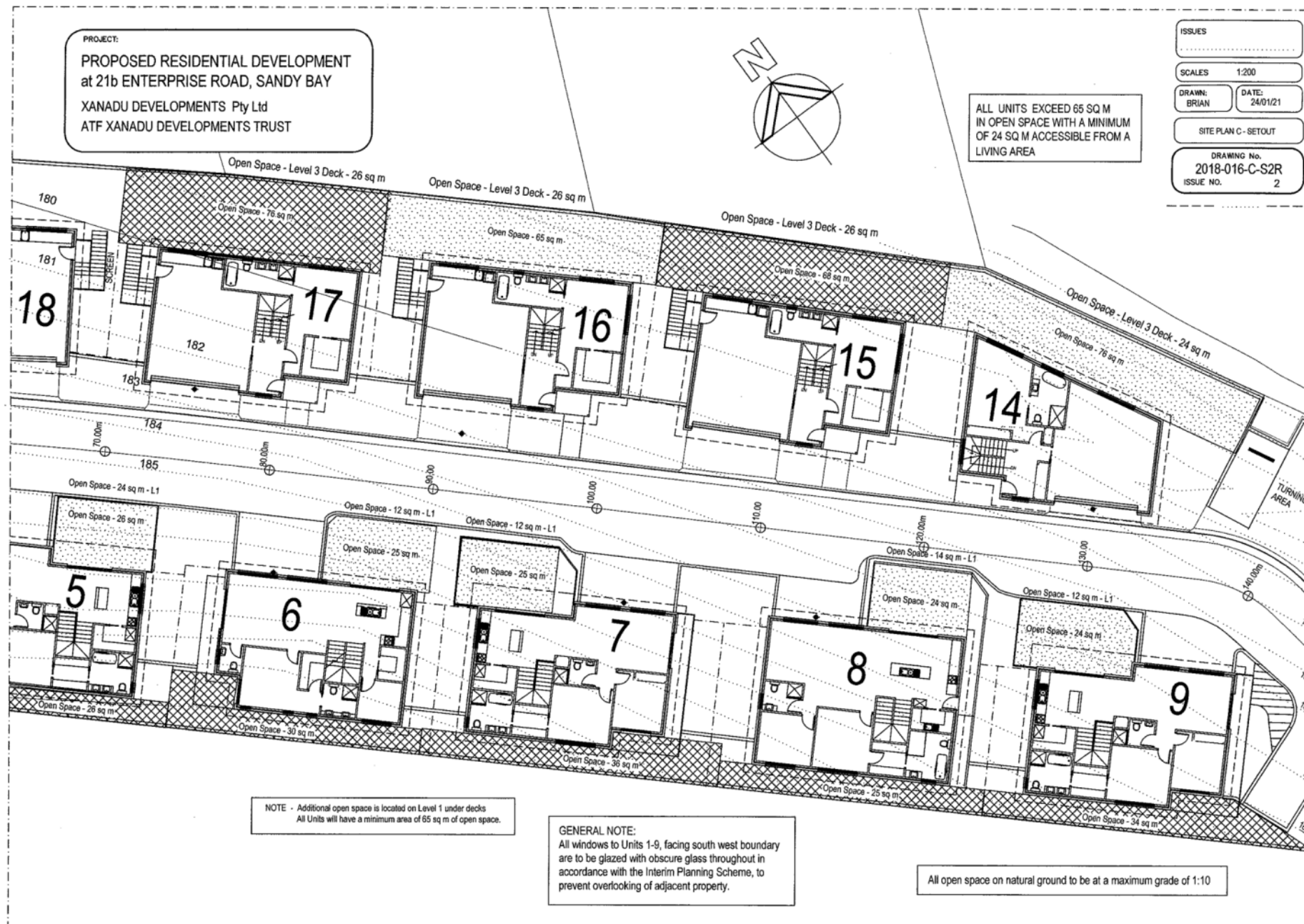
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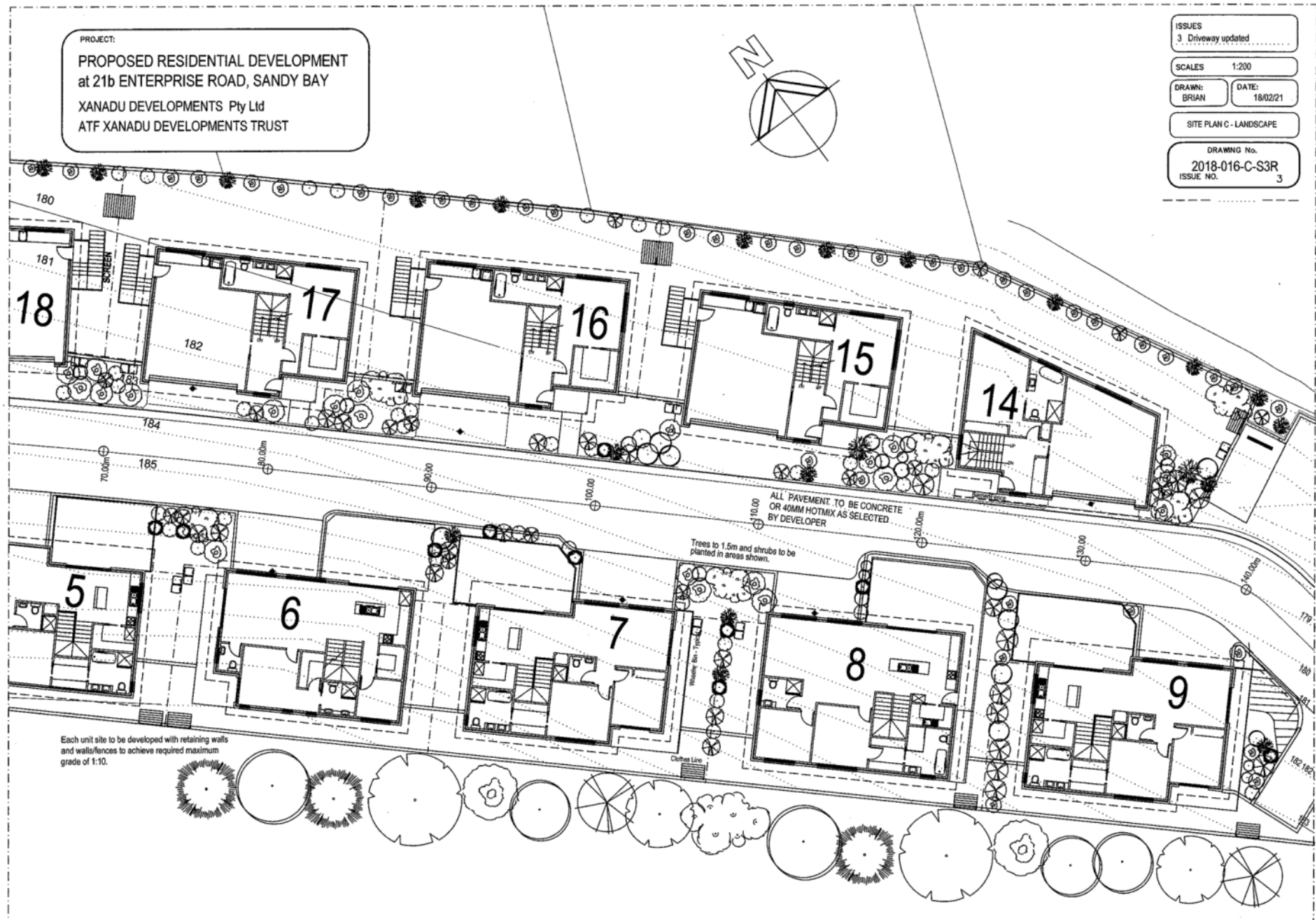
BRIAN RICHARDSON
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PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	SOR	18/02/21	3	OVERALL SITE PLAN
2018-016	A-S1R	18/02/21	2	SITE LAYOUT PLAN - ZONE A
2018-016	SHADOW	18/02/21	3	SITE LAYOUT PLAN - ZONE A
2018-016	LS-R	18/02/21	3	LONGITUDINAL SECTION
2018-016	PHOTOS	03/09/20	1	LOCATION PHOTOS
2018-016	B-SOR	18/02/21	3	ZONE B SITE PLAN
2018-016	B-S1R	18/02/21	3	ZONE B SETOUT PLAN
2018-016	B-S2R	18/02/21	3	ZONE B POS PLAN
2018-016	B-S3R	18/02/21	3	ZONE B LANDSCAPE PLAN
2018-016	B-S3a	18/02/21	3	LANDSCAPE NOTES
2018-016	B-S3-ST	18/02/21	3	ZONE B STRATUM BOUNDARIES
2018-016	B-S4R	18/02/21	3	CROSS SECTION LOCATIONS
2018-016	B-S4-1R	18/02/21	3	CROSS SECTION - UNIT 1
2018-016	B-S4-2R	18/02/21	3	CROSS SECTION - UNITS 3-20
2018-016	B-S4-3R	18/02/21	3	CROSS SECTION - UNITS 4-19
2018-016	B-S4-4R	18/02/21	3	CROSS SECTION - UNITS 5-18
2018-016	B-S4-5R	18/02/21	3	CROSS SECTION - UNITS 6-17
2018-016	B-S4-6R	18/02/21	3	CROSS SECTION - UNITS 7-16
2018-016	B-S4-7R	18/02/21	3	CROSS SECTION - UNITS 8-15
2018-016	B-S4-8R	18/02/21	3	CROSS SECTION - UNIT 14
2018-016	B-S4-9R	18/02/21	3	CROSS SECTION - UNIT 9
2018-016	B-S4-10R	18/02/21	3	CROSS SECTION - UNITS 10-11
2018-016	B-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	B-S6R	18/02/21	3	ZONE B - 0900 hrs SHADOWS
2018-016	B-S6R	18/02/21	3	ZONE B - 1200 hrs SHADOWS
2018-016	B-S8R	18/02/21	3	ZONE B - 1500 hrs SHADOWS
2018-016	B-S9R	18/02/21	3	TYPICAL CROSS SECTION
2018-016	B-S10R	18/02/21	3	TYPICAL BUILDING FOOTPRINT
2018-016	C-SOR	18/02/21	3	ZONE C SITE PLAN
2018-016	C-S1R	18/02/21	3	ZONE C SETOUT PLAN
2018-016	C-S2R	18/02/21	3	ZONE C POS PLAN
2018-016	C-S3R	18/02/21	3	ZONE C LANDSCAPE PLAN
2018-016	C-S3Ra	18/02/21	3	ZONE C Typical Wheelie Bin location
2018-016	C-S3-ST	18/02/21	3	ZONE C STRATUM BOUNDARIES
2018-016	C-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	C-S6R	18/02/21	3	ZONE C - 0900 hrs SHADOWS
2018-016	C-S7R	18/02/21	3	ZONE C - 1200 hrs SHADOWS
2018-016	C-S8R	18/02/21	3	ZONE C - 1500 hrs SHADOWS
2018-016	D-SOR	18/02/21	3	ZONE D SITE PLAN
2018-016	D-S1R	18/02/21	3	ZONE D SETOUT PLAN
2018-016	D-S2R	18/02/21	3	ZONE D POS PLAN
2018-016	D-S3R	18/02/21	3	ZONE D LANDSCAPE PLAN
2018-016	D-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	D-S6R	18/02/21	3	ZONE D - 0900 hrs SHADOWS
2018-016	D-S7R	18/02/21	3	ZONE D - 1200 hrs SHADOWS
2018-016	D-S8R	18/02/21	3	ZONE D - 1500 hrs SHADOWS

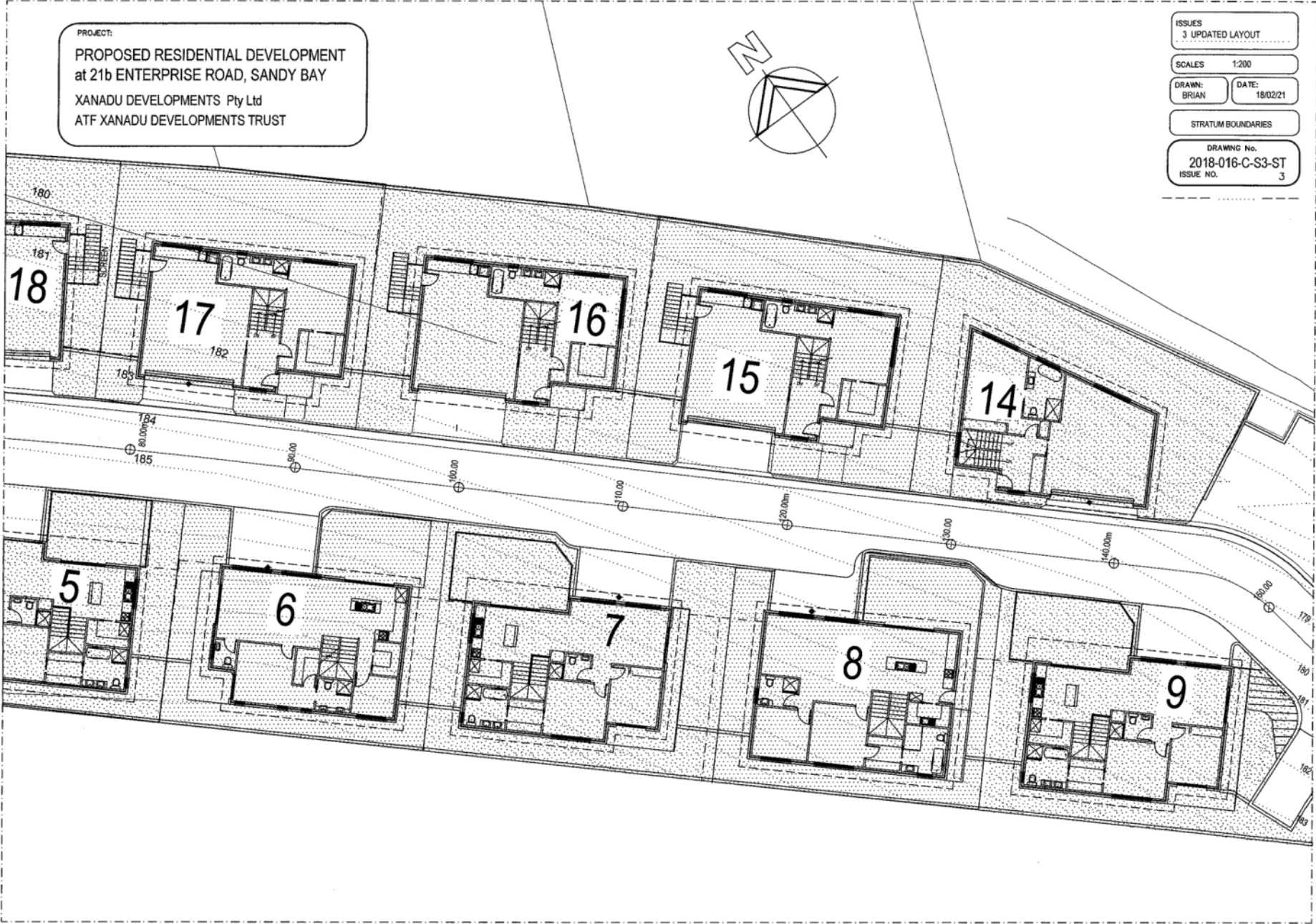


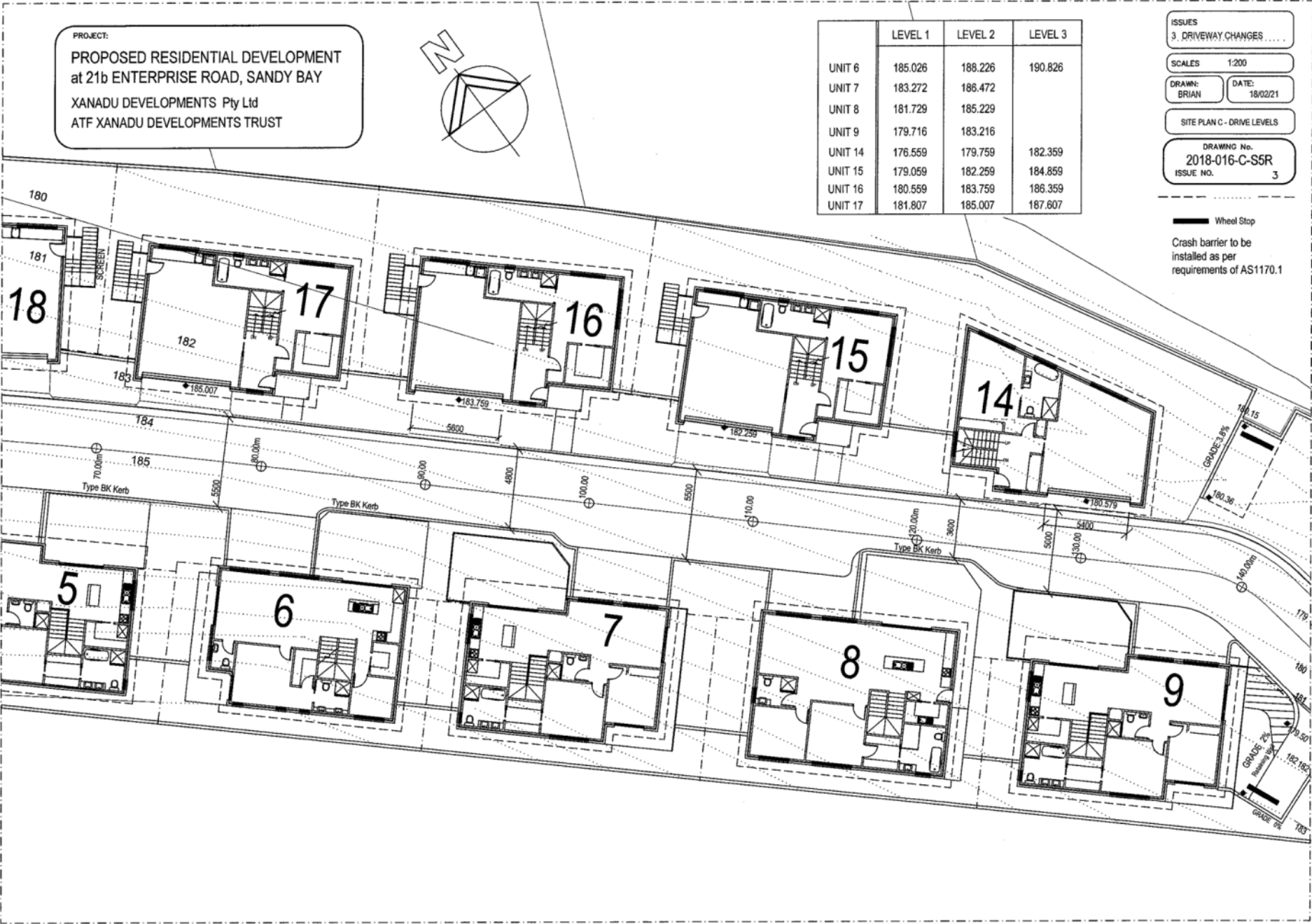


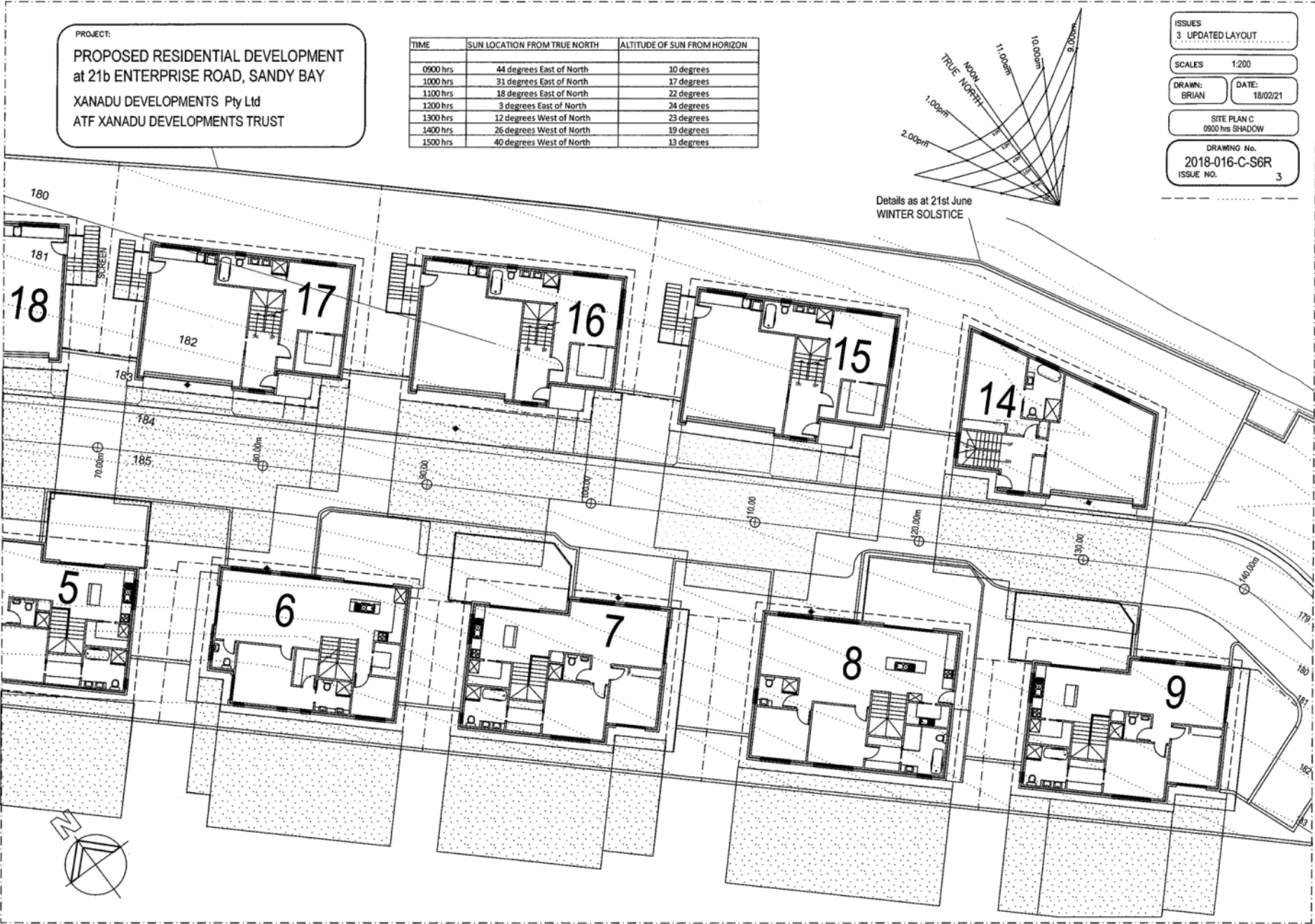


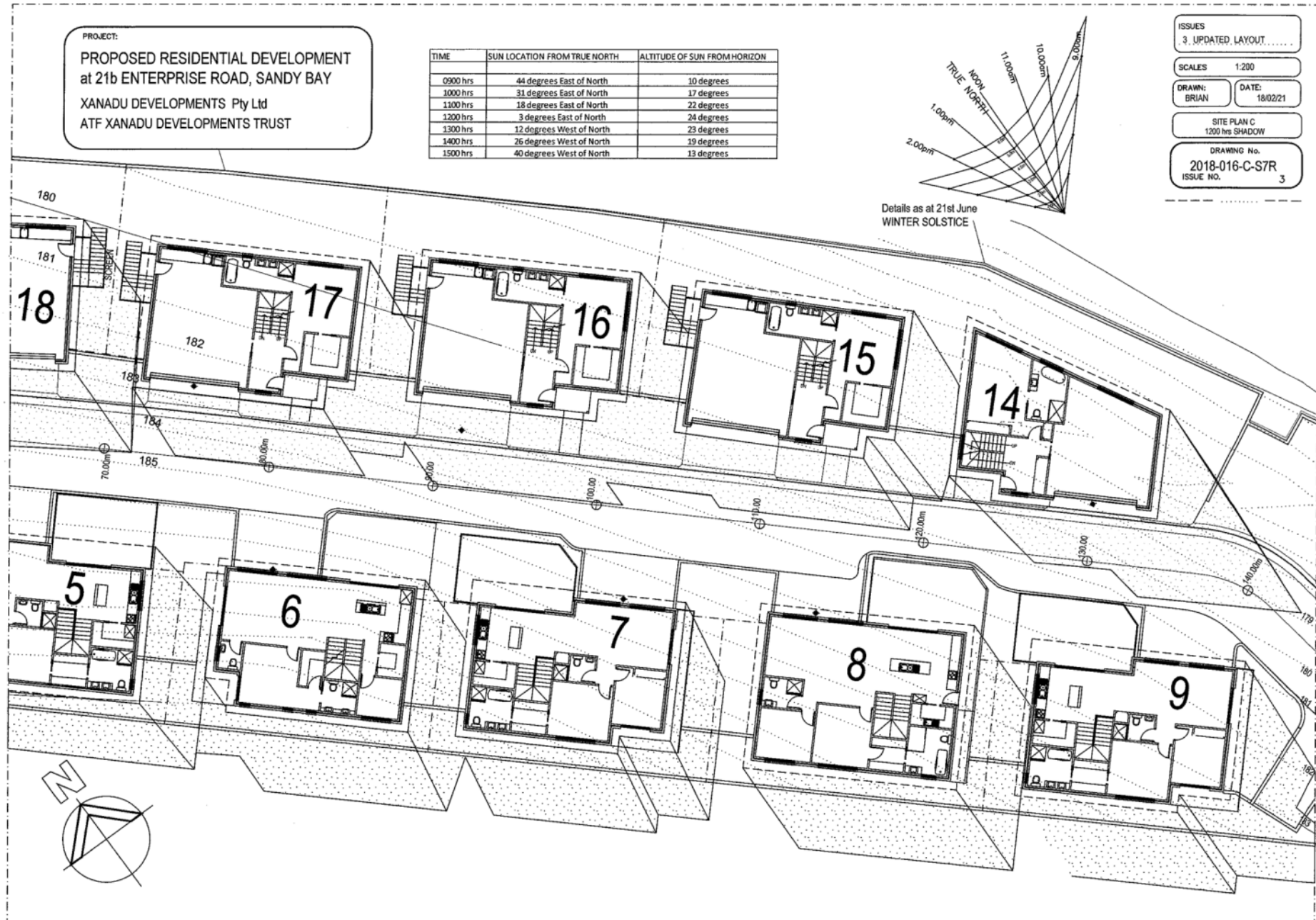


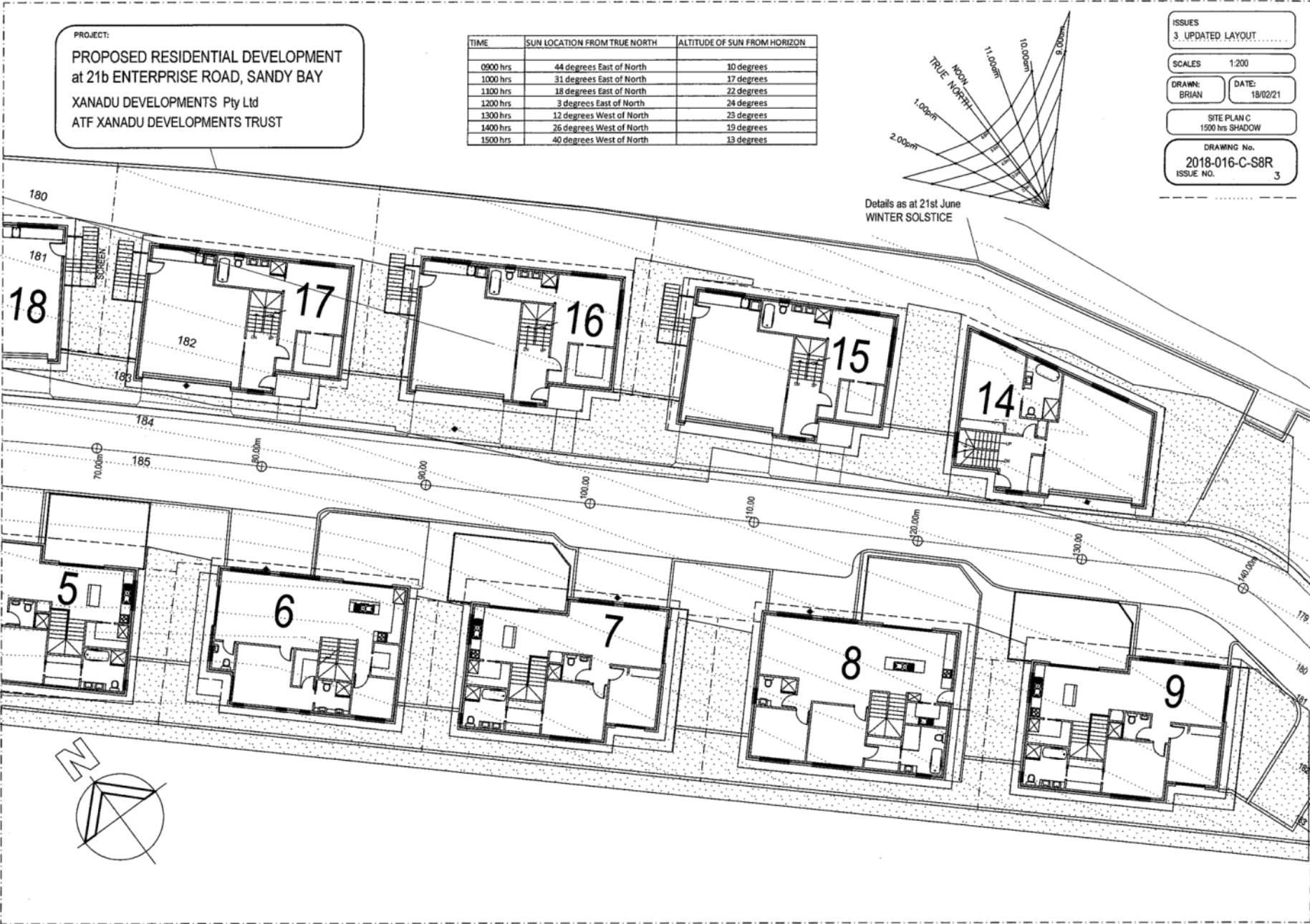












PROPOSED DEVELOPMENT
at

No.21b ENTERPRISE ROAD

SANDY BAY

for XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

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BRIAN RICHARDSON
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Association of Tasmania

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	1-A	24/01/21	5	LEVEL 1 FLOOR PLAN
2018-016	1-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	1-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	1-D	24/01/21	5	ELEVATIONS
2018-016	2-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	2-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	2-A	18/02/21	5	ELEVATIONS
2018-016	3-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	3-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	3-C	18/02/21	5	ELEVATIONS
2018-016	4-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	4-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	4-C	18/02/21	5	ELEVATIONS
2018-016	5-A	18/02/21	5	LEVEL 1 FLOOR PLAN
2018-016	5-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	5-C	18/02/21	5	ELEVATIONS
2018-016	6-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	6-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	6-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	6-D	05/02/20	4	ELEVATIONS
2018-016	7-A	06/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	7-B	06/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	7-C	06/10/19	2	ELEVATIONS
2018-016	8-A	18/02/21	6	LEVEL 1 FLOOR PLAN
2018-016	8-B	18/02/21	5	LEVEL 2 FLOOR PLAN
2018-016	8-C	18/02/21	6	ELEVATIONS
2018-016	9-A	18/02/21	3	LEVEL 1 FLOOR PLAN
2018-016	9-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	9-C	18/02/21	3	ELEVATIONS
2018-016	10-AR	18/02/21	2	LEVEL 1 FLOOR PLAN
2018-016	10-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	10-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	10-DR	18/02/21	2	ELEVATIONS
2018-016	11-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	11-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	11-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	11-DR	18/02/21	3	ELEVATIONS
2018-016	12-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	12-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	12-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	12-DR	18/02/21	3	ELEVATIONS
2018-016	13-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	13-BR	18/02/21	2	LEVEL 2 FLOOR PLAN
2018-016	13-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	13-DR	18/02/21	3	ELEVATIONS

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	14-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	14-BR	18/02/21	3	LEVEL 2 FLOOR PLAN
2018-016	14-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	14-DR	18/02/21	3	ELEVATIONS
2018-016	15-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	15-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	15-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	15-DR	24/01/21	2	ELEVATIONS
2018-016	16-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	16-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	16-CR	30/07/20	1	ELEVATIONS
2018-016	17-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	17-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	17-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	17-DR	24/01/21	2	ELEVATIONS
2018-016	18-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
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2018-016	18-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	18-DR	24/01/21	2	ELEVATIONS
2018-016	19-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	19-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	19-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	19-DR	24/01/21	2	ELEVATIONS
2018-016	20-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	20-BR	24/01/21	2	LEVEL 2 FLOOR PLAN
2018-016	20-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	20-DR	24/01/21	2	ELEVATIONS

NOTE Additional drawings - UNITS 10-14 Building Envelopes - 10-E example

TITLE REFERENCE - VOLUME 175593 FOLIO 6
 OWNER - XANADU DEVELOPMENTS Pty Ltd ATF XANADU DEVELOPMENTS TRUST
 PROPERTY ID 3604782

TOTAL FLOOR AREA OF EACH RESIDENCE - SEE DRAWINGS

DESIGNED WIND SPEED - N3 (50m/s)

SOIL CLASSIFICATION - CLASS - M
 ASSESSED BY J.P. Cumming

CLIMATE ZONE 7 FOR THERMAL DESIGN
 CORROSION ENVIRONMENT - NO

BUSHFIRE PRONE AREA - YES - See REPORT

ALPINE AREA - NO ASSESSMENT REQUIRED

SITE ASSESSMENT - NO KNOWN HAZARDS

GENERAL NOTE:

All windows to Units 1-9, facing south west boundary are to be glazed with obscure glass throughout in accordance with the Interim Planning Scheme, to prevent overlooking of adjacent property.



**QUALITY
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DESIGN**

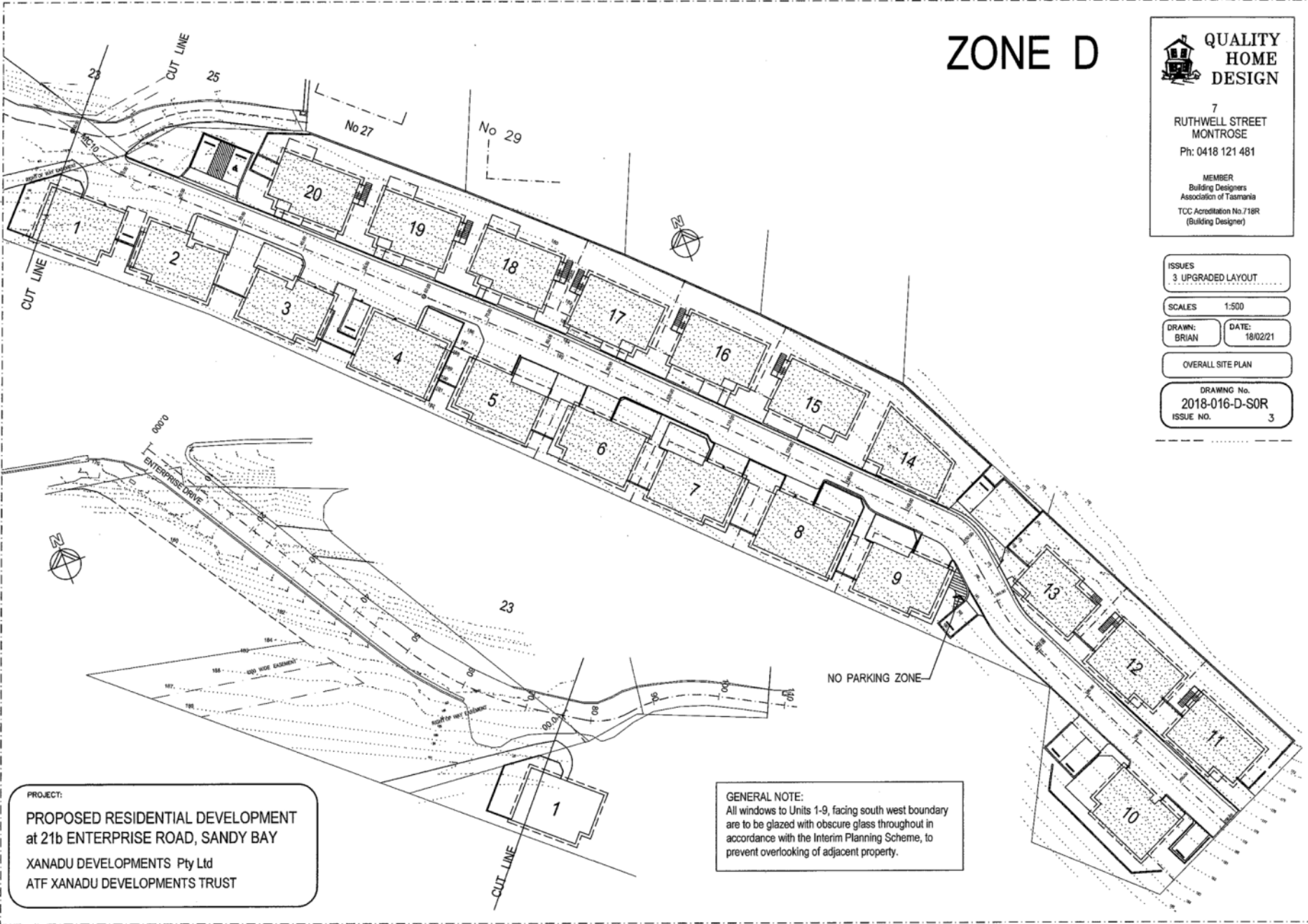
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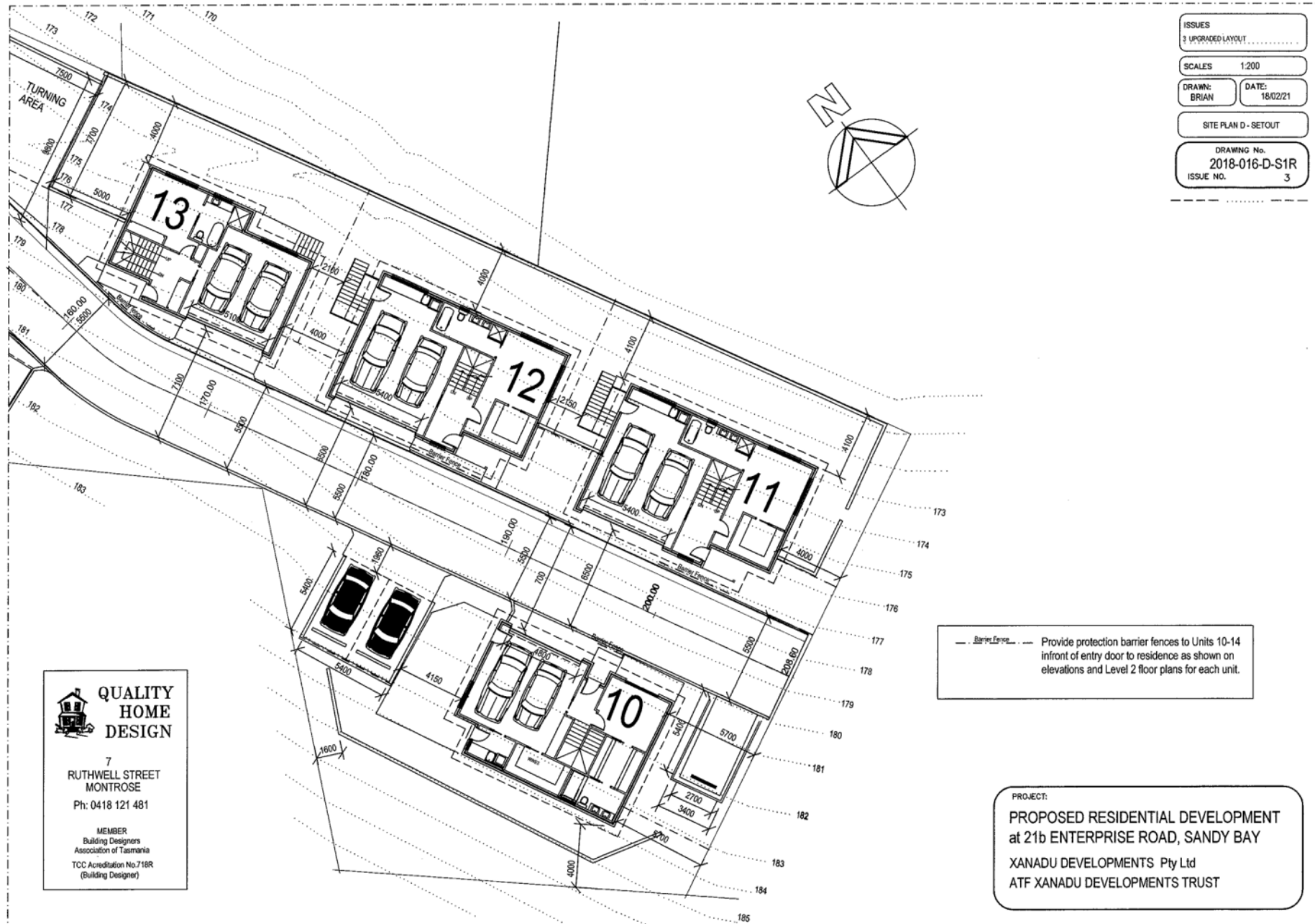
RUTHWELL STREET
MONTROSE

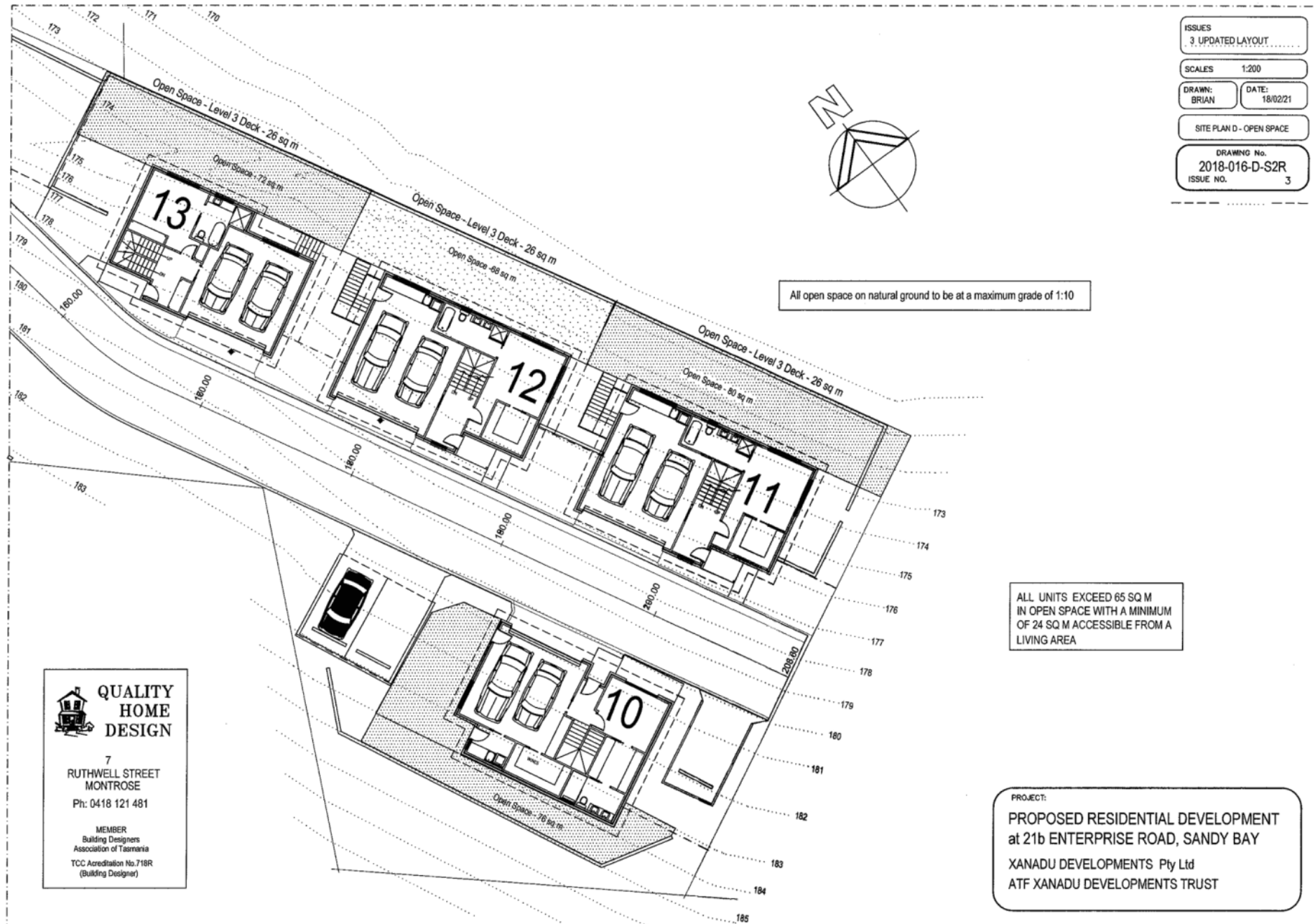
Ph: 0418 121 481

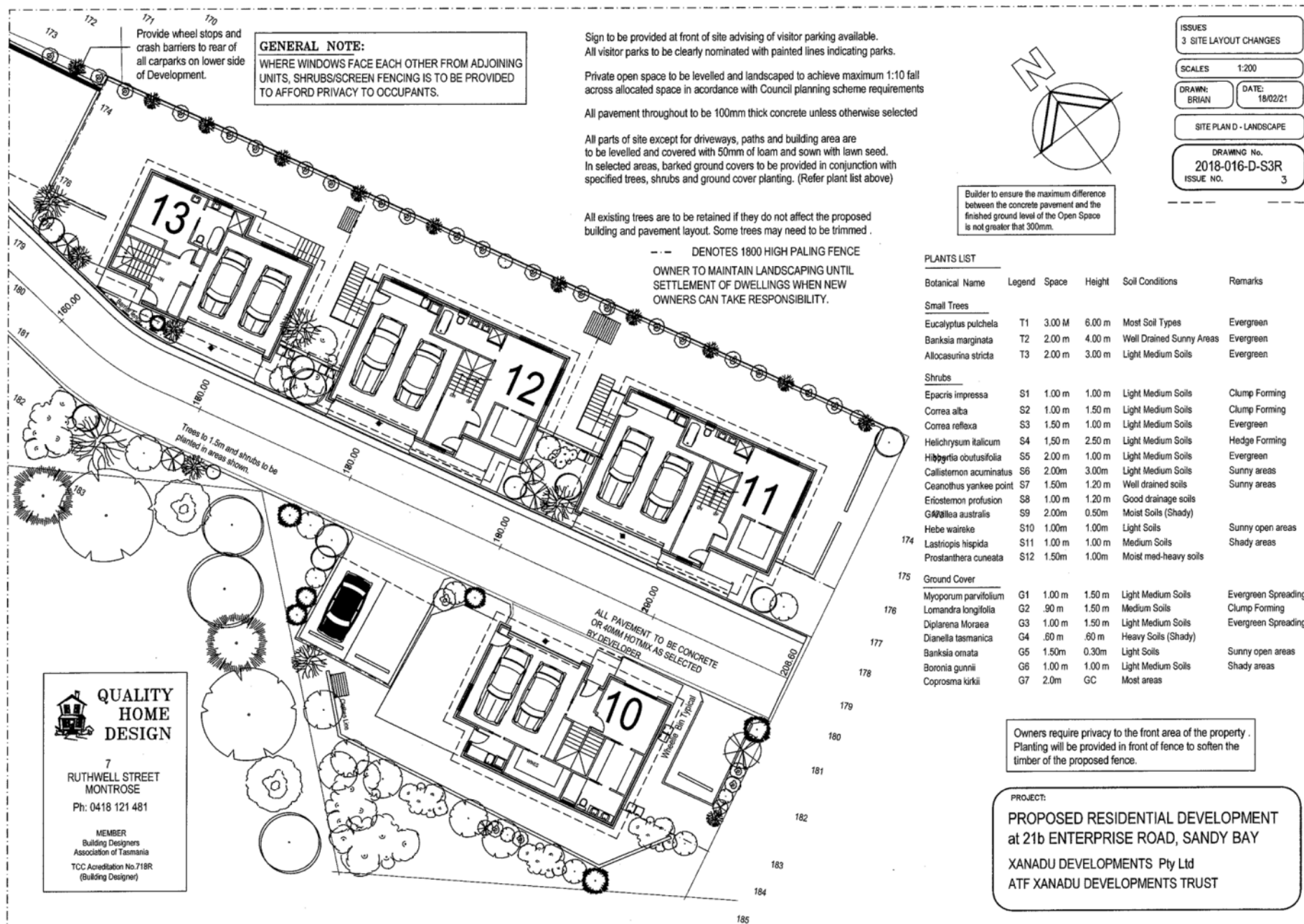
BRIAN RICHARDSON
 TCC Accreditation No. 718R
 (Building Designer)
 MEMBER
 Building Designers
 Association of Tasmania

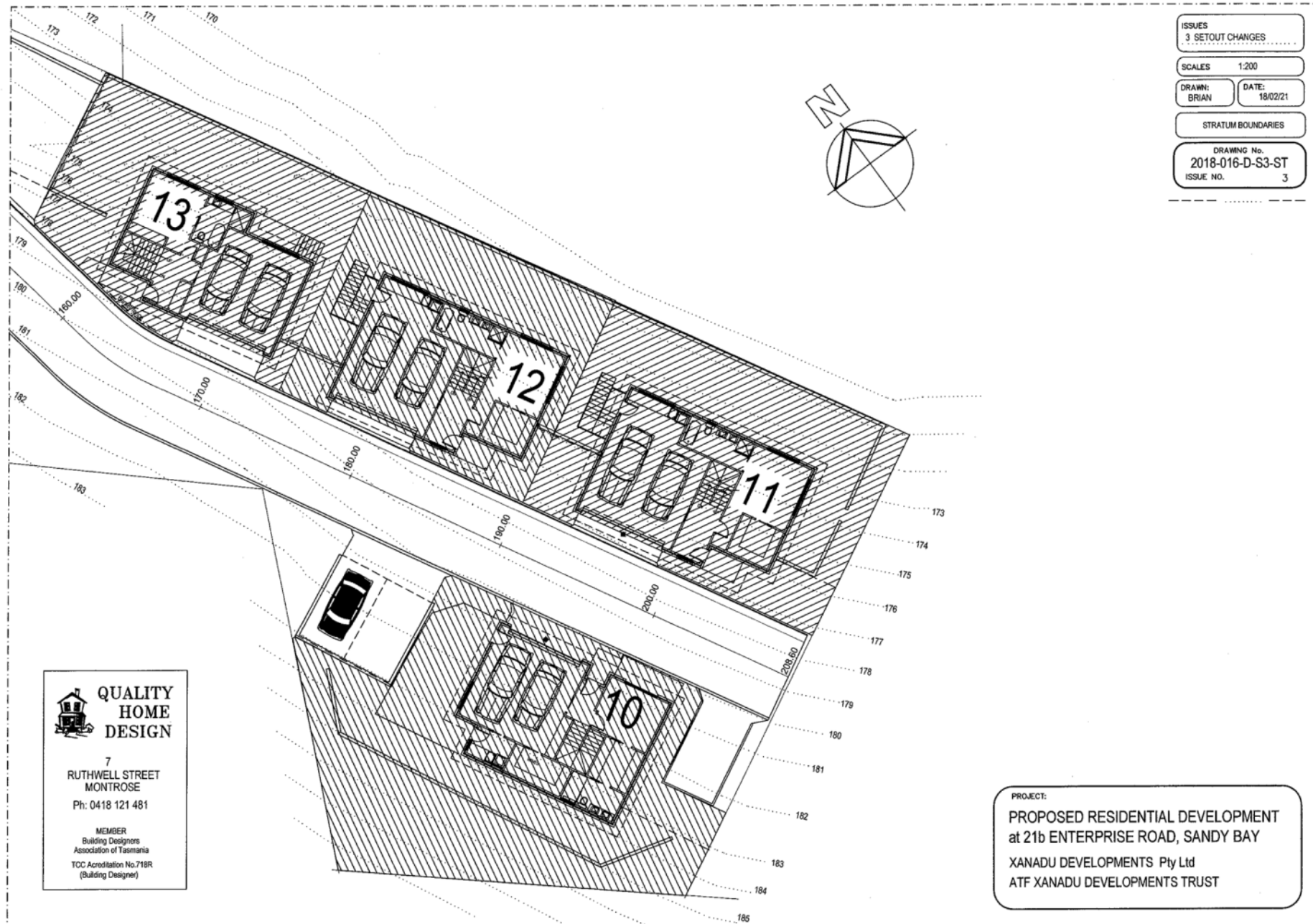
PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	SOR	18/02/21	3	OVERALL SITE PLAN
2018-016	A-S1R	18/02/21	2	SITE LAYOUT PLAN - ZONE A
2018-016	SHADOW	18/02/21	3	SITE LAYOUT PLAN - ZONE A
2018-016	LS-R	18/02/21	3	LONGITUDINAL SECTION
2018-016	PHOTOS	03/09/20	1	LOCATION PHOTOS
2018-016				
2018-016	B-SOR	18/02/21	3	ZONE B SITE PLAN
2018-016	B-S1R	18/02/21	3	ZONE B SETOUT PLAN
2018-016	B-S2R	18/02/21	3	ZONE B POS PLAN
2018-016	B-S3R	18/02/21	3	ZONE B LANDSCAPE PLAN
2018-016	B-S3a	18/02/21	3	LANDSCAPE NOTES
2018-016	B-S3-ST	18/02/21	3	ZONE B STRATUM BOUNDARIES
2018-016	B-S4R	18/02/21	3	CROSS SECTION LOCATIONS
2018-016	B-S4-1R	18/02/21	3	CROSS SECTION - UNIT 1
2018-016	B-S4-2R	18/02/21	3	CROSS SECTION - UNITS 3-20
2018-016	B-S4-3R	18/02/21	3	CROSS SECTION - UNITS 4-19
2018-016	B-S4-4R	18/02/21	3	CROSS SECTION - UNITS 5-18
2018-016	B-S4-5R	18/02/21	3	CROSS SECTION - UNITS 6-17
2018-016	B-S4-6R	18/02/21	3	CROSS SECTION - UNITS 7-16
2018-016	B-S4-7R	18/02/21	3	CROSS SECTION - UNITS 8-15
2018-016	B-S4-8R	18/02/21	3	CROSS SECTION - UNIT 14
2018-016	B-S4-9R	18/02/21	3	CROSS SECTION - UNIT 9
2018-016	B-S4-10R	18/02/21	3	CROSS SECTION - UNITS 10-11
2018-016	B-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	B-S6R	18/02/21	3	ZONE B - 0900 hrs SHADOWS
2018-016	B-S6R	18/02/21	3	ZONE B - 1200 hrs SHADOWS
2018-016	B-S8R	18/02/21	3	ZONE B - 1500 hrs SHADOWS
2018-016	B-S9R	18/02/21	3	TYPICAL CROSS SECTION
2018-016	B-S10R	18/02/21	3	TYPICAL BUILDING FOOTPRINT
2018-016				
2018-016	C-SOR	18/02/21	3	ZONE C SITE PLAN
2018-016	C-S1R	18/02/21	3	ZONE C SETOUT PLAN
2018-016	C-S2R	18/02/21	3	ZONE C POS PLAN
2018-016	C-S3R	18/02/21	3	ZONE C LANDSCAPE PLAN
2018-016	C-S3Ra	18/02/21	3	ZONE C Typical Wheelie Bin location
2018-016	C-S3-ST	18/02/21	3	ZONE C STRATUM BOUNDARIES
2018-016	C-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	C-S6R	18/02/21	3	ZONE C - 0900 hrs SHADOWS
2018-016	C-S7R	18/02/21	3	ZONE C - 1200 hrs SHADOWS
2018-016	C-S8R	18/02/21	3	ZONE C - 1500 hrs SHADOWS
2018-016				
2018-016	D-SOR	18/02/21	3	ZONE D SITE PLAN
2018-016	D-S1R	18/02/21	3	ZONE D SETOUT PLAN
2018-016	D-S2R	18/02/21	3	ZONE D POS PLAN
2018-016	D-S3R	18/02/21	3	ZONE D LANDSCAPE PLAN
2018-016	D-S5R	18/02/21	3	SITE PLAN - LEVELS
2018-016	D-S6R	18/02/21	3	ZONE D - 0900 hrs SHADOWS
2018-016	D-S7R	18/02/21	3	ZONE D - 1200 hrs SHADOWS
2018-016	D-S8R	18/02/21	3	ZONE D - 1500 hrs SHADOWS

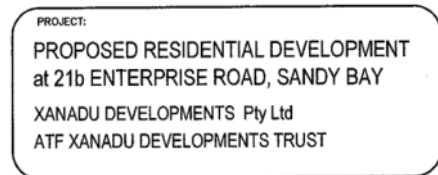


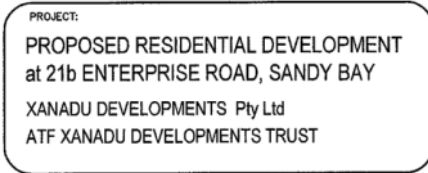


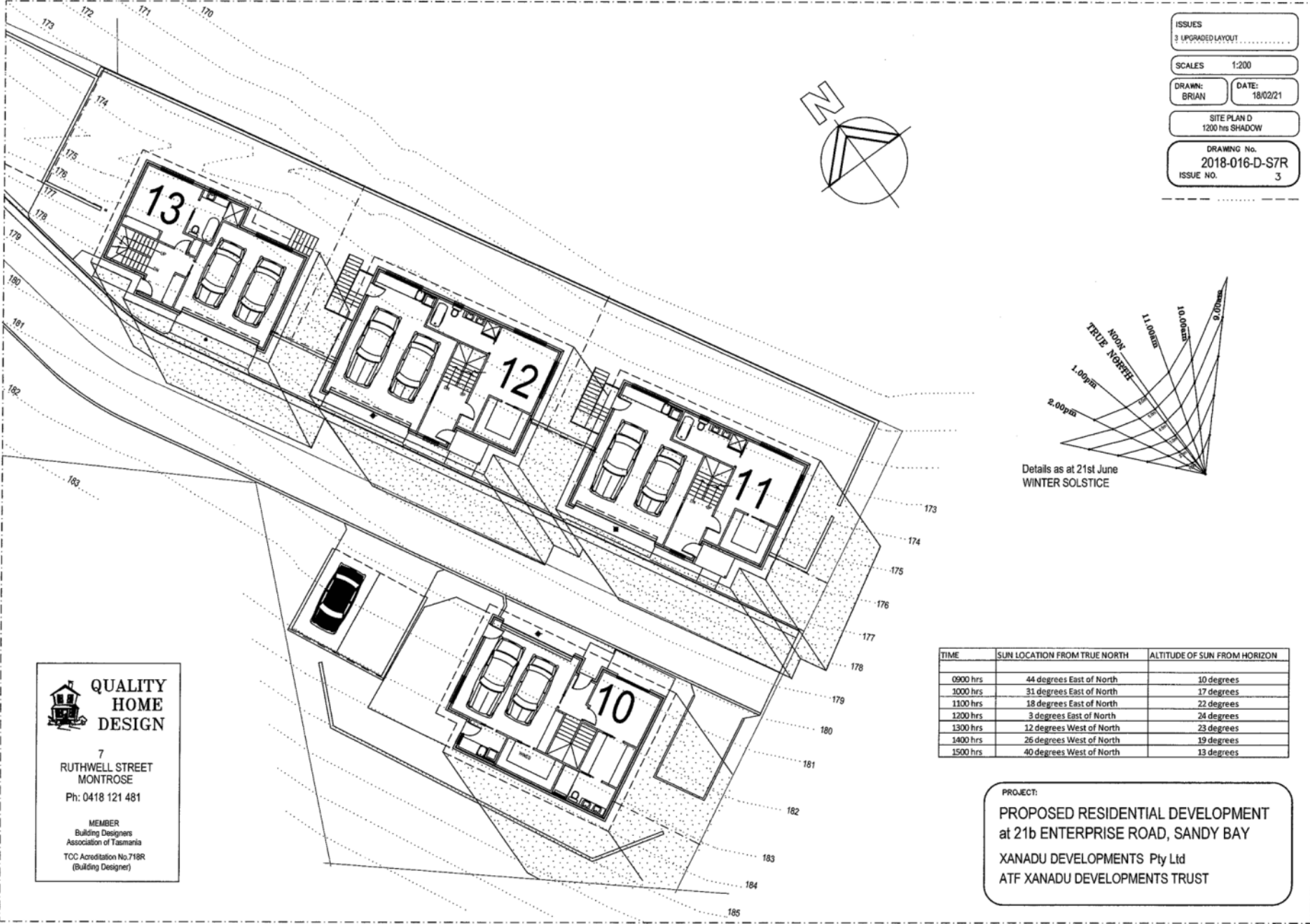


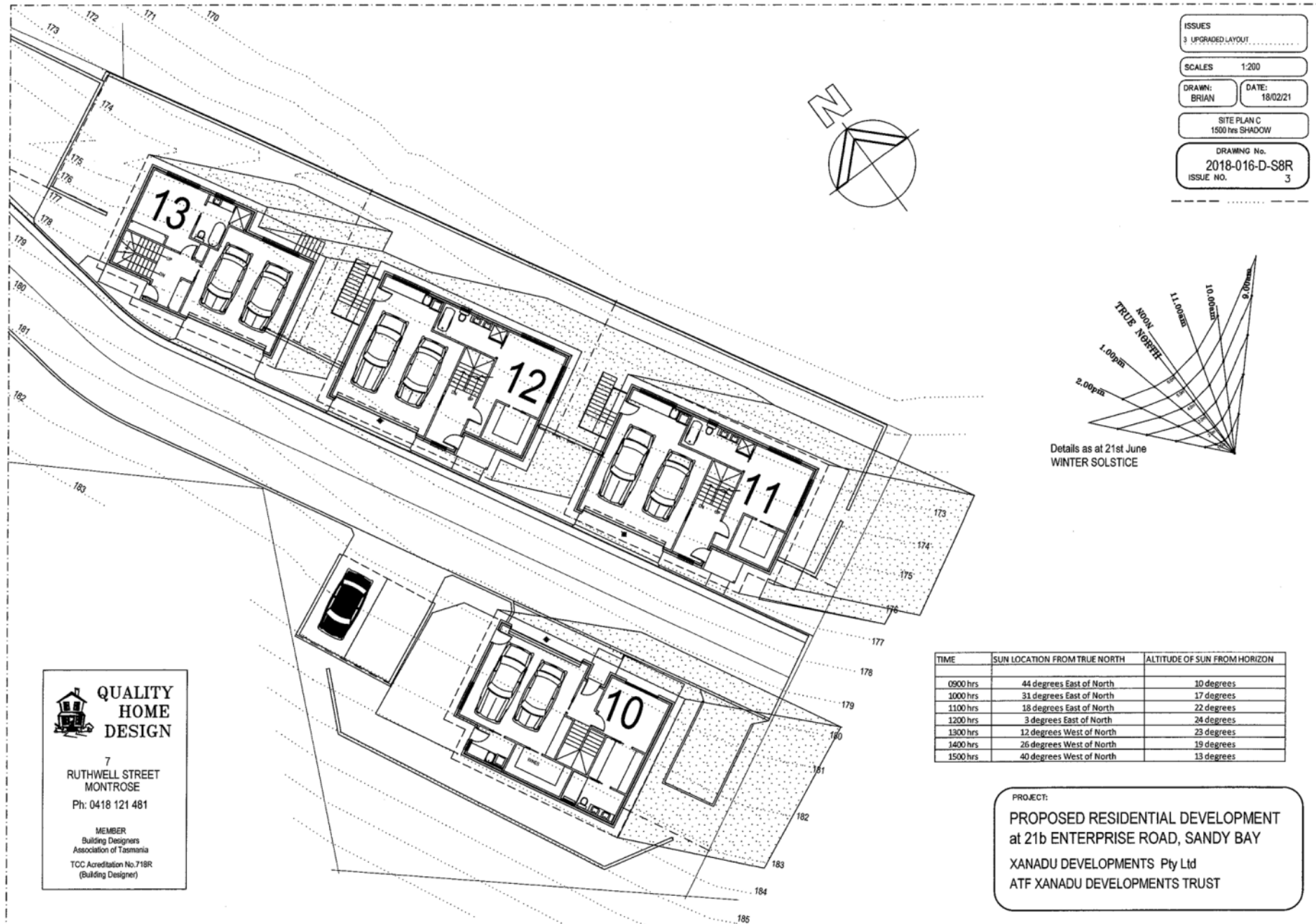


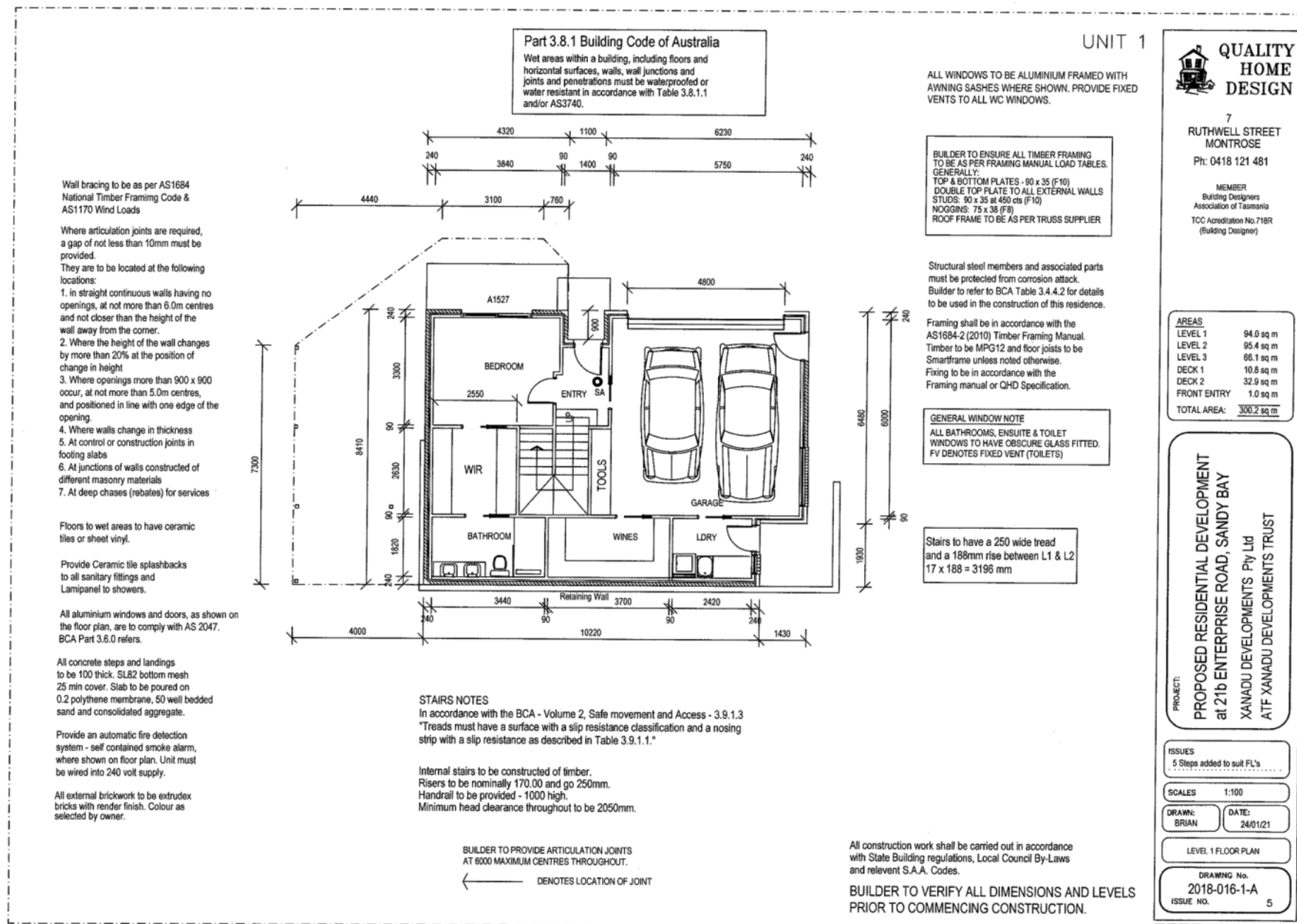








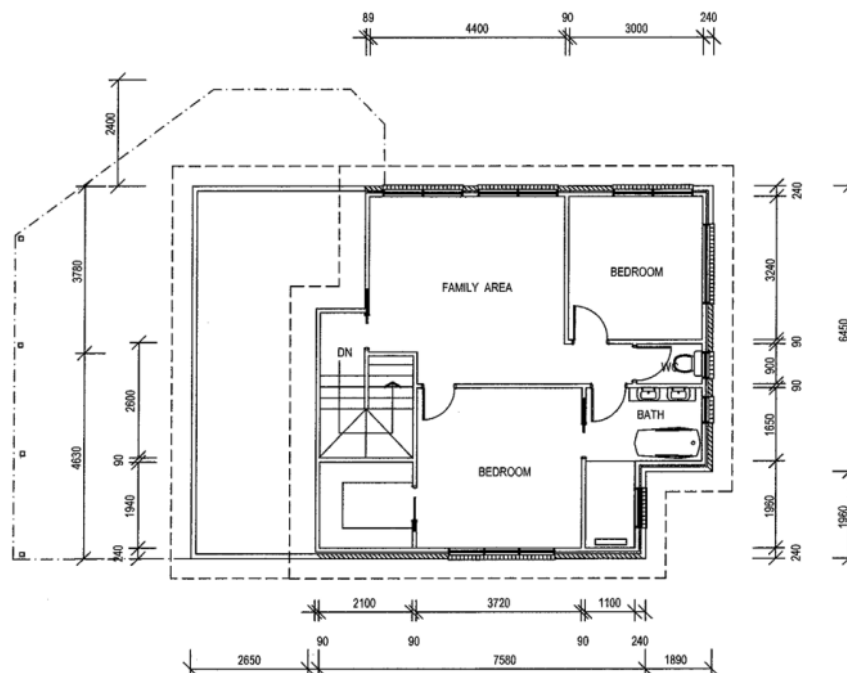






Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

UNIT 1



**QUALITY
HOME
DESIGN**

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 500 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking.
 Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
 PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 05/02/20

LEVEL 3 FLOOR PLAN

DRAWING No.
 2018-016-1-C
ISSUE NO. 4



AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
KANADU DEVELOPMENTS Pty Ltd
ATF KANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN: BRIAN	DATE: 24/01/21
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ELEVATIONS

DRAWING No.
2018-016-1-D
ISSUE NO.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

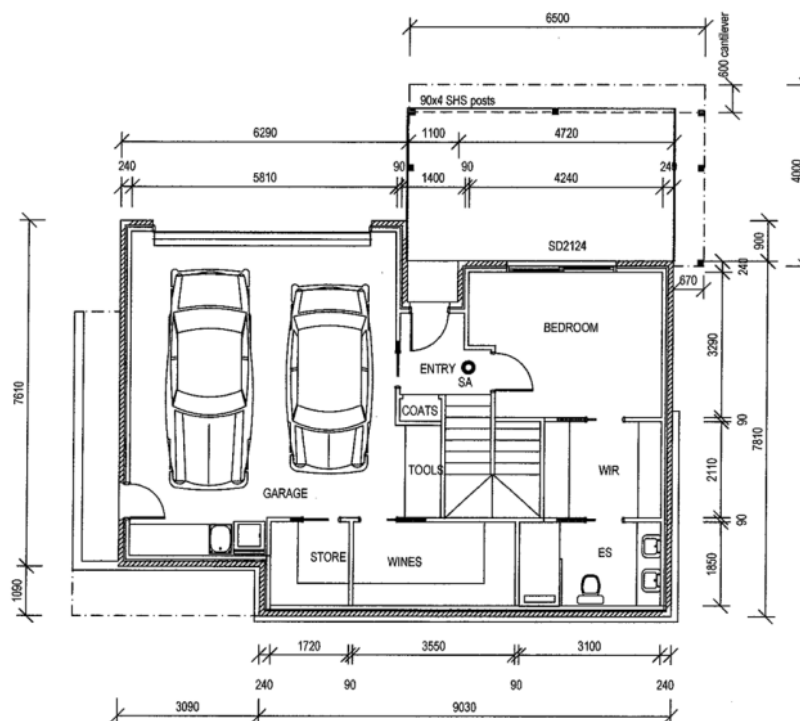
Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL62 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 2



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	21.6 sq m
DECK 2	29.2 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	244.8 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 5 Cantilever Deck

SCALES 1:100

DRAWN: BRIAN
 DATE: 18/02/21

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-2-A
 ISSUE NO. 5

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

UNIT 2



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	21.6 sq m
DECK 2	29.2 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	244.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
BRIANDATE:
18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-2-B
 ISSUE NO. 5

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on s1satation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

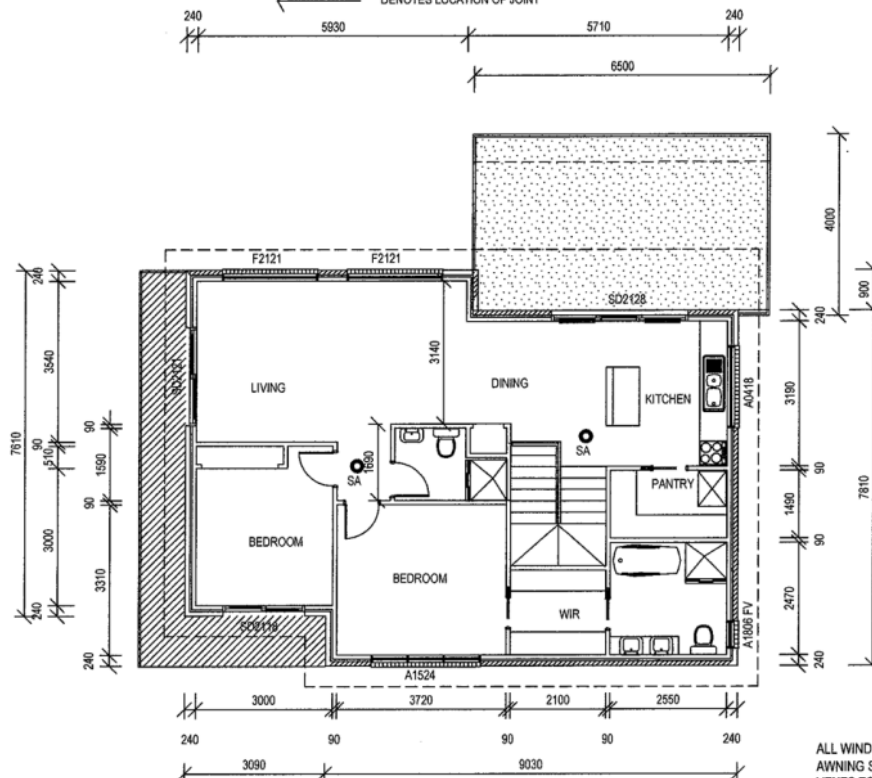
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

DENOTES LOCATION OF JOINT

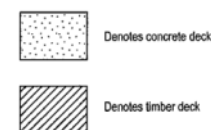


Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads



Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

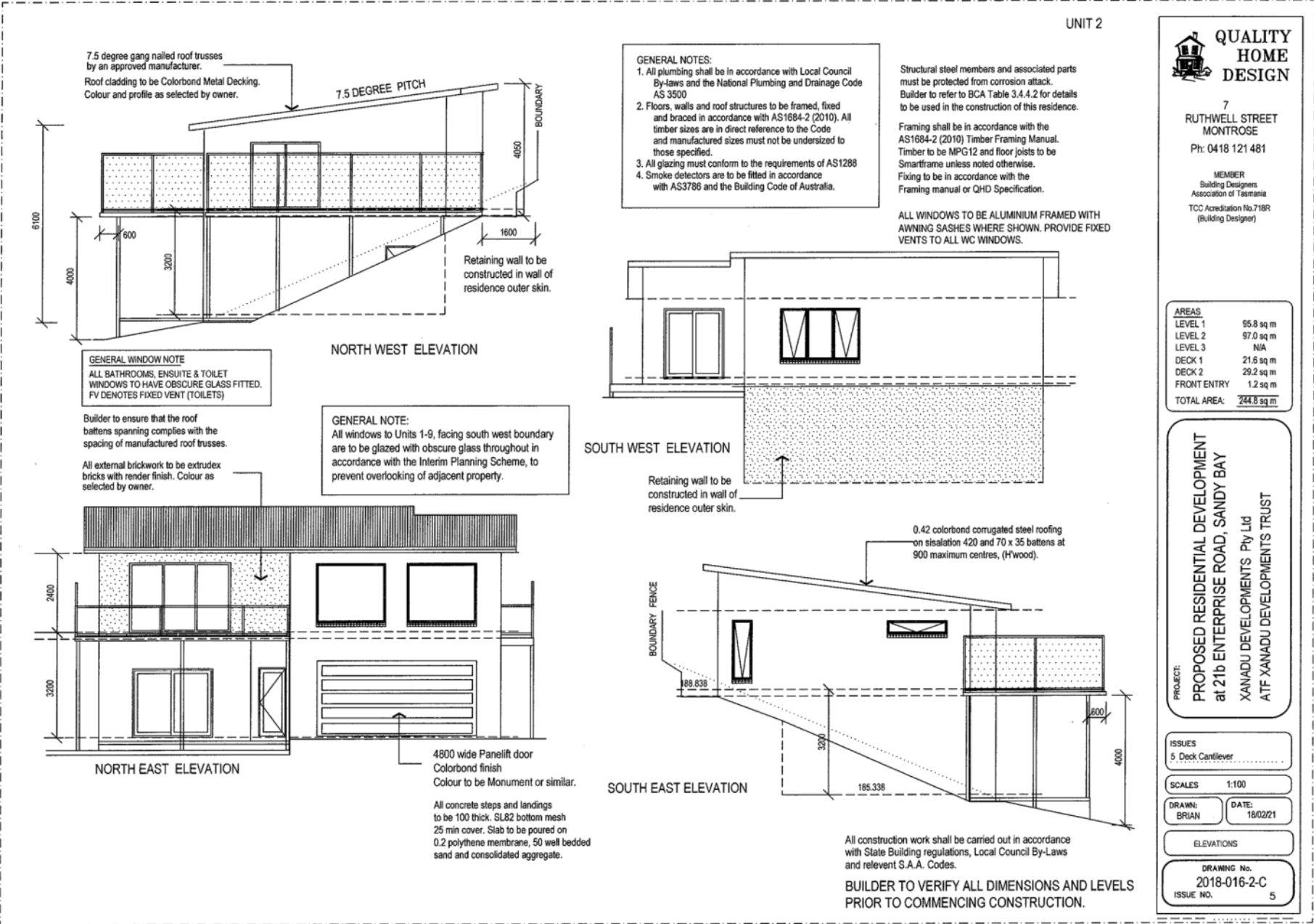
Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

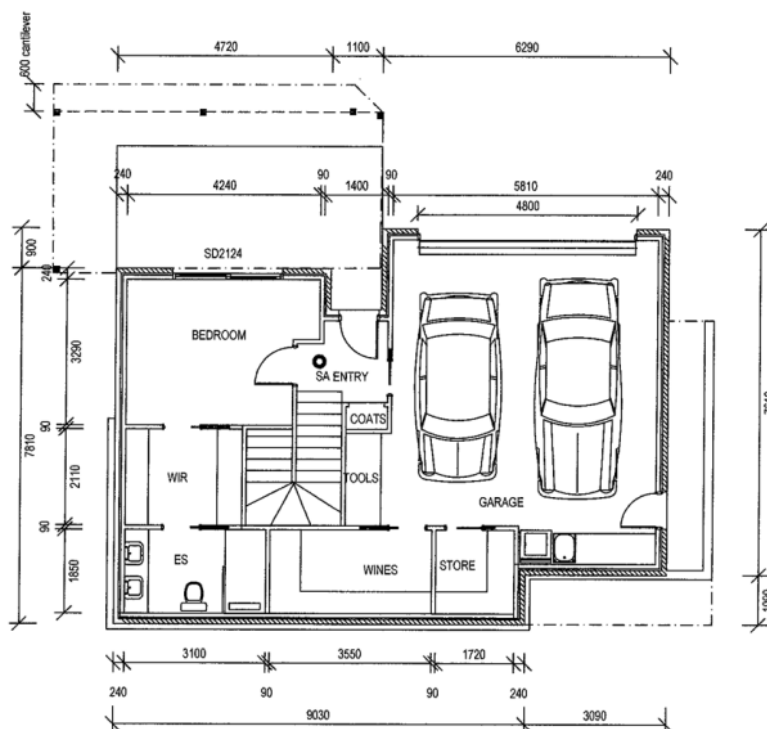
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Internal Access stairs risers - 19 @184 = 3500mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 3



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	15.8 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	238.4 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extrudex
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

ISSUES
 5. Deck Cantilvered

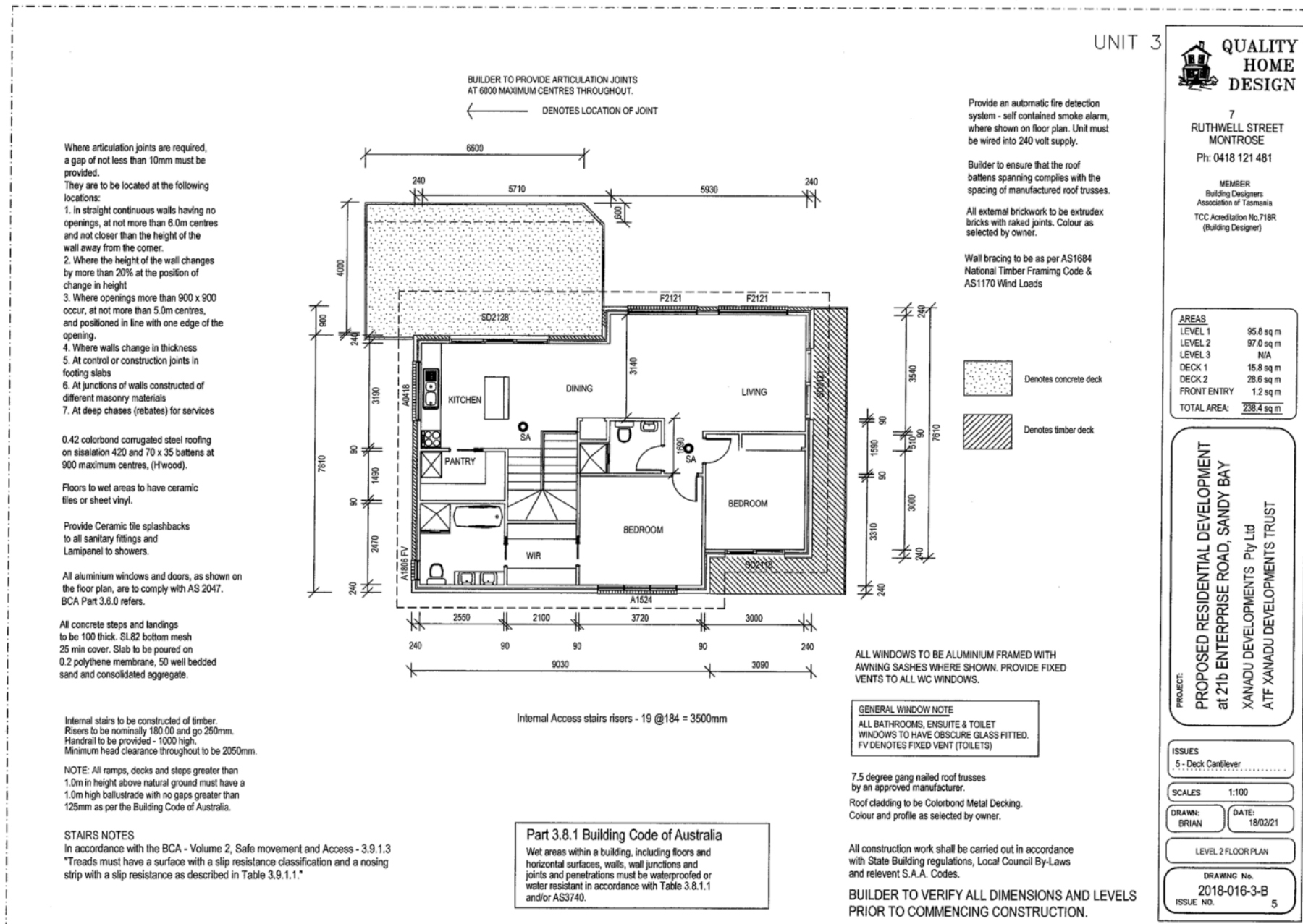
SCALES 1:100

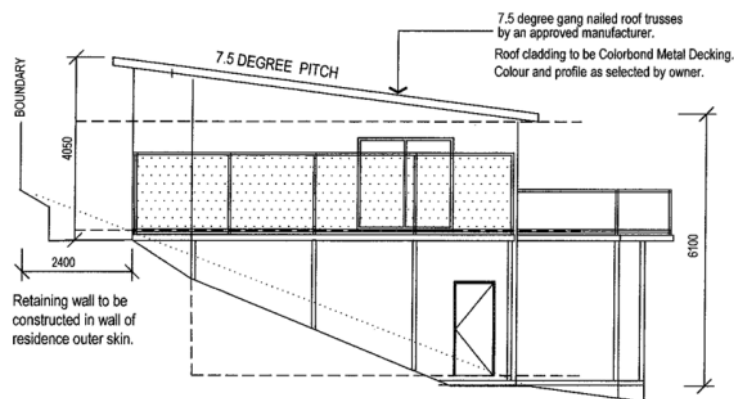
DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-3-A
 ISSUE NO. 5





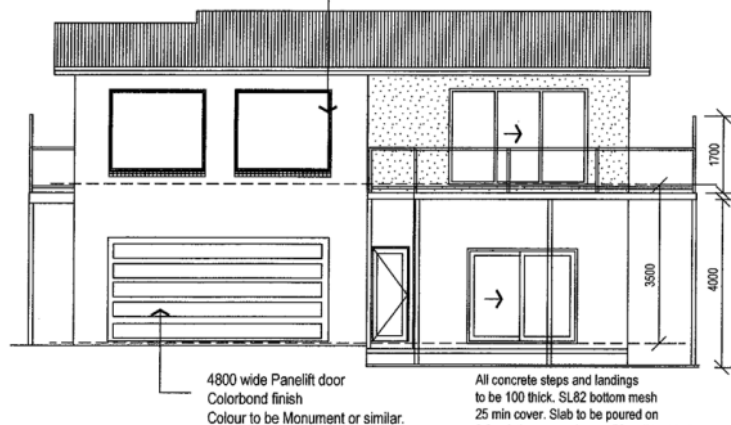
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

SOUTH EAST ELEVATION

GENERAL NOTE:
 All windows to Units 1-9, facing south west boundary are to be glazed with obscure glass throughout in accordance with the Interim Planning Scheme, to prevent overlooking of adjacent property.



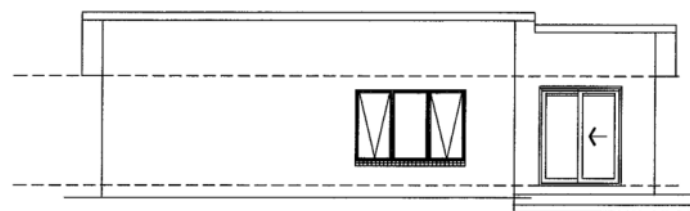
NORTH EAST ELEVATION

- GENERAL NOTES:**
1. All plumbing shall be in accordance with Local Council By-laws and the National Plumbing and Drainage Code AS 3500
 2. Floors, walls and roof structures to be framed, fixed and braced in accordance with AS1684-2 (2010). All timber sizes are in direct reference to the Code and manufactured sizes must not be undersized to those specified.
 3. All glazing must conform to the requirements of AS1288
 4. Smoke detectors are to be fitted in accordance with AS3786 and the Building Code of Australia.

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

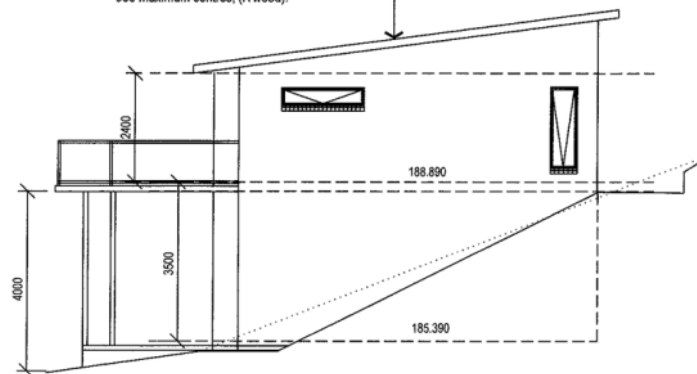
Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.



SOUTH WEST ELEVATION

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).



NORTH WEST ELEVATION

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	15.8 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	238.4 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 5 Deck Cantilevered

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

ELEVATIONS

DRAWING No.
2018-016-3-C
 ISSUE NO. 5

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

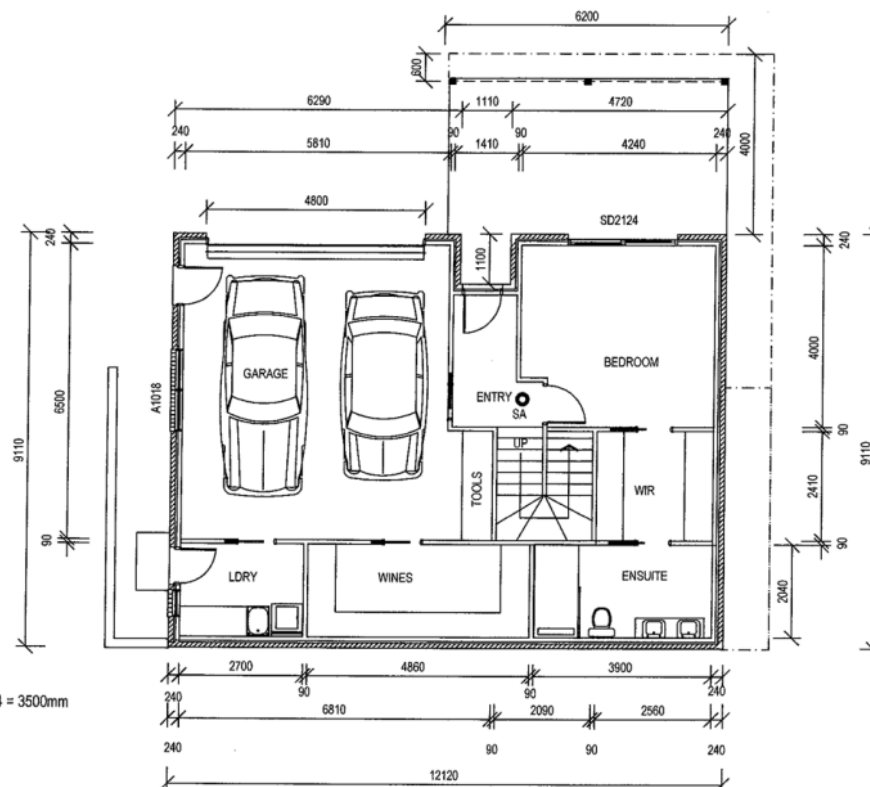
Internal Access stairs risers - 19 @ 184 = 3500mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:
 1. In straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
 2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
 3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
 4. Where walls change in thickness
 5. At control or construction joints in
 footing slabs
 6. At junctions of walls constructed of
 different masonry materials
 7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 4



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	109.2 sq m
LEVEL 2	110.4 sq m
LEVEL 3	N/A
DECK 1	22.0 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	271.2 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

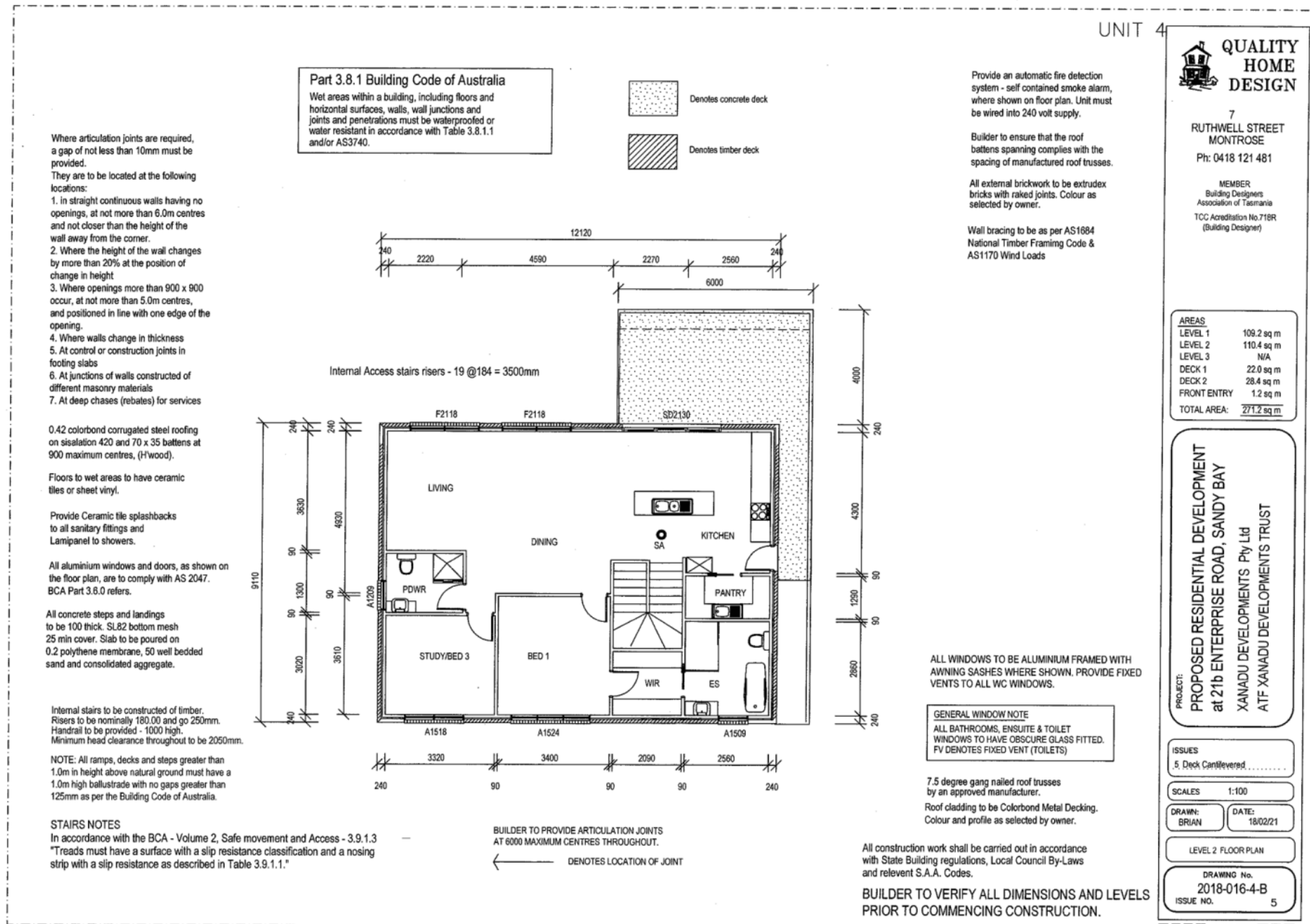
ISSUES
 5, Deck Cantilevered

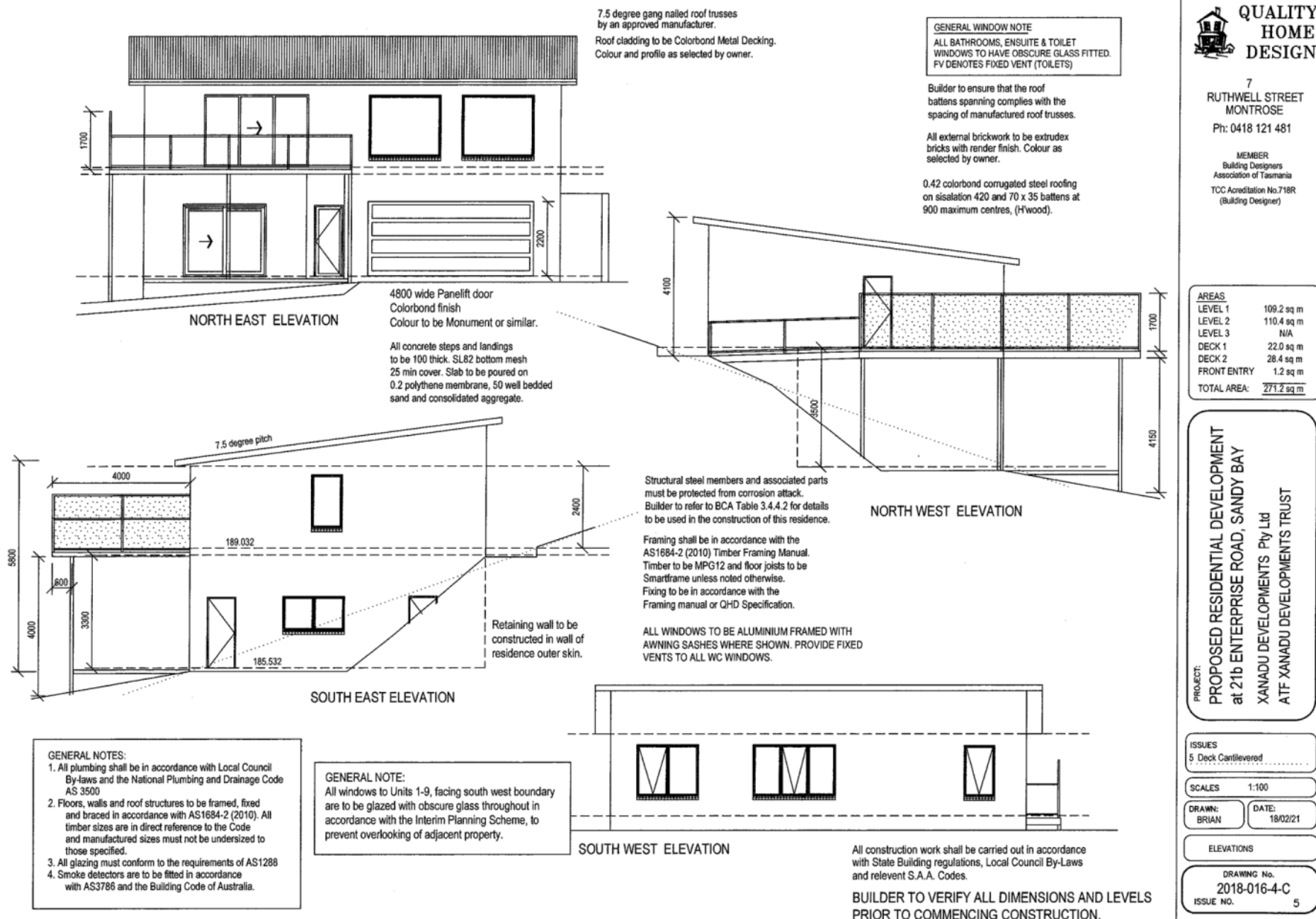
SCALES 1:100

DRAWN: BRIAN DATE: 18/02/21

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-4-A
 ISSUE No. 5





ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise.
 Fixing to be in accordance with the Framing manual or QHD Specification.

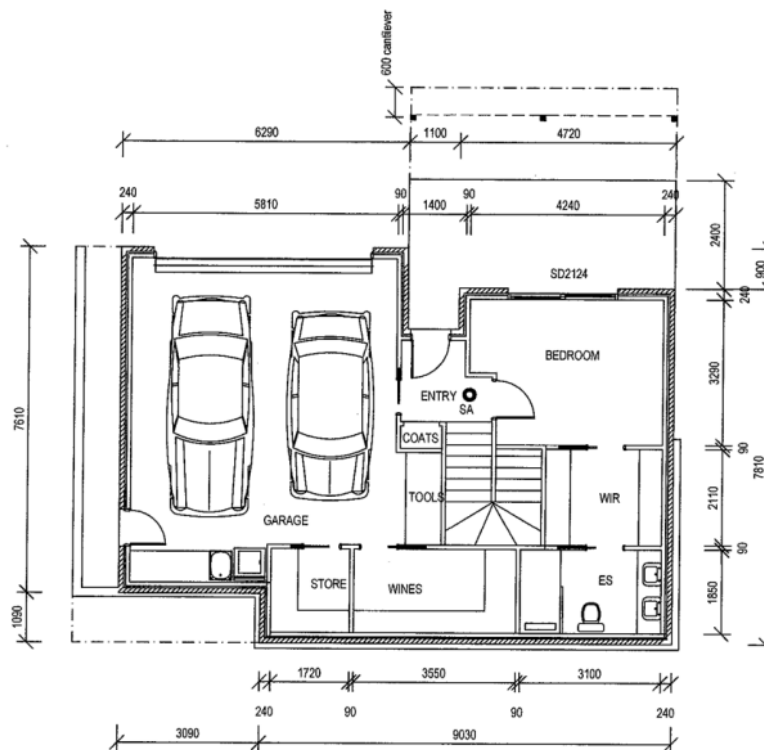
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Internal Access stairs risers - 19 @ 184 = 3500mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:
 1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
 2. Where the height of the wall changes by more than 20% at the position of change in height
 3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
 4. Where walls change in thickness
 5. At control or construction joints in footing slabs
 6. At junctions of walls constructed of different masonry materials
 7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 5



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	13.8 sq m
DECK 2	25.3 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	233.1 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES
 3 L2 Deck Cantilevered

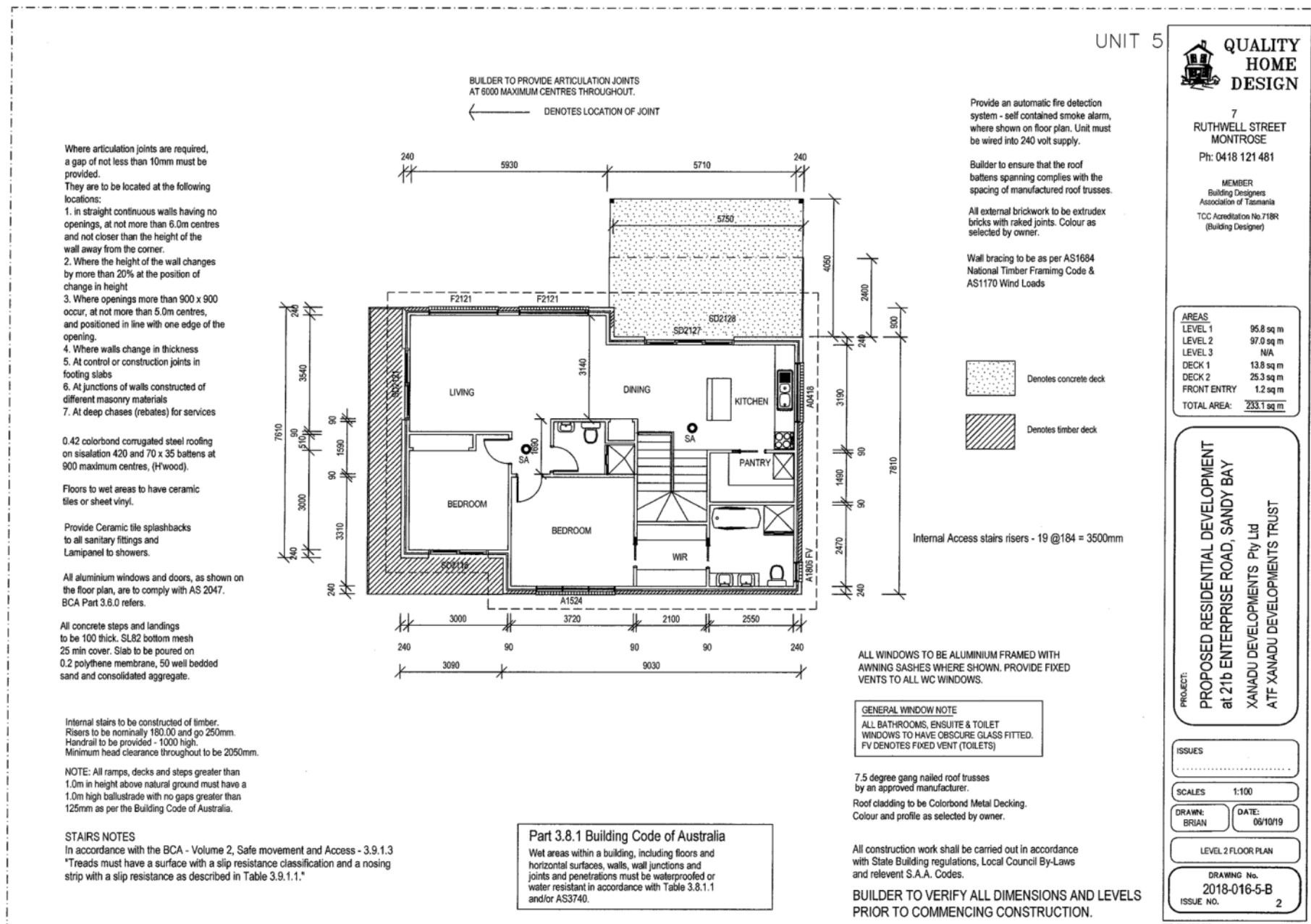
SCALES 1:100

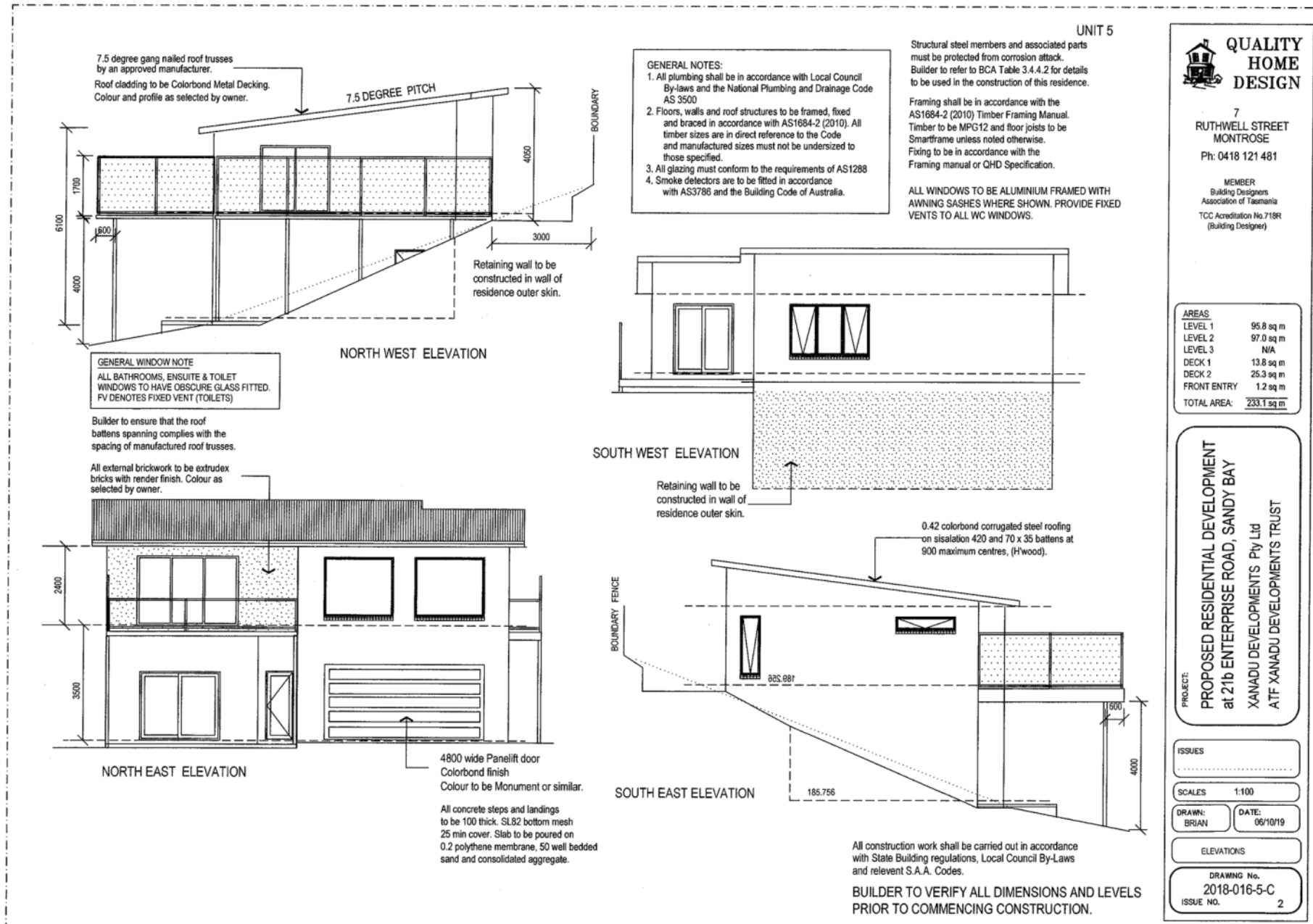
DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-5-A
 ISSUE NO. 3





Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

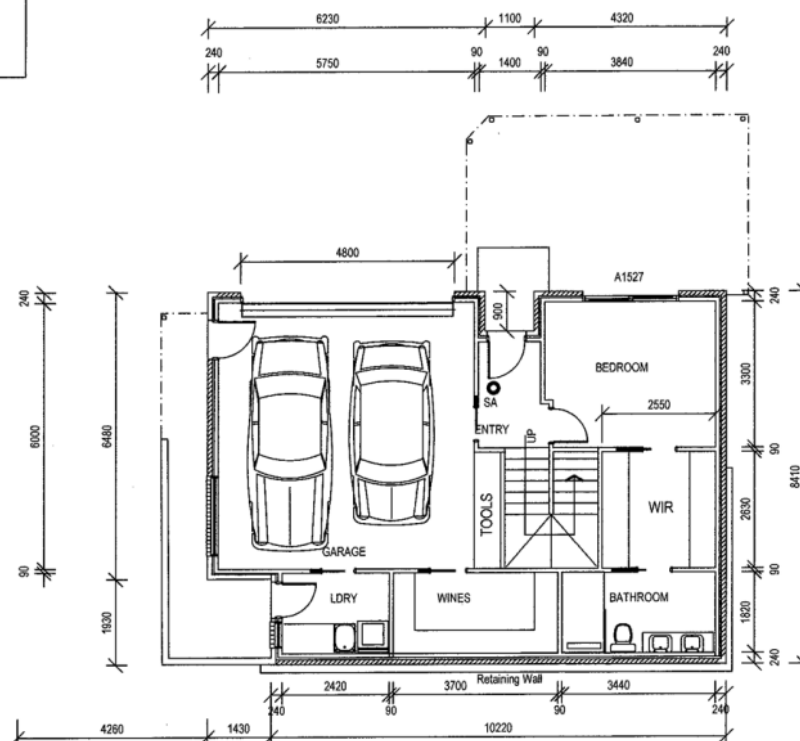
Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

UNIT 6

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Stairs to have a 250 wide tread
 and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

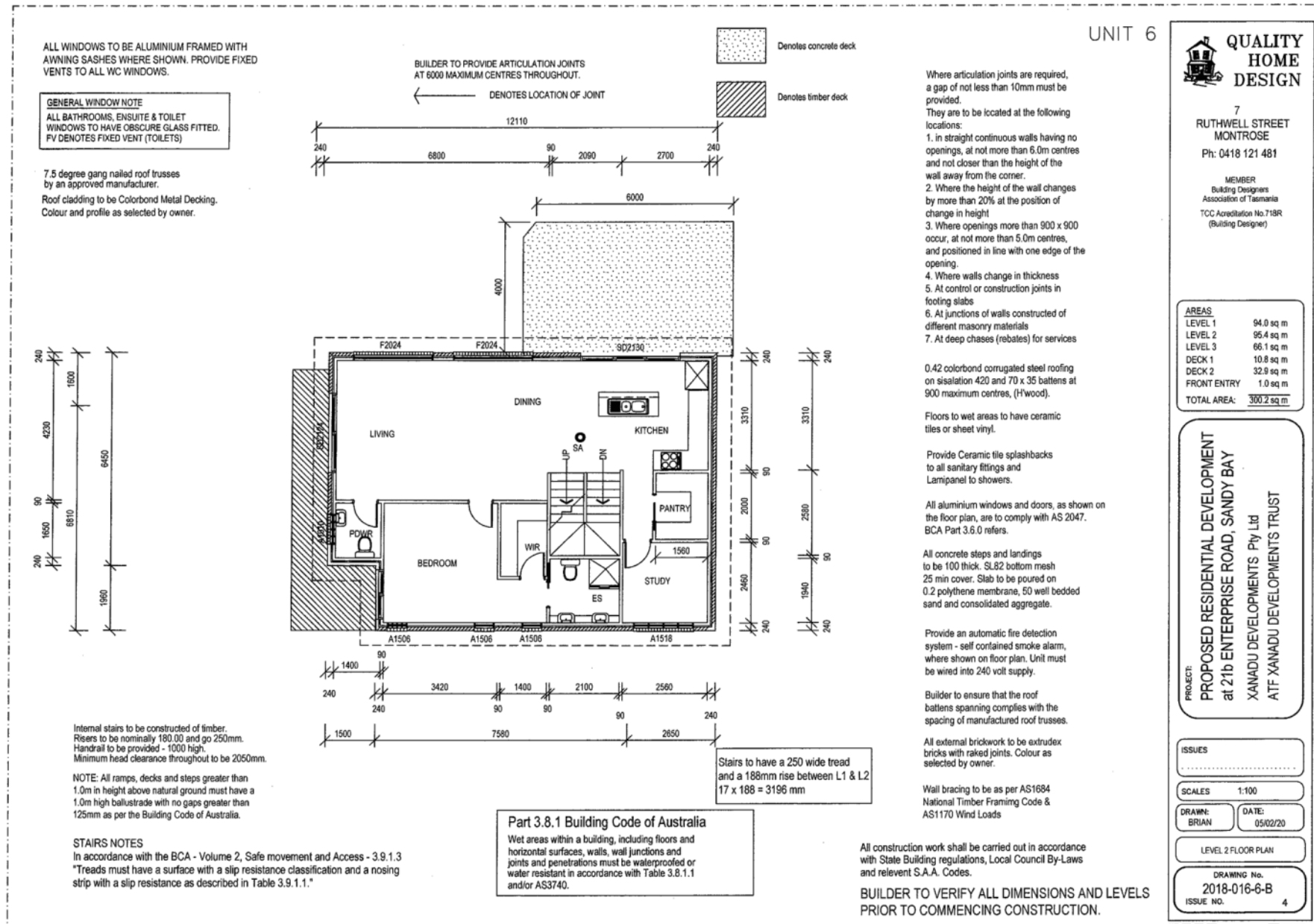
DATE:
 05/02/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-6-A
 ISSUE NO. 4

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

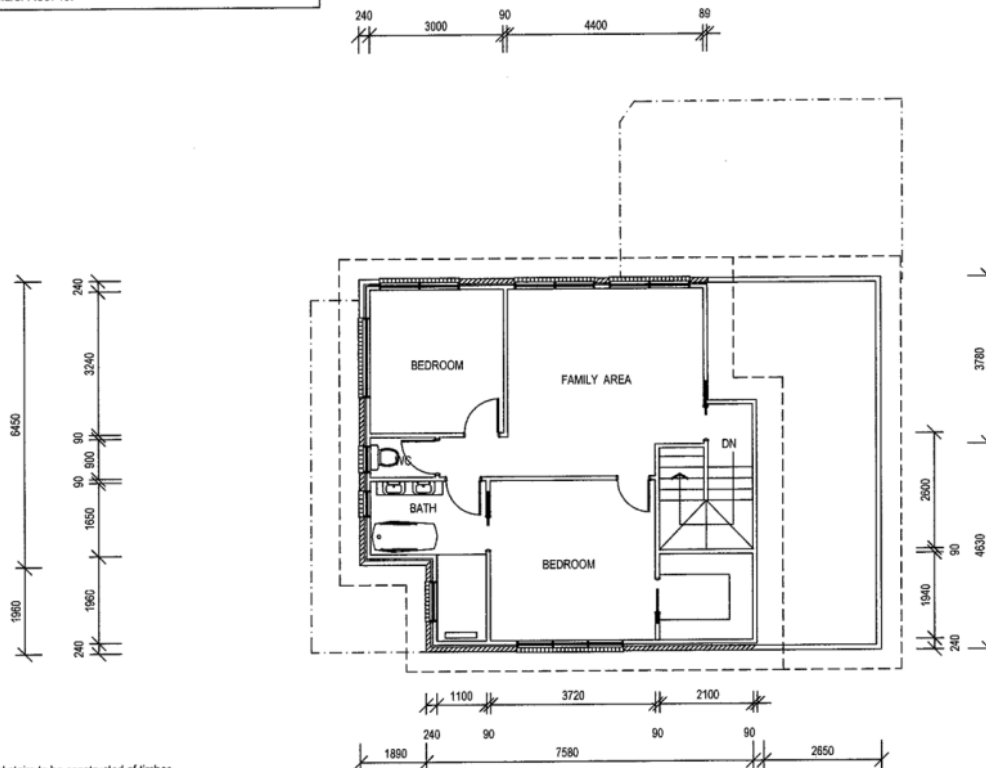
BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.



UNIT 6

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lampinlet to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking.
 Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.716R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

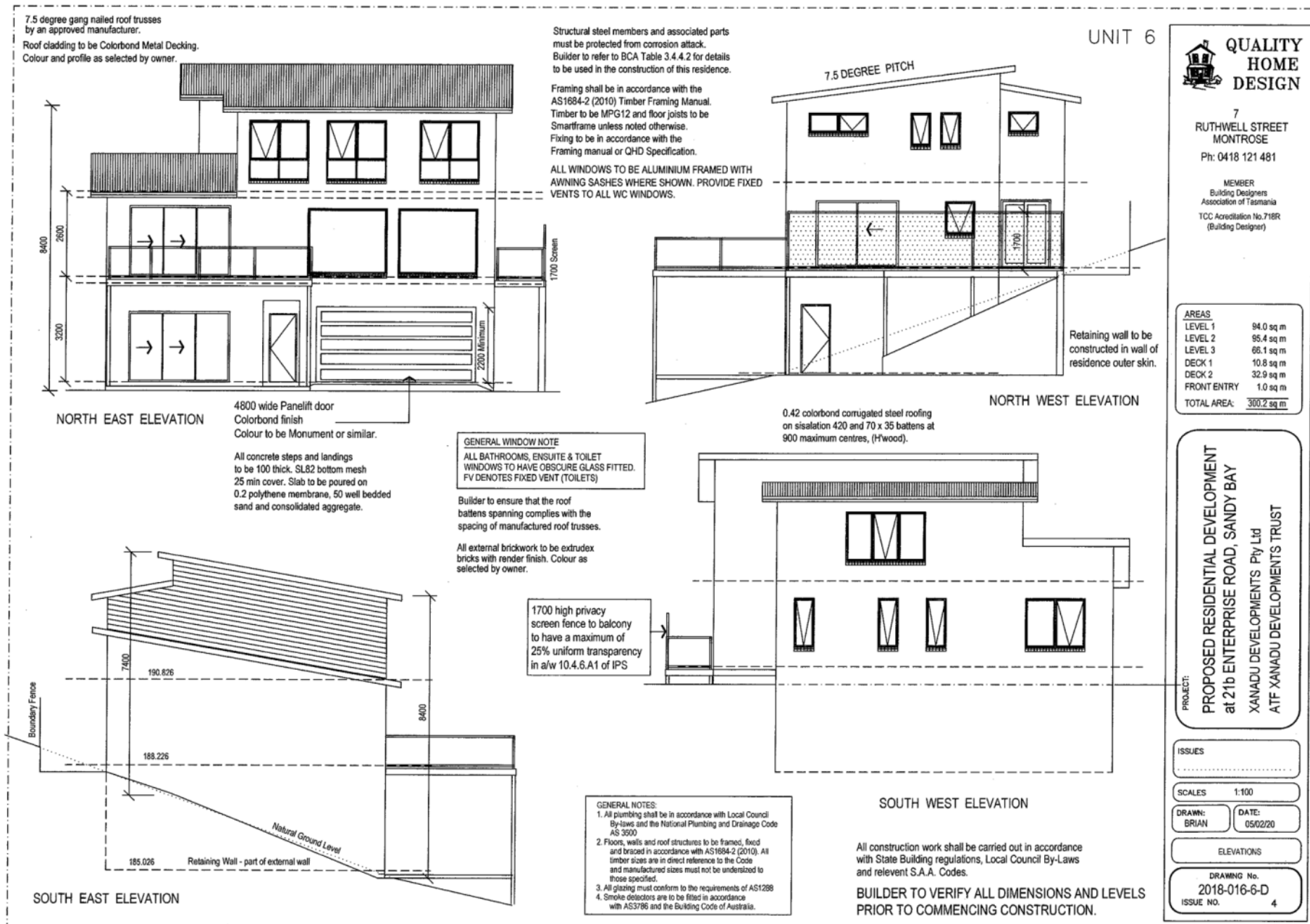
ISSUES

SCALES 1:100

DRAWN:
BRIANDATE:
05/02/20

LEVEL 3 FLOOR PLAN

DRAWING No.
 2018-016-6-C
 ISSUE NO. 4



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 c/s (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

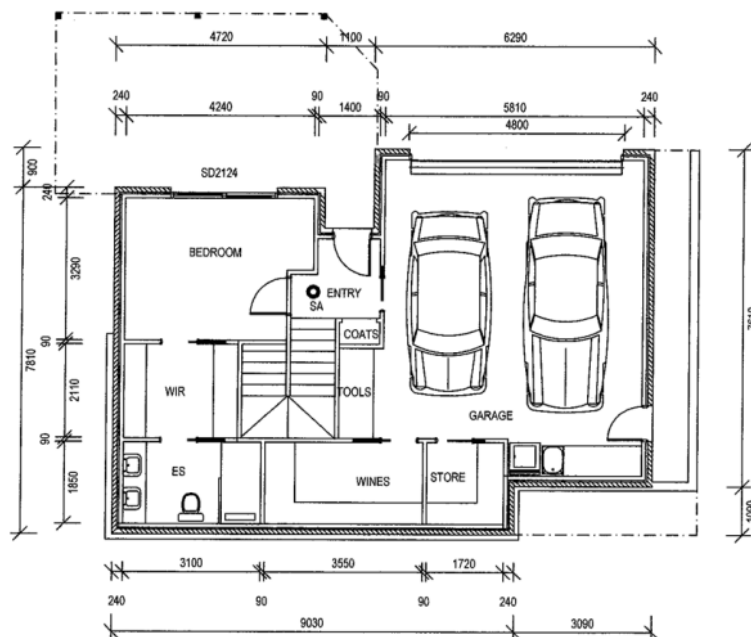
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 7



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. In straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lampanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruded
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.6 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	251.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 06/10/19

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-7-A
 ISSUE NO. 2

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick, SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

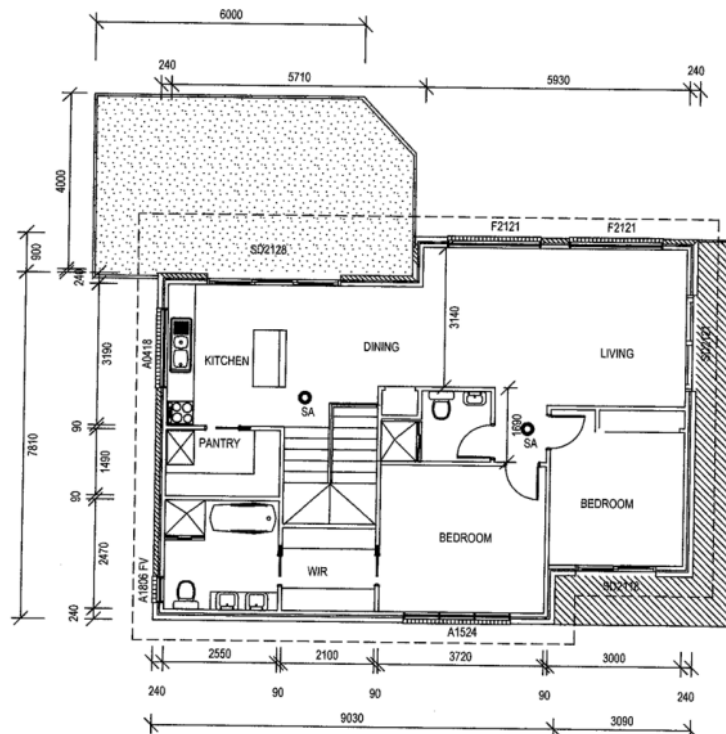
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 7



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.6 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	251.2 sq m

Denotes concrete deck

Denotes timber deck

PROJECT:
 PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

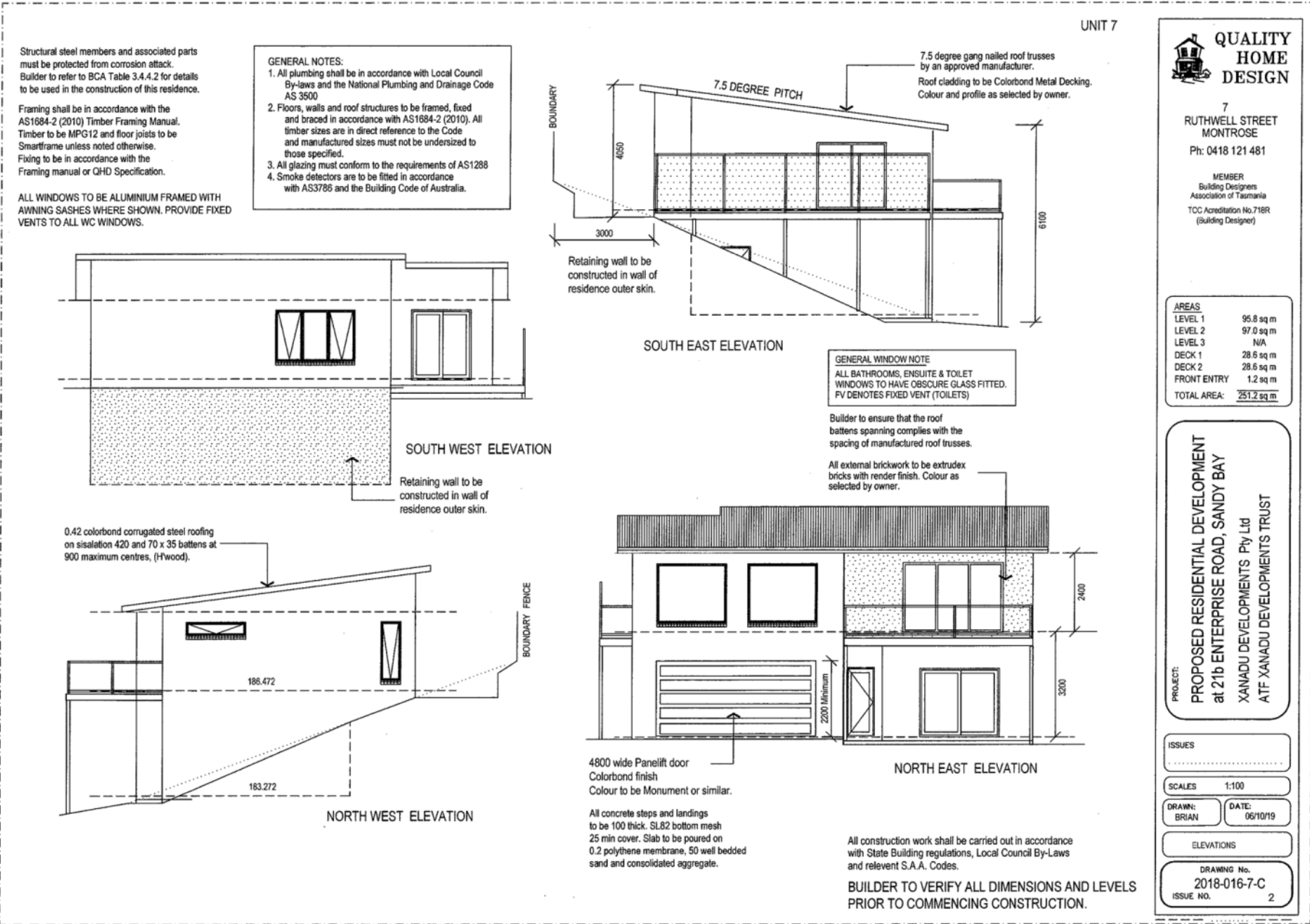
DATE:
 06/10/19

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-7-B
 ISSUE NO. 2

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



UNIT 8

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

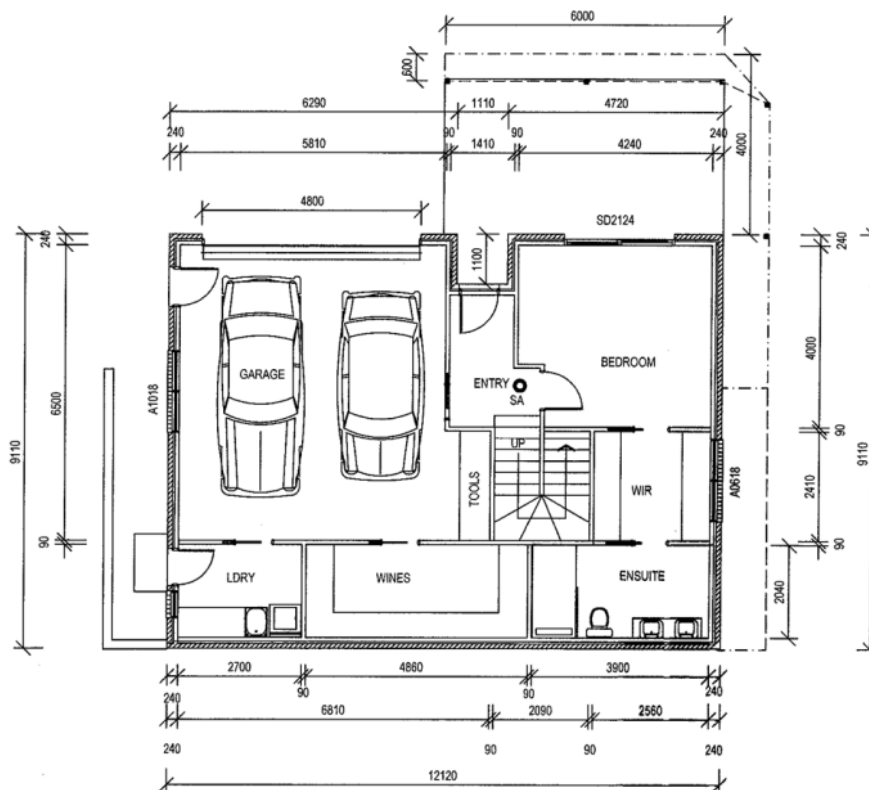
Internal Access stairs risers - 19 @184 = 3500mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

- Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:
1. in straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
 2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
 3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
 4. Where walls change in thickness
 5. At control or construction joints in
 footing slabs
 6. At junctions of walls constructed of
 different masonry materials
 7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	108.2 sq m
LEVEL 2	110.4 sq m
LEVEL 3	N/A
DECK 1	22.4 sq m
DECK 2	27.8 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	271.0 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 6 Deck Cantilevered

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

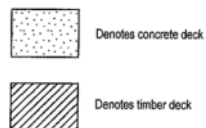
LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-8-A
 ISSUE NO. 6

UNIT 8

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

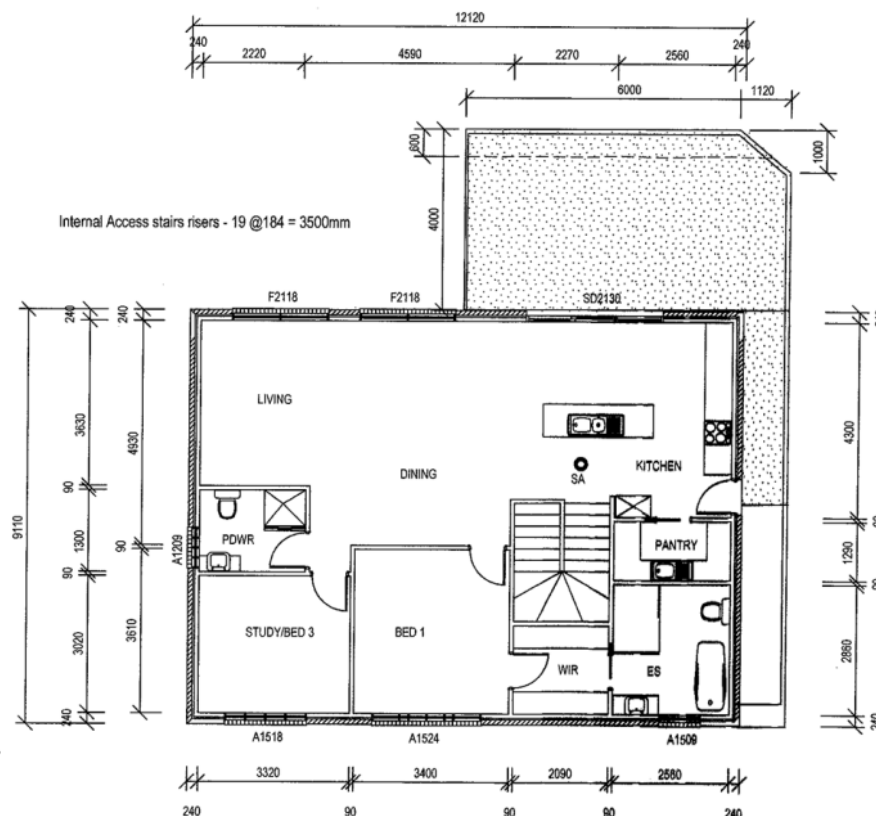
Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal Access stairs risers - 19 @184 = 3500mm



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Internal Access stairs risers - 19 @184 = 3500mm

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.716R
 (Building Designer)

AREAS	
LEVEL 1	109.2 sq m
LEVEL 2	110.4 sq m
LEVEL 3	N/A
DECK 1	26.4 sq m
DECK 2	27.8 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	271.0 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 LEVEL 2 DECK CHANGES

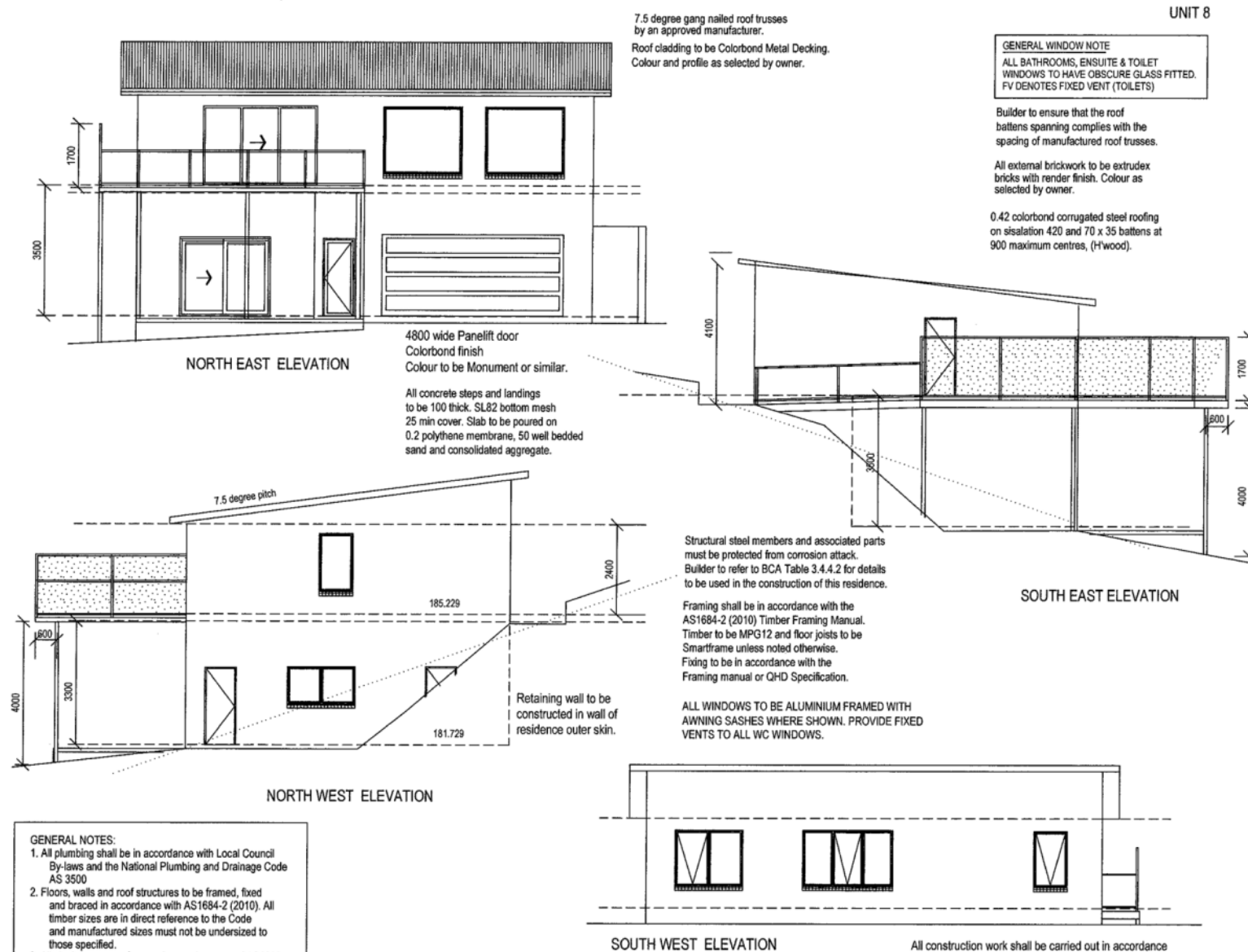
SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-8-B
 ISSUE NO. 6



All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

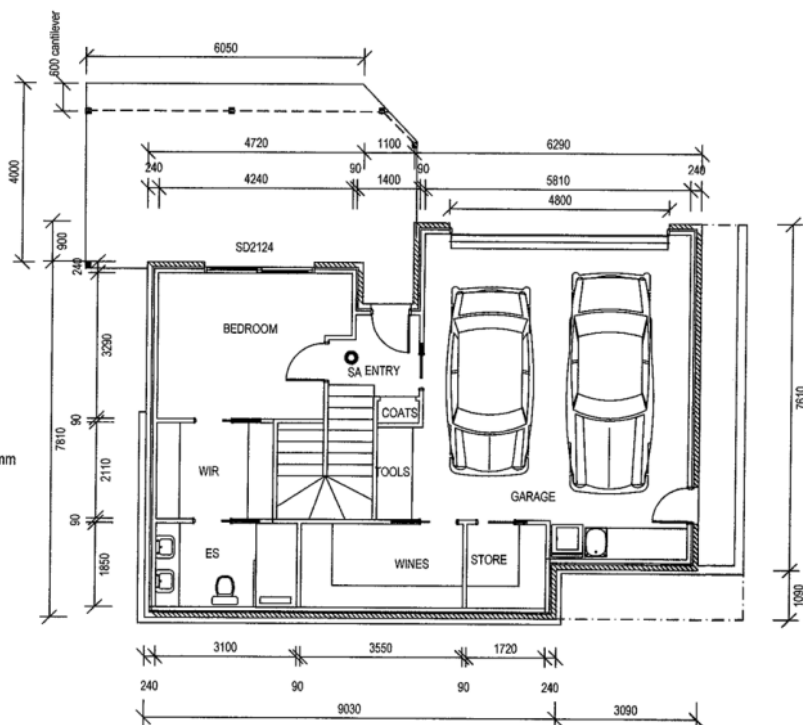
Internal Access stairs risers - 19 @ 184 = 3500mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 9



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.4 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	250.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 3 - Level 2 Deck cantilevered

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-9-A
 ISSUE NO. 3

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. In straight continuous walls having no openings, at not more than 5.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.5.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 9



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.4 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	250.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES
 3 Level changes between 1 & 2

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-9-B
ISSUE NO. 3

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

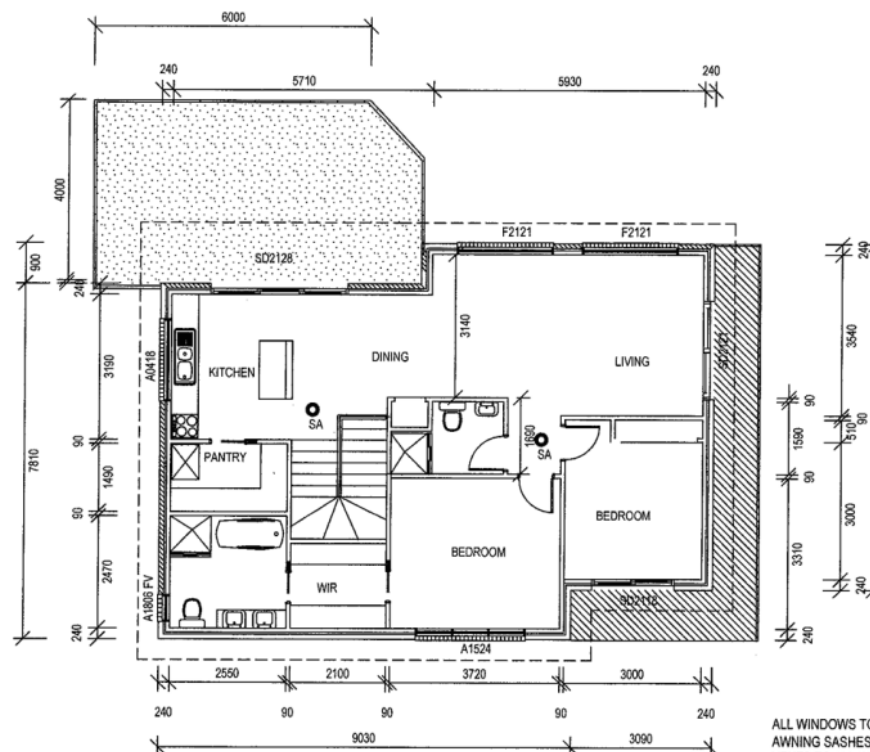
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



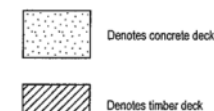
Internal Access stairs risers - 19 @184 = 3500mm

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

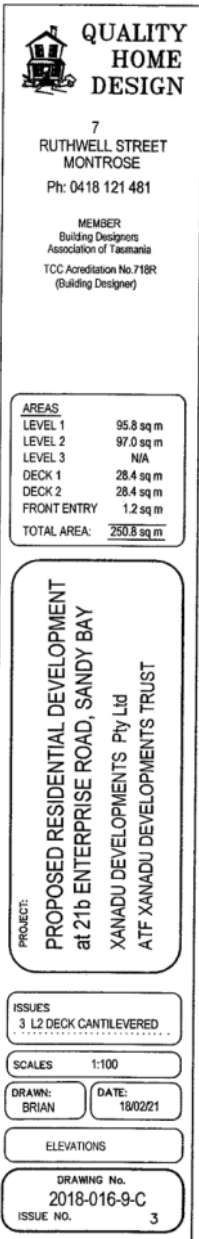
Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



UNIT 10

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

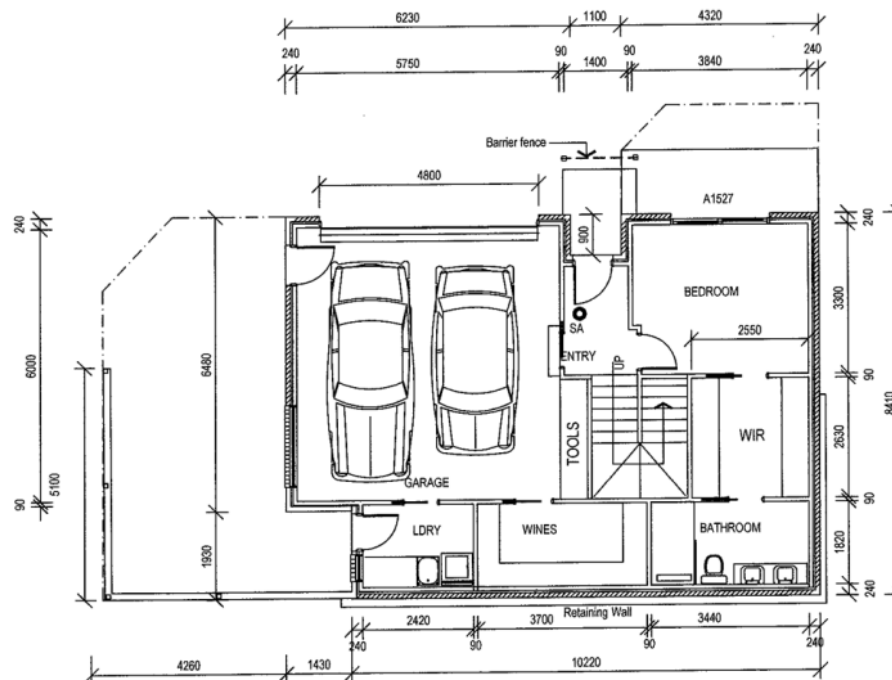
Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.

**STAIRS NOTES**

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 2 Barrier fence added

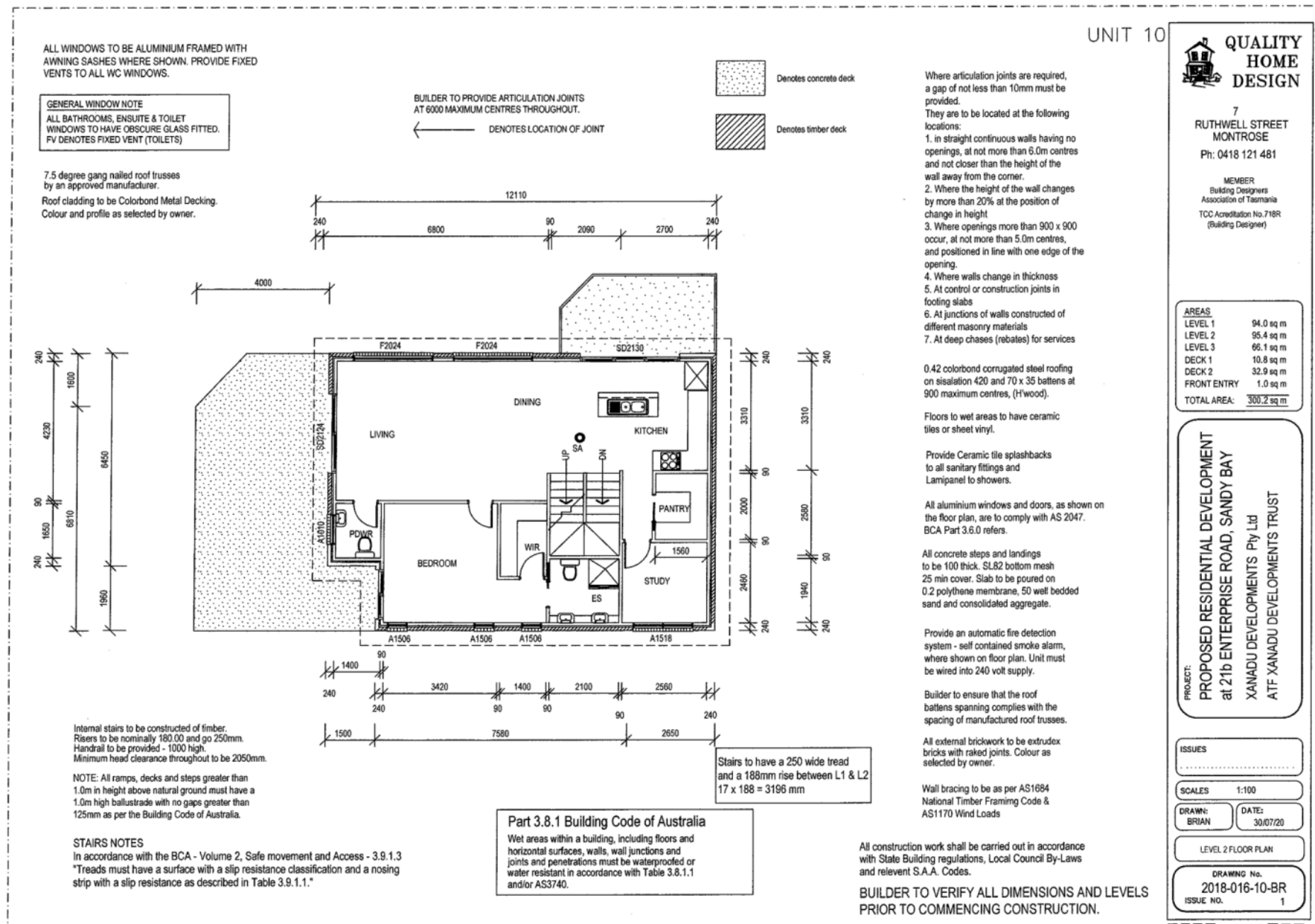
SCALES 1:100

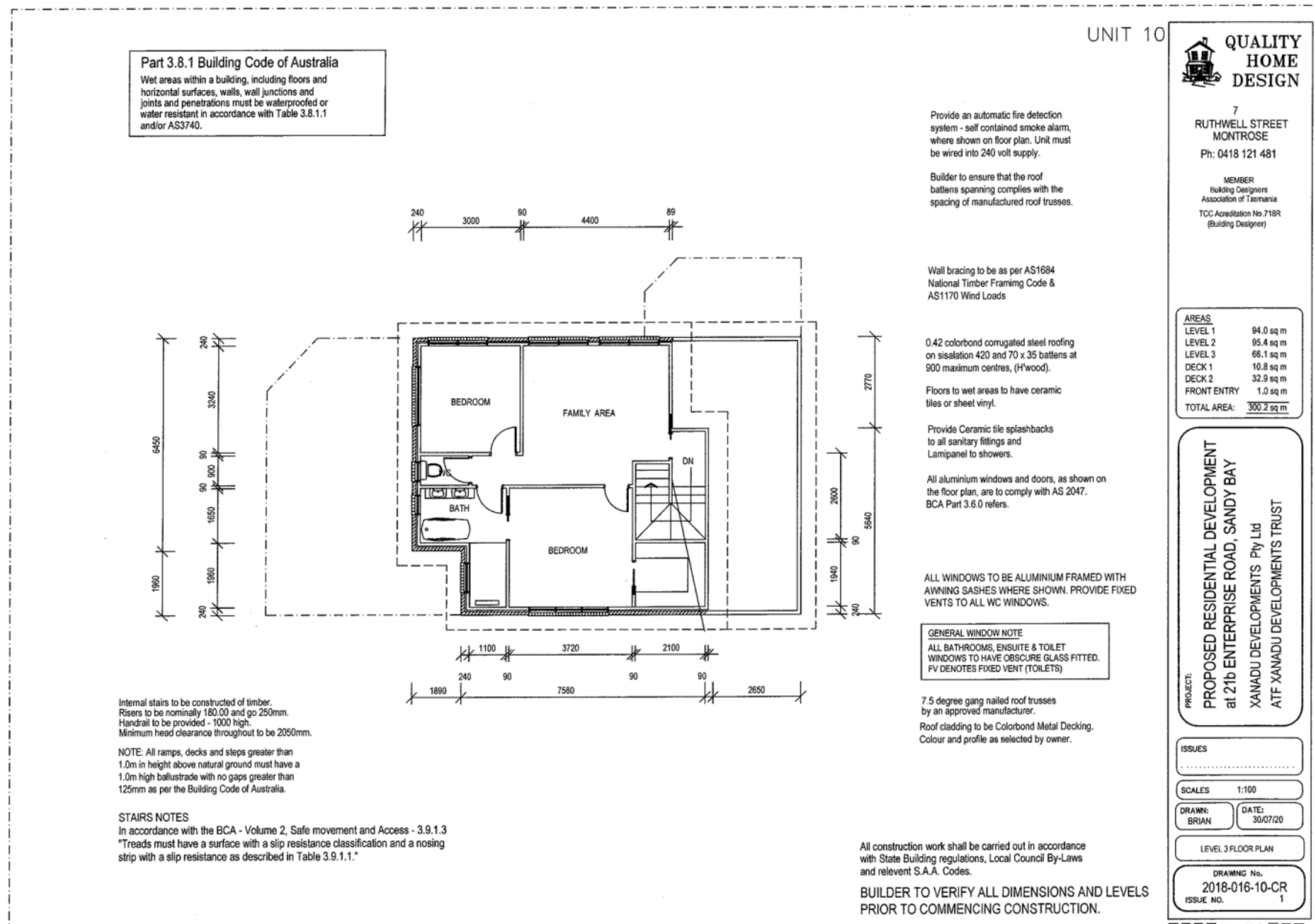
DRAWN:
 BRIAN

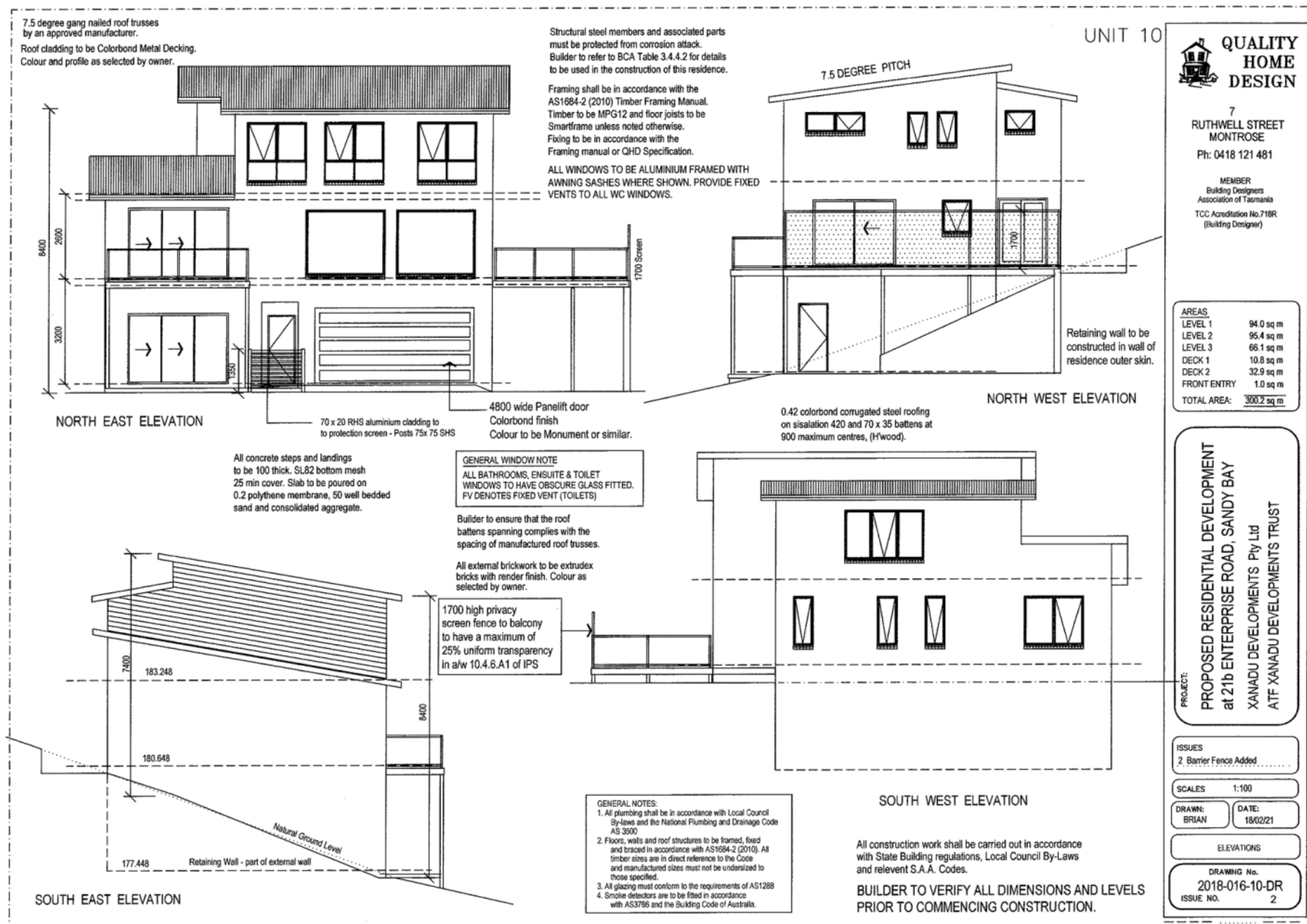
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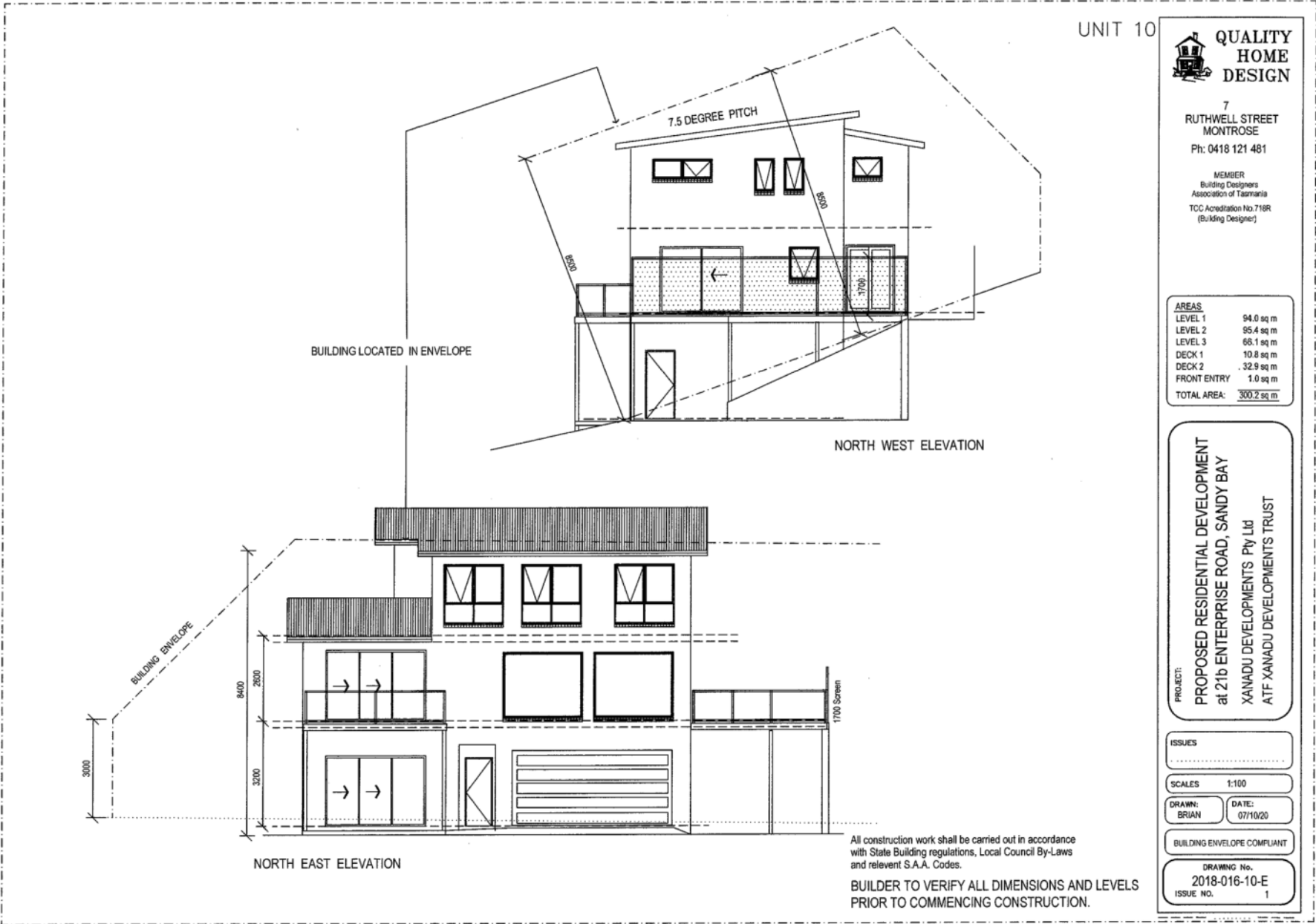
LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-10-AR
 ISSUE NO. 2









Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

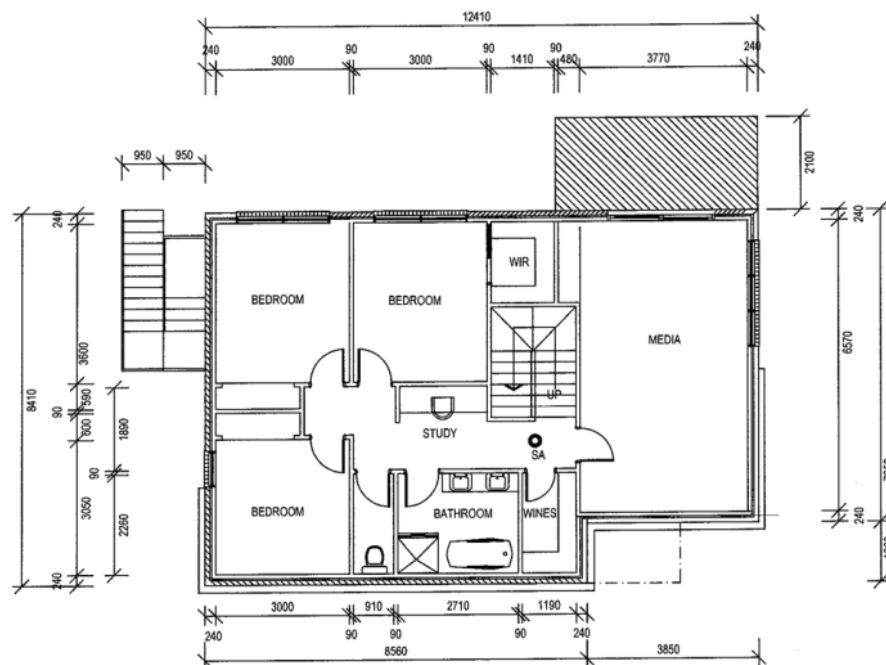
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber. Risers to be nominally 170.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 11



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN: BRIAN

DATE: 30/07/20

LEVEL: 1 FLOOR PLAN

DRAWING No.
2018-016-11-A-R
 ISSUE NO. 1

UNIT 11

7
RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES
 2 BARRIER FENCE ADDED

SCALES 1:100

DRAWN: BRIAN **DATE:** 18/02/21

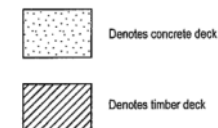
LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-11-B-R
ISSUE NO. 2

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruded bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

- Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:
1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
 2. Where the height of the wall changes by more than 20% at the position of change in height
 3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
 4. Where walls change in thickness
 5. At control or construction joints in footing slabs
 6. At junctions of walls constructed of different masonry materials
 7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

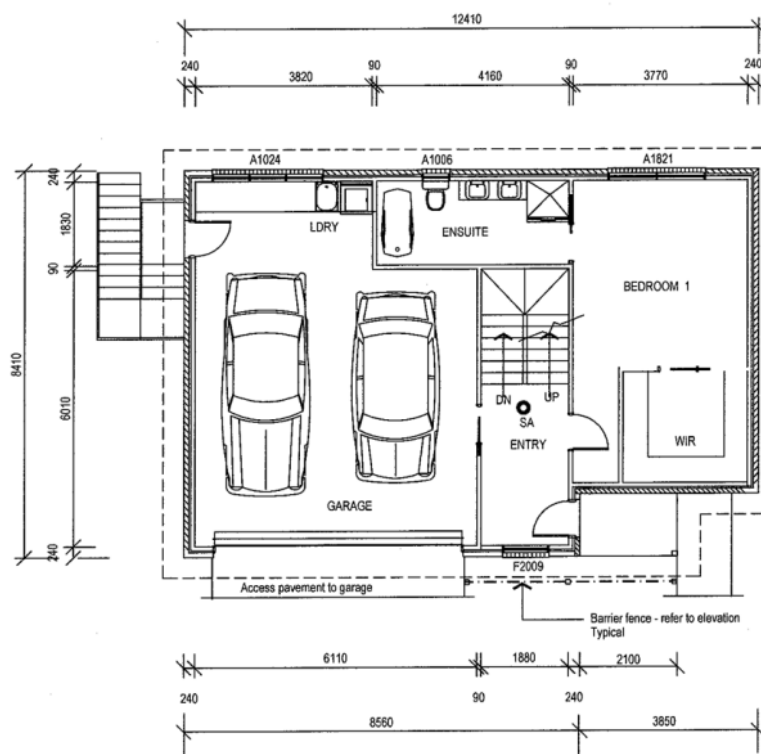
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

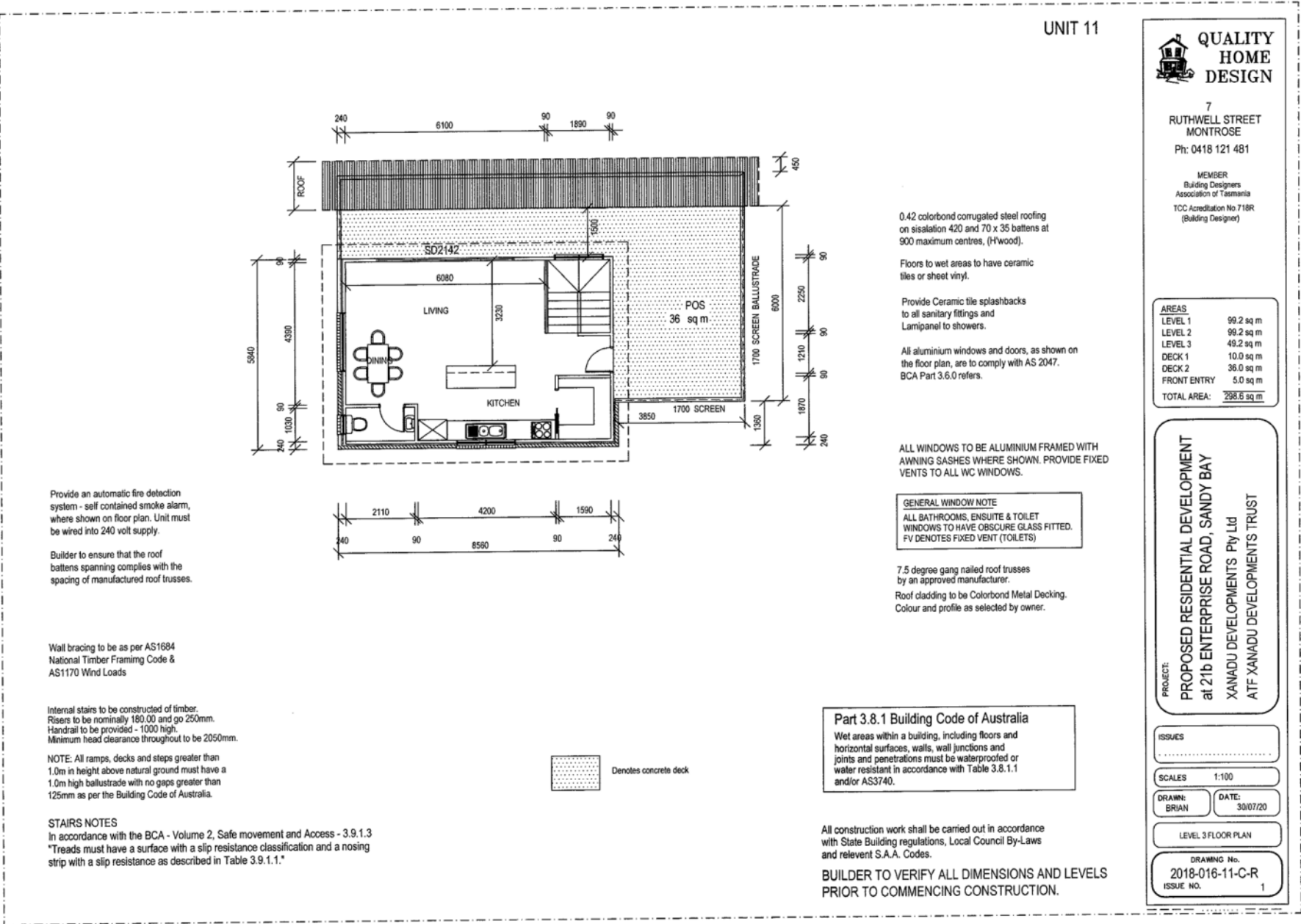
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

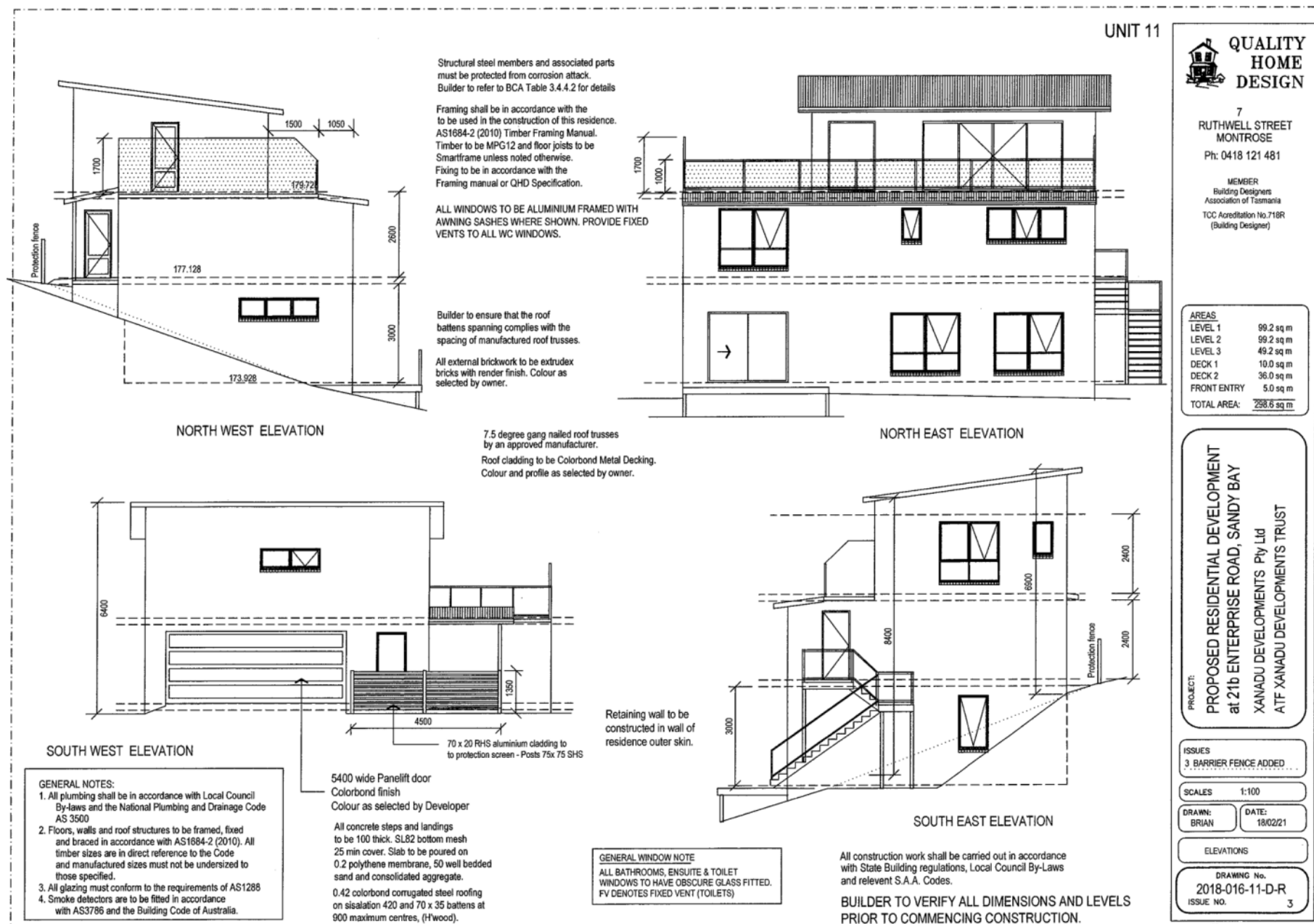
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm





UNIT 11



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No. 718R
(Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

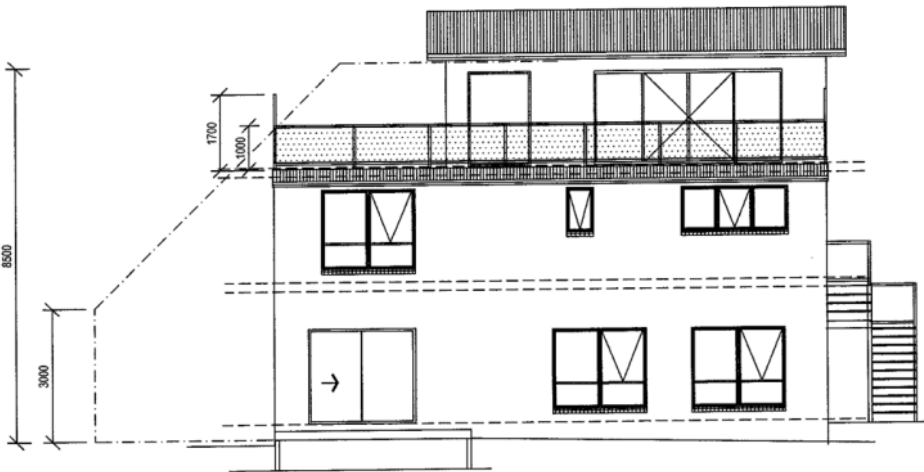
SCALES 1:100

DRAWN:
BRIAN

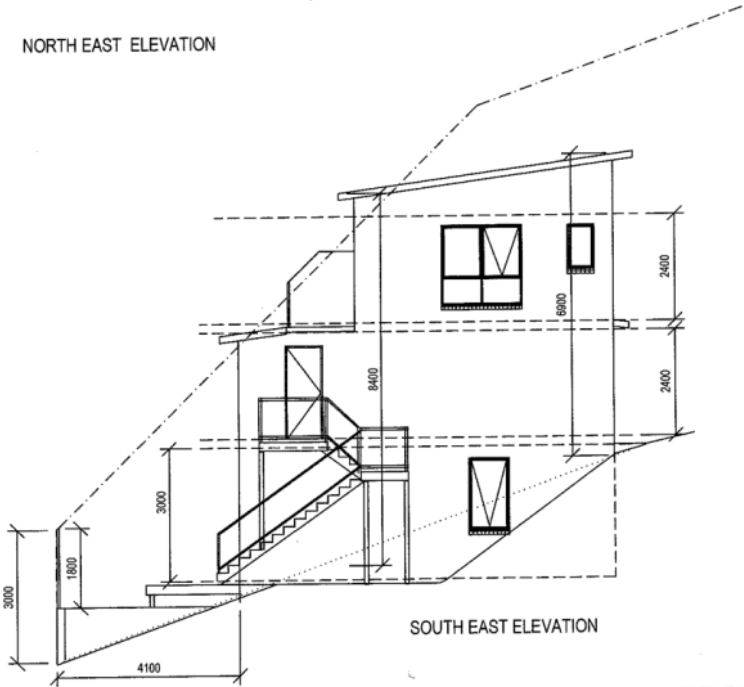
DATE:
07/10/20

BUILDING ENVELOPE

DRAWING No.
2018-016-11-E-R
ISSUE NO. 1



NORTH EAST ELEVATION



SOUTH EAST ELEVATION

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.

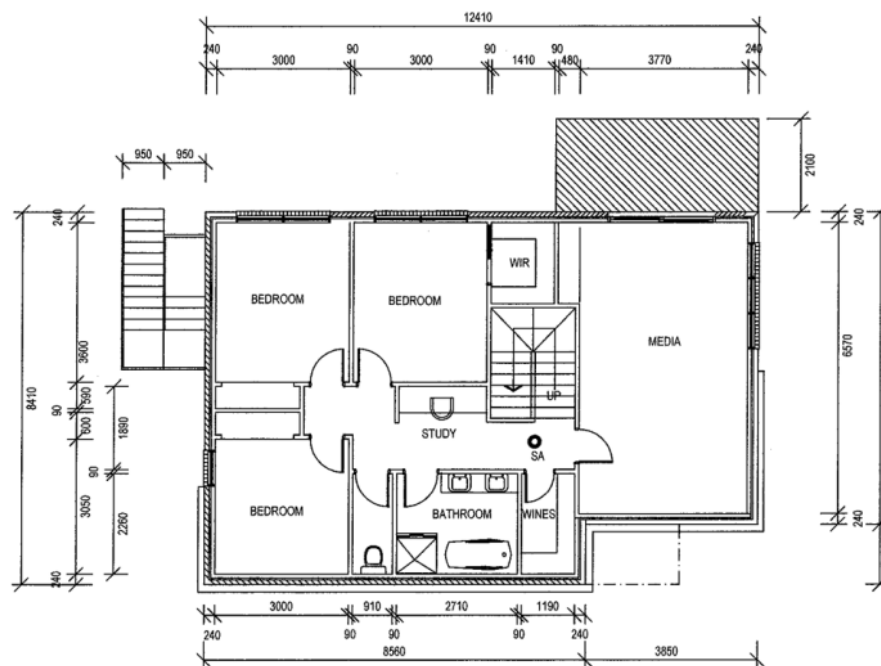
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1.

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 35 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 12



QUALITY HOME DESIGN

7

RUTHWELL STREET
 MONTROSE

Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN: BRIAN

DATE: 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-12-A-R
 ISSUE NO. 1

UNIT 12

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

- Where articulation joints are required, a gap of not less than 10mm must be provided.
- They are to be located at the following locations:
1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
 2. Where the height of the wall changes by more than 20% at the position of change in height.
 3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
 4. Where walls change in thickness
 5. At control or construction joints in footing slabs
 6. At junctions of walls constructed of different masonry materials
 7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

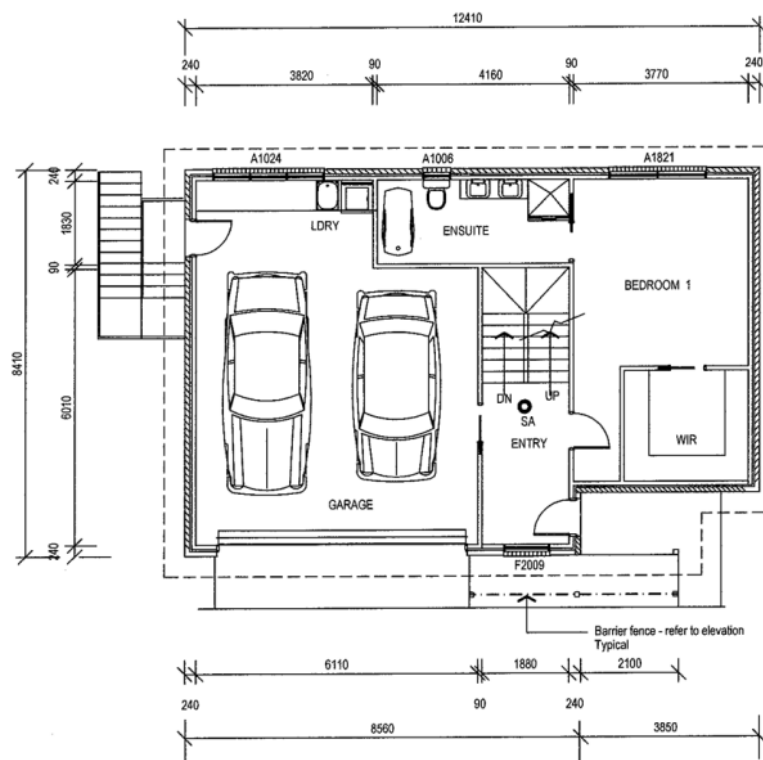
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

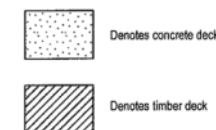
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

**Part 3.8.1 Building Code of Australia**

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruded bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TOC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST**

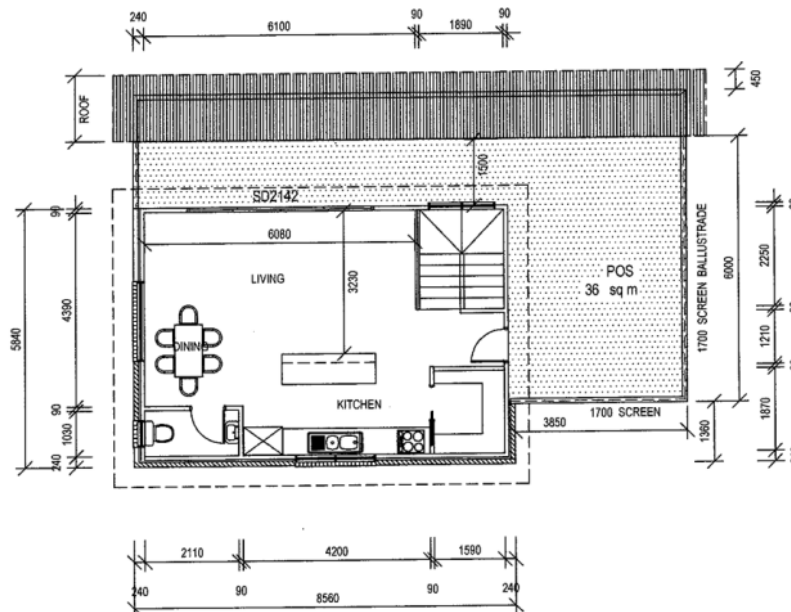
ISSUES
 2 BARRIER FENCE ADDED

SCALES 1:100

DRAWN: BRIAN DATE: 18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-12-B-R
 ISSUE NO. 2

UNIT 12

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



0.42 colorbond corrugated steel roofing on sissalation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking.
 Colour and profile as selected by owner.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

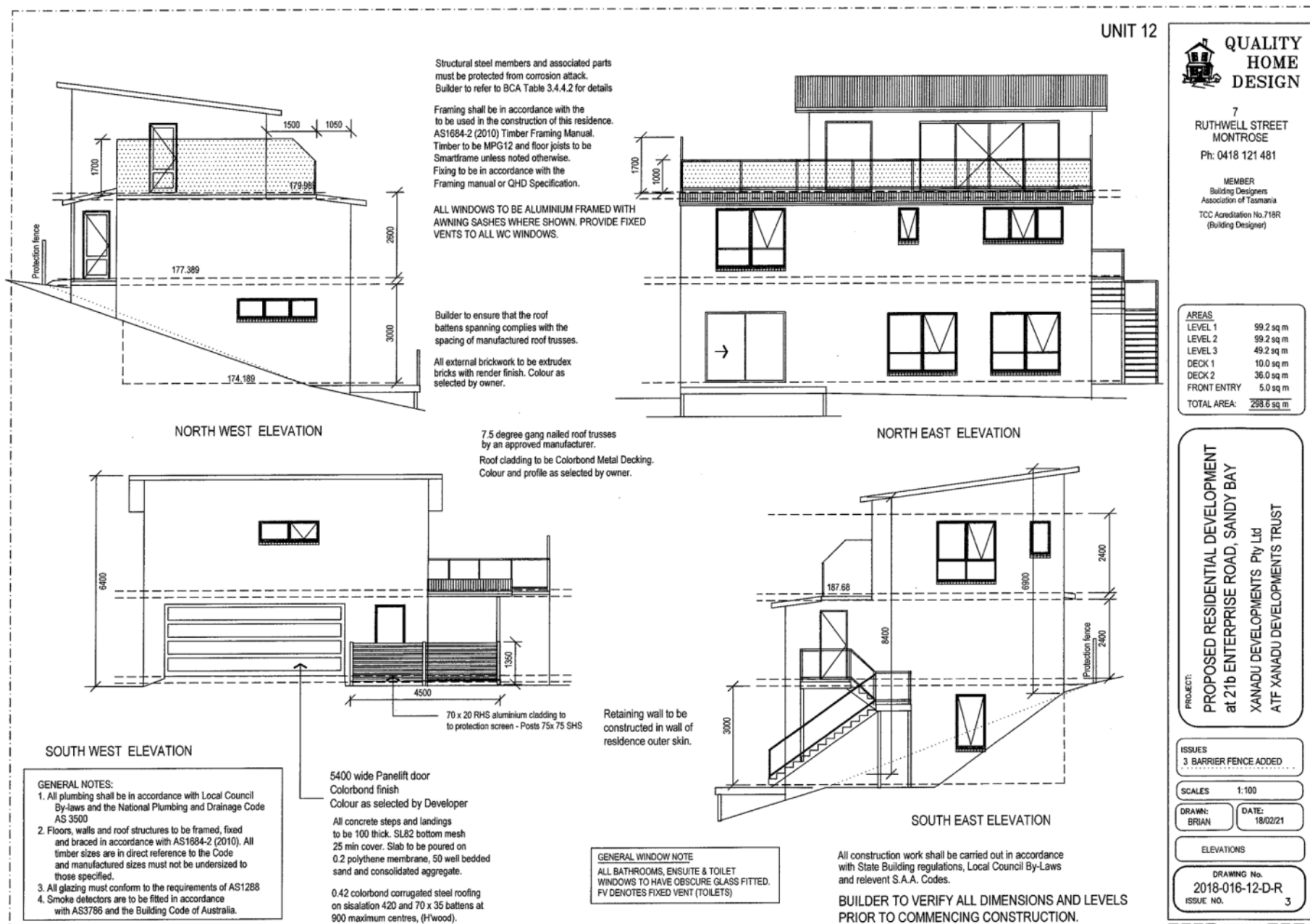
ISSUES

SCALES 1:100

DRAWN: BRIAN DATE: 30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
 2018-016-12-C-R
 ISSUE NO. 1



UNIT 12



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No.718R
(Building Designer)

AREAS	
LEVEL 1	99.2 sq m
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LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
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FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

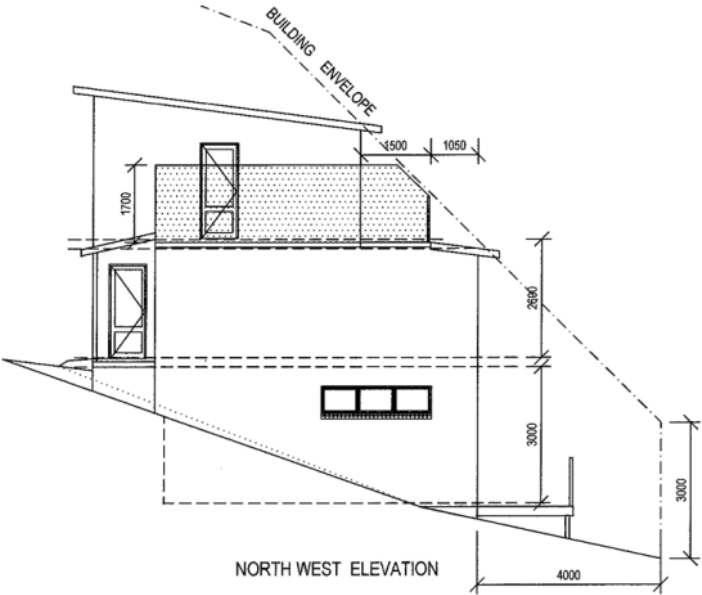
SCALES 1:100

DRAWN:
BRIAN

DATE:
07/10/20

BUILDING ENVELOPE - COMPLIANT

DRAWING No.
2018-016-12-E-R
ISSUE NO. 1



All construction work shall be carried out in accordance
with State Building regulations, Local Council By-Laws
and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
PRIOR TO COMMENCING CONSTRUCTION.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:

1. In straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

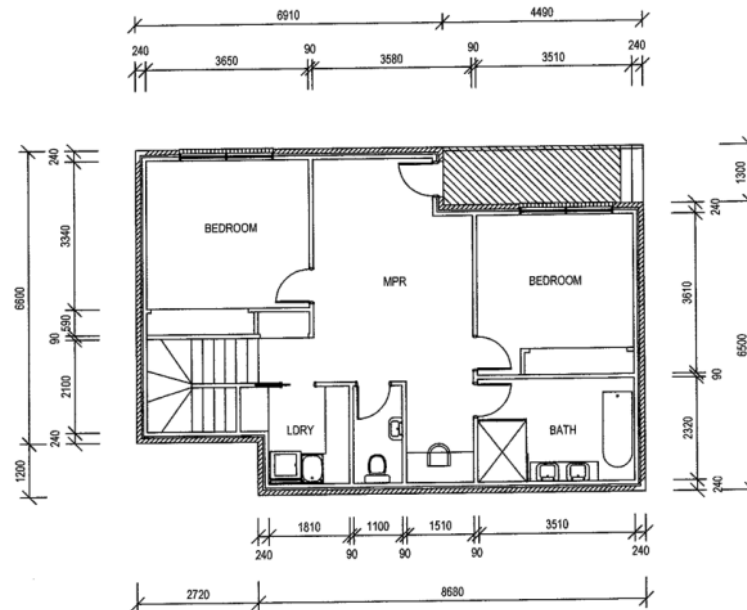
Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruded
 bricks with render finish. Colour as
 selected by owner.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGIN: 75 x 30 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 13



**QUALITY
 HOME
 DESIGN**

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 7118R
 (Building Designer)

AREAS	
LEVEL 1	80.9 sq m
LEVEL 2	80.9 sq m
LEVEL 3	56.0 sq m
DECK 1	3.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	1.5 sq m
TOTAL AREA:	247.0 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES	
SCALES	1:100
DRAWN: BRIAN	DATE: 30/07/20
LEVEL 1 FLOOR PLAN	
DRAWING No. 2018-016-13-AR	
ISSUE NO. 1	

UNIT 13**STAIRS NOTES**

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

- Where articulation joints are required, a gap of not less than 10mm must be provided. They are to be located at the following locations:
1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
 2. Where the height of the wall changes by more than 20% at the position of change in height
 3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
 4. Where walls change in thickness
 5. At control or construction joints in footing slabs
 6. At junctions of walls constructed of different masonry materials
 7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

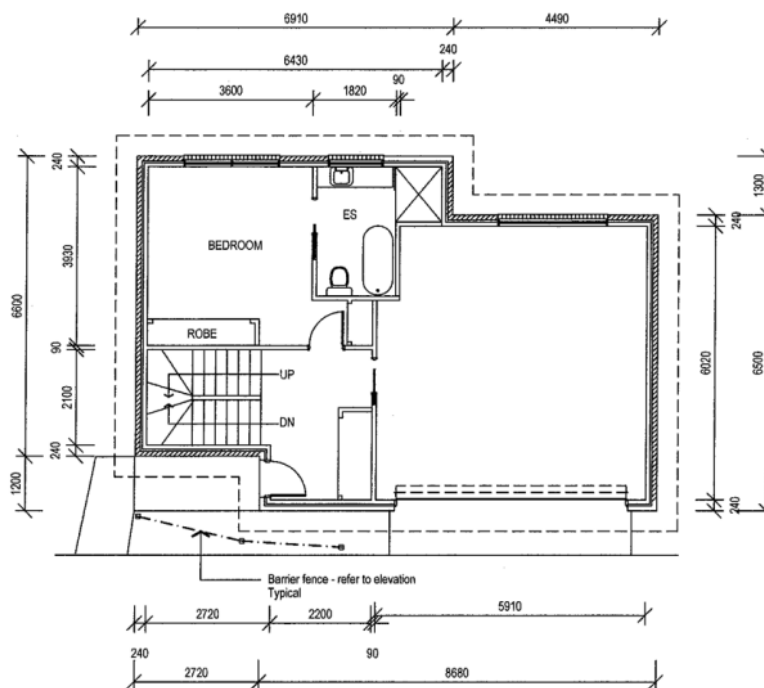
Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL62 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	80.9 sq m
LEVEL 2	80.9 sq m
LEVEL 3	56.0 sq m
DECK 1	3.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	1.5 sq m
TOTAL AREA:	247.0 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

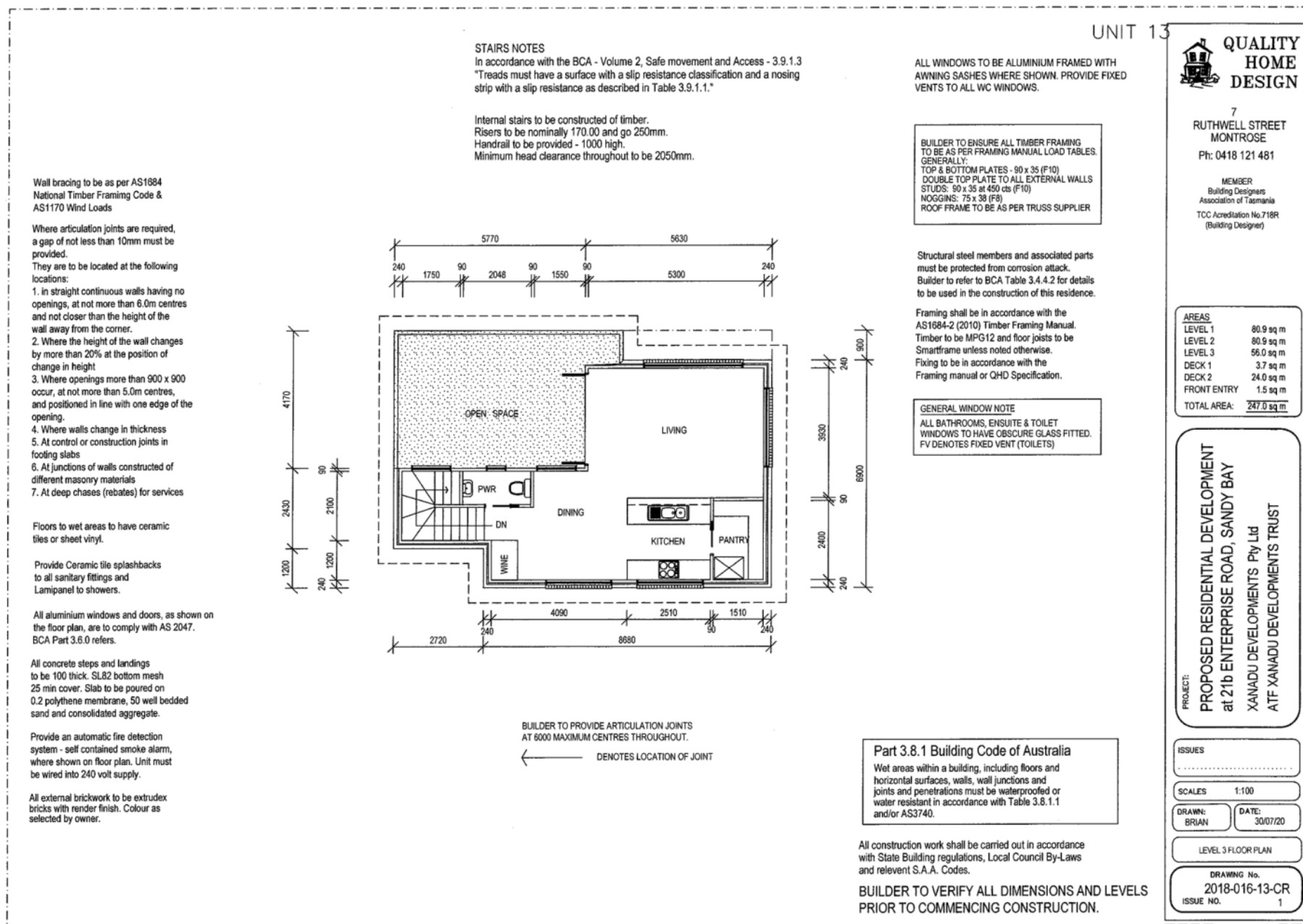
ISSUES
 2. BARRIER FENCE ADDED

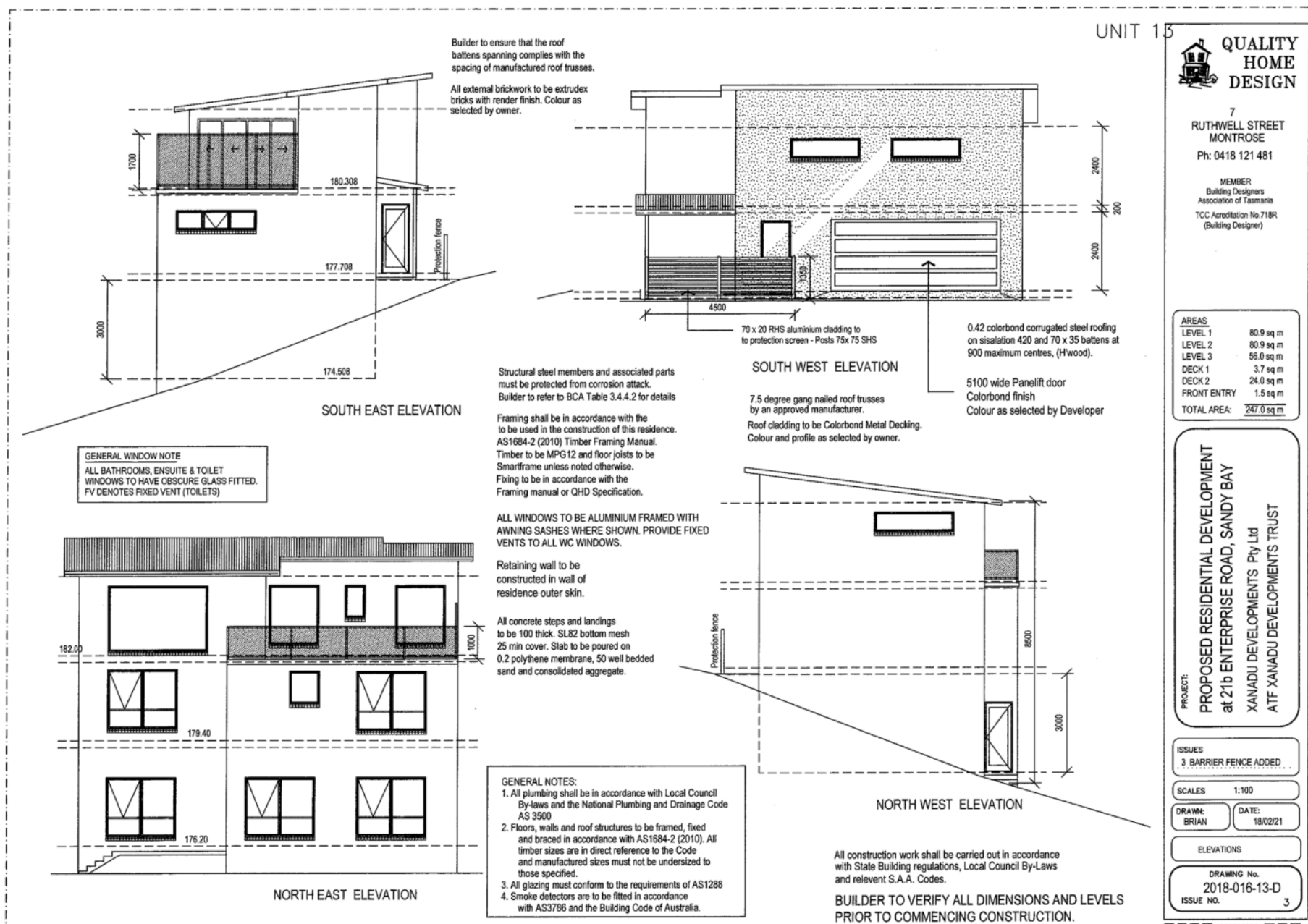
SCALES 1:100

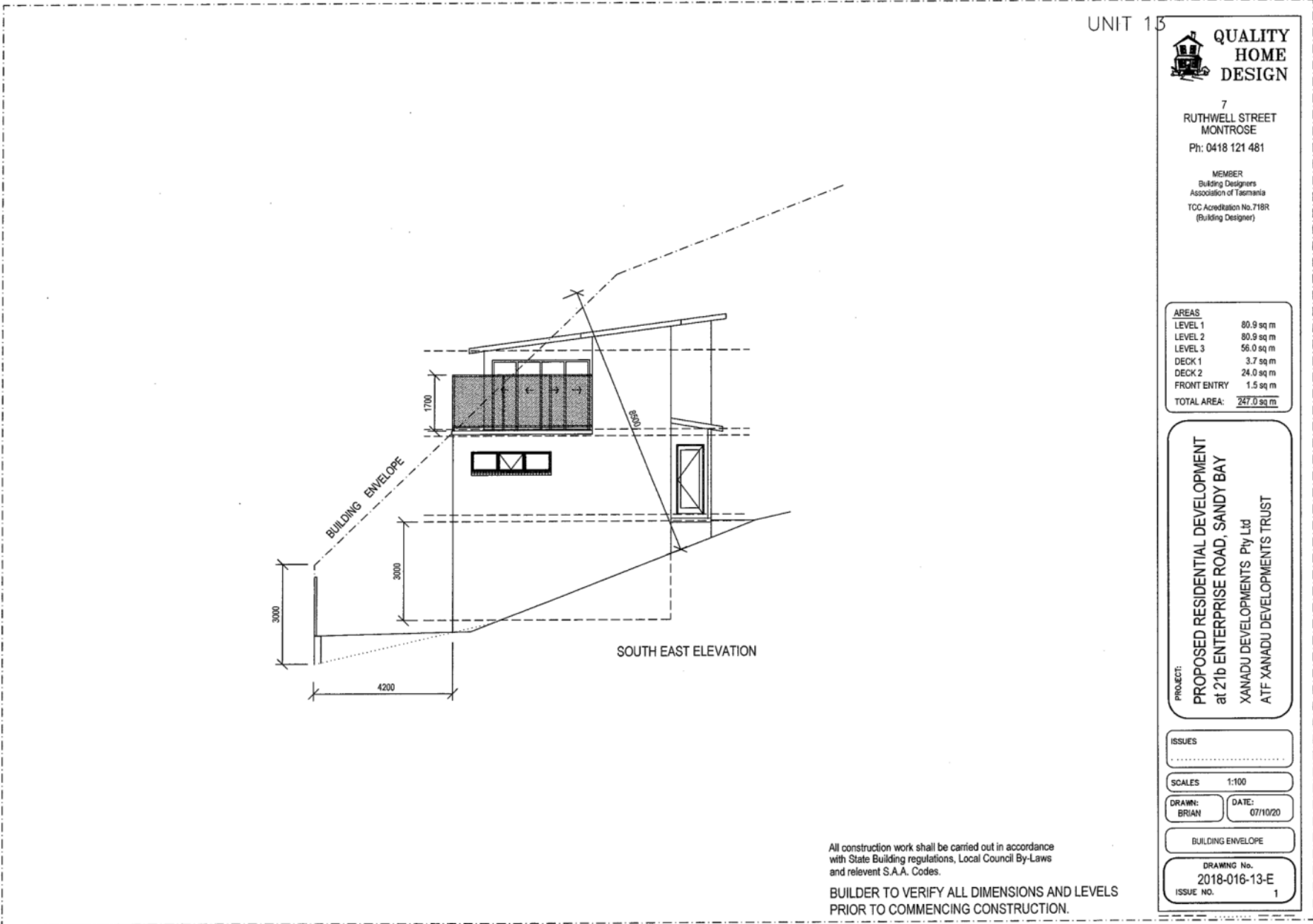
DRAWN: BRIAN DATE: 18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-13-BR
 ISSUE NO. 2







Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

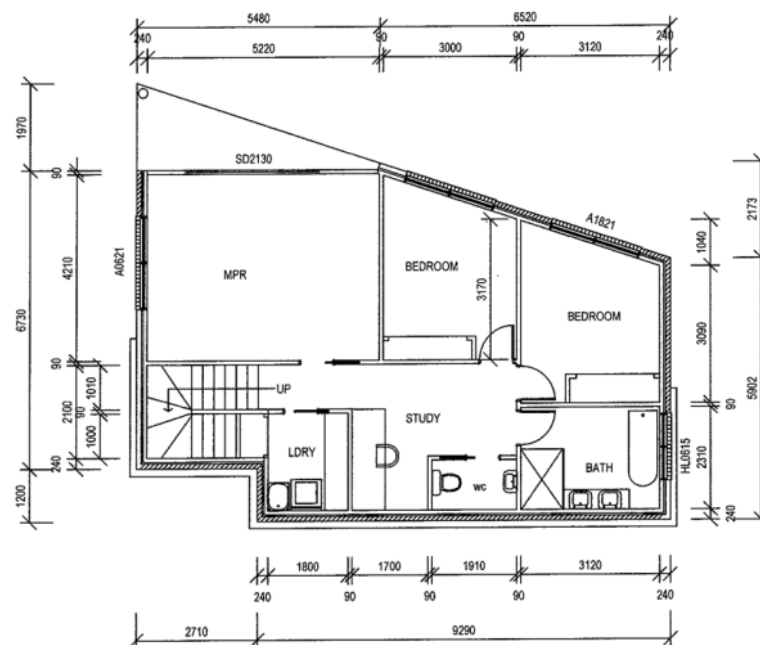
Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.

UNIT 14



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 716R
 (Building Designer)

AREAS	
LEVEL 1	85.9 sq m
LEVEL 2	91.6 sq m
LEVEL 3	67.6 sq m
DECK 1	5.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	2.0 sq m
TOTAL AREA:	278.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-14-AR
 ISSUE NO. 1

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.8.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

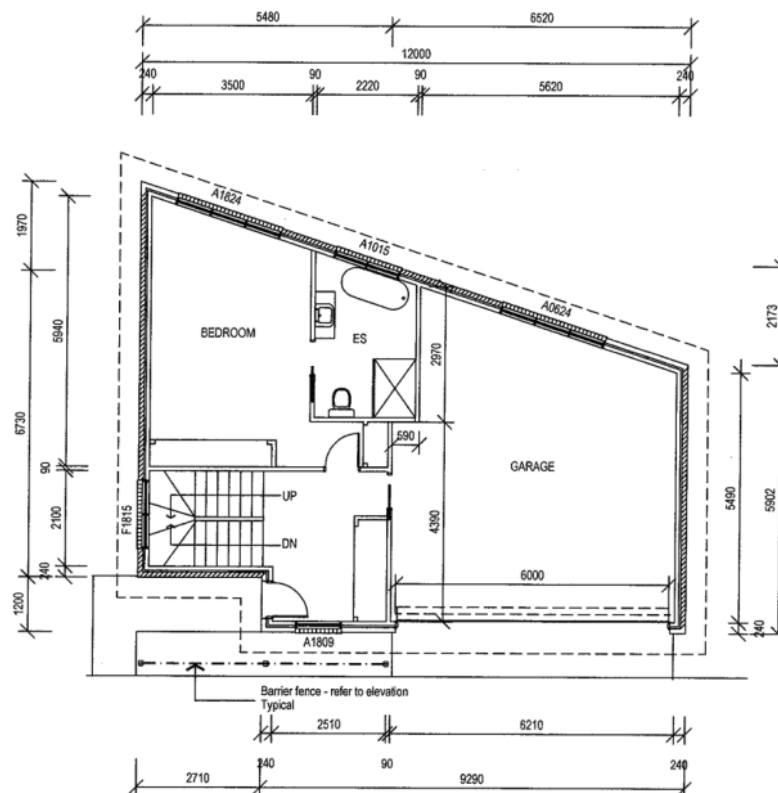
Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

UNIT 14

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cs (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accredited No.718R
 (Building Designer)

AREAS	
LEVEL 1	85.9 sq m
LEVEL 2	91.6 sq m
LEVEL 3	67.6 sq m
DECK 1	6.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	2.0 sq m
TOTAL AREA:	278.8 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES
 3 BARRIER FENCE ADDED

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 18/02/21

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-14-BR
 ISSUE NO. 3

UNIT 14



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 716R
 (Building Designer)

AREAS	
LEVEL 1	85.9 sq m
LEVEL 2	91.6 sq m
LEVEL 3	67.6 sq m
DECK 1	5.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	2.0 sq m
TOTAL AREA:	278.8 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
2018-016-14-CR
 ISSUE NO. 1

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

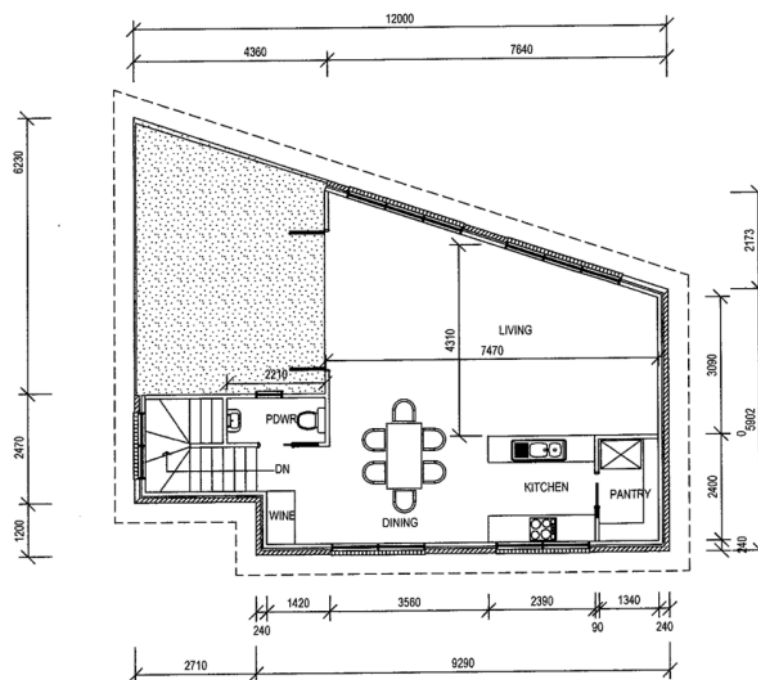
Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
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 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

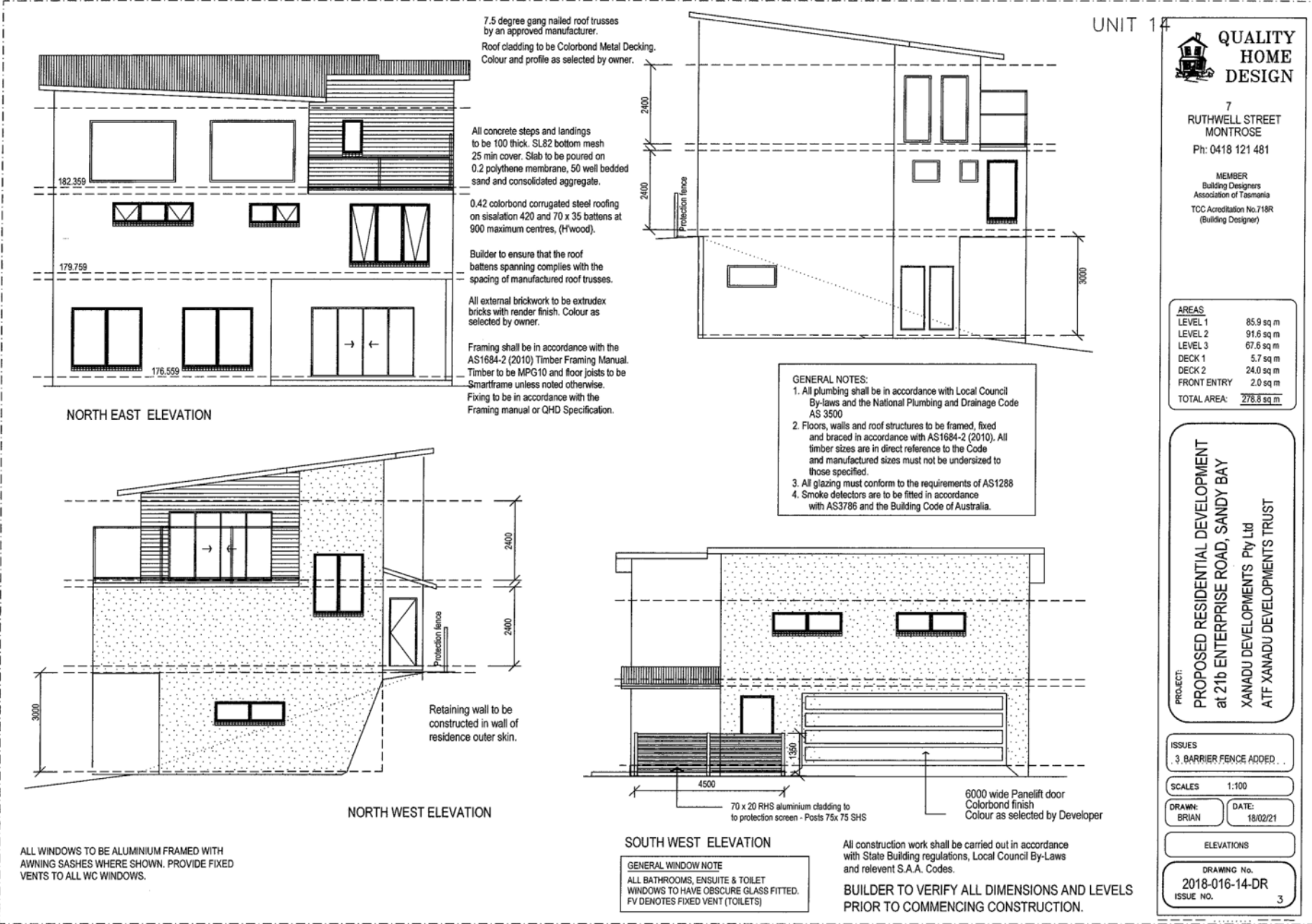
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

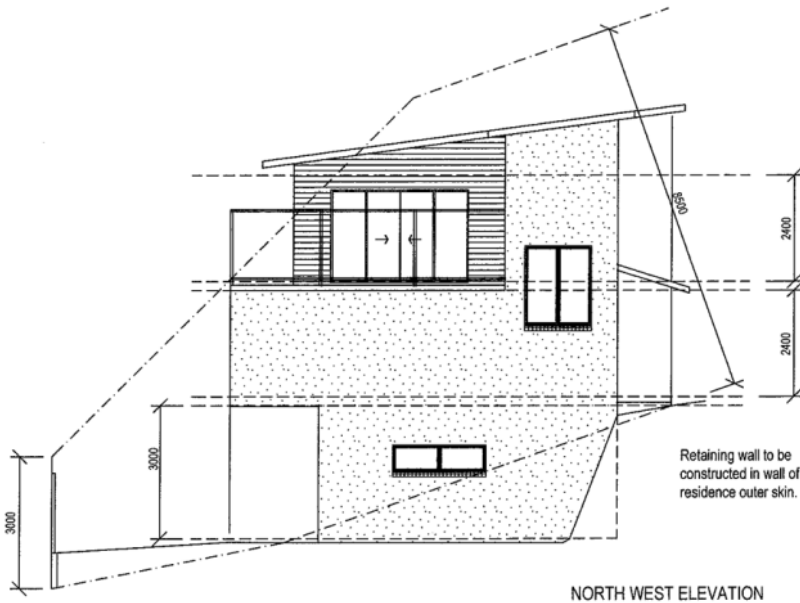
Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**



UNIT 14



NORTH WEST ELEVATION

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No.718R
(Building Designer)

AREAS	
LEVEL 1	85.9 sq m
LEVEL 2	91.6 sq m
LEVEL 3	67.6 sq m
DECK 1	5.7 sq m
DECK 2	24.0 sq m
FRONT ENTRY	2.0 sq m
TOTAL AREA:	278.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
BRIAN

DATE:
07/10/20

BUILDING ENVELOPE

DRAWING No.
2018-016-14-ER
ISSUE NO. 1

Structural steel members and associated parts must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise.
 Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

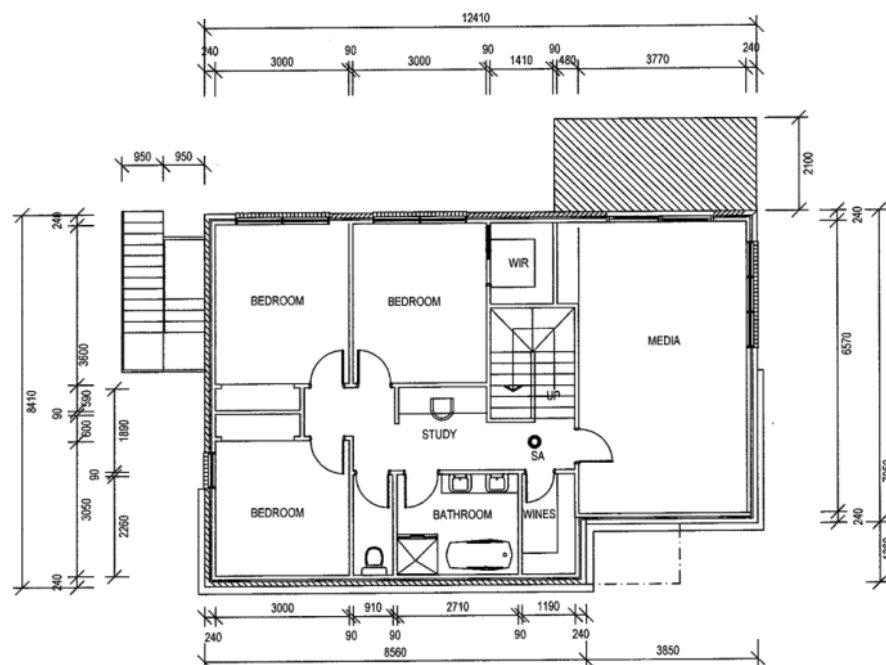
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 80 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 15



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-15-A-R
 ISSUE NO. 1

UNIT 15

**QUALITY
HOME
DESIGN**

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-15-B-R
ISSUE NO. 1

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 8000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on insulation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

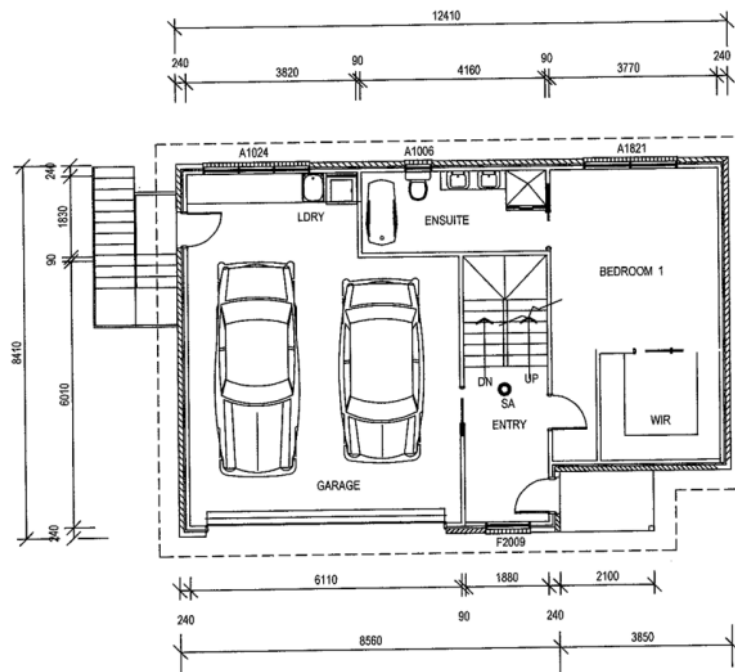
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythane membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

**Part 3.8.1 Building Code of Australia**

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruded bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

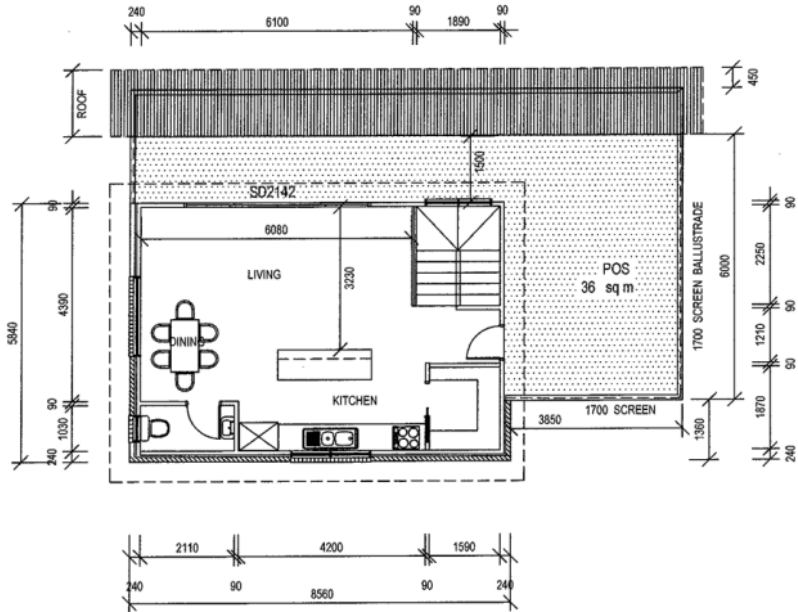
Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

UNIT 15



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

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STAIRS NOTES
In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
"Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Denotes concrete deck

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres. (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

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BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No.718R
(Building Designer)

AREAS	
LEVEL 1	89.2 sq m
LEVEL 2	89.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

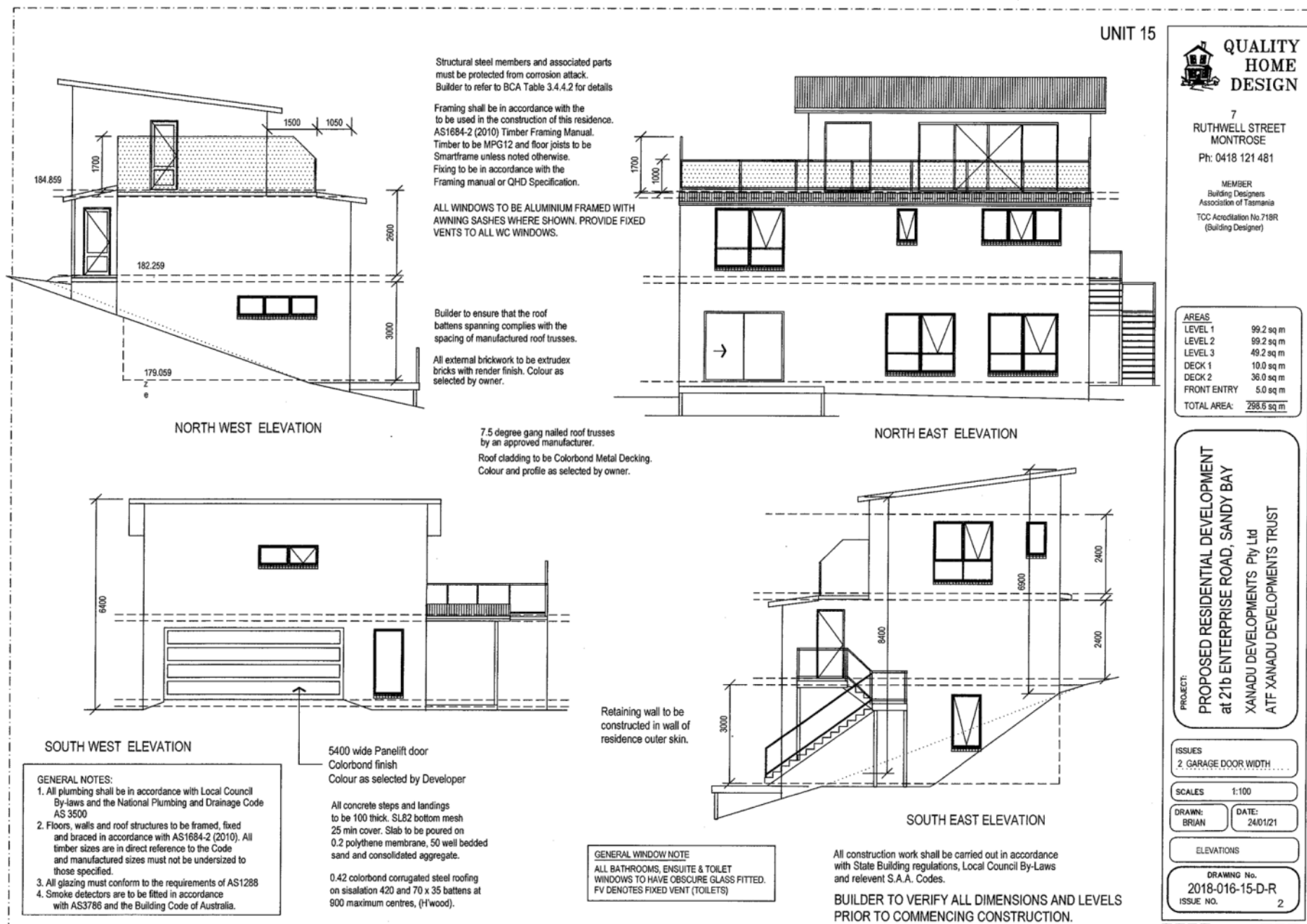
ISSUES

SCALES 1:100

DRAWN: BRIAN DATE: 30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
2018-016-15-C-R
ISSUE NO. 1



Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extrudex bricks with render finish. Colour as selected by owner.

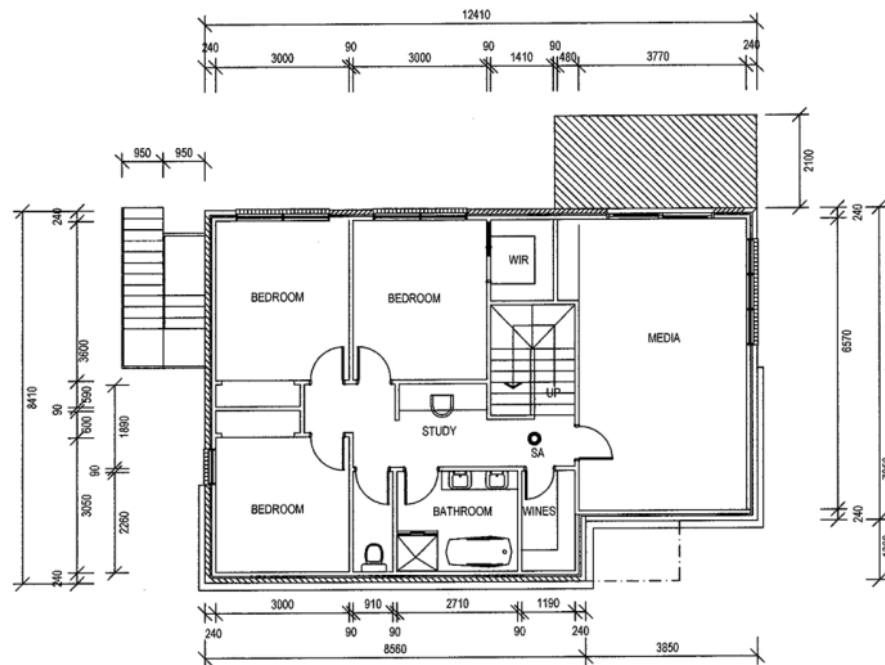
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

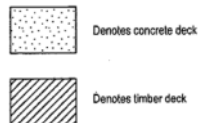
ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 35 (F9)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 16



QUALITY HOME DESIGN

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	288.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-16-A-R
 ISSUE NO. 1

UNIT 16

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

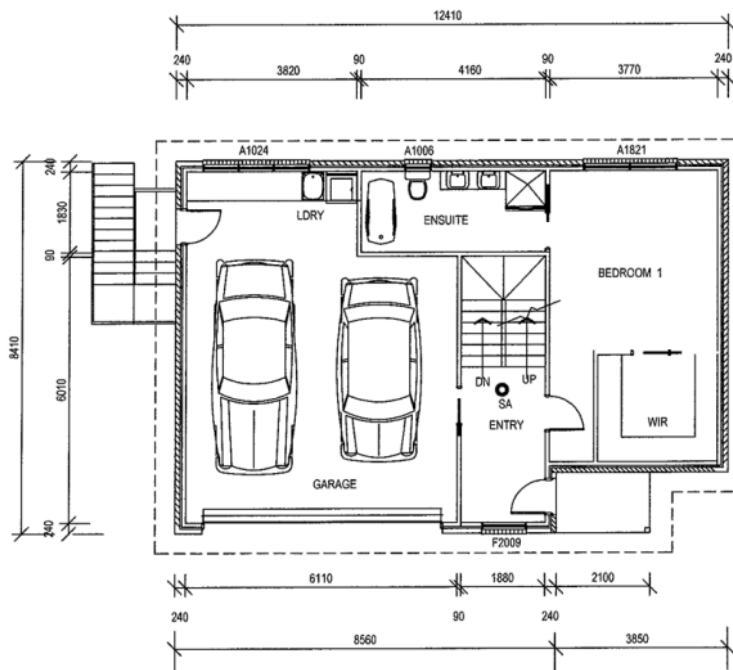
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

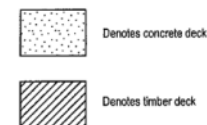
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

**Part 3.8.1 Building Code of Australia**

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



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MEMBER
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 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN:

BRIAN

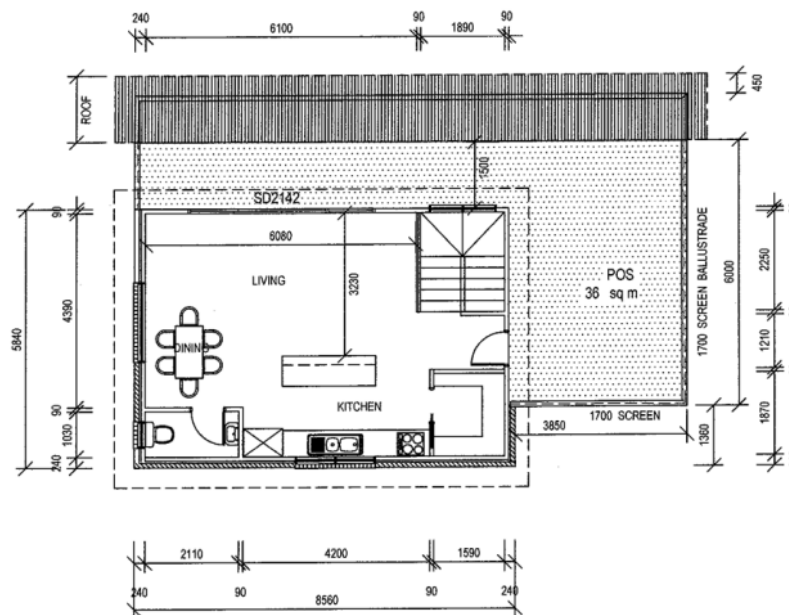
DATE:

30/07/20

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-16-B-R
 ISSUE NO. 1

UNIT 16



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
National Timber Framing Code &
AS1170 Wind Loads

Internal stairs to be constructed of timber.
Risers to be nominally 180.00 and go 250mm.
Handrail to be provided - 1000 high.
Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
"Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



0.42 colorbond corrugated steel roofing on insulation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047.
BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking.
Colour and profile as selected by owner.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

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BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



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AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
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TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

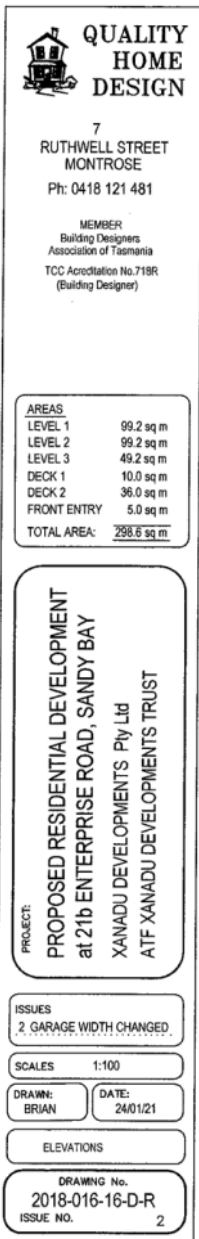
SCALES 1:100

DRAWN:
BRIAN

DATE:
30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
2018-016-16-C-R
ISSUE NO. 1



Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MP12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
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3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
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Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

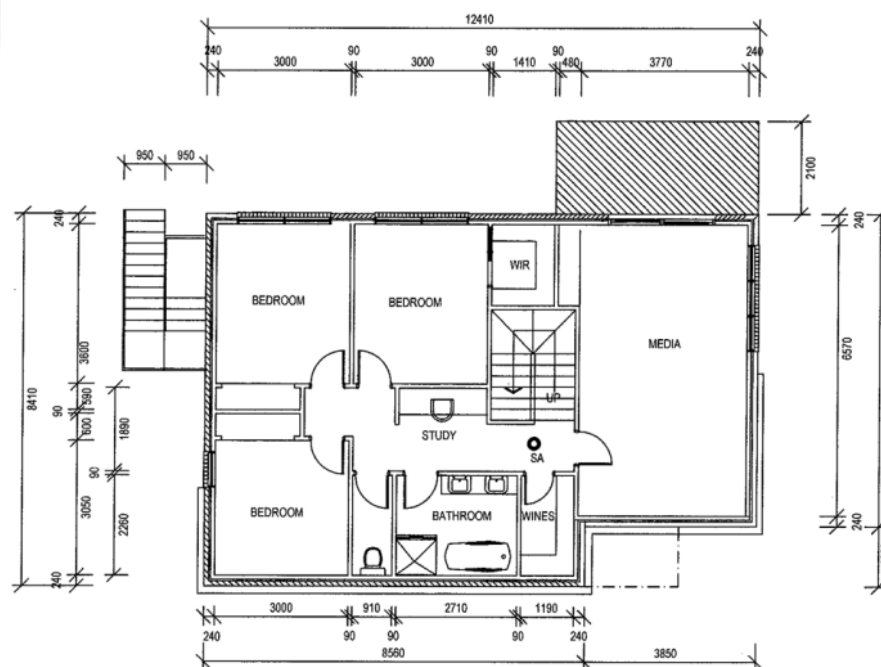
STAIRS NOTES

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BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

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UNIT 17



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 MONTROSE

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ISSUES

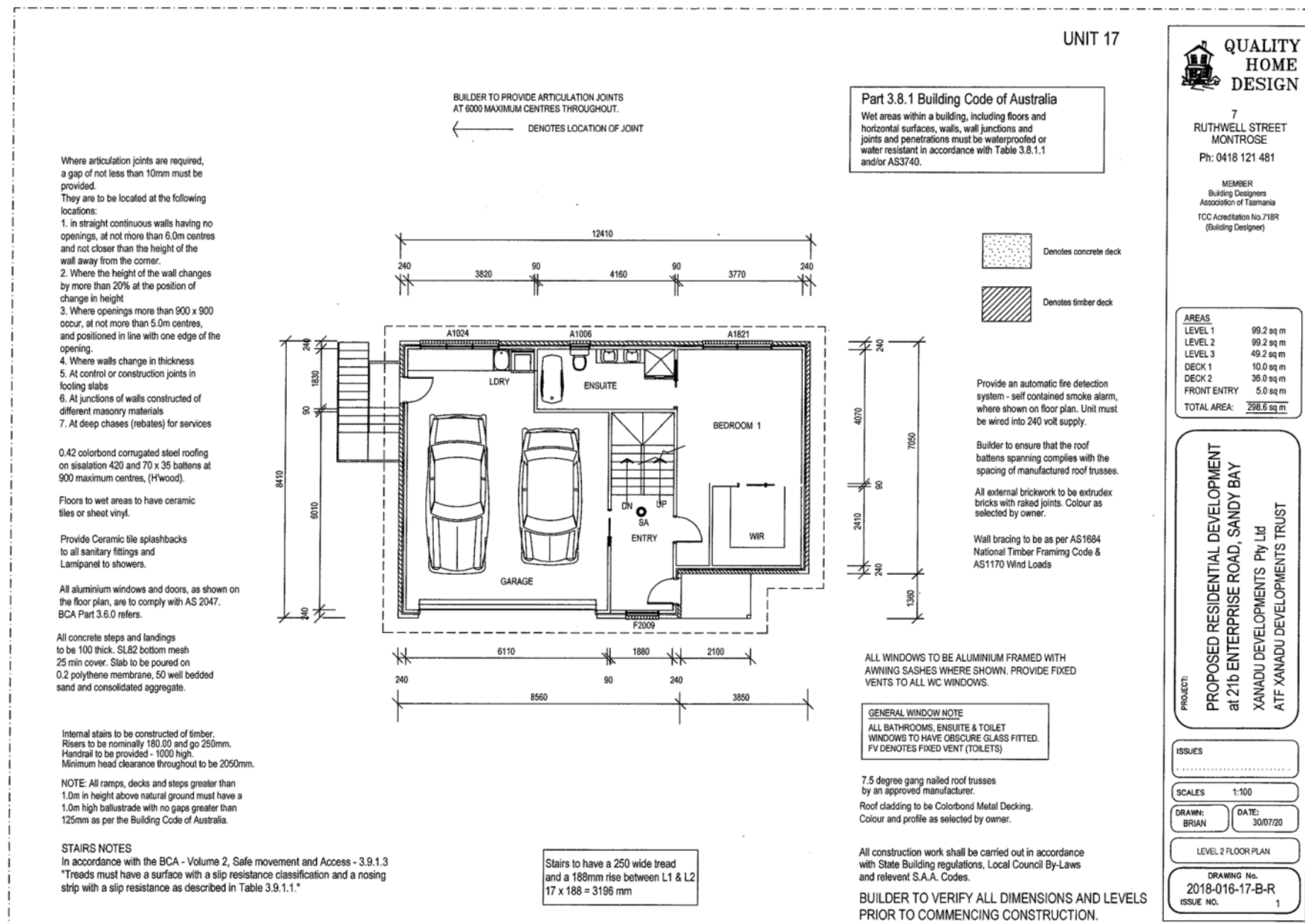
SCALES 1:100

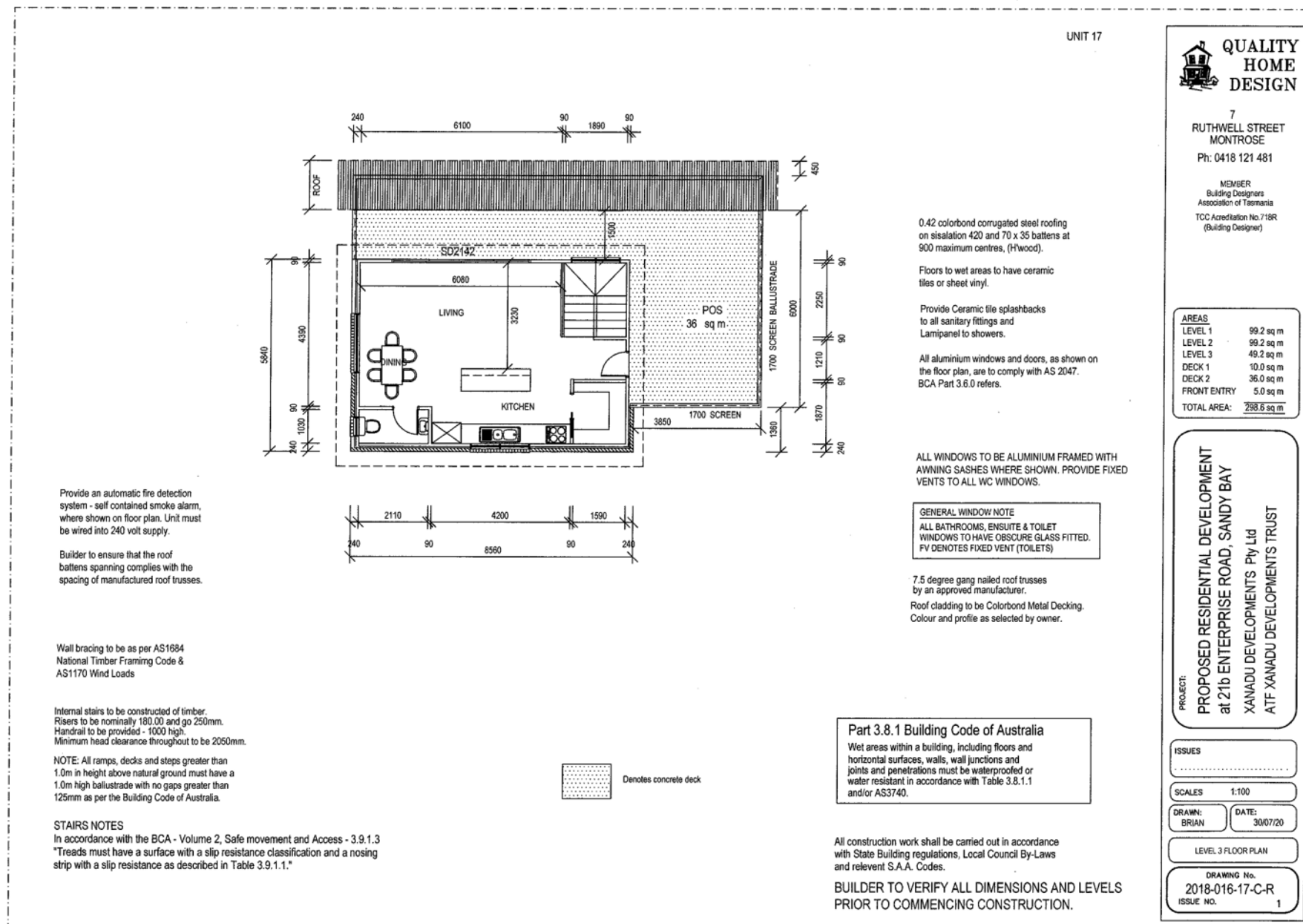
DRAWN:
 BRIAN

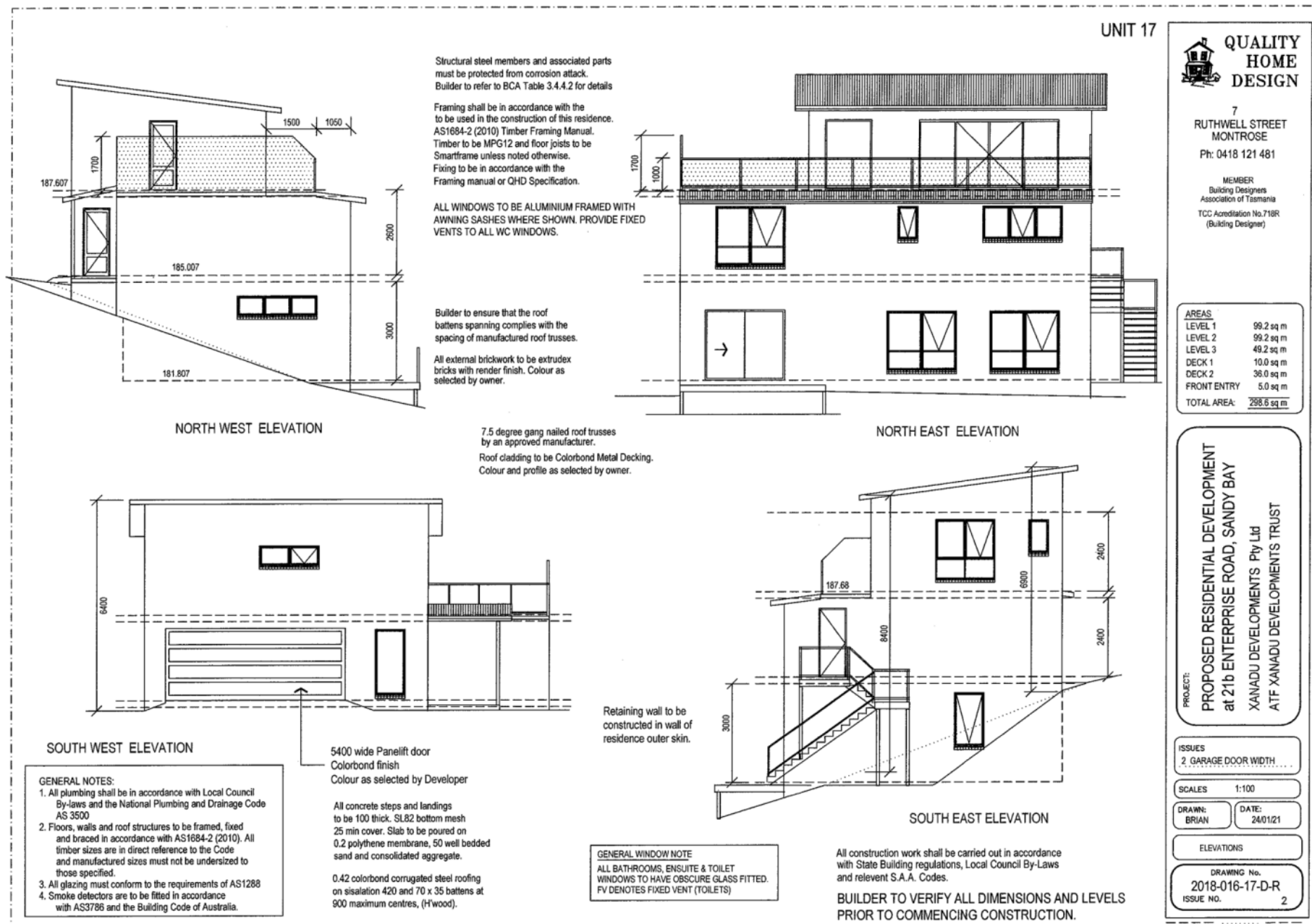
DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-17-A-R
ISSUE NO. 1







Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

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All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

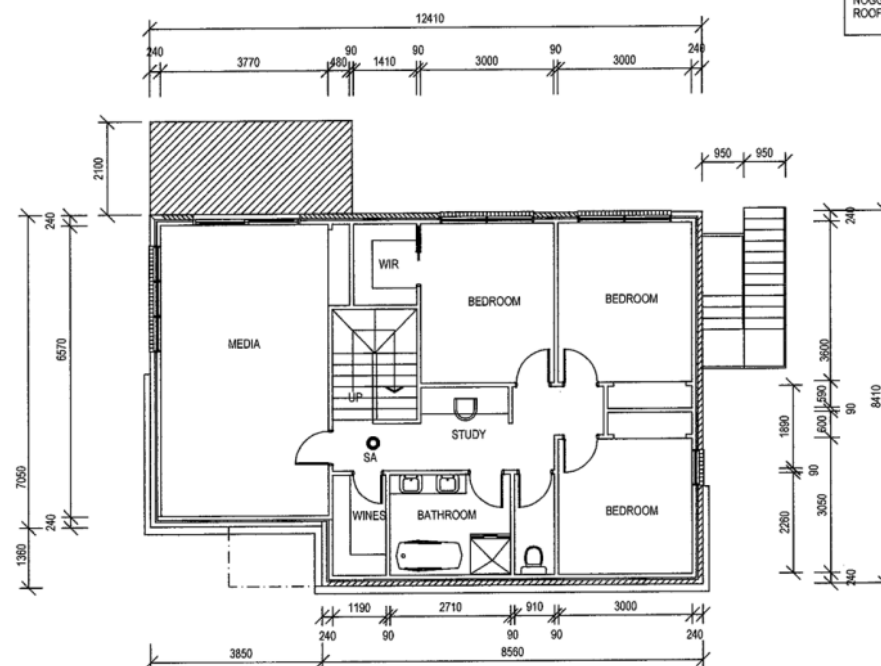
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber. Risers to be nominally 170.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 18



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES: 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-18-A-R
 ISSUE NO. 1

UNIT 18

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sissalation 420 and 70 x 35 battens at 900 maximum centres. (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

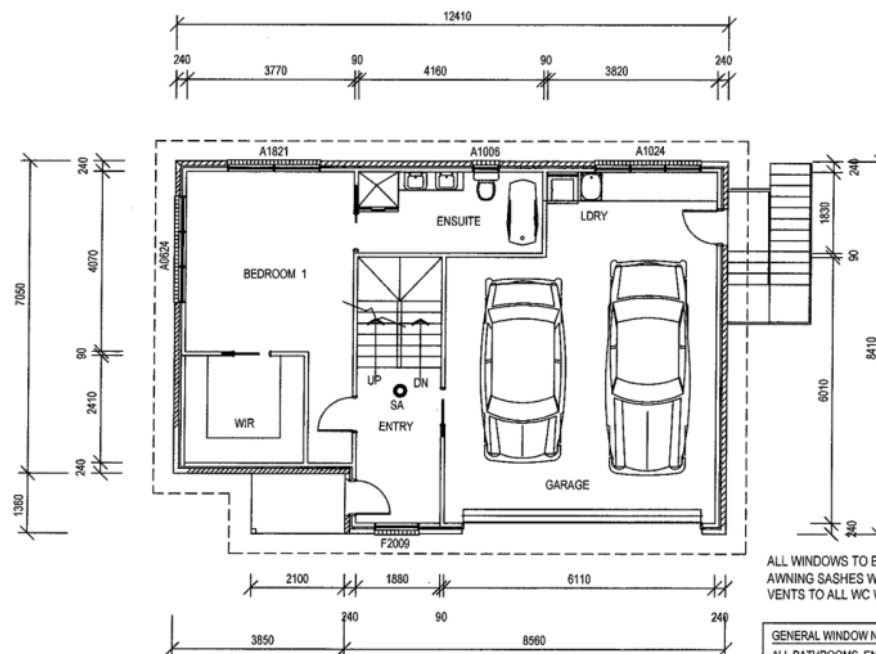
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
A/T: XANADU DEVELOPMENTS TRUST

ISSUES

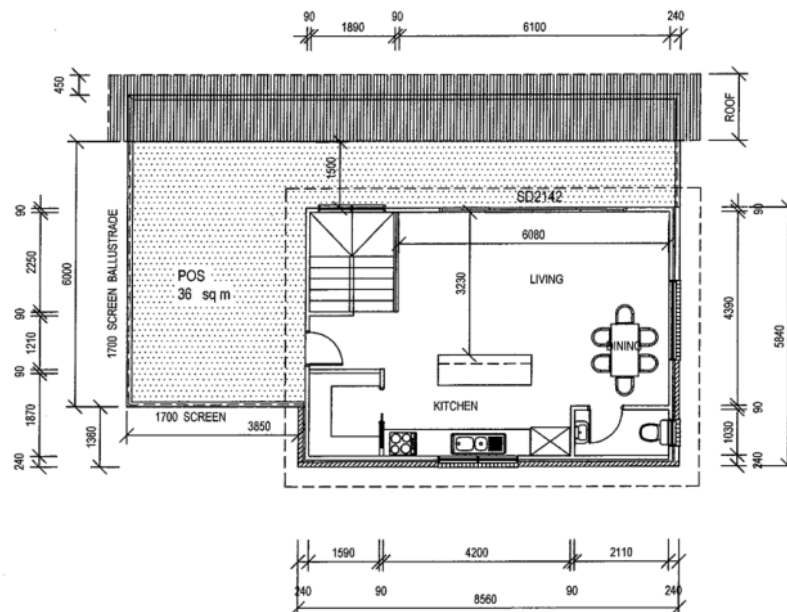
SCALES 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-18-B-R
ISSUE NO. 1



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Denotes concrete deck

0.42 colorbond corrugated steel roofing on insulation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

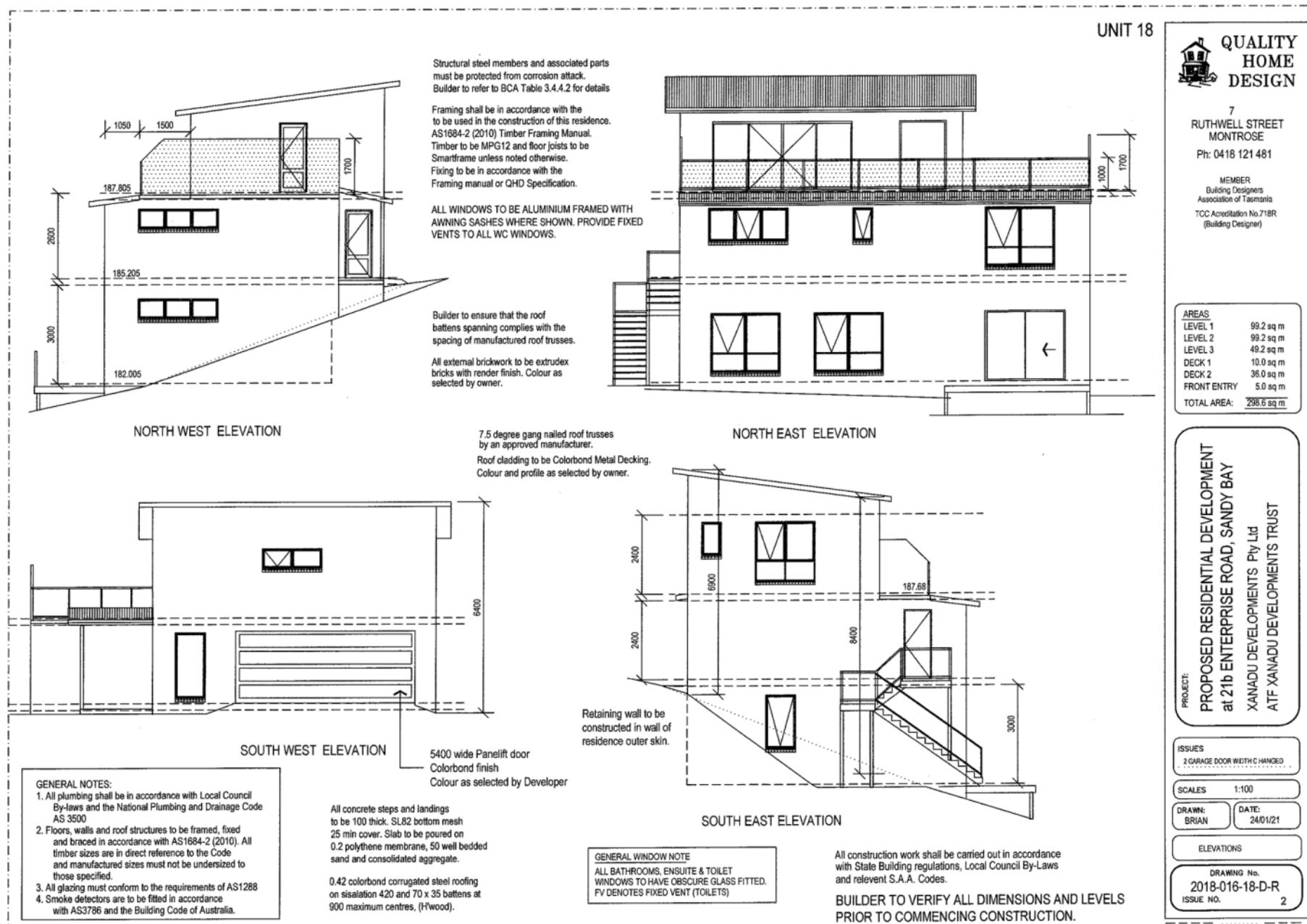
SCALES 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
 2018-016-18-C-R
 ISSUE NO. 1



Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided. They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

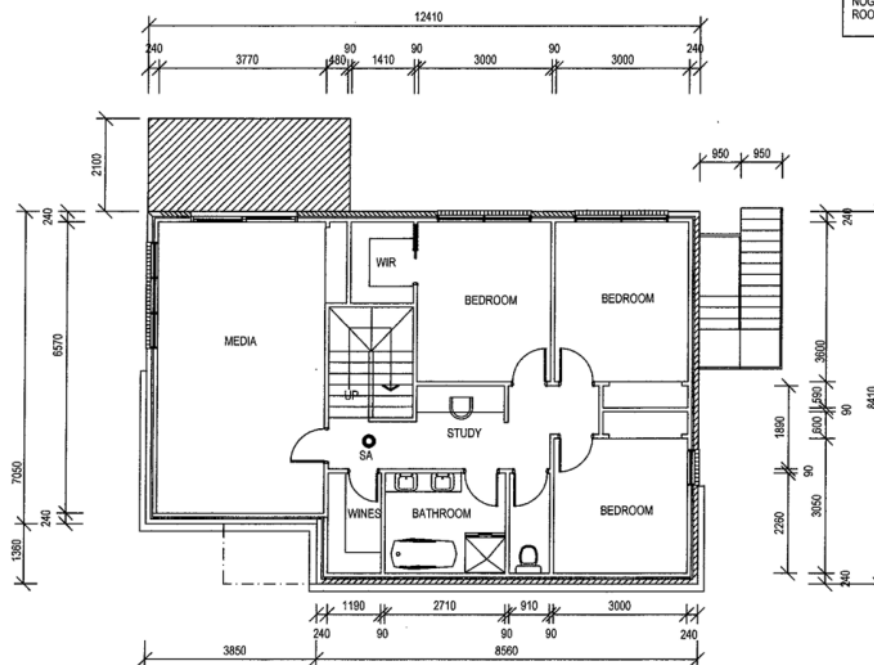
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1.

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINNS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 19



QUALITY HOME DESIGN

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-19-A-R
 ISSUE NO. 1

UNIT 19

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

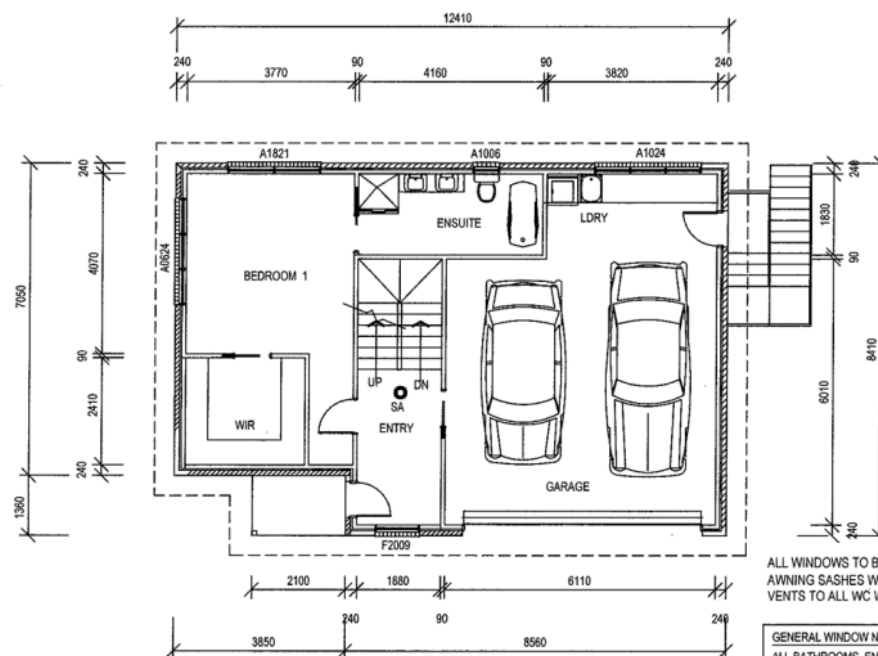
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:

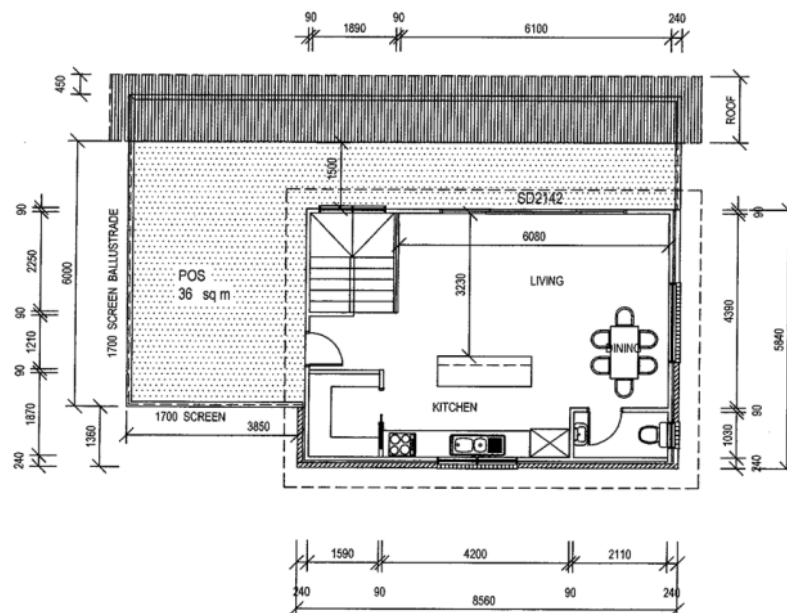
BRIAN

DATE:

30/07/20

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-19-B-R
 ISSUE NO. 1



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



QUALITY HOME DESIGN
 7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

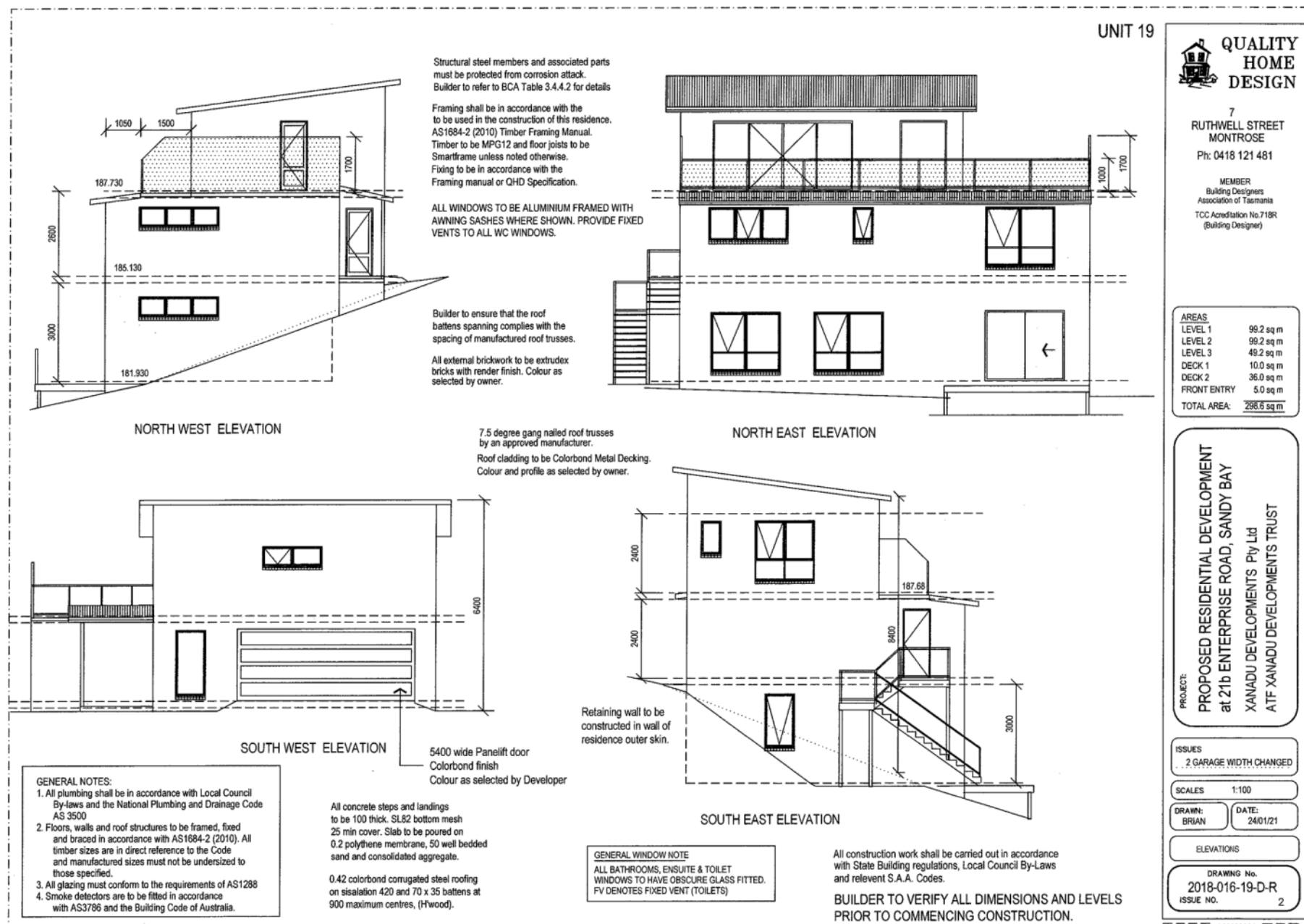
SCALES 1:100

DRAWN: BRIAN

DATE: 30/07/20

LEVEL 3 FLOOR PLAN

DRAWING No.
 2018-016-19-C-R
 ISSUE NO. 1



Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided. They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

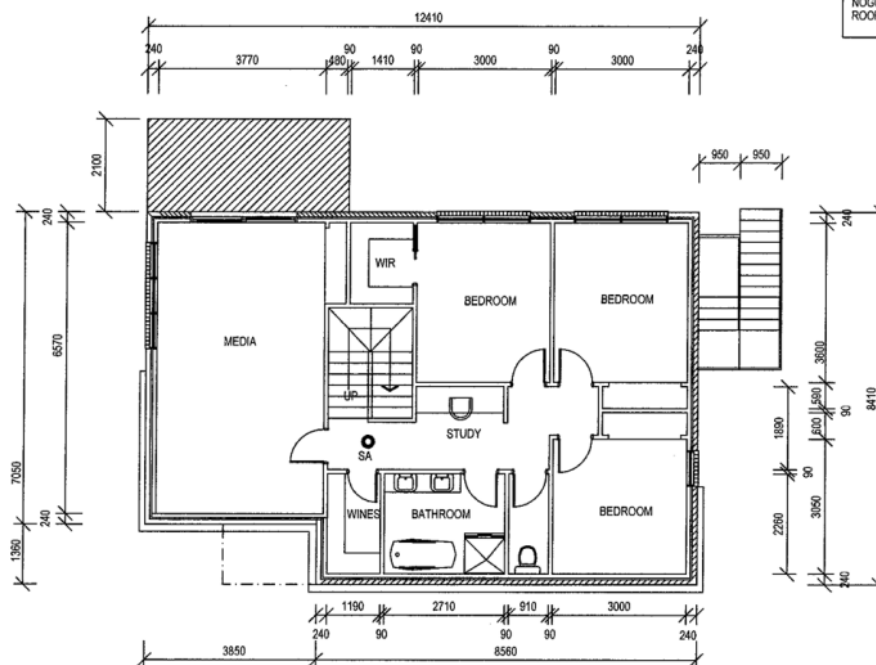
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1.

Internal stairs to be constructed of timber. Risers to be nominally 170.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGIN: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 20



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No. 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN: BRIAN

DATE: 30/07/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-20-A-R
 ISSUE NO. 1

UNIT 20

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.
 ← DENOTES LOCATION OF JOINT

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisetation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

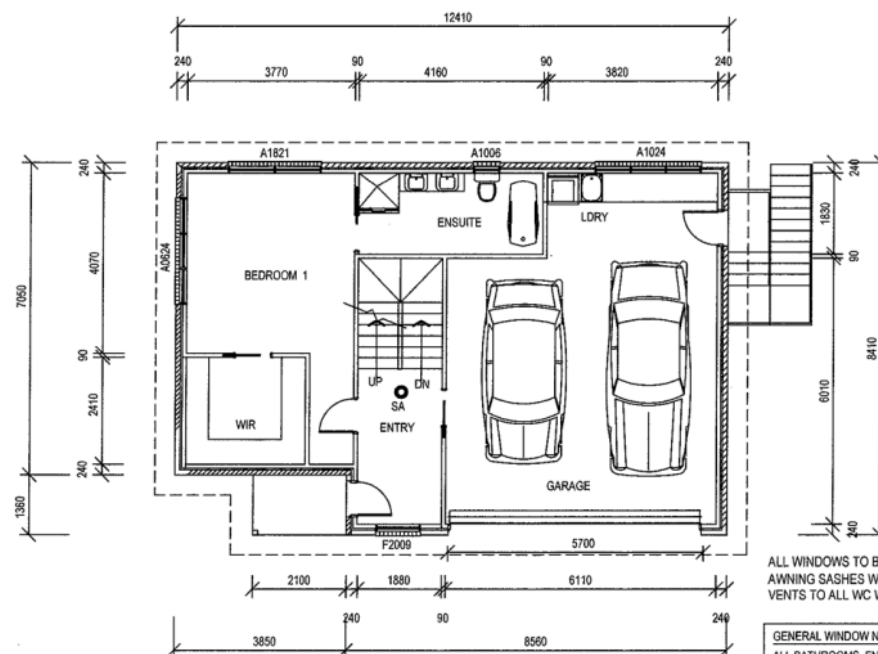
All concrete steps and landings to be 100 thick. SLB2 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



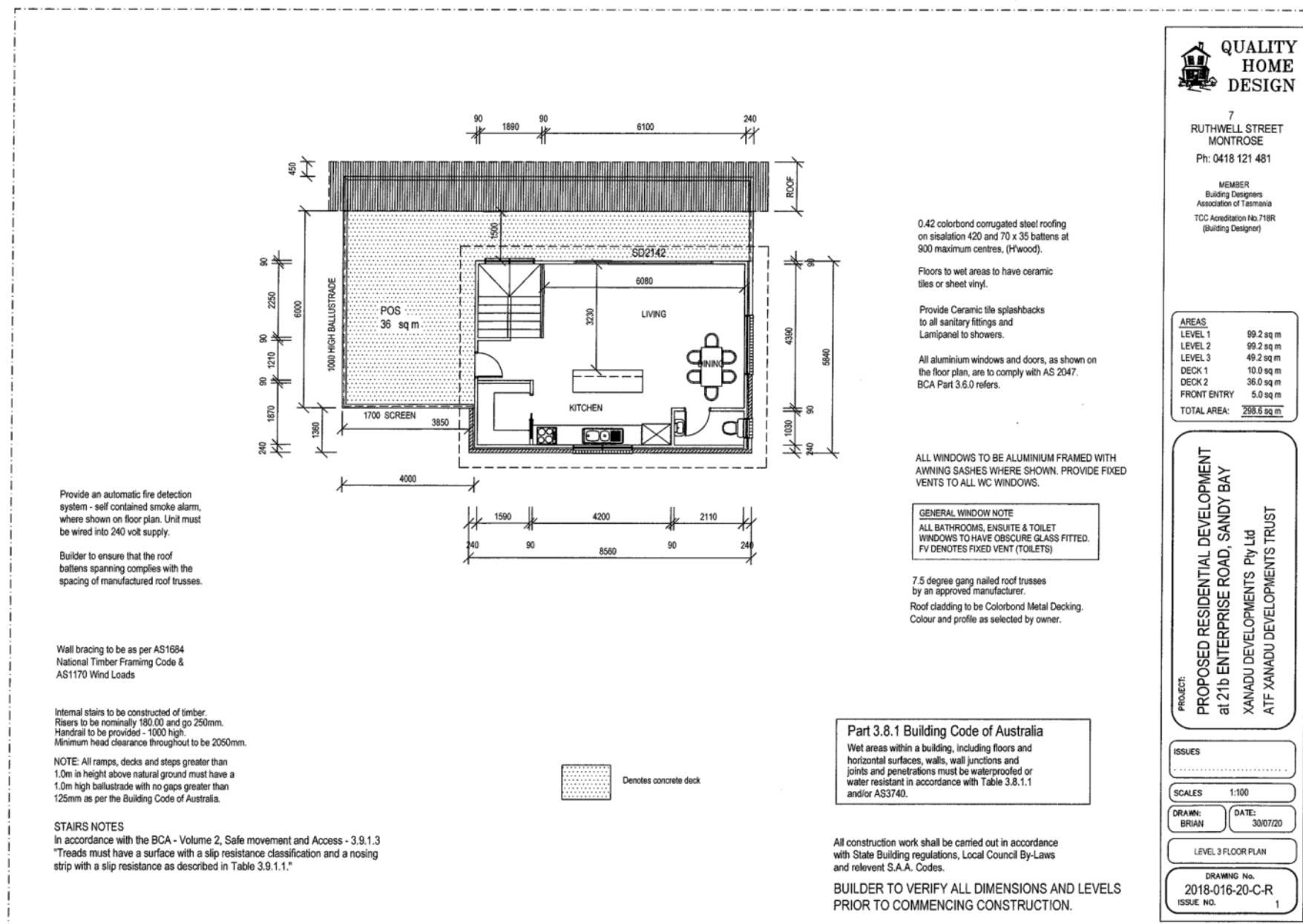
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RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

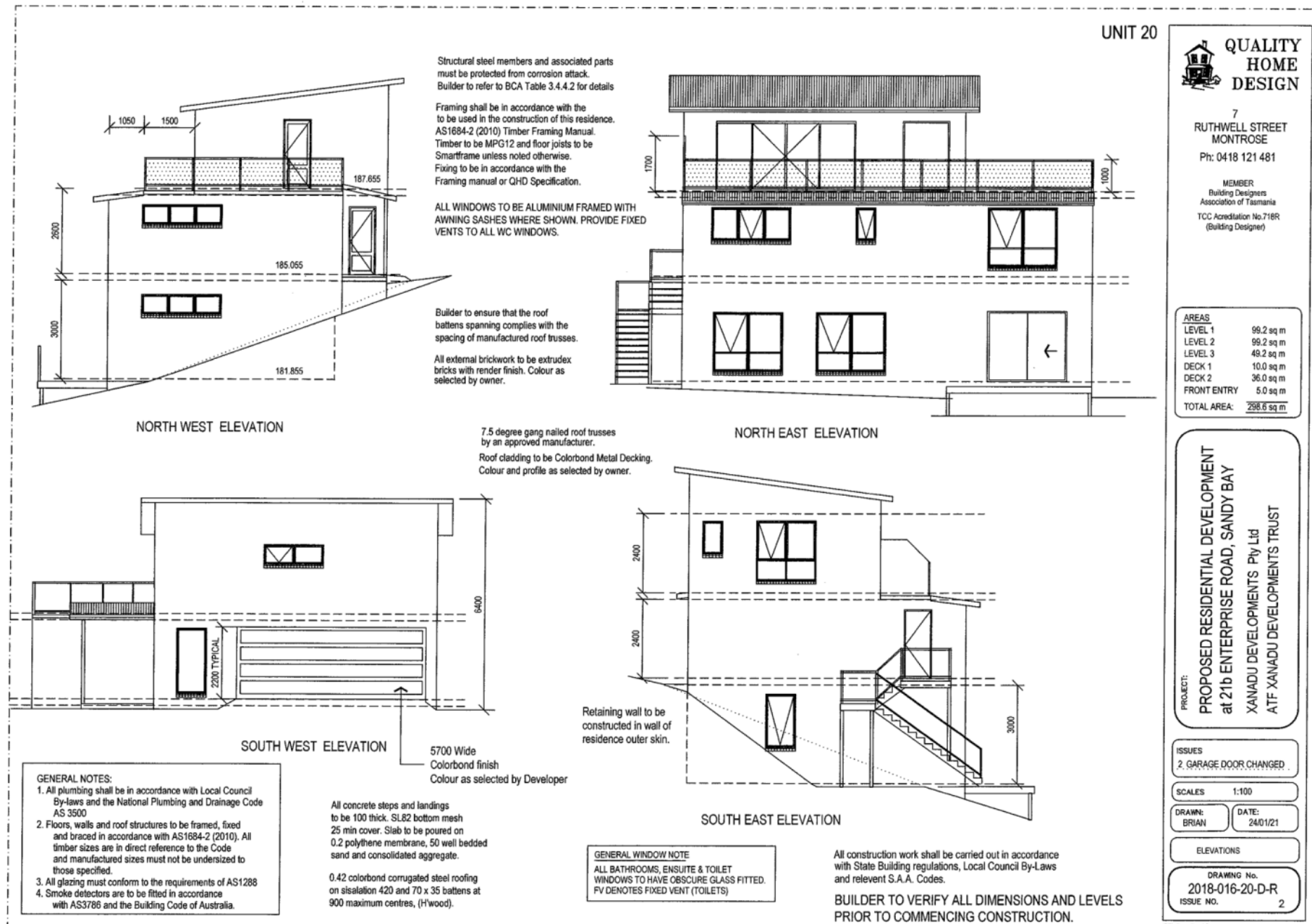
MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 718R
 (Building Designer)

AREAS	
LEVEL 1	99.2 sq m
LEVEL 2	99.2 sq m
LEVEL 3	49.2 sq m
DECK 1	10.0 sq m
DECK 2	36.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	298.6 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

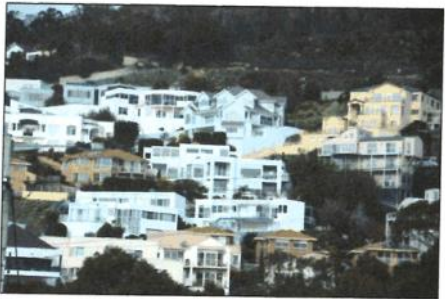
ISSUES	2 GARAGE DOOR WIDTH CHANGED
SCALES	1:100
DRAWN:	DATE:
BRIAN	24/01/21
LEVEL 2 FLOOR PLAN	
DRAWING No.	
2018-016-20-B-R	
ISSUE NO.	2







Note: the Development is below the skyline and will have a visual impact similar the existing houses that presently front Enterprise Road.



Existing Development off Nicholas Drive
Many sites have multiple dwellings constructed on them



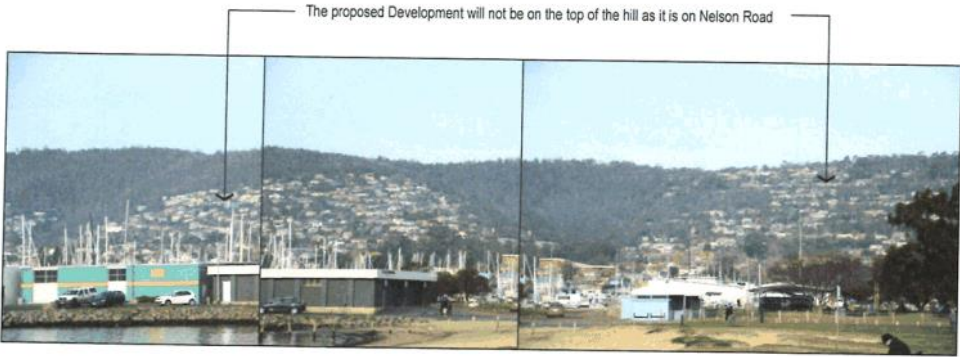
The existing development along the East End of Enterprise Road

THESE PHOTOS ARE PROVIDED TO SHOW THAT THE DEVELOPMENT WILL BE BELOW THE TOP OF THE HILL AND WILL HAVE TREES ABOVE THE DEVELOPMENT.

THE HEIGHT OF THIS DEVELOPMENT IS BELOW ADJACENT RESIDENTIAL DEVELOPMENTS

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST



The proposed Development will not be on the top of the hill as it is on Nelson Road



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER:
Building Designers
Association of Tasmania
TCC Accreditation No. 716R
(Building Designer)

ISSUES

SCALES

DRAWN:
BRIAN

DATE:
03/09/20

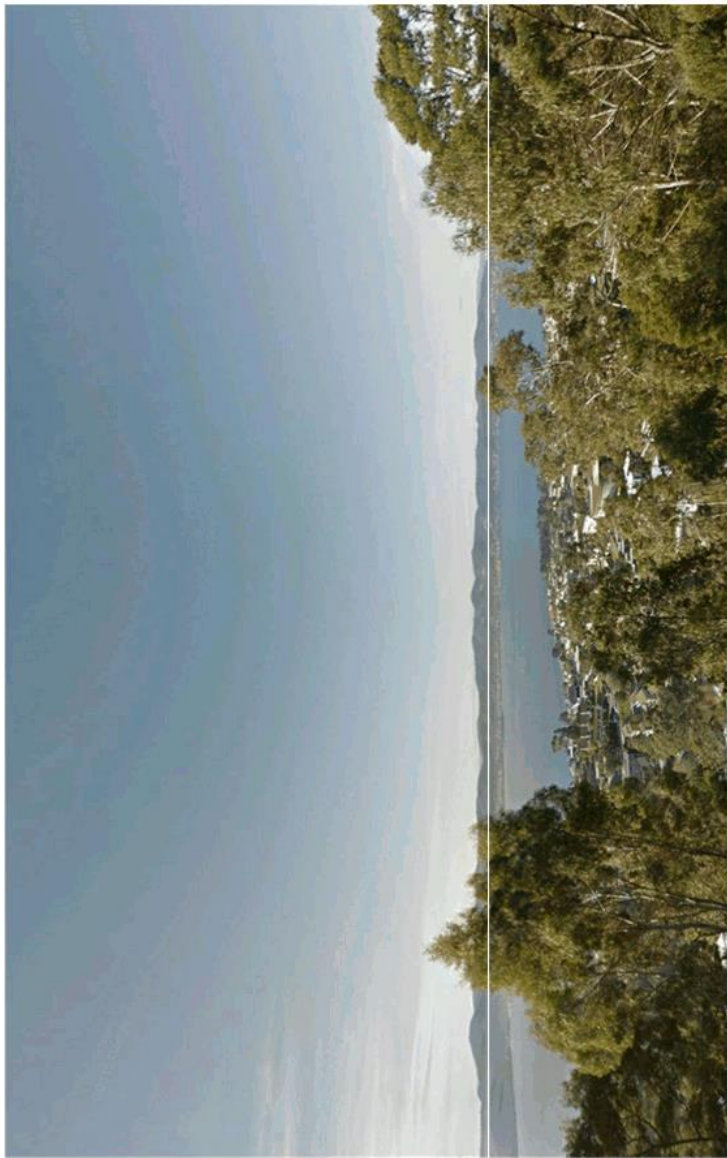
LOCATION PHOTOS

DRAWING No.
2018-016-PHOTOS
ISSUE NO. 1



18252-03

BUSHFIRE HAZARD REPORT
CONSTRUCTION OF A NEW MULTIPLE DWELLING DEVELOPMENT
21b ENTERPRISE ROAD, SANDY BAY
FOR
XANADU DEVELOPMENTS PTY LTD



PREPARED BY
N M CREESE
Accredited Bushfire Practitioner BFP-118
3rd March 2021

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LARK & CREESE

62 Channel Highway, Kingston 7050 Ph 6229 6563 info@larkandcreese.com.au



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ATTACHMENT 1 – DESIGN PLANS

ATTACHMENT 2 - BUSHFIRE HAZARD MANAGEMENT PLAN

Disclaimer:

AS 3959:2018 cannot guarantee that a dwelling will survive a bushfire attack, however the implementation of the measures contained within AS 3959:2018, this report and accompanying plan will improve the likelihood of survival of the structure. This report and accompanying plan are based on the conditions prevailing at the time of assessment. No responsibility can be accepted to actions by the land owner, governmental or other agencies or other persons that compromise the effectiveness of this plan. The contents of this plan are based on the requirements of the legislation prevailing at the time of report.



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1. SUMMARY:

This Bushfire Hazard Report has been prepared to support the design and construction of a new multiple unit development at 21b Enterprise Road, Sandy Bay. The site is subject to a Bushfire Prone Areas Overlay under the *Hobart Interim Planning Scheme 2015* has been deemed to be bushfire prone due to its proximity to the areas of bushfire prone vegetation surrounding the site.

This report identifies the protective features and controls that must be incorporated into the design and construction works to ensure compliance with the standards. Fire management solutions are defined in AS 3959:2018 *Construction of Buildings in Bushfire-Prone Areas, Building Amendments (Bushfire-Prone Areas) Regulations 2014* (16th March 2016), *National Construction Code 2016 Building Code Australia (Volume 2) (NCC)*, *Director's Determination, Requirements for Building in Bushfire-Prone Areas (Version 2.2, 6th February 2020) (The Determination)*.

Provided construction standards for **BAL-12.5** of AS 3959:2018 are incorporated into the design and new building works and the provision of the minimum Hazard Management Areas specified in Table 3 being provided, the new building works are capable of compliance with the provisions of AS 3959:2018 and as a result, the bushfire risk is reduced.

Access for firefighting purposes must comply with the requirements of *The Determination*. A performance solution is applied under *Part 3(b), The Determination* and is considered appropriate to provide vehicular access to the site firefighting and emergency personnel to defend the building and evacuate the occupants.

Water supply for firefighting purposes must comply with the requirements of *Part 4.3 The Determination*. Two fire hydrants are to be installed within the site compliant with the requirements of Table 4.3A.

A Hazard Management Area is to be established in compliance with *Part 4.4, The Determination*. A Hazard Management Area equal to the distances specified in **Error! Reference source not found.** of this report will be required and are to extend beyond the site boundaries to mitigate the bushfire threat. Formal agreements are to entered into with the owners of the properties located at No.26 Edith Avenue and No.21A Enterprise Road to enable establishment and maintenance of the bushfire threat within the hazard management areas until such time as those properties are developed and considered low threat.

The effectiveness of the measures and recommendations detailed in this report and AS 3959:2018 is dependent on their implementation and maintenance for the life of the development or until the site characteristics that this assessment has been measured from alter from those identified. No Liability can be accepted for actions by lot owner, Council or Government agencies which compromise the effectiveness of this report.



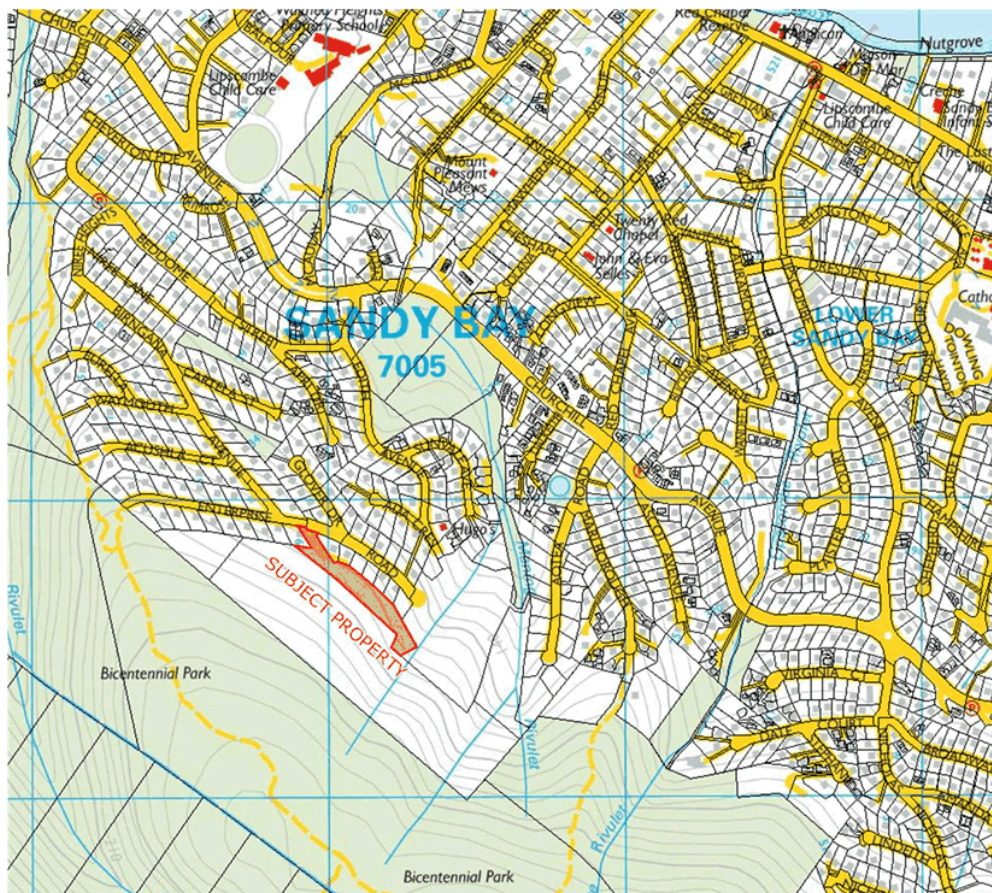
18252-03

This report has been prepared by Nick Creese, principal of Lark & Creese Surveyors. Nick is a registered surveyor in Tasmania and is accredited by the Tasmanian Fire Service to prepare Bushfire Hazard Management Plans.

Site survey carried out on the 29th June 2018.

2. LOCATION:

Property address: 21b Enterprise Road, Sandy Bay
Title owner: Xanadu Developments Pty Ltd
Title reference: C.T. 169834/40
PID N°: 3410953
Title area: Approximately 8060 m²
Municipal area: Hobart
Zoning: General Residential

Image 1: Site location (Source *The LIST*)



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3. SITE DESCRIPTION:

The site is located within an existing residential area on Enterprise Road approximately 60 metres east of the intersection of Birngana Avenue and Enterprise Road, Sandy Bay. The site is located at an elevation ranging from 165 - 185 metres with grades falling to the north east in the order of 20°.

At the time of assessment the property was vacant and vegetated predominately by native vegetation that consisted of Eucalypts with smaller native trees, shrubs and grasses. A shared bitumen driveway is constructed to the site from Enterprise Road.

To the north, north east and north west of the development site were well established residential allotments that consisted of dwellings, outbuildings, hardstand areas and gardens. Beyond the residential properties to the north east of was Enterprise Road which consisted of bitumen footpaths and a bitumen carriageway.

To the east and south of the development site were large allotments that appeared to be vacant and vegetated by native vegetation that consisted of Eucalypts, smaller native trees, shrubs and grasses.

Reticulated water supply is available to the site with domestic water supply requirements reliant on TasWater mains supply.

Planning controls are administered by the Hobart Council under the *Hobart Interim Planning Scheme 2015*. The site is zoned General Residential.



Image 2: Looking south east towards development site



Image 3: Looking north west towards development site

4. PROPOSED DEVELOPMENT:

The construction of 20 new Class 1A dwellings are proposed for the site. Construction materials are to include brick and rendered exterior cladding, colorbond roofing and aluminium framed windows and sliding doors. Each unit is to include a steel framed deck. Property access is to be constructed from Enterprise Road to the west with a new concrete driveway passing between the units.

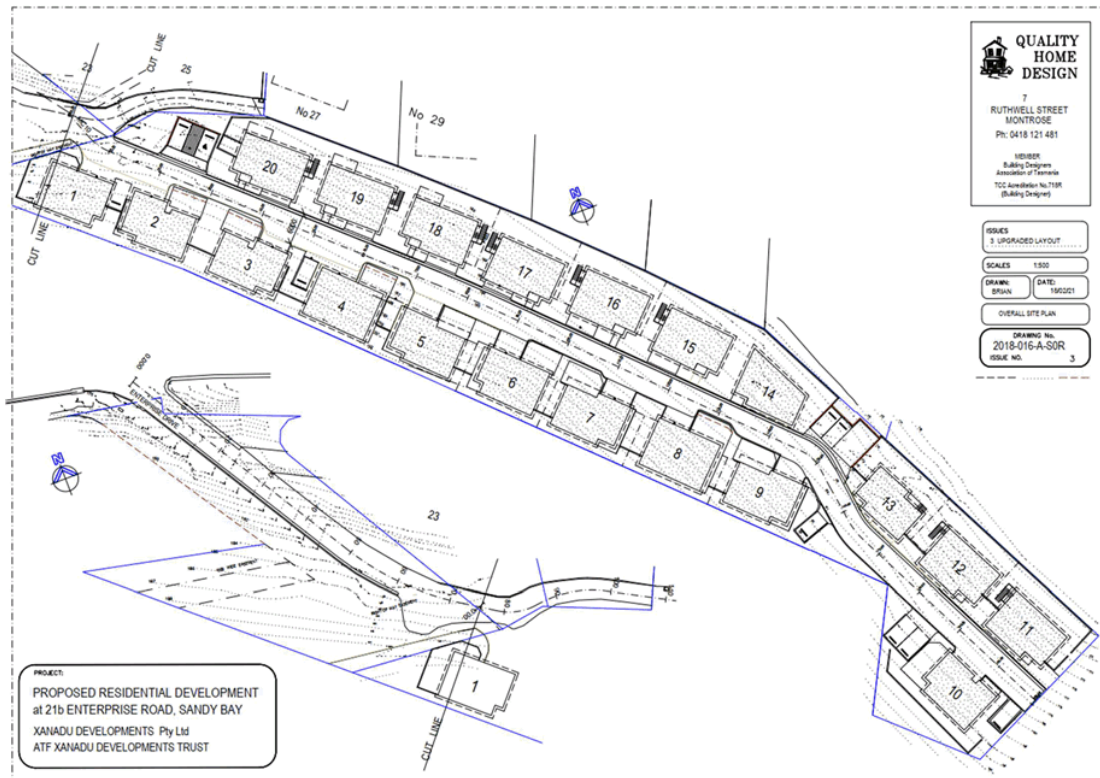


Image 4: Site plan



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5. BUSHFIRE ATTACK LEVEL:

Fire Danger Index (FDI): The Fire Risk Rating for Tasmania is adopted as 50.
Vegetation Classification:

Vegetation Assessment:

Following assessment of the characteristics of the site, the vegetation types, separation distances from development site and slope under the vegetation have been identified as shown in Table 1 below:

Direction:	Description:	Distance (m):	Slope:
North:	Developed allotments - dwellings, outbuildings, hardstand areas, gardens	0-35	17° down
	Enterprise Road - bitumen footpaths, bitumen carriageway	35-50	Level
	Developed allotments - dwellings, outbuildings, hardstand areas, gardens	50-100	20° down
North east:	Developed allotments - dwellings, outbuildings, hardstand areas, gardens	0-30	20° down
	Enterprise Road - bitumen footpaths, bitumen carriageway	30-50	Level
	Developed allotments - dwellings, outbuildings, hardstand areas, gardens	50-100	20° down
	Native vegetation - Eucalypts, smaller trees native, shrubs & grasses	0-100	20° down
East:	Native vegetation - Eucalypts, smaller native trees, shrubs & grasses	0-100	10° down
South east:	Native vegetation - Eucalypts, smaller native trees, shrubs & grasses	0-100	Level
South:	Native vegetation - Eucalypts, smaller native trees, shrubs & grasses	0-100	14° up
South west:	Native vegetation - Eucalypts, smaller native trees, shrubs & grasses	0-100	20° up
West:	Native vegetation - Eucalypts, smaller native trees, shrubs & grasses	0-100	14° up



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North west:	Developed allotments - dwellings, outbuildings, hardstand areas, gardens	0-40	Level
	Enterprise Road - bitumen footpaths, bitumen carriageway	40-65	
	Developed allotment - dwellings, outbuildings, hardstand areas, gardens	65-100	

Table 1: Site Assessment

NOTE: To the north east and north west of the development site is an extensive area of developed residential allotments that consisted of dwellings, outbuildings, hardstand areas and gardens. Also to the north east was Enterprise Road which consisted of bitumen footpaths and a bitumen carriageway. Vegetation within these areas is limited to grasses, garden shrubs and scattered mature trees. Ground fuels are minimal consistent with their residential use. Vegetation to the north east and north west has been assessed as **Managed Land** under the provisions of *Part 2.2.3.2 (e) & (f)*, AS 3959:2018.

To the north east of the south eastern portion of the development site, to the south east and south west were large allotments that appeared to be vacant and were vegetated by Eucalypts 10-15m in height with a dense understory that consisted of smaller native trees, shrubs and grasses. These sites are zoned General Residential, form part of land owned by the same developer and are intended to be developed for residential purposes in the near future. For the time being however, these areas are unmanaged, represent a significant bushfire threat to the and have been assessed under *Table 2.3*, AS 3959:2018 as A-03 Open Forest (**A: Forest**).

Vegetation Classification:

In consideration of vegetation classifications under *Table 2.3*, AS 3959:2018 and as detailed above, the predominant vegetation, separation distances from development site and slope under the classified vegetation is assessed as shown in *Table 2* below:

Direction:	Vegetation Type:	Distance:	Slope:	Exclusions:
North east:	Managed Land A: Forest	0-100 0-100	20° down	Part 2.2.3.2 (e) & (f) No
South east:	A: Forest	0-100	Level	No
South west:	A: Forest	0-100	20° up	No
North west:	Managed Land	0-100	Level	Part 2.2.3.2 (e) & (f)

Table 2: Predominate vegetation



Image 5: Aerial image of predominate vegetation (Source *The LIST*)



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Image 6: Predominate vegetation to the north east of site - **Managed Land**



Image 7: Predominate vegetation to the north east of south eastern portion of development site
- **Classification A: Forest**



Image 8: Predominate vegetation to the south east of site - **Classification A: Forest**



Image 9: Predominate vegetation to the south west of site - **Classification A: Forest**



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Image 10: Predominate vegetation to the north west of site - **Managed Land**



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Bushfire Attack Level Assessment:

Based on the predominate vegetation detailed above, and the separation distances provided between the predominate vegetation and the development site, the BAL for each elevation of the proposed dwelling has been determined from *Table 2.4.4, AS 3959:2018* as follows:

North east elevation:	BAL-LOW (Managed Land)
	BAL-FZ (A:Forest - south eastern end)
South east elevation:	BAL-FZ
South west elevation:	BAL-FZ
North west elevation:	BAL-LOW

With the establishment of hazard management areas in accordance with Table 2.6, AS 3959:2018 the increased threat associated with the exposure from bushfire attack can be reduced. The expansion of the hazard management areas beyond the site boundaries to within the properties at No.26 Edith Avenue and 21A Enterprise Road will enable reduction of the bushfire threat to the site. The resulting bushfire attack level for each elevation can then be assessed as:

North east elevation:	BAL-12.5
North east elevation:	BAL-12.5
South west elevation:	BAL-12.5
North west elevation:	BAL-12.5

Table 3 details the hazard management areas (HMA) required to comply with that BAL, and the area available for compliance.

	NORTH EAST	SOUTH EAST	SOUTH WEST	NORTH WEST
BAL	BAL-12.5	BAL-12.5	BAL-12.5	BAL-12.5
VEGETATION TYPE	Managed Land A: Forest	A: Forest	A: Forest	Managed Land
SLOPE	20° down	Level	16° up	Level
HMA SPECIFIED TABLE 2.6	None 67-<100 metres	32-<100 metres	32-<100 metres	None
HMA REQUIRED	67 metres	32 metres	32 metres	To boundary
HAZARD MANAGEMENT AREA AVAILABLE	Minimum 4 metres to boundary plus additional 63 m HMA in adjoining property. Managed land to north east.	Minimum 2 metres to boundary plus additional 28 m HMA in adjoining property,	Minimum 1.5 metres to boundary plus additional 30.5 m HMA in adjoining property,	To boundary. Managed land in adjoining properties.

Table 3: BAL assessment and Hazard Management area requirements.



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6. COMPLIANCE:

All building works shall comply with the specification for **BAL-12.5** under *Section 5* of AS 3959:2018. This includes the general provisions contained within AS3959-2009 and the following sub-sections:

- 5.1 General provisions
- 5.2 Sub-Floor Supports
- 5.3 Floors
- 5.4 External walls
- 5.5 External glazed elements and assemblies and external doors
- 5.6 Roofs
- 5.7 Verandas, decks, steps, ramps and landings
- 5.8 Water and gas supply pipes

Maintenance Requirements (Hazard Management Area)				
	NORTH EAST	SOUTH EAST	SOUTH WEST	NORTH WEST
Hazard management area required	67 metres	32 metres	32 metres	To boundary
Management practices	<p>Remove trees and shrubs within HMA. Retain individual mature eucalypts or clusters of mature eucalypts not exceeding 20m in dimension with minimum 20m separation to other areas of vegetation. Trim lower branches of retained trees to minimum 2m above ground level. Slash grasses, remove ground fuels including branches, bark, leaves and dead vegetation regularly. Plant bushfire resisting plants where appropriate. Part 5 Agreements to be entered into with owners of 26 Edith Court and 21A Enterprise Road to permit continued management of HMA within those properties until such time those sites become low threat.</p> <p>Establish garden and hardstand areas within development site. Ensure any flammable materials such as dead branches, leaves and bark are cleared regularly.</p>			

Table 4: Maintenance requirements for Hazard Management Areas.

NOTE: Due to the need to extend the HMA beyond the title boundaries, it is the responsibility of the developer to establish and maintained the HMA until such time as permanent management of the adjoining properties occurs. A Part 5 Agreement (or similar) must be entered into to with the adjoining land owners to ensure continued maintenance of the HMA until developed.



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For further information please see;

- *Building for Bushfire. Planning and Building in Bushfire-Prone Areas for Owners and Builders.*
(http://www.fire.tas.gov.au/userfiles/tym/file/131392_Building_for_Bushfires_web.pdf)



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Building Regulation 2014:

Compliance with the *Building Regulations 2014* is achieved through the implementation of the access requirements of *NCC* and *The Determination*:

Compliance with *P2.3.4, National Construction Code 2016* is achieved through implementation of the provisions detailed under *Part 4 of The Determination* as follows:

Property Access:**Part 4.2 Deemed to Satisfy Requirements**

The access to the site has been measured as being approximately 270 metres from the edge of Enterprise Road, is required to service numerous units and access for fire appliances to fire hydrants within the development site the requirements of *Part 4.2 and Table 4.2, The Determination* apply.

Table 4.2 Standards for Property Access		
B	Property access length is 30 metres or greater; or access for fire appliance to a water connection point.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) All-weather construction; (b) Load capacity of at least 20 tonnes, including for bridges and culverts; (c) Minimum carriageway width of 4 metres; *PERFORMANCE SOLUTION APPLIED - SEE BELOW* (d) Minimum vertical clearance of 4 metres; (e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway; (f) Cross falls of less than 3° (1:20 or 5%); (g) Dips less the 7° (1:8 or 12.5%) (h) Curves with a minimum inner radius of 10 metres; (i) Maximum gradient of 15° (1:3.5 or 28%), for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and (j) Terminating with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> (i) A turning circle with a minimum inner radius of 10 metres; (ii) A property access encircling the building; or (iii) A hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long.
D	Property access length is greater than 30 metres, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to access:</p> <ul style="list-style-type: none"> (a) Complies with Requirements B above; and (b) Passing bays of 2 metres additional carriageway width and 20 metres length must be provided every 100 metres.



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Part 3 Performance Requirements

Due to site constraints, application of *Part 3(b), Performance Requirements* are applied to the property access due to narrow points along the access within the site.

Access to the site generally complies with the requirements of *Part 4.2* including load rating, carriageway width (generally exceeds 4m except as noted below), gradient, vertical and horizontal clearances cross falls and on-site turning. There are however three narrow points within the site adjacent to Units 2 & 3, Unit 4 and Unit 8 necessitated by the limited dimensions of the site gradient and private open space requirements for the dwellings proposed for the site. Application of *Part 3(b), The Determination* is applied as follows:

- These narrow points are relatively short in nature (18m, 7m & 10m respectively), are of minimum width 3.6m trafficable surface measured from face of kerb to face of kerb and are interspersed with a carriageway of minimum 5.5m in width.
- A passing bay of minimum total width 6m and length 20m is to be installed adjacent to Units 3 & 4.
- Sight lines between the wider portions of the carriageway are unimpeded with no structures limiting vision of a vehicle driver as they move along the access.
- Horizontal clearances to the decks attached to Units 1, 2, 3, 4, 5, 8 & 9 exceed 0.5m due to cantilever design with the overhead deck framing exceeding 4m above the pavement surface.
- Engineers have advised that the carriageway has been designed to accommodate garbage truck access and maneuvering which is of similar dimension to a fire appliance.
- The application of BAL-12.5 to the site and extent of the applicable Hazard Management Areas surrounding the site provide for a safer area for emergency vehicle access and to assist firefighting and emergency personnel to defend the building and evacuate occupants.



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Part 4.3 Water Supply for fire fighting:

Reticulated water supply is available to the site with a fire hydrant and the addition of a further 2 fire hydrants within the development site in accordance with the requirements of *Part 4.3* and *Table 4.3A, The Determination* as follows:

Table 4.3A Reticulated Water Supply for Fire fighting		
A	Distance between building area to be protected and water supply	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) The building area to be protected must be located within 120 metres of a fire hydrant; and (b) The distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
B	Design Criteria for fire hydrants	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) Fire hydrant systems must be designed and constructed in accordance with TASWater Supplement to Water Supply Code of Australia WSA 03-2011-3.1 MRWA Edition 2.0; and (b) Fire hydrants are not installed in parking areas.
C	Hardstand	<p>A hardstand area for fire appliances must be provided:</p> <ul style="list-style-type: none"> (a) No more than three metres from the hydrant, measured as a hose lay; (b) No closer than six metres from the building area to be protected; (c) With a minimum width of three metres constructed to the same standard as the carriageway; and (d) Connected to the property access by a carriageway equivalent to the standard of the property access.

Part 4.4 Hazard Management Areas:

This report and accompanying Bushfire Hazard Management Plan details the extent of the Hazard Management Area (HMA) of sufficient dimension to accord with *Table 4.4 B, The Determination*. The dimension of the HMA is to be in accordance with *Table 2.4.4, AS 3959:2018* and is to be maintained in a reduced fuel condition at all times. A Part 5 Agreement must be entered into with the adjoining land owners at No.26 Edith Avenue and No.21a Enterprise Road to permit the establishment and management of the HAM within those lot until such time as those properties become permanently maintained in a low fuel condition.



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7. CONCLUSIONS & RECOMMENDATIONS:

This Bushfire Hazard Report and Bushfire Hazard Management Plan have been prepared to support the design and construction of a new multiple dwelling development. The report has reviewed the bushfire risks associated with the site, and determined the fire management strategies that must be carried out to ensure the development on the site is at a reduced risk from bushfire attack. Provided the elements detailed in this report are implemented, the development on the site is capable of compliance with AS 3959:2018.

The new building works must comply with the requirements for **BAL-12.5** of AS 3959:2018 as specified in Table 3 and Part 6 of this report. The Council approval issued for the building works should contain conditions requiring that the protective elements defined in this report and AS 3959:2018 are implemented during the construction phase and maintained by the lot owner for the life of the structure.

Site access must include, passing bays at maximum 100 metres intervals and either a circular, "T" or "Y" turning area at the building site in compliance with *Part 4.2, The Determination*. Due to several narrow points along the access within the site, a performance solution under *Part 3(b), The Determination* is applied with the configuration of the proposed access, passing areas and turning areas considered sufficient to provide a suitable and safe means of access and egress for firefighting and emergency personnel and for evacuation of occupants.

A minimum of two fire hydrants compliant with Table 4.3A, *The Determination* must be installed within the development site in order to achieve the necessary coverage of 120 m hose lay from the furthest point of each unit in order to comply with *Part 4.3, The Determination*.

A Part 5 agreement is to be entered into with the owners of No.26 Edith Avenue and No.21a Enterprise Road to enable establishment and management of the HMA specified in this report.

Although not mandatory, any increase in the construction standards above the assessed Bushfire Attack Level will afford improved protection from bushfire and this should be considered by the owner, designer and/or the builder prior to construction commencing. Hazard Management Areas must be established and maintained in a minimal fuel condition in accordance with this plan and the TFS guidelines. It is the owner's responsibility to ensure the long term maintenance of the Hazard Management Areas in accordance with the requirements of this report.

This Report does not recommend or endorse the removal of any vegetation within, or adjoining the site for the purposes of bushfire protection without the explicit approval of the local authority.

A handwritten signature in blue ink, appearing to read 'N M Creese'.

N M Creese- *Bushfire Management Practitioner BFP-118*



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8. REFERENCES:

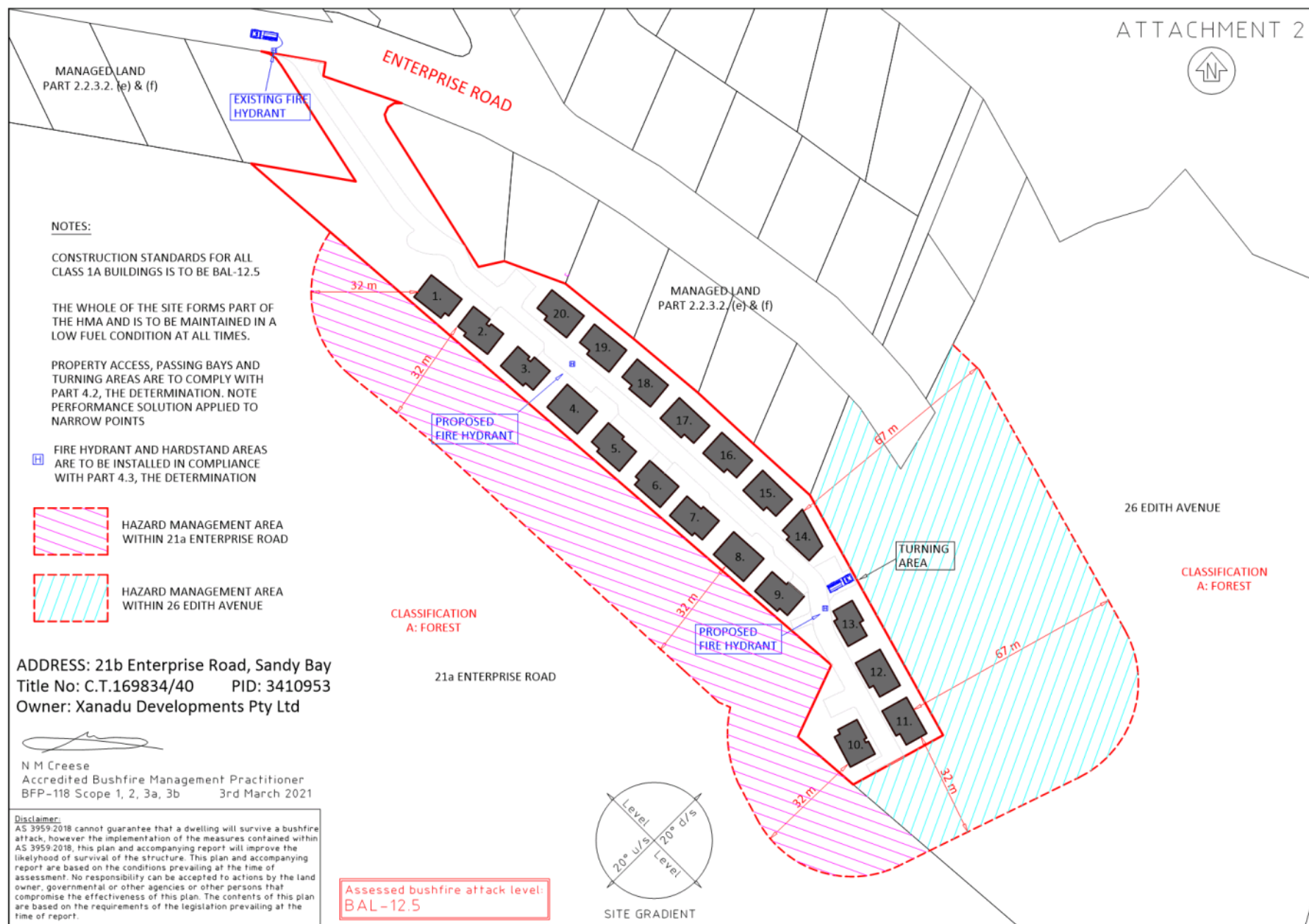
- *AS 3959:2018 - Construction of Building in Bushfire-Prone Areas.*
- *Building Amendments (Bushfire-Prone Areas) Regulations 2014 (16th March 2016).*
- *National Construction Code 2016 Building Code of Australia (Volume 2).*
- *Director's Determination - Requirements for Building in Bushfire-Prone Areas (Version 2.2, 6th February 2020).*
- *The LIST - Department of Primary Industry Parks Water & Environment.*
- *Bushfire Prone Areas Advisory Note N°01-2014 (Version 3, 8th November 2017) - Tasmania Fire Service (BHAN 01-2014).*



18252-03

9. GLOSSARY

AS 3959:2018	Australian Standards AS 3959:2018 <i>Construction of buildings in bushfire-prone areas</i> .
BAL (Bushfire Attack Level)	A means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire. The following BAL levels, based on heat flux exposure threshold are used within AS3959-2009; BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40, BAL-FZ.
Bushfire	An unplanned fire burning vegetation.
Bushfire Hazard Management Plan	A plan showing means of protection from bushfire in a form approved in writing by the Chief Officer.
Bushfire-Prone Area	An area that is subject to, or likely to be subject to, bushfire attack. Land that has been designated under legislation; or Has been identified under environmental planning instrument, development control plan or in the course of processing and determining a development application.
Carriageway (also vehicular access)	The section of the road formation which is used by traffic, and includes all the area of the traffic lane pavement together with the formed shoulder.
Classified vegetation	Vegetation that has been classified in accordance with Clause 2.2.3 of AS3959-2009.
FDI (Fire Danger Index)	The chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both long- and short-term drought effects.
Hazard Management Area	The area between a habitable building or building area and bushfire-prone vegetation, which provides access to a fire front for fire fighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire.
Hose lay	The distance between two points established by a fire hose laid out on the ground, inclusive of obstructions.
Predominate vegetation	The vegetation that poses the greatest bushfire threat to the development site.
Gradient under	The slope of the ground under the classified vegetation.
Distance to	The distance between the building, or building area to the classified vegetation.
Fire fighting water point	The point where a fire appliance is able to connect to a water supply for fire fighting purposes. This includes a coupling in the case of a fire hydrant, offtake or outlet, or the minimum water level in the case of a static water body (including a dam, lake or pool).
Water supply - Reticulated (Fire hydrant)	An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting.
Water supply - Static	Water stored on a tank, swimming pool, dam, or lake, that is available for fire fighting purposes at all times.



GENERAL NOTES

1. THE LOCATION OF UNDERGROUND SERVICES ARE INDICATIVE ONLY. THE EXACT POSITION OF EACH SERVICE PRESENT SHOULD BE ESTABLISHED ON SITE WITH THE RESPECTIVE SERVICE OWNERS PRIOR TO COMMENCING CONSTRUCTION.
2. ALL WORKS SHALL BE IN ACCORDANCE WITH LGAT STANDARD DRAWINGS (U.N.O.)
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE (U.N.O.). ALL LEVELS ARE TO A.H.D. IN METRES. ALL CO-ORDINATES ARE TO GDA 94 M.G.A.55.
4. UNLESS NOTED OTHERWISE THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE WORKS INCLUDING ANY WORKS IN THE ROAD RESERVATION AND ON ADJACENT PRIVATE PROPERTIES.
5. ALL DRAIN AND SERVICES TIE IN LEVELS & LOCATIONS ARE TO BE CONFIRMED BEFORE COMMENCEMENT OF CONSTRUCTION WORK.
6. DO NOT SCALE DRAWINGS.
7. ENGINEERING DESIGN IN ACCORDANCE WITH PLANNING PERMIT SA 2019/00007, DETAILED DRAINAGE ANALYSIS, SEPT 2019.

CIVIL WORKS

- C1. THE CONTRACTOR SHALL PREPARE AND PROVIDE A SEDIMENT AND EROSION CONTROL PLAN FOR THE WORKS. NO WORK SHALL COMMENCE UNTIL THIS PLAN HAS BEEN APPROVED BY THE SUPERINTENDENT.
- C2. NO MACHINERY IS TO BE PLACED ON OR HAVE ACCESS TO ANY AREA OUTSIDE THE LIMIT OF WORKS UNLESS APPROVED BY THE PRINCIPAL.
- C3. THE LIMIT OF WORKS LINE SHALL BE TEMPORARILY FENCED WITH BUNTING BEFORE ANY WORKS COMMENCE.
- C4. NO CLEARING OF VEGETATION OR REMOVAL OF TOPSOIL IS PERMITTED IN ANY AREA NOT DIRECTLY RELATED TO THE CONSTRUCTION WORKS OR AS NOTED ON THE DRAWINGS OTHER THAN REMOVAL OF TREES IDENTIFIED AS IN A HAZARDOUS CONDITION.
- C5. ALL STRIPPED TOPSOIL IS TO BE STORED IN AN APPROVED MANNER FOR REHABILITATION WORKS AND VEGETATION RESEEDING.
- C6. SURFACE REINSTATEMENT & EROSION CONTROL.
ALL DISTURBED AND BARE GROUND INCLUDING ALL CUT & FILL SURFACES SHALL BE REHABILITATED AS FOLLOWS:
REPLACE TOPSOIL WITH THAT RESERVED WHEN THE SITE WAS STRIPPED (50 THICK). RE-SEED ALL DISTURBED GROUND USING SEED MIX APPROVED BY THE SUPERINTENDENT.
- C7. 35mm MIN ASPHALT (AC10) IN ACCORDANCE WITH LGAT STANDARD DRAWING TSD-R06-V01.
- C8. SUBGRADE CBR FOR ROAD PAVEMENTS AND FOOTPATHS TO BE A MINIMUM OF 5%.
- C9. ALL PAVEMENT MARKING TO BE STANDARD PAINT IN ACCORDANCE WITH DEPARTMENT OF STATE GROWTH SPECIFICATION R64 - PAVEMENT MARKING.
- C10. TRAFFIC MANAGEMENT PLAN INDICATING HOW SAFE USE OF ENTERPRISE DRIVE WILL BE MAINTAINED DURING CONSTRUCTION SHALL BE SUBMITTED PRIOR TO COMMENCEMENT OF WORK.
- C11. CONCRETE FOOTPATH TO BE CONSTRUCTED IN ACCORDANCE WITH LGAT STANDARD DRAWINGS TSD-R11-V1.
- C12. CONCRETE KERBS TO BE CONSTRUCTED IN ACCORDANCE WITH LGAT STANDARD DRAWINGS TSD-R14-V1.
- C13. SAFETY BARRIERS TO BE EZY GUARD SMART OR SIMILAR PRODUCT IN ACCORDANCE WITH AS1170.1.
- C14. ALL WHEEL STOPS TO BE IN ACCORDANCE WITH AS2850.1.

SITE SAFETY

- SS1. ALL WORK SITES CAN BE POTENTIALLY HAZARDOUS TO PEOPLE, PROPERTY AND EQUIPMENT. ALL PEOPLE WHO ARE AUTHORISED TO BE ON A WORK SITE MUST CAREFULLY CONSIDER, DOCUMENT AND ADOPT SUITABLE SAFE WORK PROCEDURES FOR ALL REQUIRED ACTIVITIES.
- SS2. CURRENT LEGISLATION.
CURRENT LEGISLATION REQUIRES THAT ALL PERSONS ARE TO CONSIDER THEIR ACTIONS OR INACTION ON THE HEALTH AND SAFETY OF OTHERS AND THEMSELVES.
- SS3. THE CONTRACTOR SHALL ABIDE WITH AND IS BOUND BY THE CURRENT SAFE WORK AUSTRALIA ACT, REGULATIONS AND CODES OF PRACTICE ISSUED BY STATE GOVERNMENTS AND / OR THEIR AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION, DOCUMENTATION AND MAINTENANCE OF WORK SAFETY PROCEDURES AND OTHER RELEVANT DOCUMENTATION. THE CONTRACTOR SHALL ENSURE THAT ALL SUB CONTRACTORS AND OTHER AUTHORISED PEOPLE COMPLY WITH THE ABOVE.
- SS4. THE CONTRACTOR SHALL BE ALERT AND PROACTIVE TO IDENTIFY HAZARDS AND MANAGE THE ASSOCIATED RISKS TO ELIMINATE THEM OR MINIMISE THEM TO AN AGREED RISK LEVEL.
- SS5. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER IF THERE IS ANY PERCEIVED RISK RELATING TO THE DESIGN OR CONSTRUCTION OF THE DESIGN.
- SS6. THE CONTRACTOR SHALL ENGAGE WITH THE SUBCONTRACTOR AND OTHER AUTHORISED PEOPLE WHO USE THE SITE TO IDENTIFY THEIR RISKY WORK PROCEDURES AND OTHER ACTIVITIES.
- SS7. SUBCONTRACTORS AND OTHER AUTHORISED PEOPLE SHALL PROVIDE DOCUMENTATION ABOUT THEIR RISK ASSESSMENTS AND RISK MINIMISATION.
- SS8. PUBLIC SAFETY.
A LIVE SITE THAT HAS WORK UNDERWAY OR IS UNATTENDED HAS A STRONG ATTRACTION TO THE PUBLIC. IN GENERAL, THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT UNAUTHORISED PEOPLE ENTERING THE SITE. EXCAVATIONS, STRUCTURES AND ACCESS EQUIPMENT SHALL BE LEFT IN A SECURE MANNER AS IS REASONABLY PRACTICABLE TO PREVENT ANY UNAUTHORISED PEOPLE FROM ENTERING, CLIMBING OR FALLING. THE SITE SHALL HAVE CLEAR WARNING SIGNS IN APPROPRIATE LOCATIONS, E.G. - "DANGER KEEP OUT" AND BE SECURELY BARRICADED AND WHEN UNATTENDED LEFT IN A LOCKED CONDITION AS IS REASONABLY PRACTICABLE.
- SS9. SPECIFIC ATTENTION SHALL BE PAID TO RISKY ACTIVITIES INCLUDING BUT NOT LIMITED TO:
SITE ESTABLISHMENT
DEMOLITION, RECYCLING AND REMOVAL
EXCAVATION AND TRENCHING - UNSTABLE GROUND AND UNDERGROUND SERVICES
CONSTRUCTION PROCESSES
TRIPS AND FALLS (GENERAL)
WORKING AT HEIGHT.

SAFETY IN DESIGN (SID)

- SD1. SID GENERALLY.
CIVIL WORKS HAVE BEEN DESIGNED TO ELIMINATE HAZARDS TO HEALTH AND SAFETY WHEREVER POSSIBLE. WHERE THIS HAS NOT BEEN POSSIBLE, THE RISK TO HEALTH AND SAFETY OF PERSONS HAS BEEN MINIMISED TO BE REASONABLY PRACTICABLE.
- SD2. WORK HEALTH AND SAFETY.
THE CONTRACTOR SHALL ENSURE THAT THE CONSTRUCTION OF THIS PROJECT IS CARRIED OUT UNDER A WORK HEALTH AND SAFETY CO-ORDINATION PLAN AND COMPLIANT WITH ANY 'SAFETY IN THE WORKPLACE LEGISLATION' APPLICABLE IN THE STATE IN WHICH THE WORK IS CARRIED OUT.
- SD3. IDENTIFY HAZARDS.
THE CONTRACTOR SHALL MAKE EVERY EFFORT TO ENSURE THAT ALL PERSONS WHO ENTER THE CONSTRUCTION SITE ARE MADE AWARE ABOUT THE RISK OF HAZARDS AND POTENTIAL HAZARDS WHICH MAY OCCUR ON THE SITE. ANY SUCH HAZARD SHALL BE ISOLATED AND CLEARLY IDENTIFIED. THE CORRECT LEVEL OF TRAINING SHALL BE MANDATORY BEFORE ANY PERSON ENTERS THE CONSTRUCTION AREA. ALL PERSONS SHALL WEAR THE APPROPRIATE SAFETY PROTECTION APPAREL SPECIFIED BY THE CONTRACTOR BEFORE ENTERING THE SITE. A QUALIFIED GUIDE SHALL ACCOMPANY ALL NEW CONSTRUCTION WORKERS DURING THEIR INITIATION AND ALL SITE VISITORS WHILE ON THE SITE.
- SD4. SERVICES.
CONTRACTOR TO DEVELOP SWMS AND UNDERTAKE WORK IN ACCORDANCE WITH ALL RELEVANT 'WORKING IN THE VICINITY OF OVERHEAD AND UNDERGROUND ELECTRIC LINES GUIDANCE MATERIAL'.
- SD5. CONTRACTOR TO DEVELOP SWMS AND UNDERTAKE WORK IN ACCORDANCE WITH ALL RELEVANT CODES OF PRACTICE.

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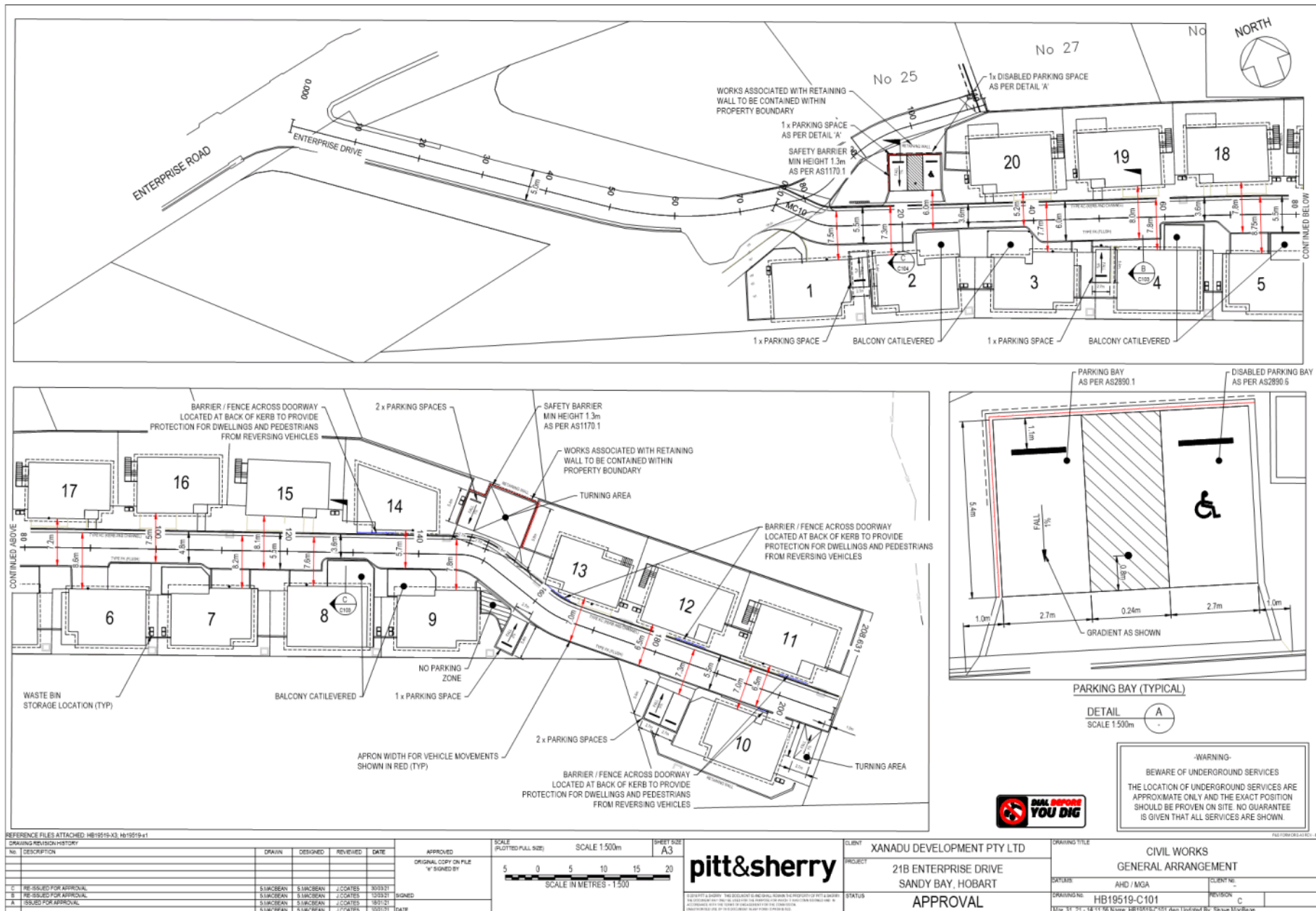
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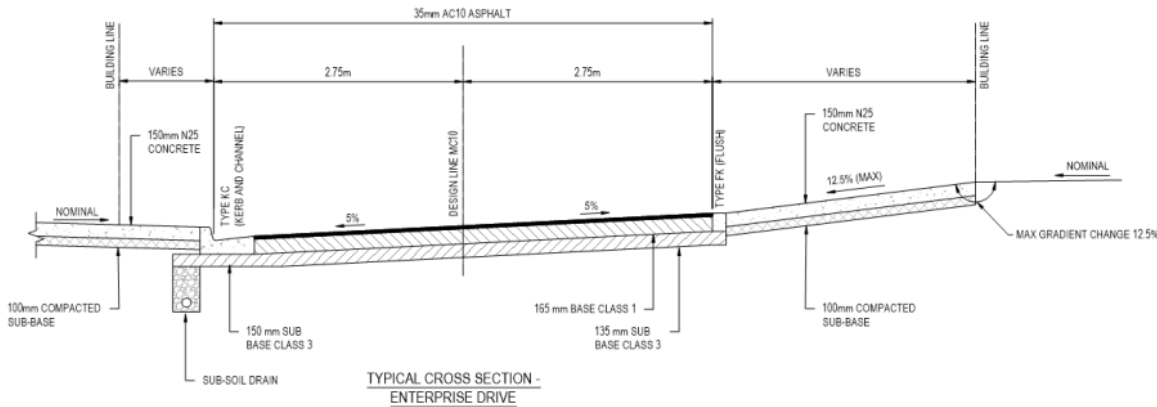
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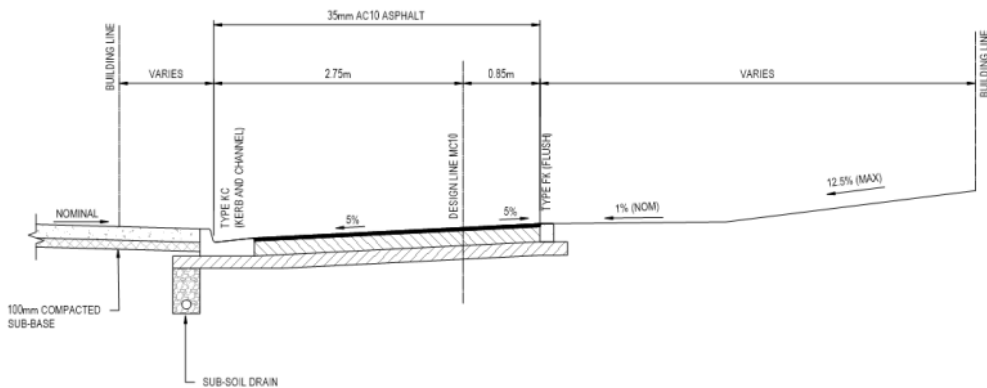
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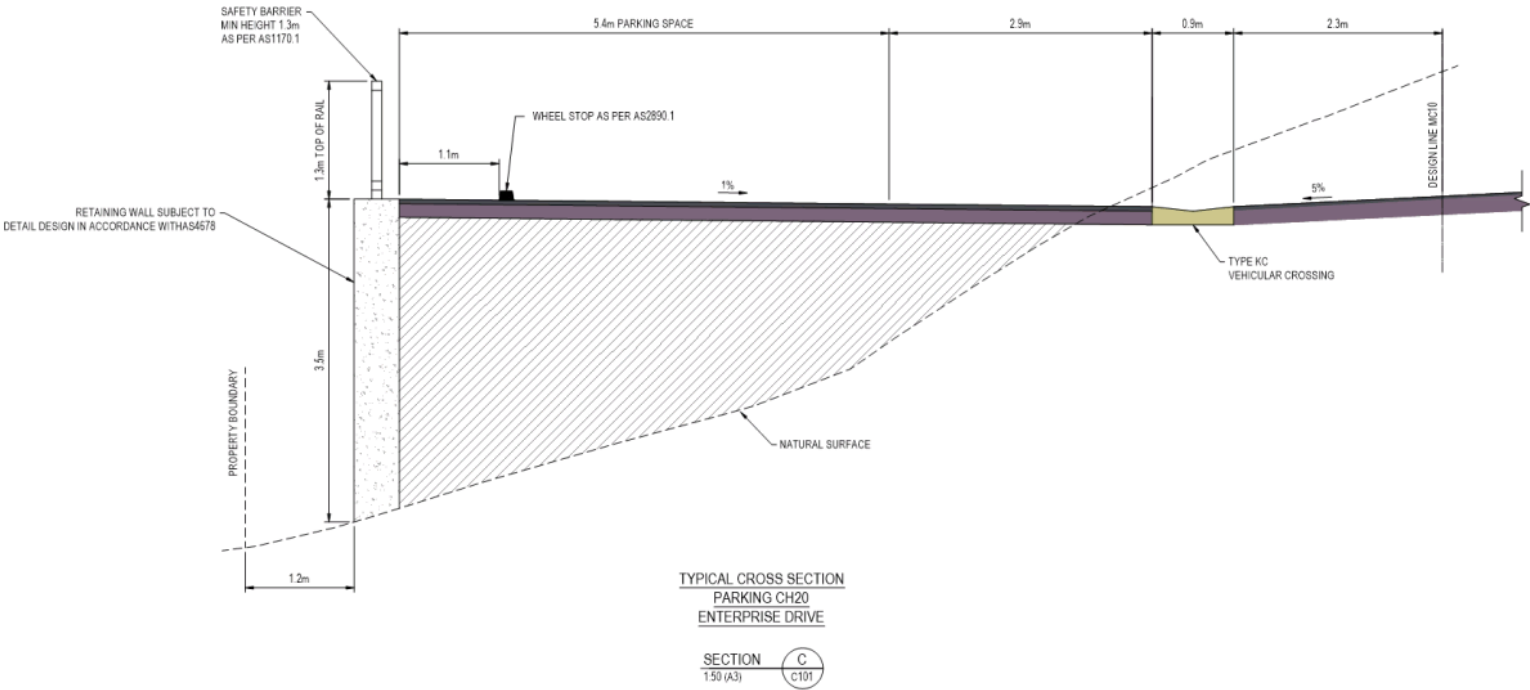
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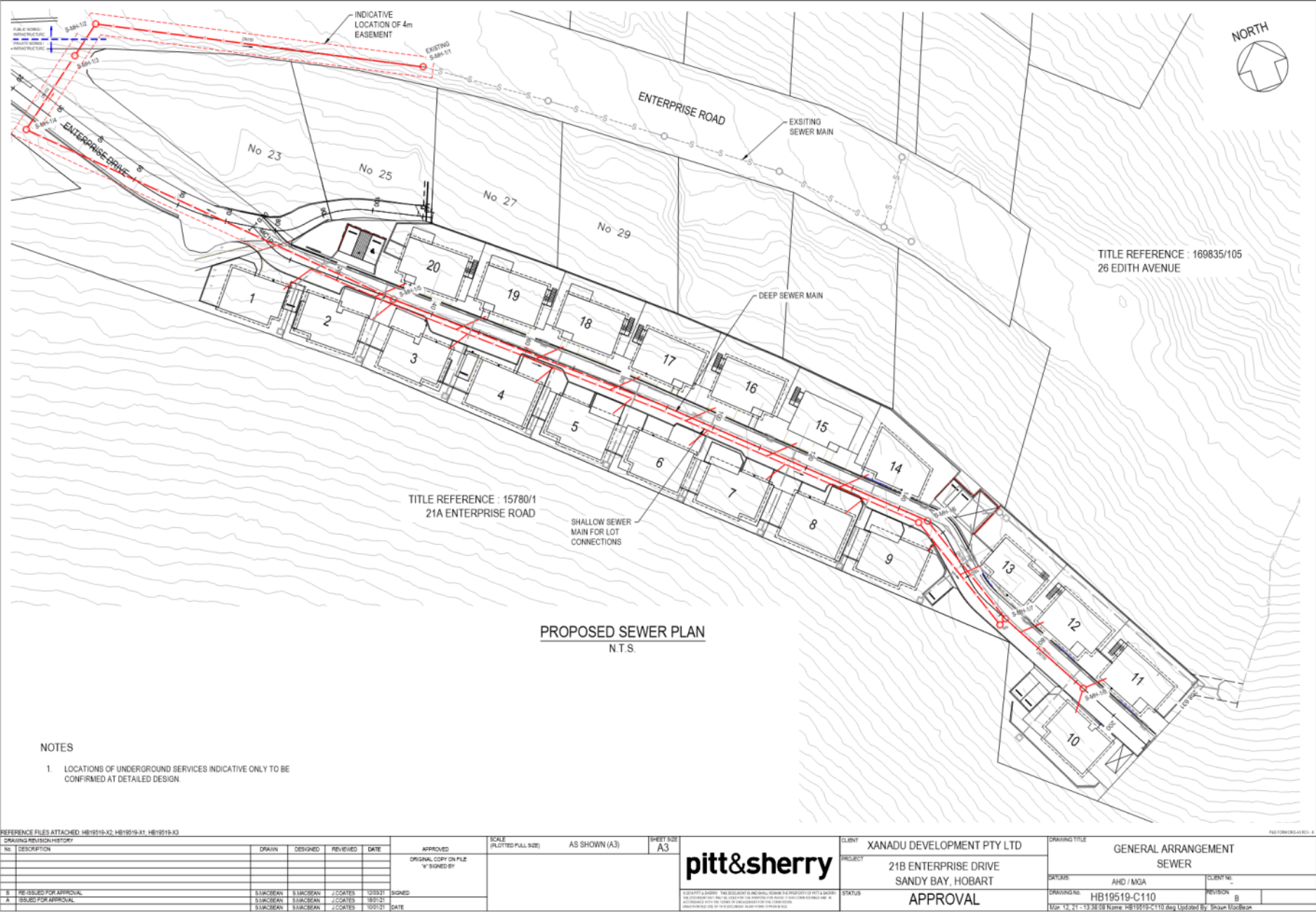
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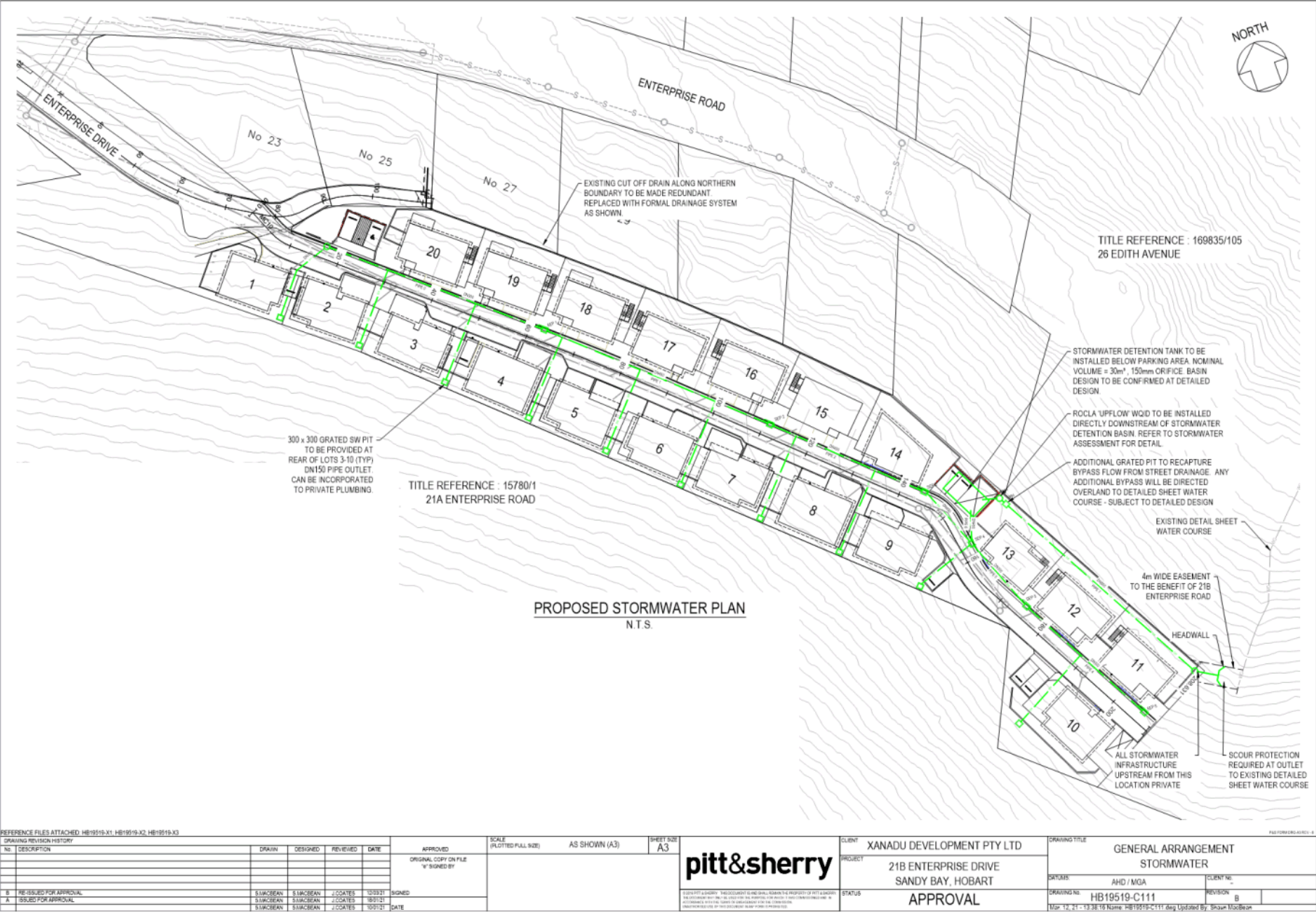
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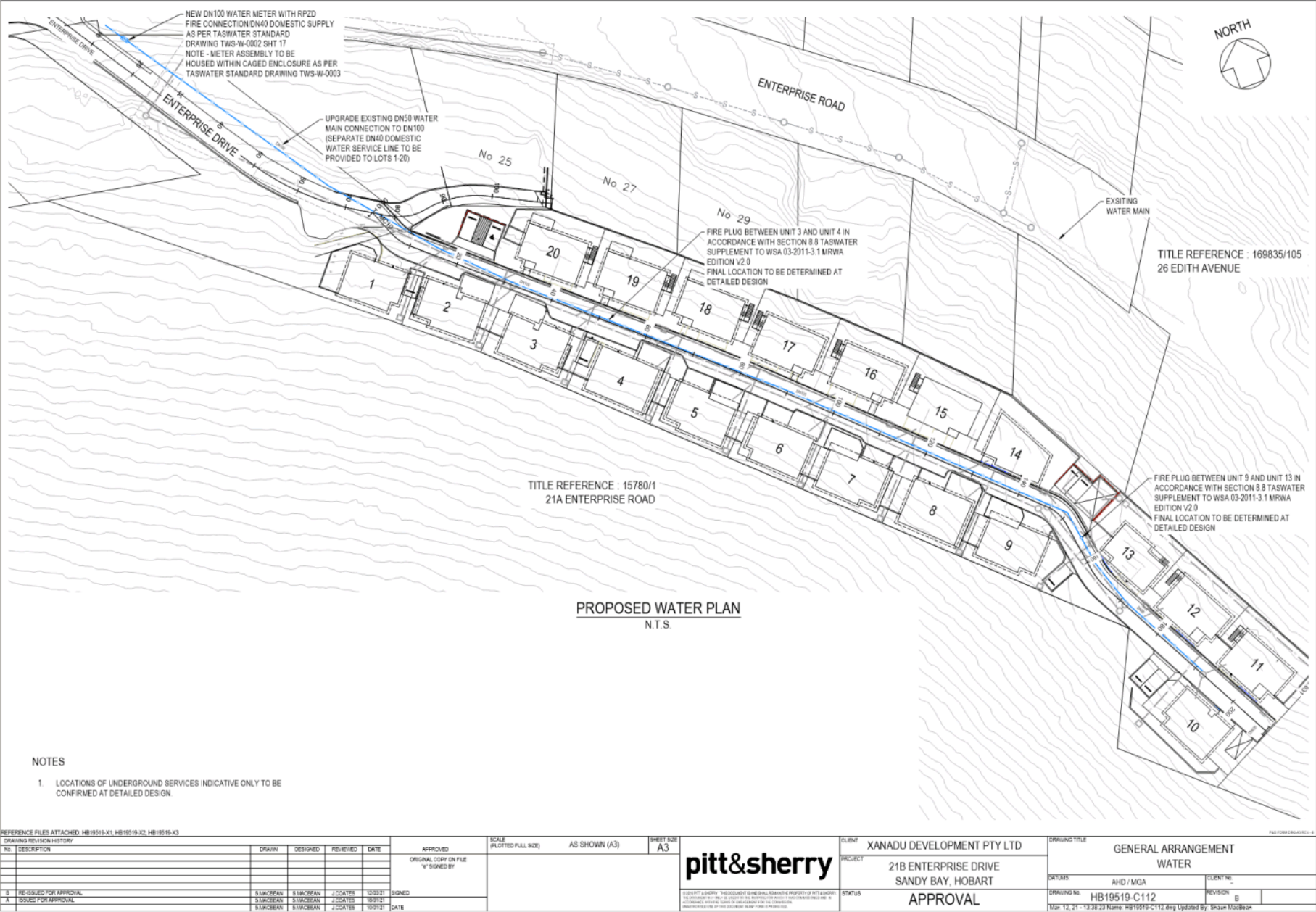
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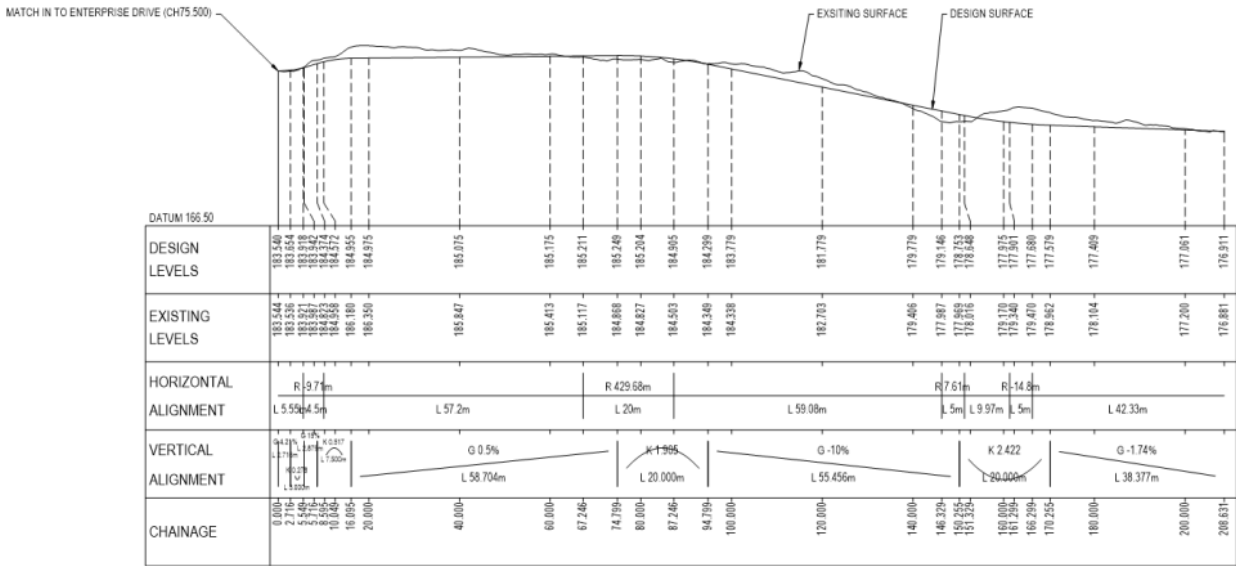


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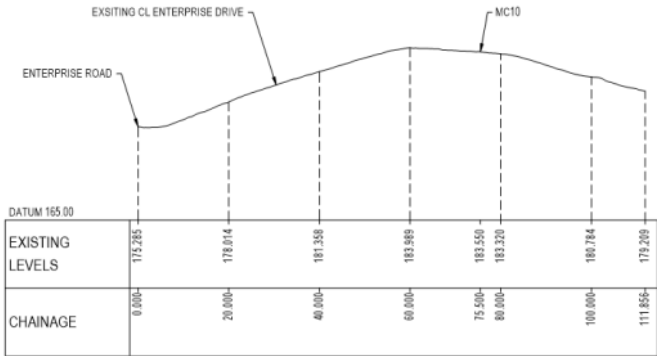








LONG SECTION PROFILE MC10
HORIZONTAL SCALE 1:1000
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LONG SECTION PROFILE ENTERPRISE DRIVE
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SCALE (PLOTTED FULL SIZE) AS SHOWN (A3)

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CLIENT: XANADU DEVELOPMENT PTY LTD

PROJECT: 21B ENTERPRISE DRIVE SANDY BAY, HOBART

STATUS: APPROVAL

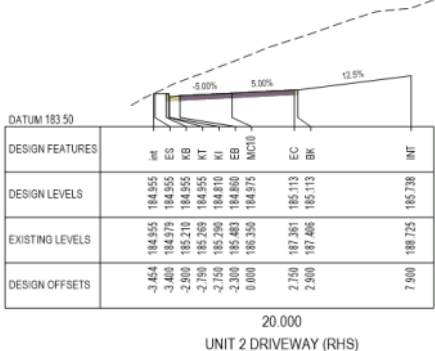
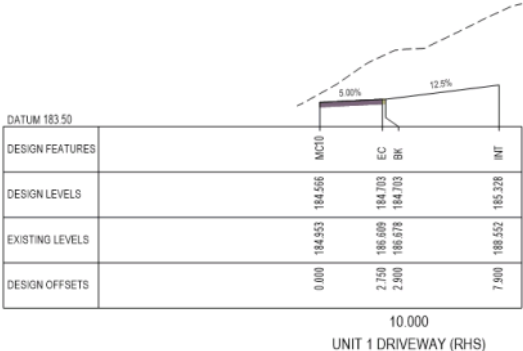
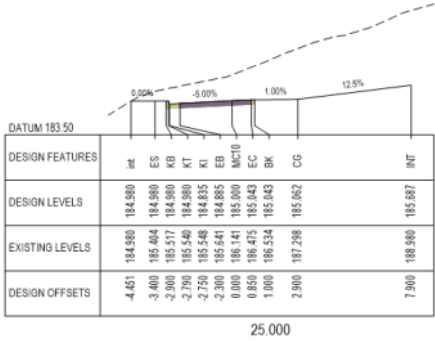
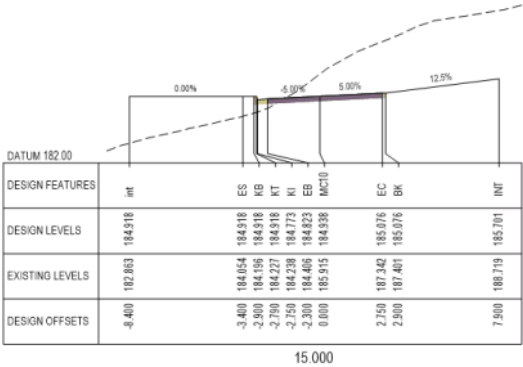
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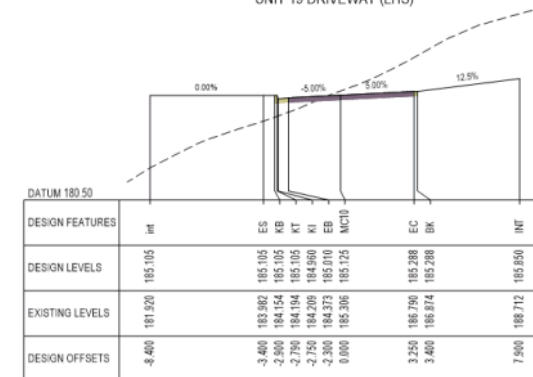
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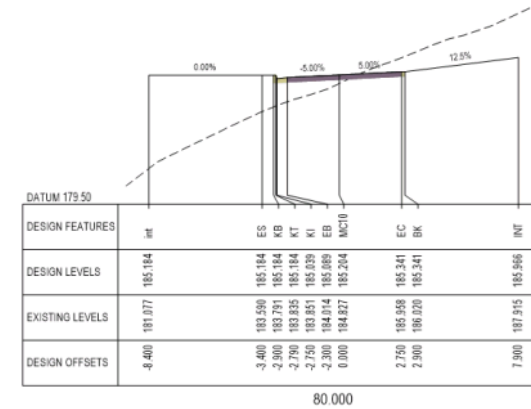
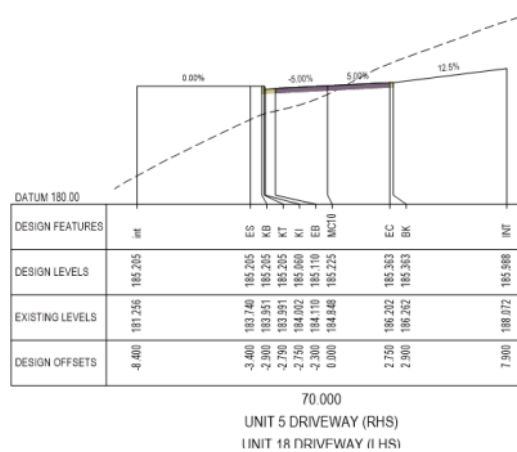
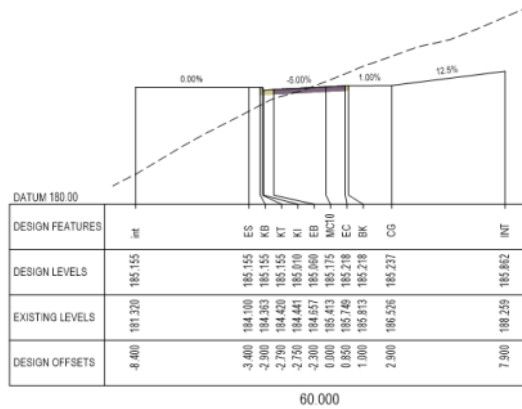
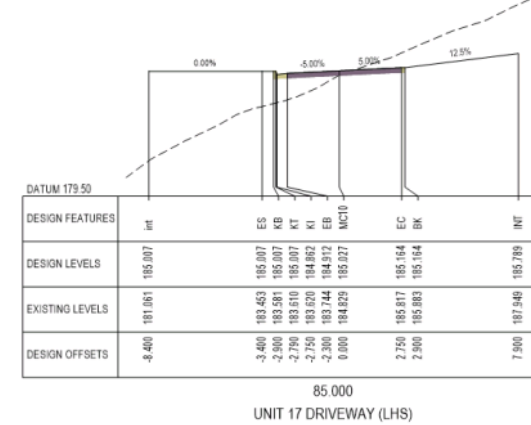
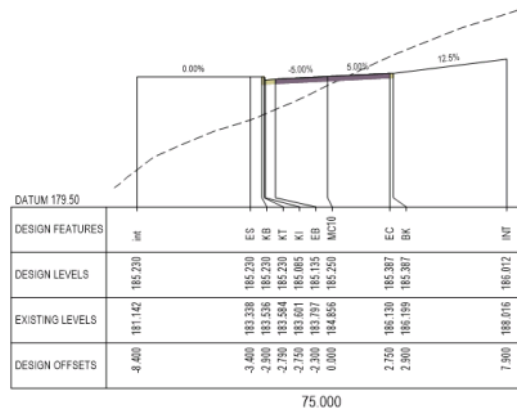
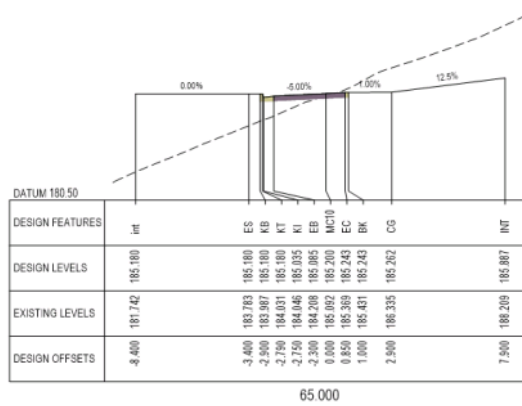
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CLIENT

PROJECT

STATUS

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APPROVAL

APPROVAL

XANADU DEVELOPMENT PTY LTD

21B ENTERPRISE DRIVE

SANDY BAY, HOBART

APPROVAL

APPROVAL

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DRAWING TITLE

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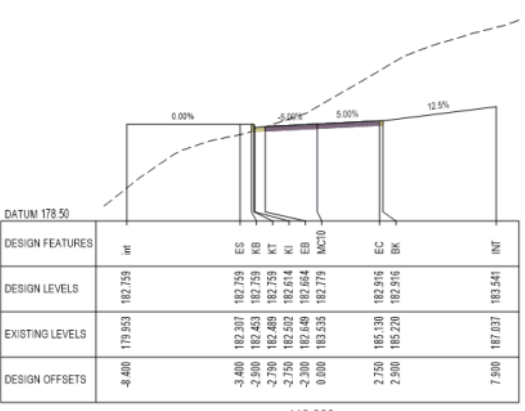
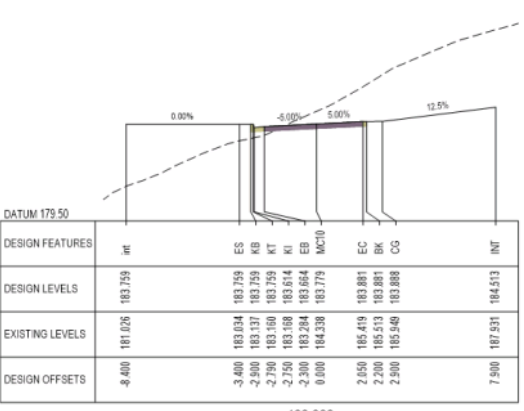
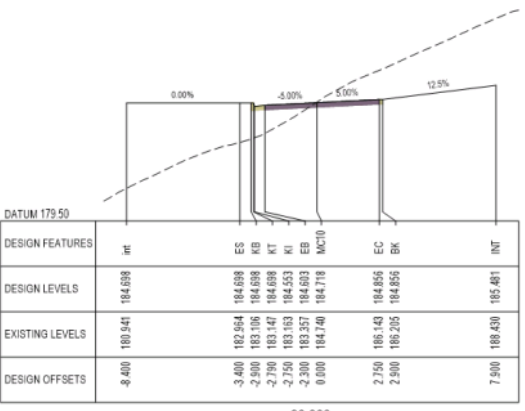
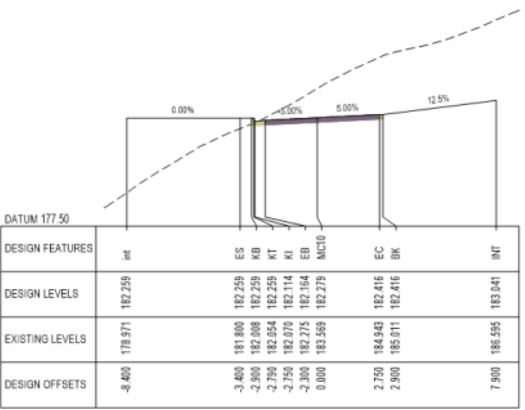
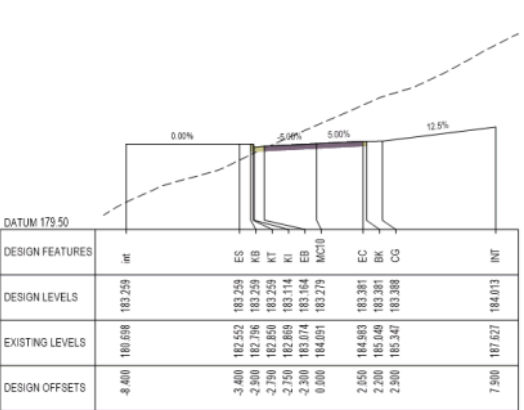
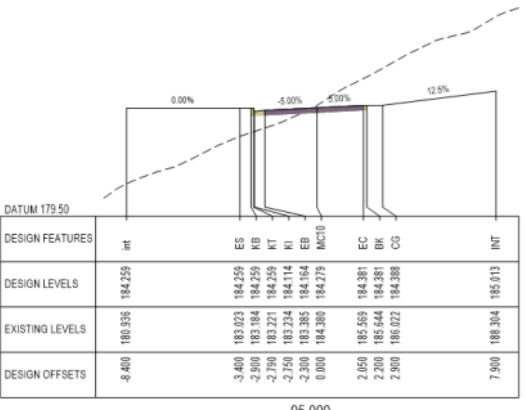
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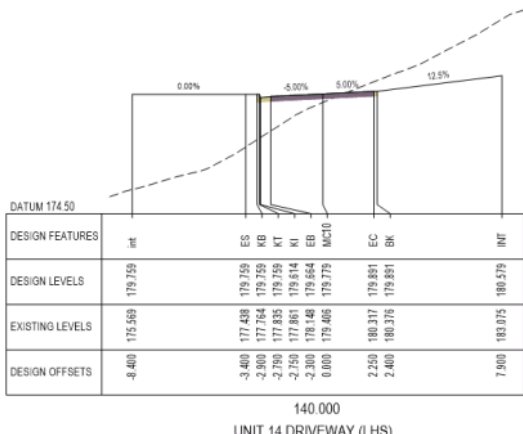
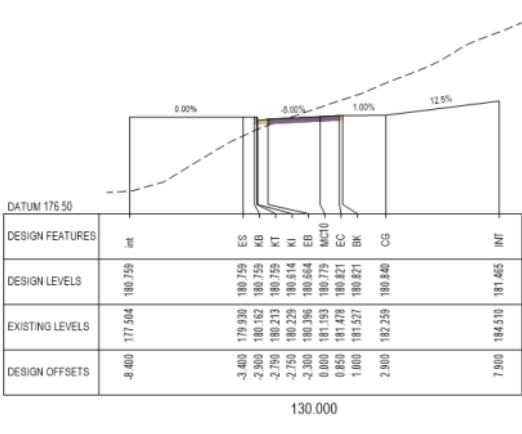
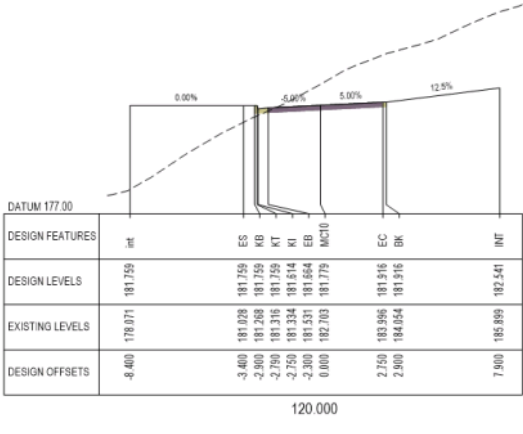
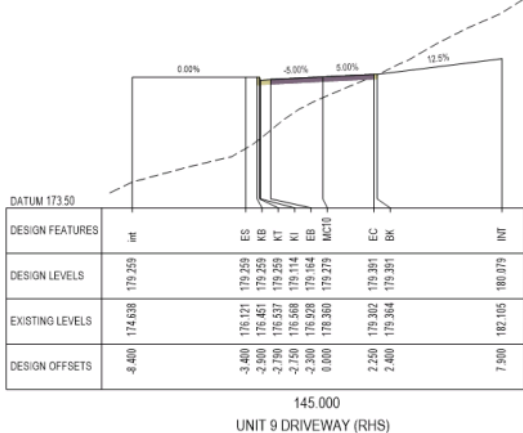
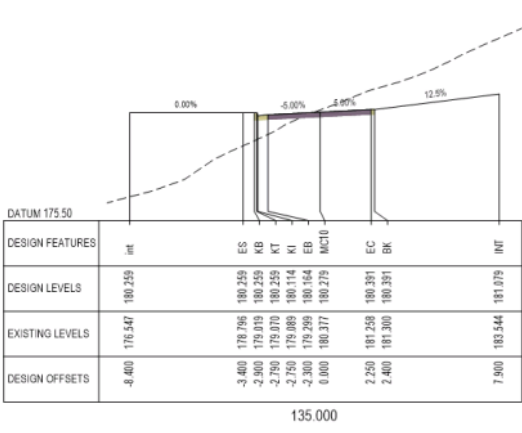
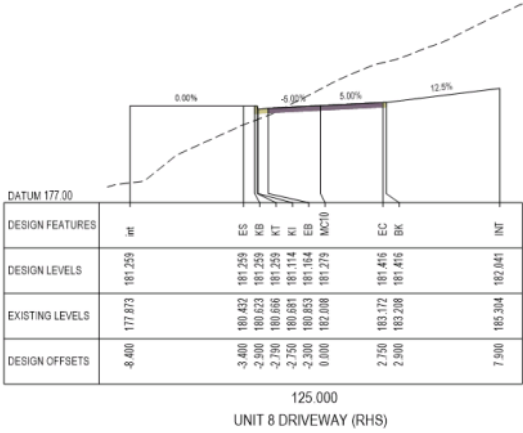
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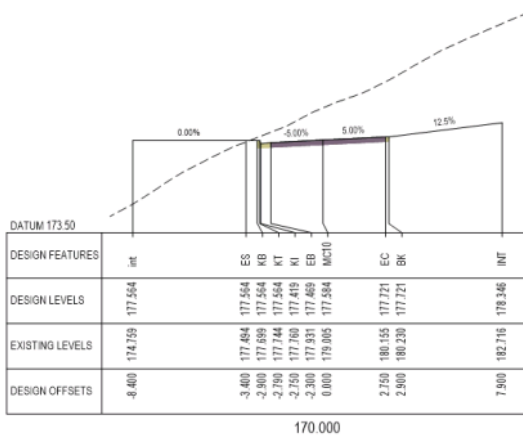
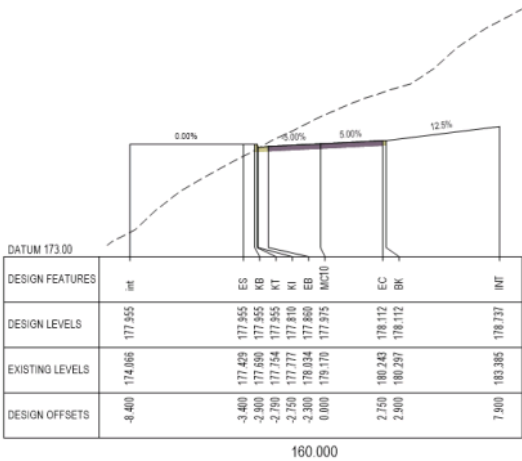
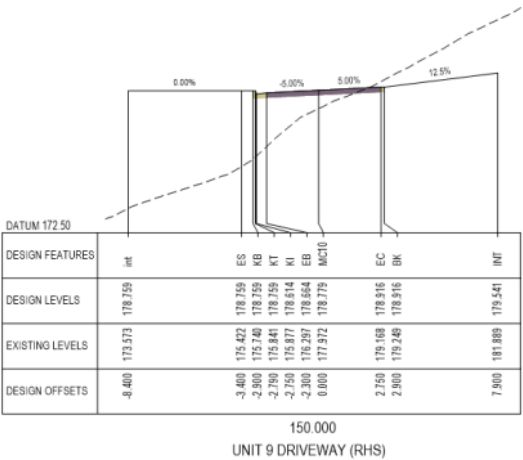
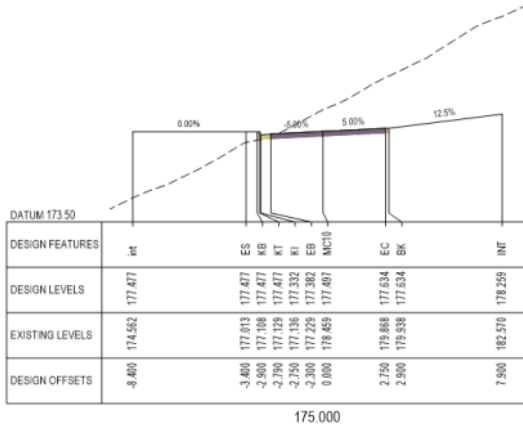
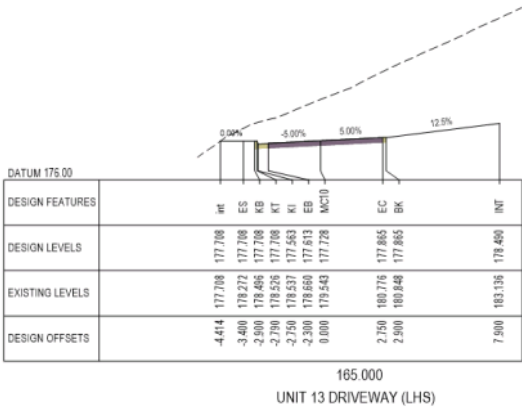
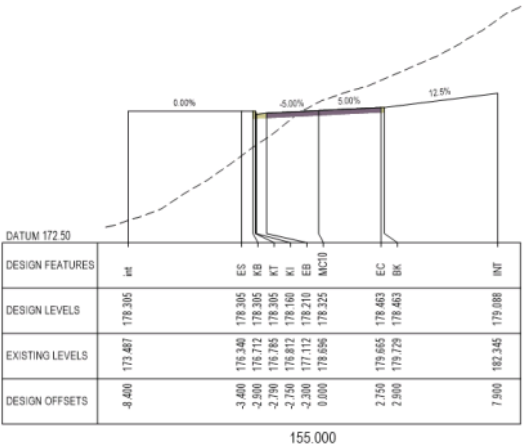
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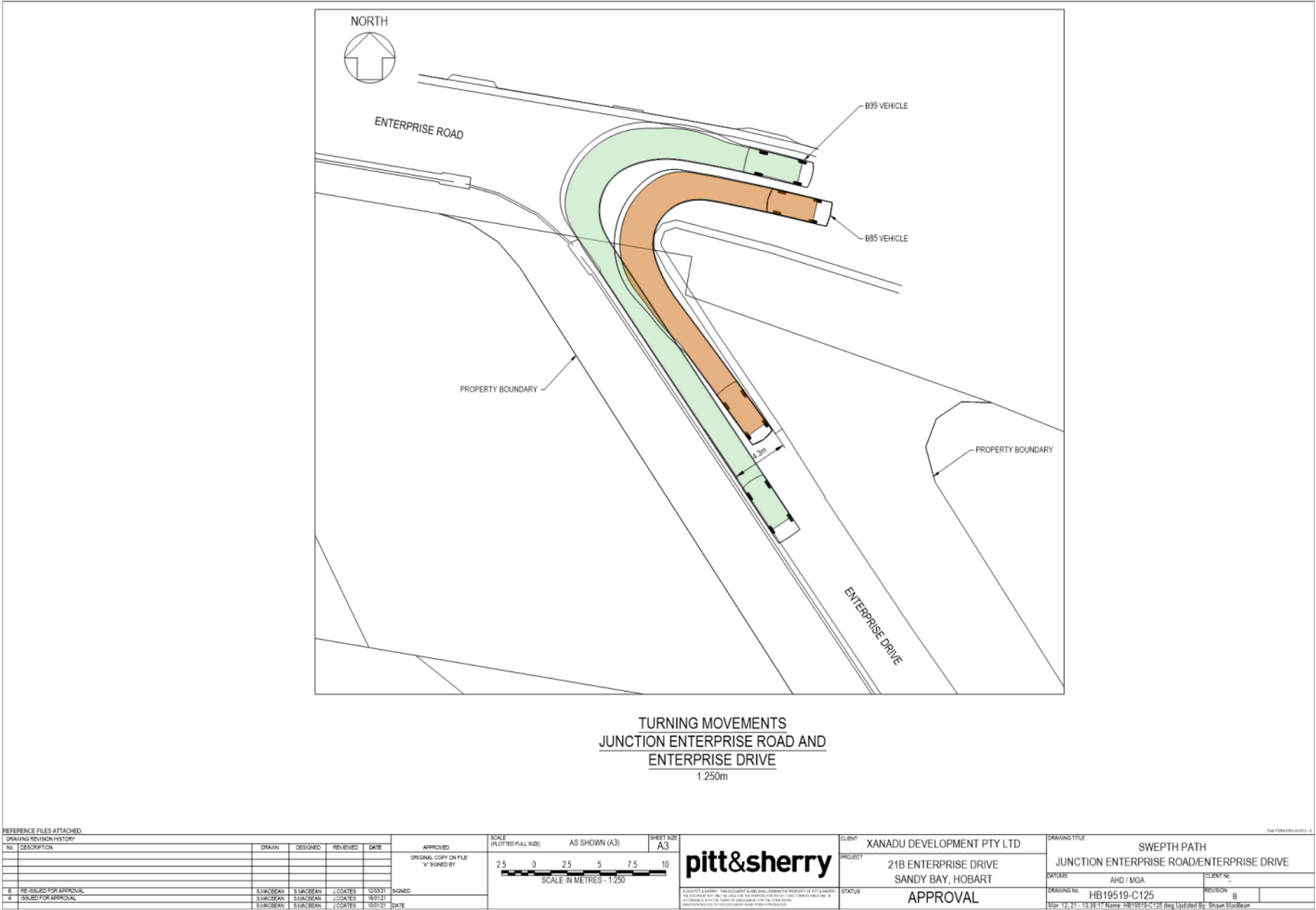
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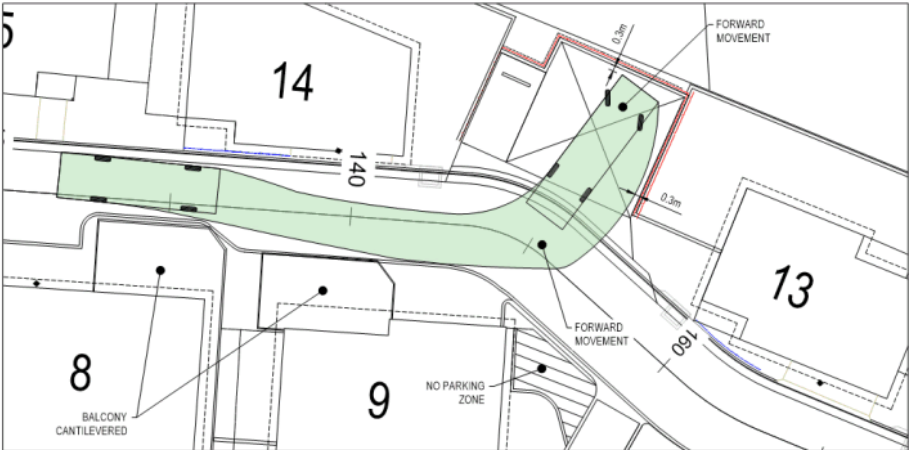
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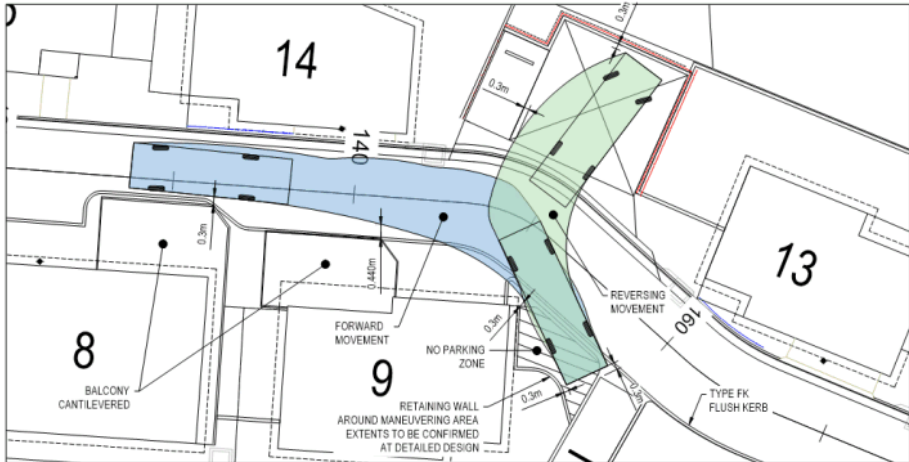






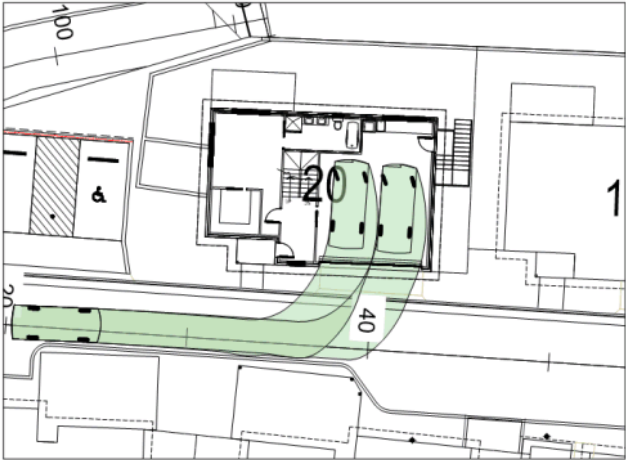


SWEPT PATH - 8.8m SERVICE VEHICLE
FORWARD IN
SCALE 1:250



SWEPT PATH - 8.8m SERVICE VEHICLE
REVERSE OUT
SCALE 1:250

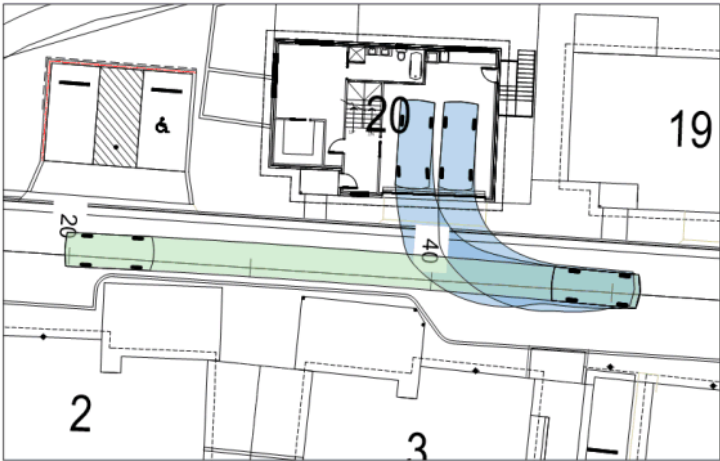
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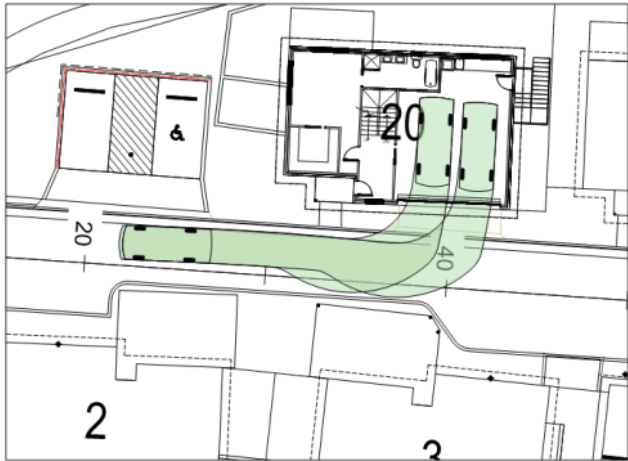
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FORWARD ENTRY - B85 VEHICLE
SCALE 1:250



LOT No 20
REVERSE EXIT - B85 VEHICLE
SCALE 1:250

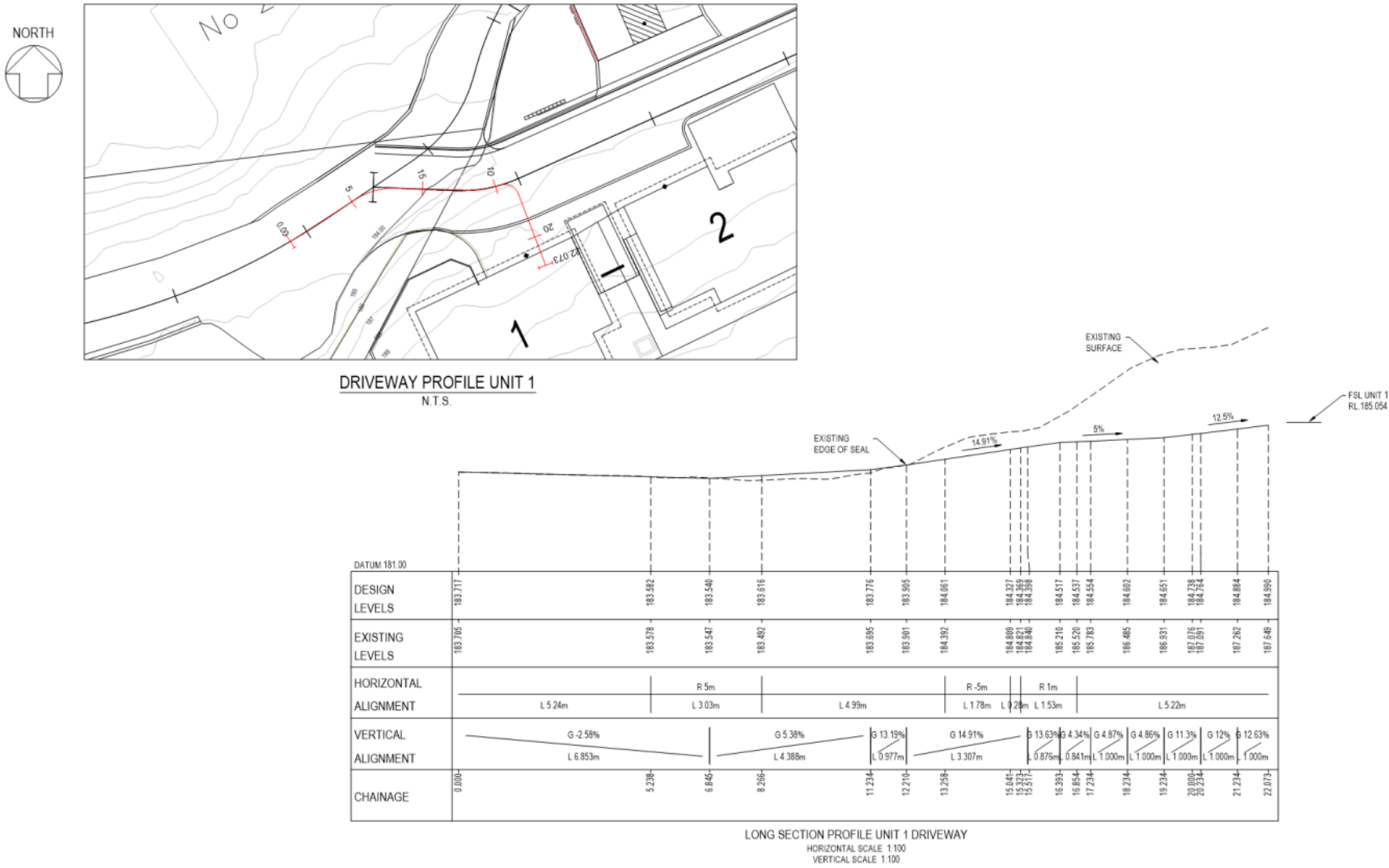


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LOT No 20
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A	ISSUED FOR APPROVAL	SHACREAN	SHACREAN	J COATES	10/01/21										

Joshua Coates

From: Leenah Ali-Lavroff
Sent: Monday, 29 March 2021 10:54 AM
To: Rebekah Ramm; Ross Mannering
Cc: Liling Lyu; Nicholas Ashlin; Matt Johnson; Joshua Coates
Subject: Fire trucks used by TFS

Hi All,

Here is a link to the fire trucks used by the Tasmanian Fire Service (TFS):
https://www.fire.tas.gov.au/userfiles/kristyb/file/O_1_6_CAFS_Capability_within_the_TFS.pdf

I spoke with Adam Salter who works at TFS and he has advised that any roads designs for bush fire areas need to be designed for the CAF Heavy Tanker (7.2m) and CAF Heavy Pumper (8.2m).

All fire trucks with the exclusion of the CAF 8-1 are smaller than the 8.8m medium rigid truck. TFS do not have any CAF8-1 in Tasmania but these are brought in from NSW and VIC when there are massive bushfires like we had a few years ago. Generally CAF8-1 are used alongside with fire helicopters and water bomber planes.

Cheers,
Leenah

pitt&sherry

Leenah Ali-Lavroff

Roads and Traffic Engineer

Phone +61 3 6210 1419 | lali@pittsh.com.au | [Connect on LinkedIn](#)

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

COVID-19: Read about pitt&sherry's measures to Flatten the Curve.



TFS Chief Officer's Operating Guideline (COOG)

GENERAL	OPERATIONAL
O.1.6 – CAFS Capability within the TFS	

1. PURPOSE

To provide insight into the considerations around the utilisation of CAFS to increase effectiveness of the organisation.

2. APPLICATION

This guideline applies to all Tasmania Fire Service (TFS) operational personnel.

3. BACKGROUND

The Tasmania Fire Service has made a significant investment in Compressed Air Foam (CAF) capability, the operational fleet now comprising one 6X4 heavy CAF (CAFS 8-1), 16 CAF enabled 4 X 4 Heavy Tankers and Two Urban Pumpers.

In every instance, the CAF installation is an enhancement to the existing capability of the appliance and does not interfere with the traditional role and functionality. The decision to engineer the CAF capability into the appliance in this manner is based on the fact that CAF is not the silver bullet for all incidents, but an option that is to be considered in tandem with traditional tactics, therefore seen as an enhancement to our capability.

Every TFS appliance is built for purpose, irrespective of whether it is CAF enabled or not, from a CAF perspective, the roles of both tankers and pumpers has not changed with the integration of CAF, however, the integration allows them to be utilised for roles outside of those traditionally undertaken by the same vehicle type without CAF.

Compressed Air Foam (CAF) has been evaluated, tested and verified as being a medium for use in both suppression and protection roles, demonstrating exceptional results by comparison to that of water alone. In fact, it has been stated (based on various testing throughout the world) that CAF in some applications is up to ten times more effective than water alone. This statement has been validated during joint testing whereby the TFS and the EPA undertook assessments of the extinguishing capability of CAF on tyre fires.

Realisation of the benefits of the suppression and protection capabilities of CAF has changed the manner in which we as an organisation respond to traditional incidents. The use of NEBA (Net Environmental Benefit Analysis) in conjunction with the known benefits of CAF allow the TFS as an organisation to suppress more effectively, protect the environment and provide a safer working environment for our firefighters. For the sake of this paper, CAF application is broken into three applications, these being Suppression, Protection (preventative) and Emission management.

4. SUPPRESSION / PROTECTION

The nature of CAF (High energy, aspirated Class A foam solution) is such that it has superior (wetting) penetration into fuels, exceptional cooling and smothering effect (starving) on all carbonaceous fuel types including plastic, rubber and textiles which have always been

problematic when utilising water as an extinguishing medium, especially when considering the issues of contaminated water runoff into the environment.

5. BUSHFIRE RESPONSE

CREATION OF BUFFER ZONES, WET LINES, DEFENDABLE SPACE

In the event that defendable space is required to be created in fine fuels and vegetation with the intention of forming a fire break, consideration **MUST** be given to the volume (area) required and time available to therefore determine the most suitable appliance for the role, ie, static and or mobile (pump and roll).

6. OTHER OPERATIONAL RESPONSE

CAF 8-1 can operate in open grasslands, on formed gravel roads and tracks where overhead clearance is available. 8-1 has a capacity to utilise monitors to create a wet line in fuels up to 700-800m in length on one tank of water (vegetation type and fire behaviour play a big part in the determination of the distance) in a relatively short period. Heavy tanker appliances can create the same defendable space, however the utilisation of hose lines and relocating continuously extends the timeframe somewhat.

Organisationally, CAF **should** be responded to the following incidents given its suppression capability, environmental and health benefits:

- Fires involving waste timber and bi products of manufacturing;
- Fires involving refuse and waste;
- Fires involving plastics, tyres and recycling products;
- Fully involved structures whereby defensive attack is required;
- Fires in landfill areas;
- Wrecking yards and storage facilities with multiple fuel types;
- Class B flammable liquid fires involving hydrocarbons including foams and rubbers; (*Note Class A CAF has an ability to suppress flammable liquid fires BUT does not have the vapour sealing capability of AFFF);
- Defensive attack on structures, particularly to stop lateral fire spread to exposures; and
- Use to control dust particles, asbestos dust control at complex incidents involving hazardous materials (effectiveness in wetting product).

CAF **should** be responded to the following incidents given its superior effectiveness in adding resilience and the creation of defendable space:

- Asset protection (wrapping of structures and area leading to the structure, therefore increasing their resilience to the effects of embers, radiant heat and flame impingement);
- Deep seated fires in vegetation including root structures and peat;
- Creation of control lines;
- Modification of fuels within the hazard management area (defendable space); and
- Exposure protection.

7. EMISSION MANAGEMENT (Bi products of combustion)

CAF provides an ability to control emissions and reduce the impact of particulate matter on firefighters as well as downwind of the incident (broader community impact).

Consideration must be given to the utilisation of CAF as a mechanism to strip carbonaceous particulate matter where exposure is an issue. The application of the CAF stream onto both the fuels as well as the emission column strip the particulate emissions due to the affinity that carbon particulate has to the CAF. This process has been used very successfully to reduce impact of emissions onto communities in the vicinity of the incident. This tactic was employed and validated on a large scale during the Hazelwood brown coal mine incident whereby the air quality was significantly improved for the residents of Morwell due to the effectiveness of CAF stripping particulate.

8. APPLIANCE CAPABILITY STATEMENTS

CAF 8-1 (Rural / Urban application)



Length:	9.5m
Height:	3.1m
Mass:	18500 Kg
Width:	2.5m

8200 litres of water, Capable of pump and roll, access off road on formed tracks (6X4) and firm standing in open grasslands, high volume mobile CAF application, use in both urban and rural applications. Utilised to provide buffer zones and to establish wet lines to burn off/to. Used for rapid, mobile suppression (direct attack) where access and operation is achievable due to its envelope and mass. Up to 4 CAF 38mm handlines simultaneously with up to 2000 LPM CAF discharge using handlines and up to 3000 LPM CAF discharge via monitors. The mass and dimensions of the appliance must be considered.

CAF Heavy Tanker (Rural / Urban application)



Length:	7.2m
Height:	2.95m
Mass:	12500 Kg
Width:	2.8m

3000 litre water HT appliance configured with CAF. Capable of high volumes of CAF discharge via 2 X 38mm rear discharge handlines, no pump and roll with CAF, no monitor application. Can deliver up to 1000 LPM of CAF via 2 handlines simultaneously, can feed monitor on snorkel booms as well as ground monitors in urban operations. Excellent agility and off road capability (same off road application as any TFS HT appliance).

CAF Heavy Pumper (Solely Urban application)

Length: 8.2m
Height: 2.97m
Mass: 11800 Kg
Width: 2.5m

4 x 2 Urban Pumper appliances are restricted to urban operations on the hard stand. Vulnerabilities of components and systems on the cab chassis prevent their effective and safe use in the rural/vegetation environment. The appliance design allows for the use of CAF in tandem with traditional fire ground tactics. The appliance is designed for static operations with no pump and roll capability. A high volume of CAF can be delivered via 2 38mm handlines up to a flow rate of 1000 LPM, with an ability to feed aerial waterways and ground monitors.

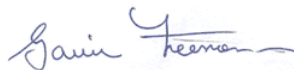
CAF Medium Tanker LTN 4-1 prototype CAF MT (Rural / Urban application)

Length: 6.4m
Height: 2.5m
Mass: 7500 Kg
Width: 2.6m

Capable of pump and roll, access off road in traditional off road MT environment, high volume mobile CAF application utilising monitor, use in both urban and rural applications. Utilised to provide buffer zones and to establish wet lines to burn off/to. Used for rapid, mobile suppression (direct attack) where access and operation is achievable. One CAF 38mm handline with up to 500 LPM CAF discharge and up to 800 LPM CAF discharge via the bumper monitor.

Prepared by: Manager Strategic Projects and Engagement

Approved by:



Gavin Freeman AFSM
DEPUTY CHIEF OFFICER
on behalf of **CHIEF OFFICER, TFS**

Mr Richard Bacon
Planning Officer
Hobart City Council

Dear Richard,

RE: 21b ENTERPRISE ROAD, SANDY BAY – PLANNING APPLICATION PLN 20-740

Please find attached revised Architectural Drawings and Engineering Documentation.

The changes to all documentation have been carried out, following discussions with Mr David Morley of the Council's Engineering Department.

The changes to the Architectural drawings that would have been the basis of your original assessment, to meet the Planning Scheme are as follows:

1. Unit 1
 - Access road levels to Unit Garage were changed to suit realigned access Road.
 - The ceiling height to Level 1 was changed to 3200mm to suit access road levels.
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)
2. Unit 2
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)
3. Unit 3
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)
 - The ceiling height to Level 1 was changed to 3300mm to suit access road levels.
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)
4. Unit 4
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)
 - The ceiling height to Level 1 was changed to 3300mm to suit access road levels.
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)
5. Unit 5
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - The ceiling height to Level 1 was changed to 3300mm to suit access road levels.
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)
6. Unit 6
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - Deck size still retained as previously applied (Open Space retained)
7. Unit 7
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - Deck size still retained as previously applied (Open Space retained)
8. Unit 8
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - The ceiling height to Level 1 was changed to 3300mm to suit access road levels.
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)
9. Unit 9
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - The ceiling height to Level 1 was changed to 3300mm to suit access road levels.
 - Deck on North East Elevation to be cantilevered 600mm to meet access width of roadway.
 - Deck size still retained as previously applied (Open Space retained)

10. Unit 10
 - Floor Level minor change to suit roadway. (2018-016-D-S5R)
 - Barrier fence added in front of Front Entrance door as required by Engineering.
11. Unit 11
 - Floor Level minor change to suit roadway. (2018-016-D-S5R)
 - Barrier fence added in front of front Entrance door as required by Engineering.
12. Unit 12
 - Floor Level minor change to suit roadway. (2018-016-D-S5R)
 - Barrier fence added in front of front Entrance door as required by Engineering.
13. Unit 13
 - Floor Level minor change to suit roadway. (2018-016-D-S5R)
 - Barrier fence added in front of front Entrance door as required by Engineering.
 - Unit has been moved 1.2m towards unit 12 to provide more clearance to the roadway adjacent to the front door, as required by HCC Engineering.
14. Unit 14
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
 - Barrier fence added in front of front Entrance door as required by Engineering.
15. Unit 15
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
16. Unit 16
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
17. Unit 17
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
18. Unit 18
 - Floor Level minor change to suit roadway. (2018-016-C-S5R)
19. Unit 19
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)
20. Unit 20
 - Floor Level minor change to suit roadway. (2018-016-B-S5R)

Carparking spaces between U13 and U14 have been increased, in particular, the one nearest to U13, as this is the nominated turning area for garbage trucks and fire trucks.

The access road from Enterprise Road has now been linked to the roadway through the Development. No part of the access road to the Development runs through the rear of No.23 Enterprise Road.

The Fire Report has also been upgraded to reflect the new layout of the Roadway and to meet requirements by the Council Engineering Department. In particular, the location of the hydrants and turning of fire vehicles.

If you require further information, please do not hesitate to give me a ring.

Kind regards,

A handwritten signature in blue ink, appearing to read 'Brian Richardson', with a long horizontal flourish extending to the right.

Brian Richardson
15 March 2021

Mr Richard Bacon
Planning Officer,
Hobart City Council.

PLN-20-740 – 21b ENTERPRISE ROAD, SANDY BAY

Dear Richard,

With respect to the construction of retaining walls on or adjacent to the property boundaries, all excavation, scaffolding and construction of the walls will be carried out within the property boundaries of the Development site only. – Drawing 2018-016-B-S10 refers.

In response to HCC letter dated 25 March 2021, I forward to you amended Architectural drawings to reflect the changes to the turning area between Units 13 and 14 along with Pitt & Sherry drawings, as requested in further information No. PA6.

With the additional details provided by Pitt and Sherry and TasFire, we believe all queries are now addressed and therefore the project should be able to be advertised.

We therefore look forward to seeing this occur at your earliest convenience.

Kind regards,

A handwritten signature in blue ink, appearing to read 'Brian Richardson', with a stylized flourish underneath.

Brian Richardson
31 March 2021

Joshua Coates

From: Wilson, Claudia <claudia.wilson@veolia.com>
Sent: Wednesday, 17 February 2021 2:20 PM
To: Joshua Coates
Subject: Re: FW: 21B Enterprise Drive - Private waste collected proposed 20 unit development

Hello Joshua,

I have received the below feedback based on your plans/proposal:

*I've looked at the plans and I believe this is achievable.
The turning area provided towards the end of the complex looks tight but achievable.*

*Bins would need to be serviced with a Single Axle Rear Load collection vehicle. (Medium Rigid Truck).
We would just need to check that the roadway surface is capable of supporting the truck GVM of 15.5t*

***I would recommend 120L Waste bins for each of the 20 units serviced Weekly
and 140L Recycle bins for each of the 20 units serviced Fortnightly.
This is in line with a typical house (serviced by HCC) within the Hobart City Council.***

Note - HCC residents also have a 240L Fogo bin serviced fortnightly, but we typically do not offer this service for a unit complex.

*A body corporate would need to be set up to cover the cost of empty and the rental charges on the bins.
Servicing with a Rear Loader can become quite expensive in complexes such as this, particularly when the driver is required to stop and get out at each property.*

*To minimise the cost of Waste and Recycling collections for the site, consideration should be given to installing a waste compound at the entrance to the property (similar to most other unit complexes).
This minimises time spent on site and hence a reduction in collection fees. Residents would bring the waste and recycling to this single point and as such the bins can be larger, communal bins.*

*To achieve roughly the same result, the complex would require **4x660L Waste bins** serviced weekly and **2x660L Recycle bins** serviced weekly. (or 4 x 660L Recycle bins serviced bi-weekly)
Happy to discuss further with the developer if they have any questions, my details are below.*

Chris Dickinson | Operations Supervisor | **Veolia Australia and New Zealand** P: 03 6244 0003 | M: 0438 728 908 |
E: Chris.Dickinson@veolia.com

Please note, we do not offer a formal letter for a waste management proposal based on plans.
A final waste management offer can be provided once the development has been concluded and a site risk assessment can be performed.

However the above should be sufficient for future planning and the council, please use this email instead.

Thank you and kind regards

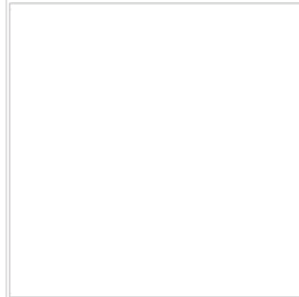
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Claudia Wilson

Planning: #216474

Property

21B ENTERPRISE ROAD SANDY BAY TAS 7005

**People**

Applicant

*

Brian Richardson
7 Ruthwell Street
MONTROSE TAS 7010
0418 121 481
bgr01@bigpond.com

Owner

*

Xanadu Developments
Max Wang
1341 Dandenong Road
Chadstone Vic 3148
0402 920 089
mwang@venturesolutions.com.au

Entered By

QUALITY HOME DESIGN
0418 121 481
bgr01@bigpond.com

Use

Multiple dwellings

Details

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application.

*

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below.

*

<input type="radio"/> No		
If this application is related to an enforcement action please enter Enforcement Number <input type="text"/>		
Details		
What is the current approved use of the land / building(s)? *		
<input type="text" value="Vacant"/>		
Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *		
<input type="text" value="20 Villa Apartments"/>		
Estimated cost of development *		
<input type="text" value="10000000.00"/>		
Existing floor area (m2)	Proposed floor area (m2)	Site area (m2)
<input type="text" value="0.00"/>	<input type="text" value="5200.00"/>	<input type="text" value="7265"/>
Carparking on Site		
		N/A
Total parking spaces	Existing parking spaces	<input type="text" value="Other (no selection chosen)"/>
<input type="text" value="30"/>	<input type="text" value="0"/>	
Other Details		
Does the application include signage? *		
<input type="radio"/> No		
How many signs, please enter 0 if there are none involved in this application? *		
<input type="text" value="0"/>		
Tasmania Heritage Register		
Is this property on the Tasmanian Heritage Register? • <input type="radio"/> No		
Documents		
Required Documents		
Title (Folio text and Plan and Schedule of Easements) *		
<input type="text" value="21b Enterprise Road - Title Documents .pdf"/>		
Plans (proposed, existing) *		
<input type="text" value="21b Enterprise Road - Zone A - Site & Overall Details -R.PDF"/>		
Supporting Documents		
Photos or Montages 21b Enterprise Road - Location Pictorial .pdf Concept Servicing Plan Sewer - Updated 10 Sep 2020.pdf Traffic Impact Assessment Turning Paths - Updated 10 Sep 2020.pdf Bushfire Management Plan BHMP with ELZ overlay - 21b Enterprise Road .pdf Flora and Fauna Report Biodiversity Report - 21b Enterprise Rd Sandy Bay NVA 20191028.pdf Zone B Site Plans & Details 21b Enterprise Road - Zone B - Site Plan Details - R.PDF Zone C Site Plans & Details 21b Enterprise Road - Zone C - Site Plan Details - R.PDF Zone D Site Plans & Details		

21b Enterprise Road - Zone D - Site Plan Details.pdf
Zone B - Units 1-4 Revised
21b Enterprise Road - Zone B - Units 1-4 - R.PDF
Zone B - Units 18-20 Revised
21b Enterprise Road - Zone B - Units 18-20.pdf
Zone C - Units 5-9 Revised
21b Enterprise Road - Zone C - Units 5-9.pdf
Zone C - Units 14-18 Revised
21b Enterprise Road - Zone C - Units 14-18.pdf
Zone D - Units 10-13 Revised
21b Enterprise Road - Zone D - Units 10-13-R.PDF
Building Envelope Typical
Building Envelope - 21b Enterprise Road Development - Revised Sep 2020.pdf
Road Cross Sections
21b Enterprise Road - Road Cross Sections.pdf
Cross Section - Road Pavement
21b Enterprise Road - Cross Section - Road Pavement .pdf
Landslide Risk Review
Landslide Risk Review - 21b Enterprise Road.pdf
Stormwater Assessment Report
Stormwater Assessment Report - 21b Enterprise Road.PDF
Letter to No.23 Enterprise Road
Letter to No.23 Enterprise Road - 18 October 2020.pdf
Title - No.23 Enterprise Road
No.23 Enterprise Road Title - 1 June 2020.pdf
Letter to adjoining Properties
Letter to adjoining property owners - 5 March 2020.pdf

Hobart City Council
16 Elizabeth Street, Hobart 7000

**Tax Invoice
Official Receipt**

ABN: 39 055 343 428

26/10/2020

Receipt No: 216007

To: Brian Richardson
7 Ruthwell Street
MONTROSE TAS 7010

Description	Reference	Amount
Planning Permit Advertising Fee*		\$ 300.00
Planning Permit Fee		\$ 12,000.00
Transaction Total*:		\$ 12,300.00
Includes GST of:		\$ 27.27

Cheque payments subject to bank clearance

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

PAYMENT SUMMARY

ABN: 39 055 343 428

PLEASE NOTE: Payments can **only** be made via Council's online development portal payment gateway or by calling Customer Services on (03) 6238 2190.

28/10/2020

YOUR REFERENCE ONLY: 21b Enterprise Road 2

To: Brian Richardson
7 Ruthwell Street
MONTROSE TAS 7010

Description	Amount
Planning Permit Advertising Fee*	\$ 300.00
Planning Permit Fee	\$ 12,000.00
Total[†]:	\$ 12,300.00
Includes GST of:	\$ 27.27

Tax Receipt will be issued on payment.



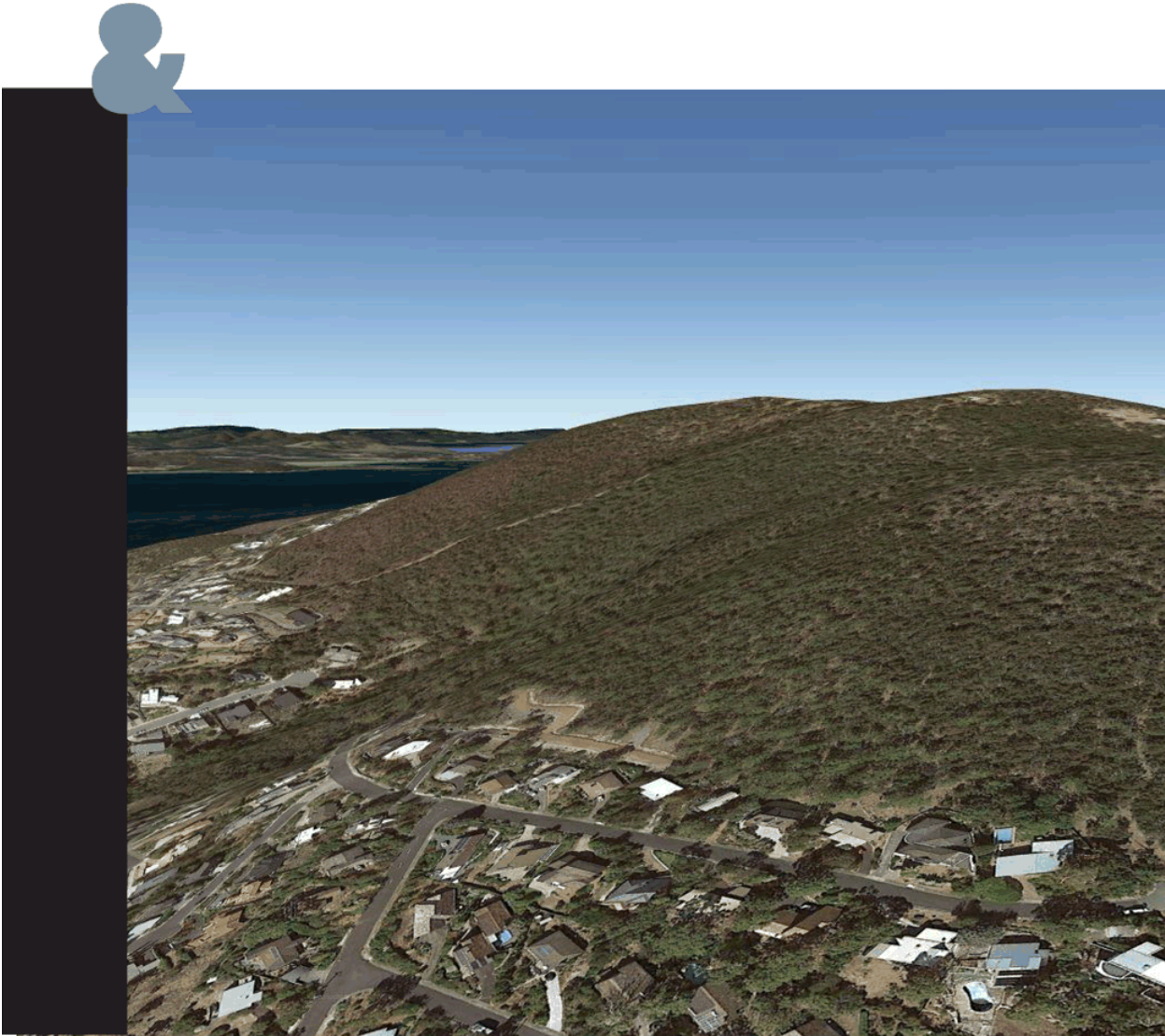
21 Enterprise Road
Stormwater Assessment

Prepared for
Max Wang

Client representative
Max Wang

Date
21 December 2020

Rev 03



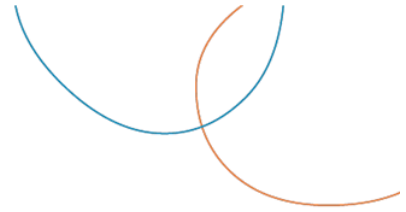


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Appendices

- Appendix A —** Water Quality Management Products
- Appendix B —** DRAINS Modelling outputs
- Appendix C —** Stormwater Plan



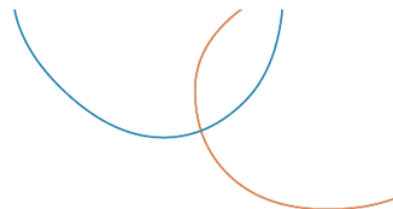
Prepared by — Joshua Coates		Date — 4 May 2020
Reviewed by — Hamish Peacock		Date — 4 May 2020
Authorised by — Joshua Coates		Date — 4 May 2020

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
0	Draft issue to Client	JC	HP	JC	19/09/19
01	Update in response to RFI	JC	HP	JC	04/05/20
02	Included revised lot layout (APP – C)	JC	HP	JC	23/11/20
03	Update for Waterway Protection Code	JC	HP	JC	21/12/20

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Executive Summary

This stormwater report has been updated to reflect changes recommended by City of Hobart provide in a request for information dated 30 April 2020. This request relates primarily to the previously proposed cutoff drain and overland flow management. Any previous reporting or correspondence relating to overland flow management is now superseded. Reference should be made to this report.

A summary of changes is provided below.

- An existing cut-off drain services properties downstream of the subject site. This drain is proposed to be made redundant. It is recommended to replace the cut off drain with an enlarged pit and pipe stormwater system. The outlet pipe and upstream system has been sized to accept flow for the 1% AEP event + CC
- The initial stormwater management solution suggested overland flow be managed within the proposed road corridor. Further explanation and more detailed analysis has been undertaken to show that this solution is able to work with the current proposed development layout and level. By providing suitable pit inlets, minimal flow is expected in the road reserve and current adopted floor levels on lots 20 to 11 will be appropriate provided standard kerb and channel is adopted for the road.
- Based on the latest advice provided on 30 April 2020 by City of Hobart, and following discussion with City of Hobart officers on 1 May 2020. It is proposed to revert the proposed stormwater management system to the initial recommendation. This is:
 - Natural overland flow from the upstream catchment to be directed to pits at the rear of each lot. It will be the responsibility of the property owner to maintain the pit as it will be to benefit their own property.
 - In the event of storm exceeding the capacity of these on lot pits, overland flow will be directed between lots to the road reserve.
 - Stormwater inlet pits are proposed within the road reserve, with any bypass flow directed towards the proposed stormwater detention basin.
 - Any flow exceeding the capacity of the basin, or that bypasses the basin will be directed towards an inlet structure (subject to detailed design). This may be incorporated into the detention system proposed below the parking area. An enlarged stormwater pipe at the outlet of the site is proposed with additional inlet pits capable of accepting the design flow. This aims to replicate to intention of the existing cut-off drain.

One of the primary concerns with directing water through the site is nuisance flooding of lots 11 to 20. It is recommended that a standard KC kerb be adopted. This provides 150mm barrier for stormwater. The longitudinal grade is greater than 3% through most of the site meaning flow will preferentially be directed longitudinally as opposed to laterally.

The analysis undertaken for the 1% AEP event plus 30% increase in rainfall shows minimal depth within the kerb and channel.

With the further detailed analysis now undertaken, a minimum 300mm freeboard can be omitted as the subject lots are not considered to be flood prone. It is recommended that lots do have a minimum floor level of 100mm above top of kerb. This would provide additional insurance that new properties would not be subject to nuisance flooding.

1. Introduction

Pitt&sherry have been engaged to undertake a stormwater assessment to support a development application for a subdivision in Enterprise Road, Sandy Bay. The land is currently zoned as General Residential. Figure 1 presents the proposed development extent and associated points of interest.



Figure 1: Subject Site and Points of Interest

This report details the stormwater assessment, including all assumptions and limitations, in response to the requirements provide in the planning letter for City of Hobart dated 8 July 2019.

2. Stormwater Assessment

2.1 SW1 – Stormwater Disposal

SW1: A site plan to demonstrate how stormwater from the proposed development (including roofed areas and impervious surfaces - driveways etc.) will be disposed of via gravity to public stormwater infrastructure.

A site plan is to be provided that demonstrates how the proposed development intends to dispose of stormwater generated from impervious surfaces (roof areas, driveways, footpaths, etc.) via gravity to the public stormwater system.

The site generally grades in a north-west direction with slopes of approximately 40%. The access road for the proposed development is generally aligned along the contour. This is presented below in Figure 2.

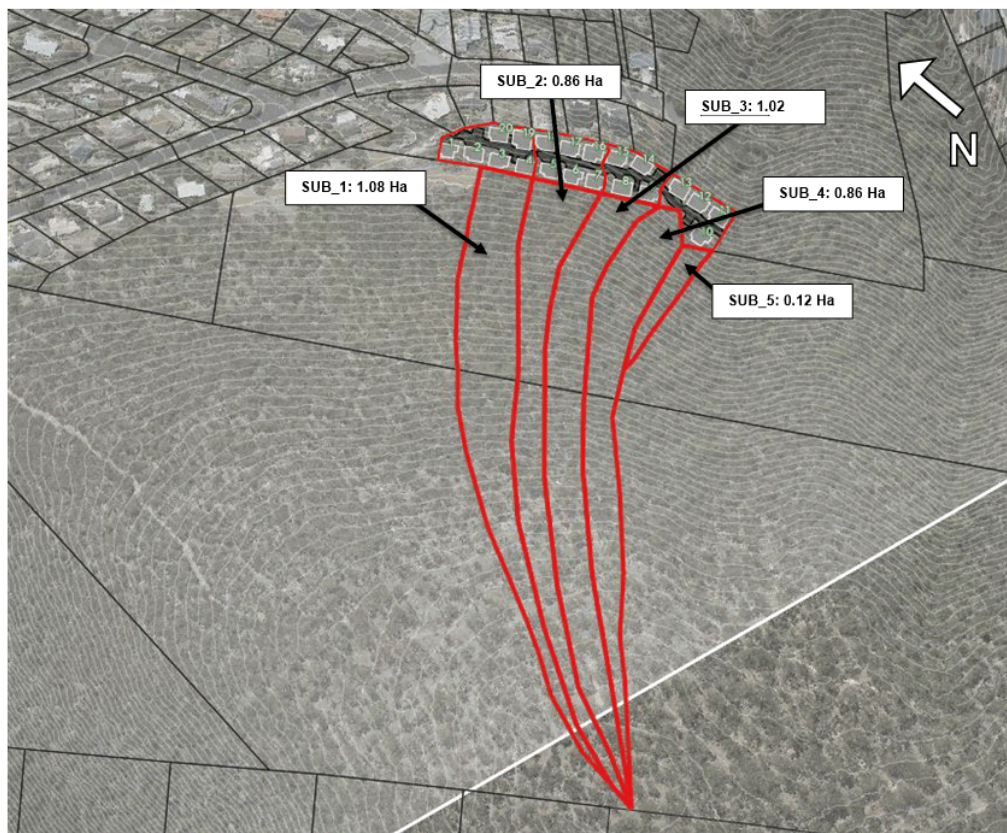


Figure 2: Proposed Development Layout and Upstream Catchments

The proposed development layout provides longitudinal fall in a south-east direction. A piped drainage system within the roadway is proposed that enables the collection of stormwater from roof and road areas. Stormwater will be directed towards the natural depression at the south-eastern most corner of the proposed development. This discharge location is selected for the following reasons.



- It adequately services the proposed development site;
- It provides reasonable opportunity for any additional development upstream to have access to a part of the stormwater system
- It directs stormwater away from existing development and returns flow to the natural depression.
- It replicates the discharge location under existing conditions.

The proposed stormwater discharge location is mapped as a 'Minor Tributary' on 1:25,000 topographic maps (TheLIST). Appropriate energy dissipation and erosion protection at the outlet to Manning Rivulet will be required.

An easement over 26 Edith Avenue will be required to ensure the proposed stormwater system has legal access to the public stormwater system.

2.2 SW5 – Stormwater Quality

SW5: A report prepared by a suitably qualified person, demonstrating:

- *That the stormwater system for the new development incorporates water sensitive urban principles for the treatment and disposal of stormwater.*
- *A concept stormwater treatment report, including associated plans and calculations, demonstrating that the proposed stormwater system will achieve the State Stormwater Strategy targets. If this treatment cannot be achieved, demonstrate why it is not feasible. Council notes carpark treatment should target fine sediments and hydrocarbons.*

The proposed stormwater system must incorporate water sensitive urban design principles for the treatment and disposal of stormwater. The *Hobart Interim Planning Scheme 2015* suggest the pollutant load reduction targets in accordance with the *State Stormwater Strategy 2010*. These are:

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.
45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.
45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.

Based on the proposed development layout, a MUSIC model has been developed to determine pollutant loads from the proposed development, and to provide a recommendation for a suitable water quality management system.

To achieve these pollutant load reduction targets, *Hudson Civil 'pit traps'* are proposed on all stormwater gully pits (five in total) and a *Rocla 'Upflow' Standard (DN1200)* is proposed at the end of line, immediately downstream of the proposed detention structure (refer to Section 2.3.3).

A schematic of the MUSIC model is presented below in Figure 3.

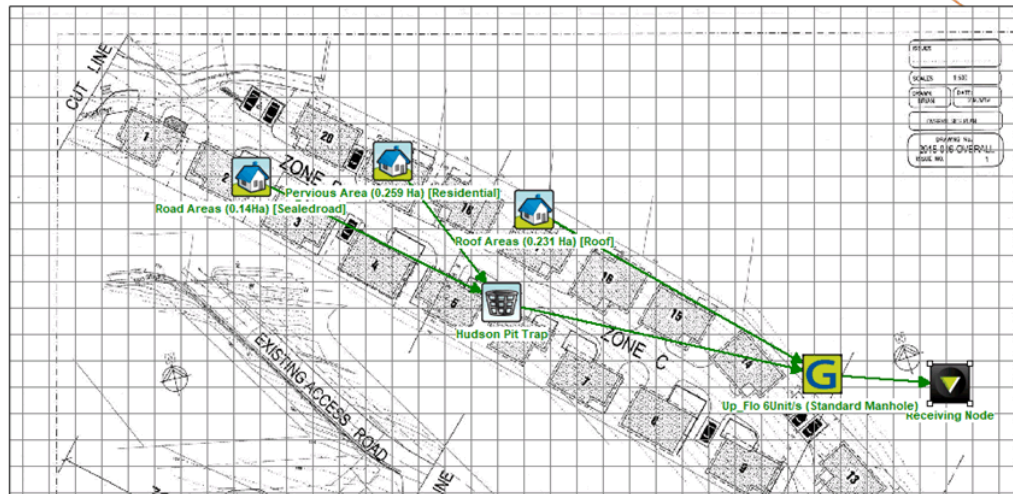


Figure 3: MUSIC Model Schematic

The proposed water quality management system achieves the required pollutant load reduction targets. The treatment train effectiveness is provided in Table 1.

Table 1: Treatment Train Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.19	1.19	0
Total Suspended Solids (kg/yr)	212	16.3	92.3
Total Phosphorus (kg/yr)	0.434	0.131	69.8
Total Nitrogen (kg/yr)	2.67	1.41	45.8
Gross Pollutants (kg/yr)	42.6	1.97	95.4

Details of the proposed water quality management measures are presented in Appendix A.

2.3 SW6 – Stormwater Quantity

SW6: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following:

- accommodate a storm with an ARI of 20 years (non industrial zoned land) or
- accommodate a storm with an ARI of 50 years (industrial zoned land) when the land serviced by the system is fully developed
- Stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure

A stormwater system is to be provided that can convey a storm with an ARI of 20 years and stormwater discharging from the subject site under post development conditions is to be no greater than the flow under pre-developed conditions.

The existing catchment contributing to the subject site is bush and scrub, assumed to be pervious. No defined channel directs stormwater to the site but rather distributed sheet flow.

There is existing development downstream of the subject site (properties 23 to 35 Enterprise Road) that would receive flow from the upstream catchment. A cut-off drain exists upstream of these properties which captures and directs from in a south-easterly direction towards a natural creek. This ultimately contributes to Maning Rivulet.

This flow behavior will be maintained as part of the proposed development, although formalised with the pit and pipe stormwater system. The access road kerb and gutter will act as the cut off drain, directing stormwater to a piped stormwater system via gully pits.

It is proposed that pits be placed at the rear of each of lots 3 to 10. The purpose of these pits will be to collect stormwater from the upstream catchment and direct it to the piped drainage system.

The proposed stormwater system is sized based upon the direct area (development site) and the existing upstream catchment. The proposed stormwater system is shown below in Figure 4:

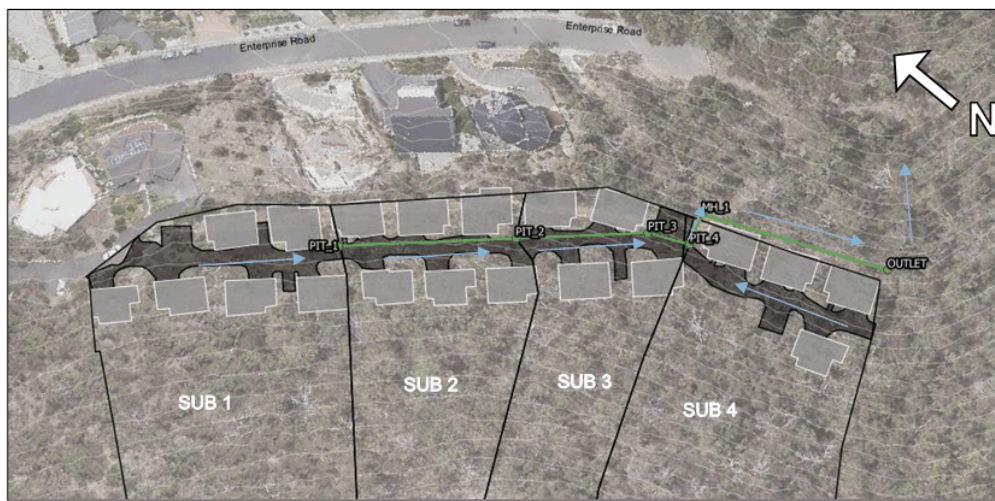


Figure 4: Proposed Stormwater System

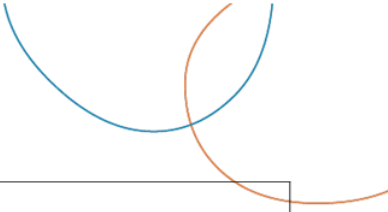
The existing cut-off drain will serve as the point at which a peak flow rate is calculated for the base case (pre-development scenario). This allows for the impact of the proposed development to be appropriately quantified and managed accordingly.

2.3.1 Hydrologic / Hydraulic Analysis

A DRAINS hydrologic / hydrologic model has been prepared to appropriately size the stormwater system. The following input parameters are adopted:

Table 2: Hydrologic Model Parameters

Hydrologic Model:	ILSAX
Paved Depression Storage:	1 mm
Supplementary Depression Storage:	1 mm
Grassed Area Depression Storage:	5 mm
Soil Type:	Type 3 (slow infiltration rates, may have layers that impede downward



	movement of water)
Antecedent Moisture Condition (AMC):	3 (Rather wet, equates to approximately 12.5mm to 25mm in the preceding 5 days)

The stormwater assessment has been undertaken in accordance with principles set out in *Australian Rainfall and Runoff 2019*. As such, the ensemble approach for temporal variation is adopted.

Rainfall data (depths and temporal patterns) is extracted for the site at the following co-ordinates:

Latitude:	42.9125 (S)	Longitude:	147.3375 (E)
-----------	-------------	------------	--------------

2.3.2 Total Catchment (Stormwater System Assessment)

The peak flow rates for the 5% and 1% AEP at the proposed development outlet are provided below in Table 3. These flow rates take account of the upstream catchment and are used to appropriately size stormwater infrastructure.

ID	Catchment Area (Ha)
Sub_1	1.08
Sub_2	0.86
Sub_3	1.02
Sub_4	0.86
Sub_5	0.12

Table 3: Peak Flow Rates – Total Catchment

AEP	Peak Flow Rate (m ³ /s) Existing	Peak Flow Rate (m ³ /s) Developed
5% AEP	0.158	0.156
1% AEP + CC	0.578	0.567

The catchment areas and associated portion impervious associated with these flows are presented in Table 4.

Table 4: Total Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4	SUB_5
Area US (Bush) (Ha)	1.08	0.86	1.02	0.86	0.12
Area on Subject Site (Ha)	0.18	0.17	0.15	0.18	
Road Area (Ha)	0.045	0.028	0.033	0.034	
Roof Area (Ha)	0.069	0.068	0.047	0.047	
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081	
% Impervious	8%	9%	6%	4%	

The results show that the peak flow rate is either maintained or reduced as a result of development. This is due to the change in catchment response time as a result of the change in land-use. The proposed development site is located at

the bottom of the subject catchment.

These results are used for sizing stormwater infrastructure to convey both flow generated from the proposed development and flow generated from the upstream catchment. These flows are not used to determine the size of any stormwater detention.

Based on the assessment undertaken, DN450 pipes and standard 1800mm single grated pits provide sufficient capacity to convey flow through the proposed development for the 5% AEP storm event. A maximum pit spacing of 50m proposed. A typical hydraulic grade line for the 5% AEP event system is provided below in Figure 5.

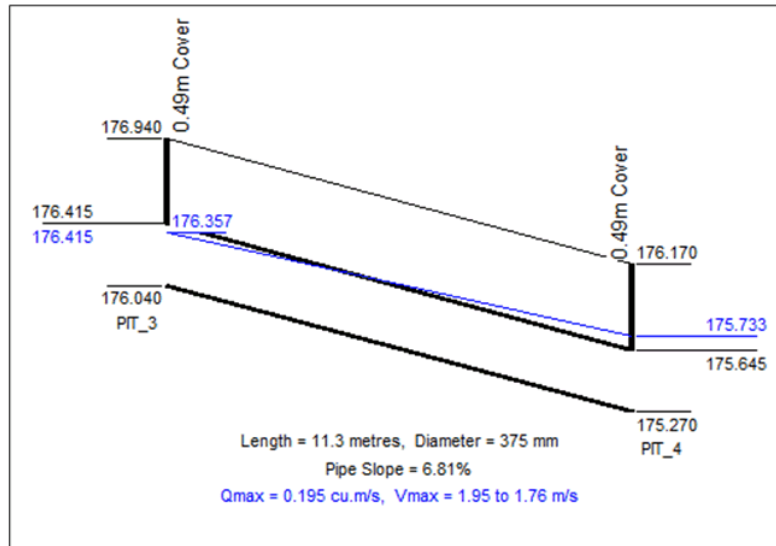


Figure 5: Hydraulic Grade Line – 5% AEP – Pit_3 to Pit_4

DN450 pipes are proposed to assist with conveying flow for the 1% AEP event + CC.

2.3.3 Local Catchment (Detention Assessment)

The position of the proposed development relative to the downstream catchment suggests any change in land-use will likely have an impact in receiving waters further downstream. To determine what this impact is, flow rates generated from the site, in isolation of the upstream catchment are calculated.

Table 5: Peak Flow Rates – Local Catchment

AEP	Peak Flow Rate (m ³ /s) Existing	Peak Flow Rate (m ³ /s) Developed	Peak Flow Rate (m ³ /s) Developed with Basin
5% AEP	0.040	0.084	0.042
1% AEP + CC	0.172	0.221	0.231

The local catchment areas and percentage impervious associated with these flows are presented in Table 6

Table 6: Local Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4
--	-------	-------	-------	-------

Total Area (Ha)	0.18	0.17	0.13	0.15
Road Area (Ha)	0.045	0.028	0.033	0.034
Roof Area (Ha)	0.069	0.068	0.047	0.047
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081
% Impervious	63%	56%	62%	54%

A minimum time of concentration of 5 minutes is adopted for impervious areas. For pervious areas a time of concentration is derived from the catchment parameters. These are:

Overland Flow Path Length:	10 m
Overland Flow Path Slope:	5%
Retardance Co-efficient n*:	0.05

A detention system is proposed as part of the development, although it is recommended that Council consider the development in the context of the catchment to ensure it is appropriate in this use case. In some instances, the incorporation of detention structures can in-fact increase flood levels.

Notwithstanding, a detention structure is sized that limits the peak discharge from the proposed development site to 0.04 m³/s.

A detention structure with volume of 23 m³, orifice outlet of 129mm and maximum depth of 1.5m is required to reduce post development flowrates to pre-developed conditions for the 5% AEP storm. A schematic of how the basin is modelled is presented below in Figure 6.

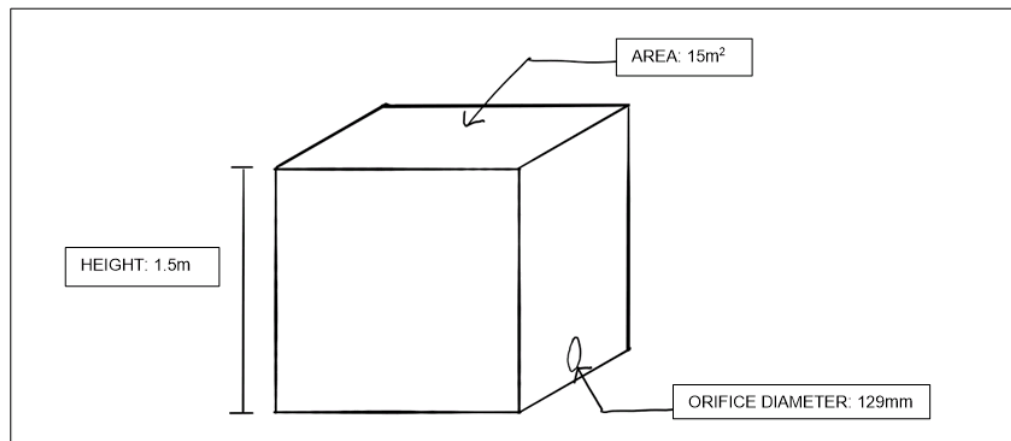


Figure 6: Detention Basin Schematic

Based on a review of the preliminary development layout, the most suitable location for a detention structure of this size is beneath the parking / turning bay between lots 13 and 14. It is likely the location where the road surface is proposed will require fill. This location would make a good candidate for a detention tank.

Either a constructed storage area or an off the shelf storage system is reasonable to service the required storage

volume.



Figure 7: Possible Detention Tank Location

Full hydraulic modelling results are provided in Appendix B.



2.4 SW7 – Overland Flow Path

SW7: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following: designed to accommodate a storm with an ARI of 100 years.

- *A piped stormwater system sized to handle at least the 20yr ARI event based on a possible future fully-developed catchment, with the overall drainage system (including suitable overland flow paths) catering for the 100yr ARI events (including 30% loading for climate change).*
- *Clearly show all overland flow paths for the developed site, that they avoid private property as far as practicable, and how they will be contained within appropriate easements.*
- *Council infrastructure has limited receiving capacity. Show any required measures (such as surcharge points, flow paths, detention) to ensure the 100yr ARI flows from the site can be safely managed*

The proposed development is to accommodate overland flow from an 1% AEP storm. An assessment has been undertaken to calculate the likely 1% AEP flow arriving at the site, inclusive of a 30% increase in rainfall to account for climate change.

Under existing conditions, existing properties on Enterprise Drive manage flow from the upstream catchment by use of a cut of drain. This does not appear to be a formal drainage asset and the drain is not located within the properties to which it provided benefit to.

The proposed development provides an opportunity for a formal drainage system to be designed, capable of directing flow away from existing properties on Enterprise Drive. The following considerations have informed the assessment and proposed stormwater management solution.

- A cut off drain upstream of properties will concentrate flow. At the downstream end of the system a substantial inlet structure would be required to ensure flow is not directed towards property. Given the upstream catchment, there is a high debris load potential, meaning pit blockage is likely.
- Evenly distributed flow is easy to capture with distributed pits. This means each property owner is responsible to manage their own overland flow. This is fair and equitable and doesn't require a single property owner to take the burden of all stormwater.
- By providing several pit inlets, less flow will be directed overland and hence less flow within the road area. This reserves the road area for direct drainage.
- It is the preference of City of Hobart to not have Cut-off drain located above the existing development.

To ensure flow can be directed to a piped drainage system, several opportunities for a stormwater inlet are proposed. These are:

- Private stormwater pits located at the rear of lots 3 to 10. The purpose of these pits is to capture flow from the upstream vegetated catchment. By adopting several distributed pits minimises the hydraulic load on any single pit, providing greater confidence that the system will perform as intended.
- Allowance for flow to pass through lots 3 – 10 to the road reserve in the event of pit blockage.
- Pit inlets on the downstream side of road to collect stormwater.

The proposed road kerb and gutter will act as the cut off drain. Any flow intercepted from the upstream catchment will be captured within kerb and channel and either directed to the pit and pipe drainage system, or if pit inlet capacity is exceeded, direct overland flow within the road surface to the parking bay positioned between lots 13 and 14.

This system will provide suitable flood conveyance to mitigate flood impact of existing properties on Enterprise Drive and lots 11 to 20 of the proposed development (Northern side of road)

For lots 1 to 10, overland flow generated from the upstream catchment may impact lots. It is not considered appropriate to install cutoff drains on upstream properties not owned by the proponent to protect downstream properties. Existing property owners will have little control as to how the land will be managed and it would not be possible to guarantee the operation of the cutoff drain over the life of the proposed development.

A more robust method to manage overland flow is to allow for and to design for flow to naturally pass around each of lots 1 – 10. The following provides reasoning as to why this method is adopted.

As part of a separate development upstream, a cut-off drain has been constructed that diverts flow away from the site. This means lots 1 and 2 do not require any upstream flow management.

The intended operation is for overland flow to be locally directed to small drainage pits (our alternate suitable solution) at the rear of each lot (lots 3 – 10). Flow can either be directed over the retaining wall, or formally directed through small channels installed on the top of the retaining wall. In the event a pit becomes blocked, or a flow rate is produced in excess of the inlet capacity of the pit, overland flow is to be directed around lots to the road reserve.

Local shaping and grading around lots should be included ensure flow does not enter buildings.

A detailed hydraulic assessment has been undertaken to determine the type of pit inlets required to ensure flow is managed accordingly. The 1% AEP event + 30% increase in rainfall intensity is adopted.

A nominal 300x300 grated pit is adopted with a minimum pit depth of 600mm. The pit is assumed to be a sag pit and be able to develop a maximum of 200mm head above the surface of the pit. For depths above 200mm, is directed between lots to the road reserve. The adopted pit inlet curve for internal lot pits (300x300 square pit) is shown below in Figure 8.

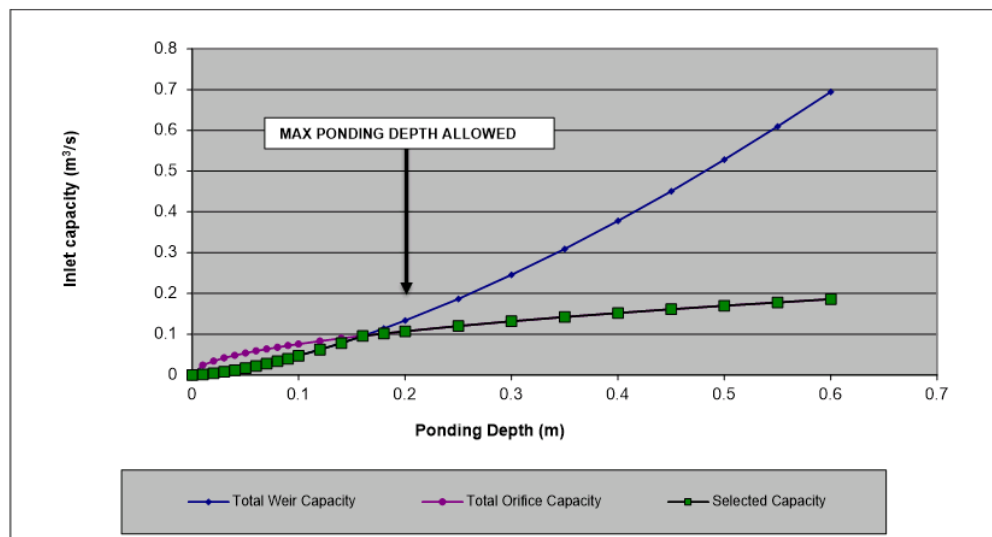


Figure 8: 300x300mm Sag Pit inlet curve

The capacity of the receiving DN150 pipe is approximately 20-30 L/s. The pit (even with a portion blocked) will have capacity to make best use of the pipes drainage system.

The upstream catchment has been distributed over each of the lots. The contributing catchment areas for each of the lots assessed is presented in Table 7.

Each pit will require a DN150 pipe outlet. This is assumed to be integrated into the building plumbing. The retaining wall proposed at the rear of lots will have a drainage system. It is expected that this pit system can be easily integrated.

Table 7: Upstream Contributing Catchment Areas.

Sub catchment	Lot	Area (Ha)	Total (Ha)
Sub 1	Lot 3	0.54	1.08
	Lot 4	0.54	
Sub 2	Lot 5	0.28	0.84
	Lot 6	0.28	
	Lot 7	0.28	
Sub 3	Lot 8	0.51	1.02
	Lot 9	0.51	
Sub 4	No Lot	0.86	0.86
Sub 5	Lot 10	0.12	0.12
TOTAL			3.94

The suggested location for the pit is shown below in Figure 9. (to be confirmed at detailed design). Fences should have a small opening to ensure flow does not build and is able to freely pass through or under.

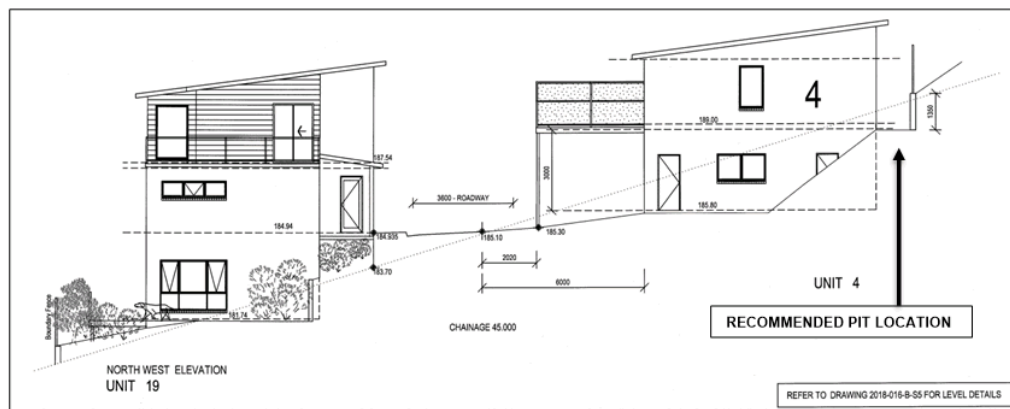


Figure 9: Recommended Pit Location

For the 1% AEP + 30% increase in rainfall intensity (allowance for climate change). Most pits perform well with less than 100mm of ponding above the pit and no overland flow contributing to the road reserve. The most critical lots are Lots 8 and 9. The peak ponding depth above pits is 260mm. These are the only two lots that are expected to contribute overland flow to the road reserve.

With the increased pit inlet capacity provided, the load on stormwater system located within the road has increased. The size of the underground drainage system has been increased to allow for conveyance of the 1% AEP + CC flow rate. Details of the proposed piped drainage system are provided in Appendix B.

This proposed approach limits the amount of flow being directed onto the road area. Figure 10 shows the cross section for the part of the road with most flow being contributed.

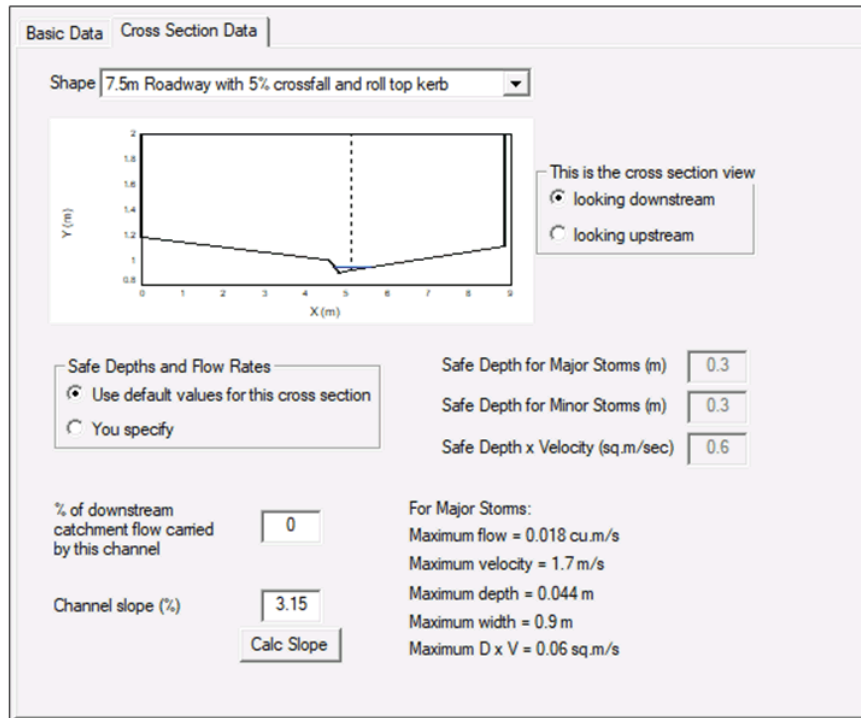


Figure 10: Flow within kerb -1% AEP + CC: downstream of Pit 1

This solution does direct more flow to the piped drainage system and hence the proposed detention structure. Therefore, in a rare storm event, the detention structure is expected to spill. Space allowed for stormwater detention will be large enough to incorporate a weir system such that flow can be attenuated through a suitably sized low-level outlet, but for more extreme events, flow will be directed over a weir to a stormwater pit with suitable depth and outlet configuration.

The assessment undertaken allows for flow to be directed through piped system and ultimately to Maning Rivulet.

Outlet pipe and upstream infrastructure has been sized to convey flows for the 1% AEP event + CC to the discharge point at Maning's Rivulet. Based on the estimated flow rates contributing to the site, a suitable stormwater management system can be implemented that does not adversely impact downstream property owners, and in fact, improves stormwater management by implementing a formal drainage system. A schematic in Figure 11 shows flow contributing to the downstream end of the site.

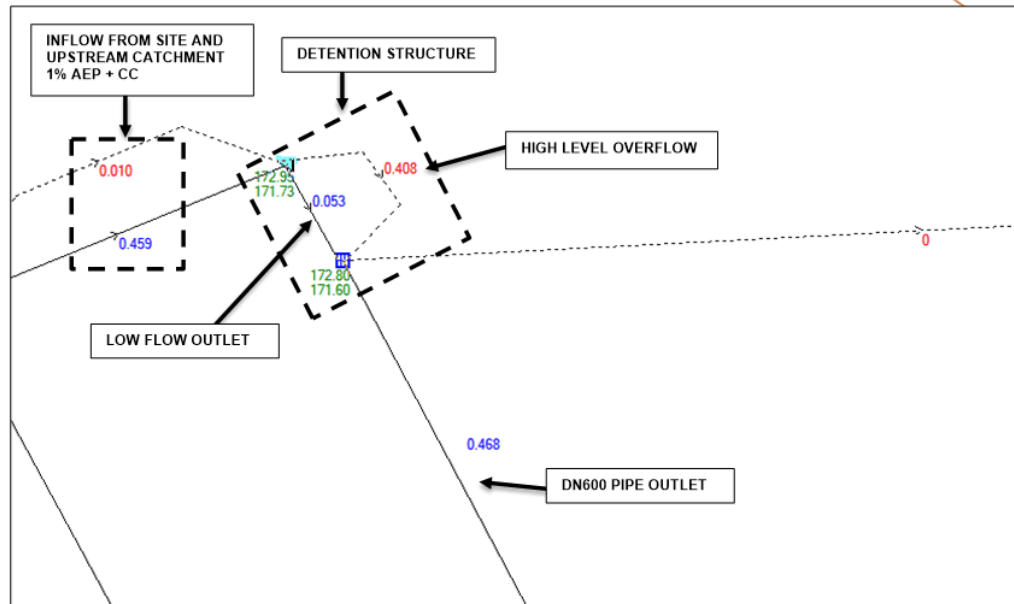


Figure 11: Detention system schematic: flows presented for 1% AEP + CC

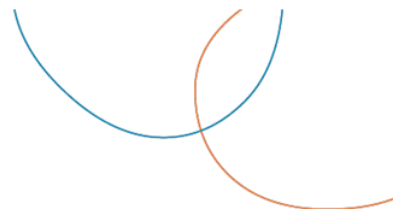
The analysis undertaken presents a suitable solution although alternate option could be:

- Drainage from the upstream catchment could be directed to a small channel / gutter mounted on the side of the retaining wall. This could direct water to a rain head similar to those used on industrial roofing systems. This would be expected to provide a similar capacity or improved pipe inlet capacity.

These options should be explored at a detailed design phase to ensure the best stormwater management solution is adopted the best benefits the ultimate user.

It is noted that the interim climate change factors available on the *Australian Rainfall and Runoff Data Hub* suggests a maximum increase in rainfall intensity of 16.3% (year 2090, RCP 8.5). The adoption of a 30% increase is conservative and provides added insurance that the proposed system is suitable sized.

The site will have some pipes that exceed 10% longitudinal grade. A suitable design will be required that considers steep grades. Either anchor blocks or drop structures will be required to be adopted at the detailed design phase.



2.5 Waterways and Coastal Protection Code

The Hobart City Council RFI dated 4 December 2020 included a request relating to the Waterways and Coastal Protection Code. The request was as follows

A clear report detailing vegetation management requirements and methodology within the riparian zone, and how adequate vegetation to prevent erosion and land instability will be ensured, given the extremely steep slopes and high flows.

This is assumed to relate to the piped stormwater outlet directing flows to Maning Rivulet. A response to the Waterways and Coastal Protection Code, E11.7.1, is provided below:

Objective:

To ensure that buildings and works in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values.

Acceptable Solution	Performance Criteria
<p>A1</p> <p>Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.</p>	<p>P1</p> <p>Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:</p> <ul style="list-style-type: none"> a) avoid or mitigate impact on natural values; b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values; c) avoid or mitigate impacts on riparian or littoral vegetation; d) maintain natural streambank and streambed condition, (where it exists); e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation; f) avoid significantly impeding natural flow and drainage; g) maintain fish passage (where applicable); h) avoid landfilling of wetlands; i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and 'Tasmanian Coastal Works Manual' (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.

Assessment

The following relates to performance criteria:

- a) Several stormwater management elements aim to mitigate impact on natural values. Refer to discussion below (refer to section (b)) and design of water quality management measure in Section 2.2, 2.3 and 2.4.

Objective:

- b) A stormwater detention and stormwater quality system is proposed to limit pollutants from exiting the site in accordance with best practice pollutant load reduction targets. This is inclusive of sediments.
Erosion protection works are proposed at the stormwater outlet. This is detailed on the included concept stormwater design plans included in Appendix C. It is recommended that erosion mitigation works be extended to a sufficient distance downstream such that a natural flow condition is reinstated.
Protection works at the pipe outlet are likely to be rock pitching. The immediate outlet velocity for the 1% AEP plus 30% increase in rainfall is approximately 4m/s. A minimum rock size of $D_{50} = 500\text{mm}$ for a minimum length of 4m past the outlet is likely require. This will be subject to a geotechnical investigation to optimise the outlet erosion protection works. It is noted that much of the site is rocky, forming a natural erosion protection.
It is recommended in addition to the rock pitching and within the creek bank area that native grasses, sedges and sags be planted throughout. Species such as tussock grass and common wallaby grass recommended as a minimum. Planting is recommended for a minimum of 8m past the culvert outlet, subject to detailed design and associated investigations.
- c) Effort will be made to avoid or mitigate impact on riparian or littoral vegetation (refer to (b)). It is noted no works are proposed within the creek
- d) Effort will be made to maintain the natural stream bank (refer to (b)). No works are proposed within the creek.
- e) The combination of erosion protection (b), stormwater quality management measures (Section 2.2) and stormwater quantity management measures (Section 2.3 and 2.4) aims to maintain natural flow conditions. Any natural creek features will remain in place. At this location of Maning Rivulet, the contributing catchment is relatively small, and as such, the creek cross section is minor.
- f) Any proposed rock armoring will be recessed to minimise any change to the creek cross section and form.
- g) NA
- h) NA
- i) Any works within the waterway required to be undertaken in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003).



Water Quality Management Products



Appendix A

pitt&sherry



PIT TRAPS

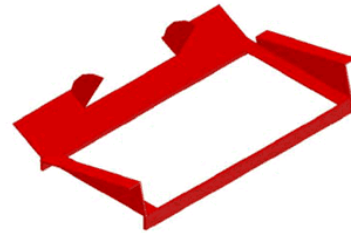
Hudson Environmental 'Pit Trap' - At source pollution control

Hudson Environmental has launched its '*Pit Trap*' into the Tasmanian market to expand our range of stormwater quality improvement devices to include '*at source*' to complement our range of '*end of line*' devices.

The '*Pit Trap*' is manufactured in Tasmania and is available off the shelf to suit Hudson Civil Products precast kerb and grate units. We can also manufacture one off traps to be retrofitted on site for existing pits.

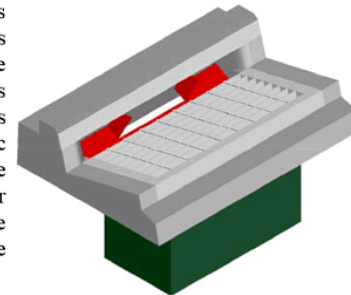
Benefits of a Hudson Environmental 'Pit Trap'

- Our basket is fabricated from corrosion resistant lightweight Aluminium allowing the capture of pollutants above 4mm
- Optional Polyester liner for the capture of finer particles down to 1mm and smaller.
- Captured materials remain in a dry state eliminating odours, mosquitos and reducing the weight of the basket for cleaning purposes.
- Baskets supplied in a 'mechanical empty only' design without handles to eliminate employees removing the trap by hand with the associated risks of strain injuries.
- Our Polyester liner comes with stainless steel fixings and penetrations are made with stainless steel eyelets. This liner is then attached to the aluminium basket to alleviate any strain on the liner when being emptied or manhandled.
- Built in bypass on top of the large surface area of the basket allows high flows to enter the drainage system without the remobilisation of pollutants.
- Large capacity basket holds 0.15 m³ when full.



A simple design for a simple problem

The '*Pit Trap*' design is based on a common sense approach to the problems of gross pollutants entering the stormwater system and therefore our creeks and estuaries. Our design simply consists of a robust aluminium sub frame which is positioned in the grate seat into which an aluminium basket is lowered into position. This basket in its basic form will collect all pollutants larger than 4mm. Items that fall into this category are cigarette butts, plastic drinking bottle caps and large type aggregates. For additional performance to collect pollutants above 1mm, we offer an additional welded polyester liner that is simply fitted inside the aluminium basket. These baskets can be cleaned by either hi-ab truck or pump trucks. We do not encourage the use of handles as the force and location of the lift is potentially very dangerous.



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HUDSON
CIVIL PRODUCTS

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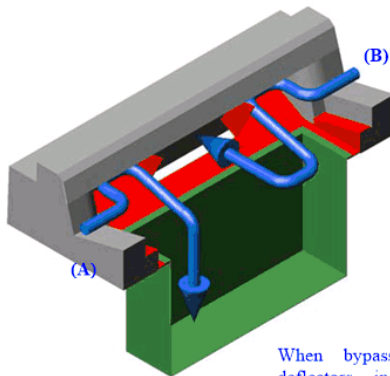


PIT TRAPS

Why use a rigid basket?

Hudson Environmental, as a division of Hudson Civil Pty Ltd, is a locally owned business specifically targeting the Tasmanian market. We do not have the problems that large mainland and multinational company's face when trying to cover a market the size of Australia.

Basically, a rigid frame makes sense unless you are freighting them large distances like across Bass Strait and the Nullarbor as the costs are prohibitive. As we are not affected by these cost restrictions, we have the ability to design products that are constructed from the most suitable designs and materials.



When bypass occurs (B), the deflectors induce a flow that prevents remobilisation of pollutants previously captured (A).

Maintenance

When the basket is full, excess water is diverted through the bypass at the back of the pit (a large amount of water will still pass through the basket even when full). ALL baskets when full will allow the remobilisation of pollutants so an adequate maintenance regime must be put in place to ensure the correct operation of the baskets.

Construction site filters

We also provide filter fabric liners for installation when site works produce an increased amount of fine particles. These liners are disposable one use items and are both more cost effective and reliable than traditional 'silt socks'.

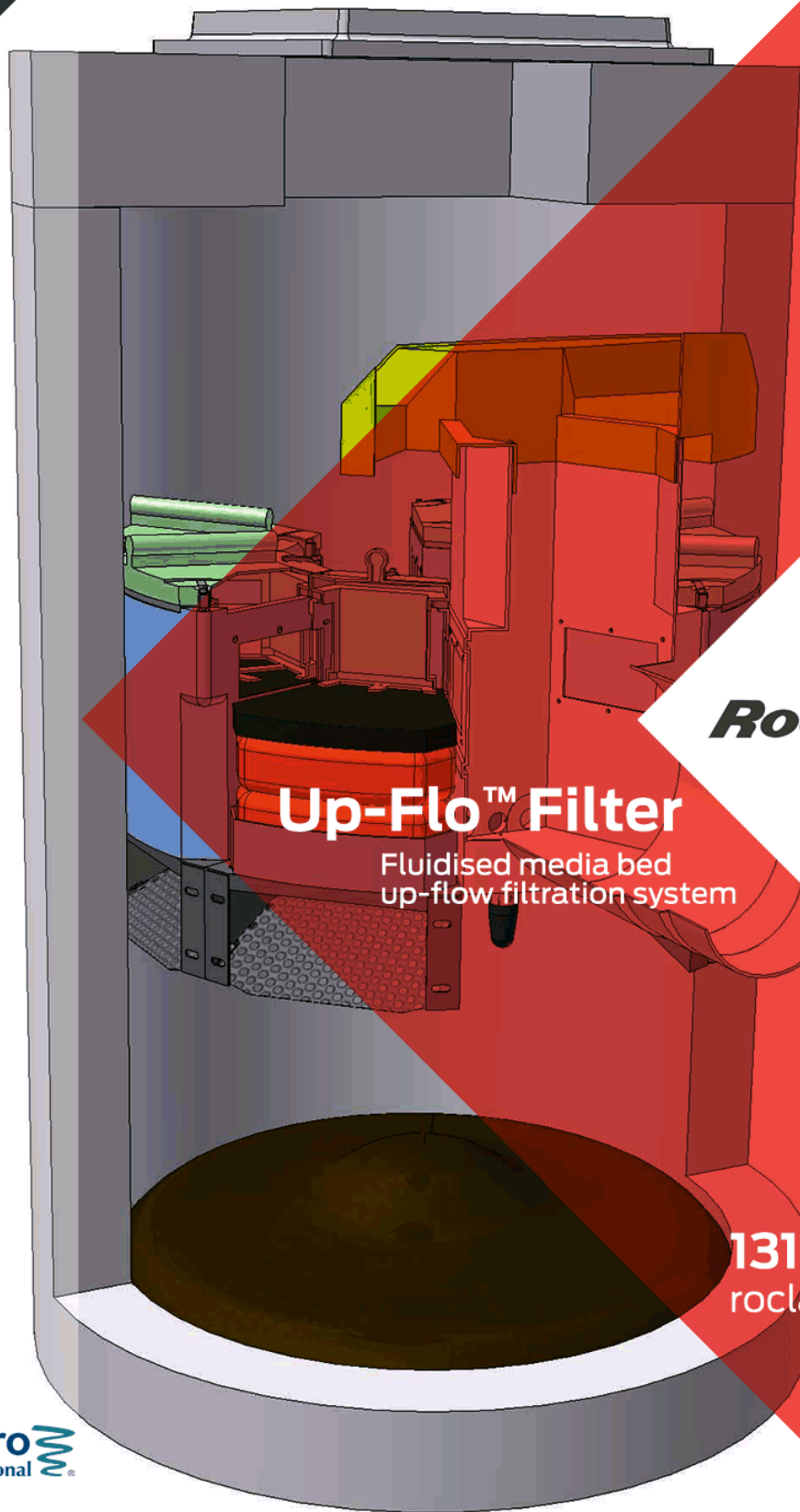


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PRODUCT
BROCHURE



Up-Flo™ Filter

Fluidised media bed
up-flow filtration system

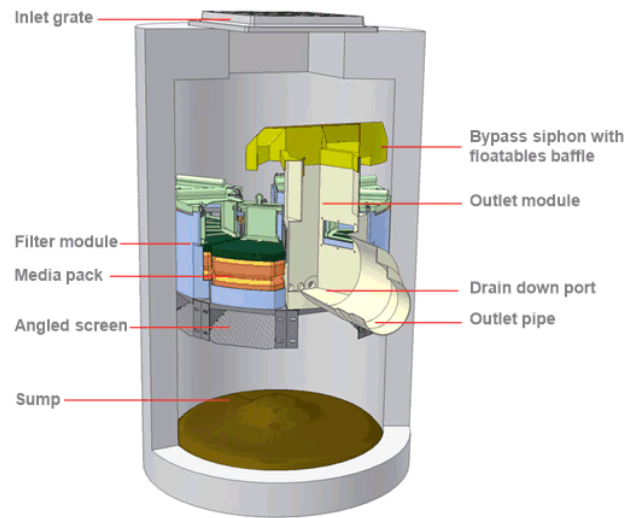
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FLUIDISED MEDIA BED UP-FLOW FILTRATION SYSTEM

The Rocla Up-Flo™ Filter is the most efficient high-rate stormwater filtration technology available for the removal of sediments, nutrients, metals and hydrocarbons from stormwater runoff.

As the industry's only fluidized bed upflow filtration technology, the Up-Flo™ Filter provides a higher level of treatment, a higher rate of filtration, longer life of filter media and a longer maintenance cycle than other filter systems.



APPLICATIONS

- New developments
- Industrial and commercial facilities
- Source control
- Sediment and hydrocarbon control
- Nutrient control
- Heavy metal control
- Wetlands protection
- Retrofit

ADVANTAGES

- Available in multiple configurations
- Small footprint
- Removes >70% total suspended solids (TSS) with a mean particle size of 20 microns
- Low head requirements
- Higher flow capacity resulting in smaller footprint
- Includes a 4mm pre-screening
- Uses a patented CPZ™ media
- Patented drain-down prevents media degradation
- Long media life and maintenance cycle
- Easy installation
- Low maintenance

HOW IT WORKS

During a storm event, stormwater enters the chamber via an inlet pipe or inlet grate and fills the chamber, as flow is directed up through the angled screen and filter modules. Flow is evenly distributed across the media for maximum treatment.

Gross debris and sediment settle out in the sump. Oil and floatables rise to the surface of the water.

Treated water flows out of the filter module to the outlet module and into the outlet pipe.

Excess flows are discharged to the outlet using a siphon bypass, which also acts as a floatables baffle, preventing the escape of oil and floatable trash.

To guard against pollutant leaching and filter media degradation between storm events, water drains out of the chamber through the filtered drain-down port as the storm subsides.

CPZ™ MIX

- Over 70% removal of metals, nutrients & TSS
- TSS removal down to 1 micron particle
- 1.6 l/s per module

The industry's only fluidised
bed upflow filtration
technology

PRODUCT SELECTION TABLE

UFF Model Type	Chamber Size	Number of Modules	Maximum Treatment Flow (L/s)	Peak Syphonic Bypass Flow (L/s)	Min Standard Headloss (mm)	Sump Storage Capacity (Litres)
Standard	DN1200	1 - 6	9.6	170	500	700
Small Vault	DN1800	7 - 8	12.8	225	500	1580
Medium Vault	DN2400	9 - 14	22.4	400	500	2800
Large Vault	DN2700	15 - 19	30.4	535	500	3550
Special	As required	>19	>30.4	>535	500	As designed

FILTER MODULES

Each filter module has a typical treatment flow rate of 1.6 L/sec.

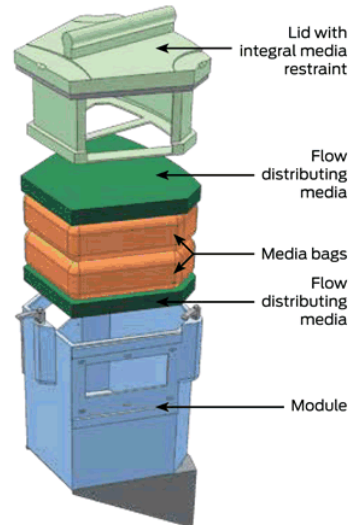
SIZING AND DESIGN

The Rocla Up-Flo™ Filter is sized to treat a specified runoff area or a design flow rate for a water quality design storm.

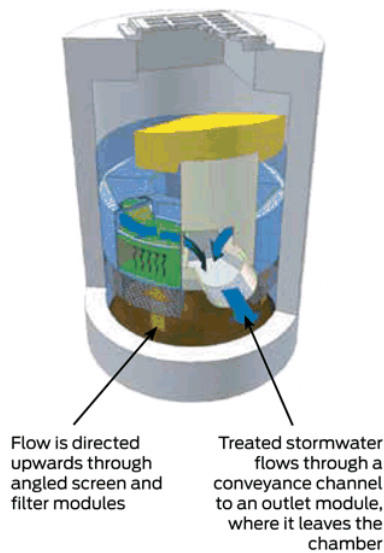
The number of modules is determined by the treatment objectives and the size of the runoff area. This is based on each individual filter module treatment flowrate.

The flexibility of the system allows effective design for sites with low hydraulic drops. Rocla Water Quality's expert PAD engineering team can assist in designing a system that is right for each situation.

To allow easier access to the individual modules the design includes removeable lids that can be temporarily stacked adjacent to the inlet.



Design developed at the University of Alabama. Data is collected through extensive field testing by the University of Alabama. No chemical exhaustion of media after 12 months of field testing.

**INSTALLATION**

Installing a Rocla Up-Flo™ Filter is as simple as installing a standard precast pit and connecting to the stormwater system.

MAINTENANCE

Maintenance is simple, with easy access to the sump and replaceable media packs. A vacuum truck is used to remove sediment and other pollutants from the sump and the media packs are replaced manually. Unlike other filtration systems, no specialised heavy lifting equipment is needed.



CONCRETE PRODUCTS | PIPE | ENGINEERING CAPABILITY



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Before application in a particular situation, Rocla recommends that you obtain appropriate independent qualified expert advice confirming the suitability of product(s) and information in question for the application proposed.

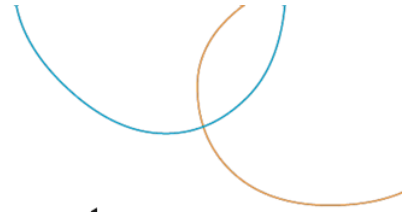
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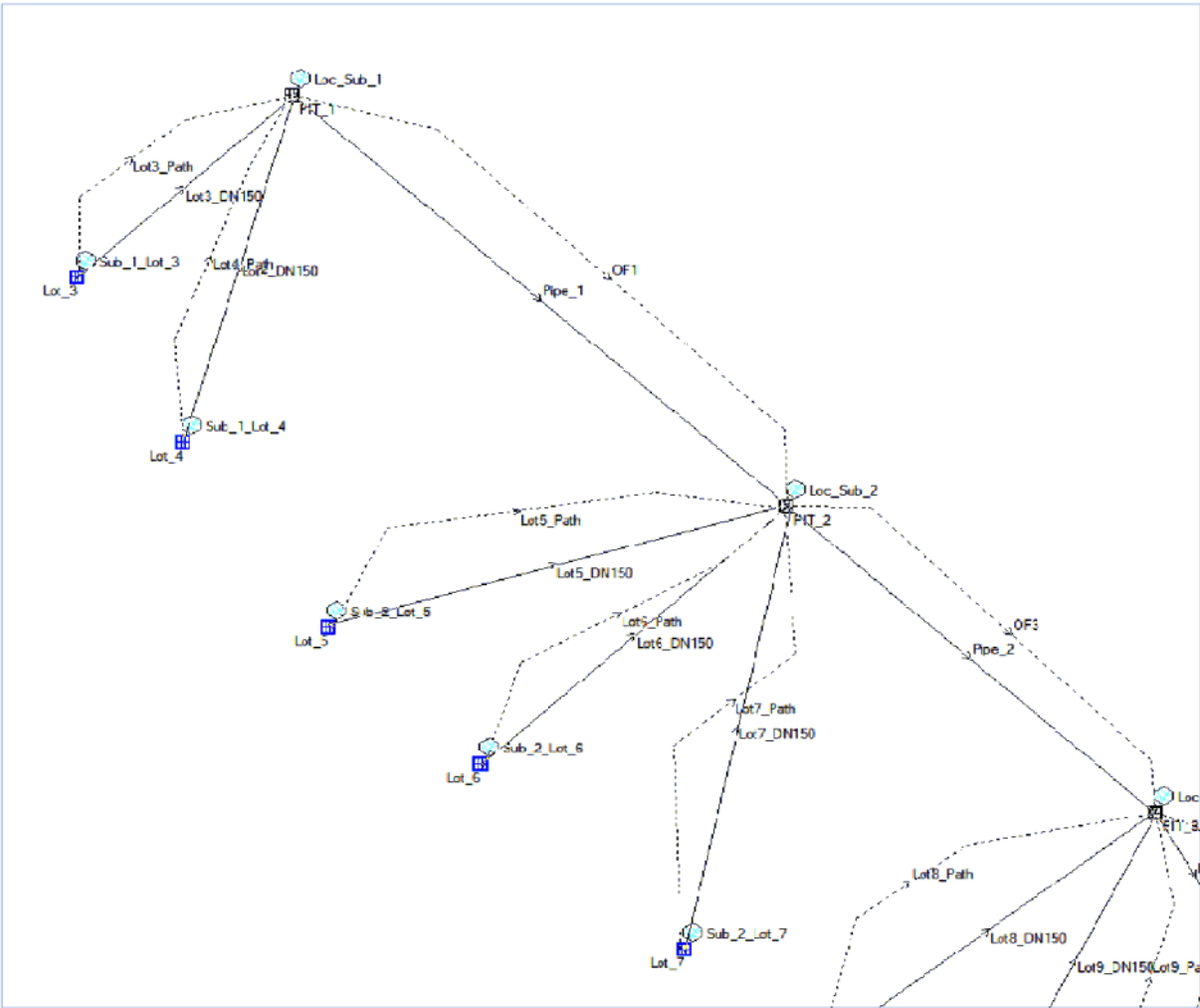


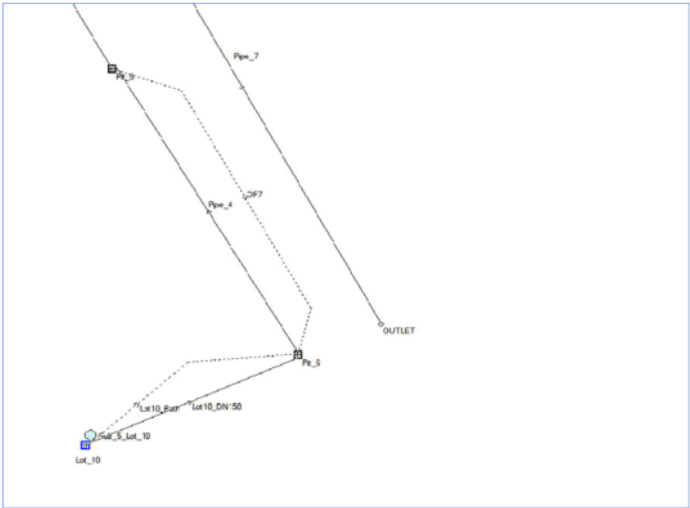
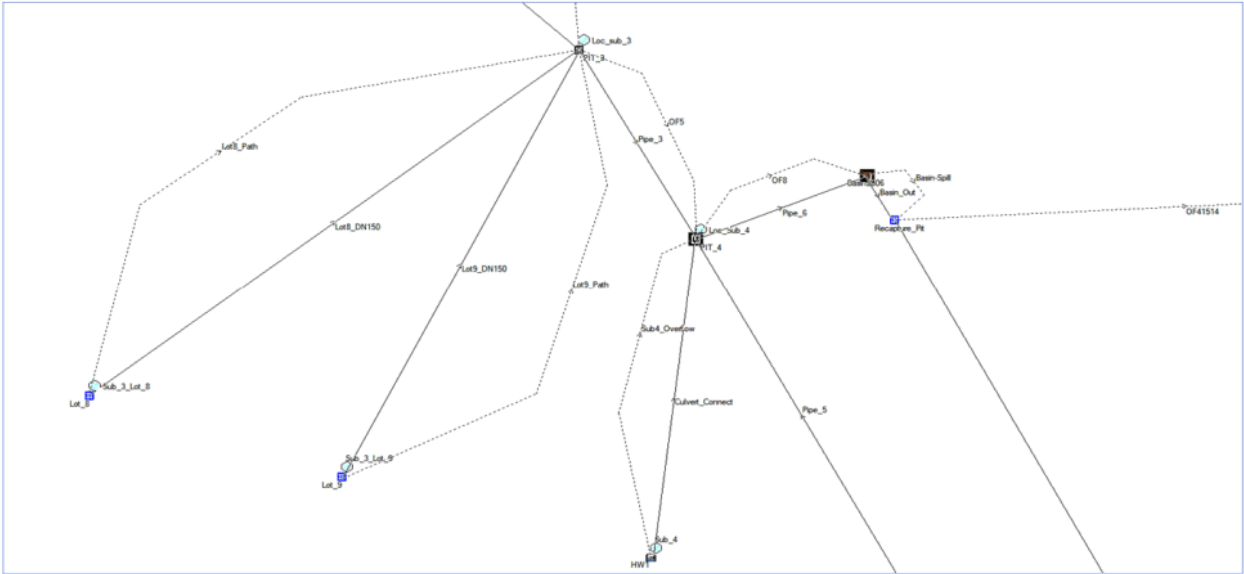
DRAINS Modelling outputs

Appendix B

(Includes previous analysis prepared for detention basin analysis plus additional analysis associated with overland flow analysis for upstream catchment)

PIT / NODE DETAILS		Version 15																				
Name	Type	Family	Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor	x	y	Bolt-down lid	id	Part Full Shock Loss	Inflow Hydrograph	Pit is	Internal Width (mm)	Inflow is Misaligned	Minor Safe Pond Depth (m)	Major Safe Pond Depth (m)		
Overflow	Node					0	172	0	0	527652.168	5248296.505	No	1630		No	New	300	No	0.1	0.2		
Lot_3	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.613	0.2	0	0	527536.182	5248344.477	No	22711541	1 x Ku	No	New		No				
PIT_1	OnGrade	IPWEA Pits, 3% crossfall, 3% grade	Single Grated Pit	5.9	185.1	185.1		0	0	527550.921	5248358.295	No	1	1 x Ku	No	New		No				
PIT_2	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	5.9	183.65	183.65		0	0	527584.797	5248327.153	No	2	1 x Ku	No	New		No				
PIT_3	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	5.4	180.1	180.1		0	0	527610.056	5248303.917	No	3	1 x Ku	No	New		No				
PIT_4	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	179	179		0	0	527615.557	5248294.102	No	4	1 x Ku	No	New		Yes				
Recapture_Pit	Sag	IPWEA Pits, 3% crossfall, 1% grade	Single Grated Pit	1.6	4	172.5	0.4	0	0	527624.947	5248295.087	No	22404460	1 x Ku	No	New			0.15	0.4		
OUTLET	Node					170.55		0	0	527647.079	5248253.214	No	6		No	New						
Lot_4	Sag	Small Pits	300x300 Grated Pit	0.25	4	189	0.2	0	0	527543.433	5248332.047	No	22711546	1 x Ku	No	New			0.1	0.2		
Lot_5	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.9	0.2	0	0	527553.348	5248317.989	No	22711548	1 x Ku	No	New			99999			
Lot_6	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.96	0.2	0	0	527563.854	5248307.63	No	22711550	1 x Ku	No	New			99999			
Lot_7	Sag	Small Pits	300x300 Grated Pit	0.25	4	187.6	0.2	0	0	527577.764	5248293.572	No	22711551	1 x Ku	No	New			99999			
Lot_8	Sag	Small Pits	300x300 Grated Pit	0.25	4	185.9	0.2	0	0	527587.177	5248285.96	No	22711556	1 x Ku	No	New			0.1	0.2		
Lot_9	Sag	Small Pits	300x300 Grated Pit	0.25	4	183.7	0.2	0	0	527596.978	5248281.781	No	22711558	1 x Ku	No	New			99999			
Lot_10	Sag	Small Pits	300x300 Grated Pit	0.25	4	181.05	0.2	0	0	527623.194	5248242.372	No	22711560	1 x Ku	No	New			99999			
Pit_6	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	177	177		0	0	527640.417	5248250.448	No	22711616	1 x Ku	No	New						
Pit_5	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	178	178		0	0	527625.324	5248276.049	No	22711606	1 x Ku	No	New						
HW1	Headwall			0.5	180	180		0	0	527613.429	5248277.584	No	2329272			New						
DETENTION BASIN DETAILS																						
Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length(m)	id							
Basin2606	171	20		Orifice		150	171.1			527623.556	5248297.366	No			17528890							
	172	20																				
	173	20																				
SUB-CATCHMENT DETAILS																						
Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope %	Supp Slope %	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor	Rainfall Multiplier
Sub_1_Lot_3	Lot_3	0.54	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Loc_Sub_1	PIT_1	0.18	63	37	0	5	0	0	0	0	-1	0.1	5	-1	0.015	0.05	-1	0				1
Loc_Sub_2	PIT_2	0.17	56	44	0	5	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Loc_Sub_3	PIT_3	0.13	62	38	0	0	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Loc_Sub_4	PIT_4	0.15	54	46	0	5	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_1_Lot_4	Lot_4	0.54	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_2_Lot_5	Lot_5	0.28	0	100	0	5	30	0	0	0	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_2_Lot_6	Lot_6	0.28	0	100	0	5	30	0	0	0	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_2_Lot_7	Lot_7	0.28	0	100	0	5	30	0	0	0	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_3_Lot_8	Lot_8	0.51	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_3_Lot_9	Lot_9	0.51	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_5_Lot_10	Lot_10	0.12	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
Sub_4	HW1	0.86	0	100	0	5	30	10	0	10	-1	0.1	5	-1	0.015	0.05	-1	0				1
PIPE DETAILS																						
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe is	No. Pipes	Chg From	At Chg	Chg (m)	RI (m)	Chg (m)	RL (m)	etc (m)			
Lot3_ON150	Lot_3	PIT_1	15	188.013	184.5	23.42	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_3	0								
Pipe_1	PIT_1	PIT_2	46.03	183.38	181.86	3.3	Concrete, under roads	450	450	0.3	New	1	PIT_1	0								
Pipe_2	PIT_2	PIT_3	33.6	181.86	179	8.51	Concrete, under roads	450	450	0.3	New	1	PIT_2	0								
Pipe_3	PIT_3	PIT_4	11.3	179	177	17.7	Concrete, under roads	450	450	0.3	New	1	PIT_3	0								
Pipe_6	PIT_4	Basin2606	8.6	175.774	171.67	47.72	Concrete, under roads	450	450	0.3	NewFixed	1	PIT_4	0								
Basin_Out	Basin2606	Recapture_Pit	5	171.67	171	13.4	Concrete, under roads	450	450	0.3	NewFixed	1	Basin2606	0								
Pipe_7	Recapture_Pit	OUTLET	44	171	169.65	3.07	Concrete, under roads	600	600	0.3	NewFixed	1	Recapture_Pit	0								
Lot4_ON150	Lot_4	PIT_1	15	188.6	184.5	27.33	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_4	0								
Lot5_ON150	Lot_5	PIT_2	15	188.3	183.05	35	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_5	0								
Lot6_ON150	Lot_6	PIT_2	15	188.36	183.05	35.4	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_6	0								
Lot7_ON150	Lot_7	PIT_2	15	187	183.05	26.33	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_7	0								
Lot8_ON150	Lot_8	PIT_3	15	185.3	179.5	38.67	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_8	0								
Lot9_ON150	Lot_9	PIT_3	15	183.1	179.5	24	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_9	0								
Lot10_ON150	Lot_10	Pit_6	15	180.45	176.4	27	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_10	0								
Pipe_4	Pit_6	Pit_5	29.2	176.02	175.874	0.5	Concrete, under roads	450	450	0.3	New	1	Pit_6	0								
Pipe_5	Pit_5	PIT_4	20	175.874	175.774	0.5	Concrete, under roads	450	450	0.3	New	1	Pit_5	0								
Culvert_Connect	HW1	PIT_4	10	179.2	177	22	Concrete, under roads	450	450	0.3	NewFixed	1	HW1	0								
OVERFLOW ROUTE DETAILS																						
Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major Storms (m)	SafeDepth Minor Storms (m)	Safe DvV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)						
Lot3_Path	Lot_3	PIT_1	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711762	188.813	185.1	15						
OF1	PIT_1	PIT_2	0.3				7.5m Roadway with 5%	0.3	0.3	0.6	3.15	0	1620	185.1	183.65	46						
OF3	PIT_2	PIT_3	0.1				7.5m Roadway with 5%	0.3	0.3	0.6	10.73	0	1622	183.65	180.1	33.1						
OF5	PIT_3	PIT_4	0.1				7.5m Roadway with 5%	0.3	0.3	0.6	9.65	0	1624	180.1	179	11.4						
OF8	PIT_4	Basin2606	0.1				7.5 m roadway with 3%	0.3	0.15	0.4	43.37	0	1627	179	172.57	8.3						
Basin-Spill	Basin2606	Recapture_Pit	0.1	172.57	1.8	1.6	Swale with 1:4 sidesloz	0.45	0.3	1	1.4	0	22711749	172.57	172.5	5						
OF41514	Recapture_Pit	Overflow	0.8				Swale with 1:4 sidesloz	0.45	0.3	1	0.59	0	22404467	172.65	172.4	42.2						
Lot4_Path	Lot_4	PIT_1	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711765	189.2	185.1	15						
Lot5_Path	Lot_5	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711770	189.1	183.65	15						
Lot6_Path	Lot_6	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711772	189.16	183.65	15						
Lot7_Path	Lot_7	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711775	187.8	183.65	15						
Lot8_Path	Lot_8	PIT_3	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711777	186.1	180.1	15						
Lot9_Path	Lot_9	PIT_3	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711781	183.9	180.1	15						
Lot10_Path	Lot_10	Pit_6	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711784	181.25	177	15						
OF7	Pit_6	Pit_5	0.2				7.5m Roadway with 5%	0.3	0.3	0.6	3.44	0	22711759	178	177	29.1						
Sub4_Overflow	HW1	PIT_4	0.1	180	0.6	1.6	Swale with 1:4 sidesloz	0.45	0.3	1	5	0	23292946	180	179	15						





DRAINS results prepared from Version 2019.092

PIT / NODE DETAILS		Version 8						
Name	Max HGL	Max Pond	Max Surface	Max Pond	Min	Overflow	Constraint	
		HGL	Flow Arriving	Volume	Freeboard	(cu.m/s)		
			(cu.m/s)	(cu.m)	(m)			
Lot_3	188.79	188.87	0.078	0.2	0	0.018	Outlet System	
PIT_1	183.76		0.118		1.34	0.018	Inlet Capacity	
PIT_2	182.43		0.1		1.22	0.015	Inlet Capacity	
PIT_3	179.56		0.115		0.54	0.01	Inlet Capacity	
PIT_4	176.19		0.085		2.81	0.01	Inlet Capacity	
Recapture_Pit	171.6	172.8	0.621	1.3	0.9	0	Inlet Capacity	
OUTLET	169.9		0					
Lot_4	189.2	189.27	0.078	0.2	0	0.023	Outlet System	
Lot_5	188.78	188.97	0.04	0.2	0.12	0	Inlet Capacity	
Lot_6	188.84	189.03	0.04	0.2	0.12	0	Inlet Capacity	
Lot_7	187.48	187.67	0.04	0.2	0.12	0	Inlet Capacity	
Lot_8	186.07	186.16	0.073	0.2	0	0.015	Outlet System	
Lot_9	183.87	183.96	0.073	0.2	0	0.015	Outlet System	
Lot_10	180.58	181.09	0.017	0	0.47	0	Inlet Capacity	
Pit_6	176.2		0		0.8		None	
Pit_5	176.2		0		1.8	0	None	
HW1	179.51		0.124		0.49	0	None	

SUB-CATCHMENT DETAILS									
Name	Max	Paved	Grassed	Paved	Grassed	Supp.	Due to Storm		
	Flow Q	Max Q	Max Q	Tc	Tc	Tc			
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)			
Sub_1_Lot_3	0.054	0	0.054	5	30	10	1% AEP, 1 hour burst, Storm 4		
Loc_Sub_1	0.07	0.046	0.024	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_Sub_2	0.066	0.039	0.027	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_sub_3	0.053	0.036	0.018	0	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_Sub_4	0.058	0.033	0.025	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Sub_1_Lot_4	0.054	0	0.054	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_5	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_6	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_7	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_3_Lot_8	0.051	0	0.051	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_3_Lot_9	0.051	0	0.051	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_5_Lot_10	0.012	0	0.012	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_4	0.086	0	0.086	5	30	10	1% AEP, 1 hour burst, Storm 4		

PIPE DETAILS					
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
Lot3_DN150	0.036	5.9	188.165	184.556	1% AEP, 1 hour burst, Storm 4
Pipe_1	0.118	1.5	183.631	182.426	1% AEP, 1 hour burst, Storm 10
Pipe_2	0.241	1.85	182.204	179.561	1% AEP, 1 hour burst, Storm 9
Pipe_3	0.344	8.01	179.381	177.126	1% AEP, 1 hour burst, Storm 9
Pipe_6	0.459	2.17	176.194	172.947	1% AEP, 1 hour burst, Storm 9
Basin_Out	0.053	0.33	172.113	171.601	1% AEP, 1 hour burst, Storm 9
Pipe_7	0.468	4.22	171.446	169.899	1% AEP, 1 hour burst, Storm 9
Lot4_DN150	0.031	6.12	188.746	184.549	1% AEP, 1 hour burst, Storm 4
Lot5_DN150	0.028	6.69	188.442	183.093	1% AEP, 1 hour burst, Storm 4
Lot6_DN150	0.028	6.72	188.502	183.092	1% AEP, 1 hour burst, Storm 4
Lot7_DN150	0.028	5.88	187.142	183.097	1% AEP, 1 hour burst, Storm 4
Lot8_DN150	0.036	5.17	185.452	179.561	1% AEP, 1 hour burst, Storm 4
Lot9_DN150	0.036	5.17	183.252	179.561	1% AEP, 1 hour burst, Storm 4
Lot10_DN150	0.012	5.11	180.55	176.428	1% AEP, 1 hour burst, Storm 4
Pipe_4	0.014	0.24	176.203	176.198	1% AEP, 30 min burst, Storm 9
Pipe_5	0.022	0.18	176.197	176.194	1% AEP, 10 min burst, Storm 1
Culvert_Connect	0.086	6.17	179.404	177.064	1% AEP, 1 hour burst, Storm 4

OVERFLOW ROUTE DETAILS									
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm	
Lot3_Path	0.018	0.018	1.401	0.045	0.06	4	8.43	1% AEP, 1 hour burst, Storm 4	
OF1	0.018	0.018	1.796	0.044	0.06	0.86	1.67	1% AEP, 5 min burst, Storm 1	
OF3	0.015	0.015	1.081	0.034	0.06	0.62	2.32	1% AEP, 10 min burst, Storm 7	
OF5	0.01	0.01	1.154	0.033	0.13	0.62	12.58	1% AEP, 5 min burst, Storm 1	
OF8	0.01	0.01	0.391	0.377	0.13	8.86	12.67	1% AEP, 5 min burst, Storm 1	
Basin-Spill	0.408	0.408	1.158	0.303	0.34	2.43	1.11	1% AEP, 1 hour burst, Storm 9	
OF41514	0	0	0.752	0	0	0	0		
Lot4_Path	0.023	0.023	1.401	0.045	0.06	4	8.55	1% AEP, 1 hour burst, Storm 4	
Lot5_Path	0	0	1.401	0	0	0	0		
Lot6_Path	0	0	1.401	0	0	0	0		
Lot7_Path	0	0	1.401	0	0	0	0		
Lot8_Path	0.015	0.015	1.401	0.013	0.06	1.26	11.55	1% AEP, 1 hour burst, Storm 4	
Lot9_Path	0.015	0.015	1.401	0.013	0.05	1.26	8.77	1% AEP, 1 hour burst, Storm 4	
Lot10_Path	0	0	1.401	0	0	0	0		
OF7	0	0	1.771	0	0	0	0		
Sub4_Overflow	0	0	1.598	0	0	0	0		

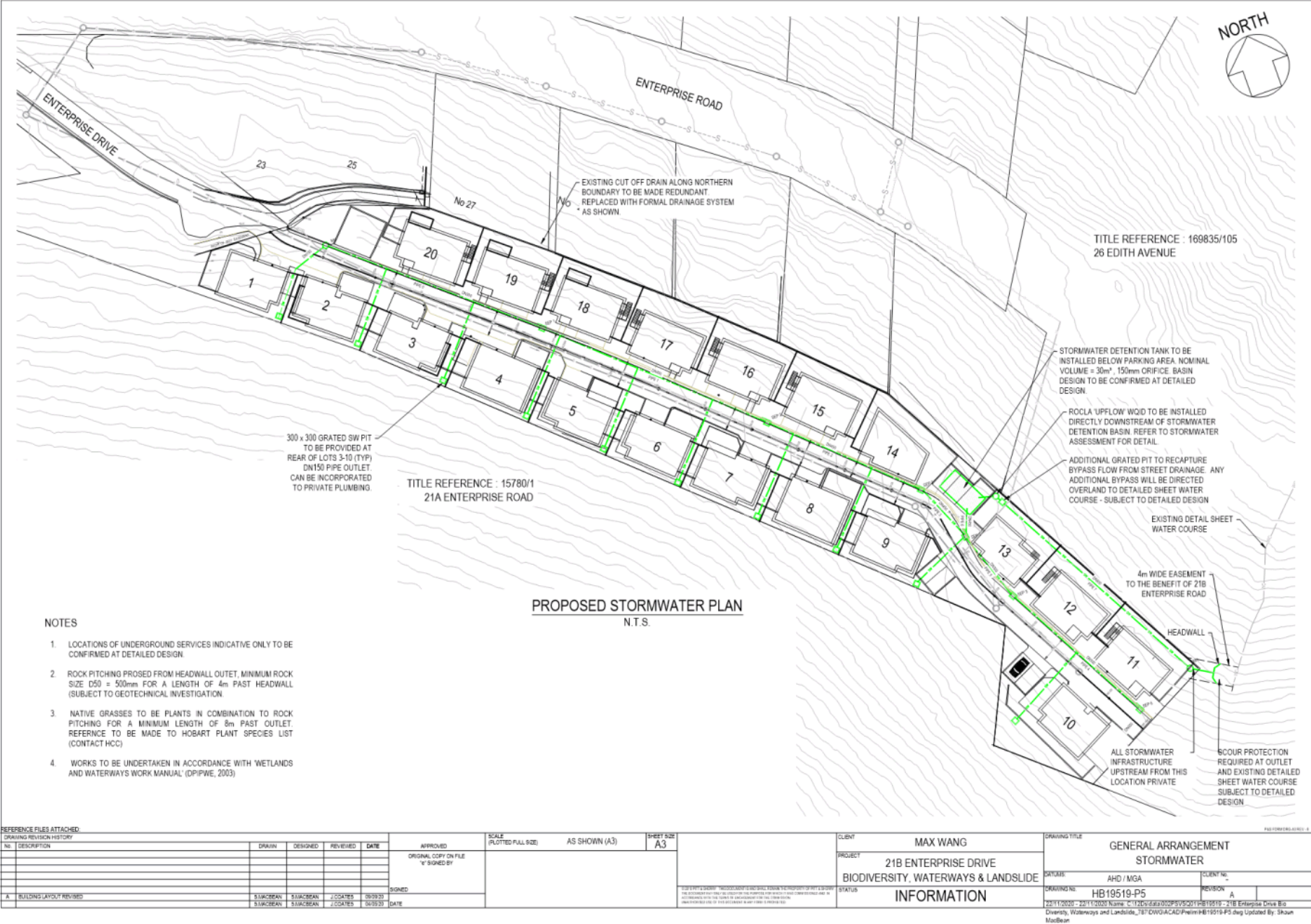
DETENTION BASIN DETAILS					
Name	Max WL	MaxVol	Max Q	Max Q	Max Q
			Total	Low Level	High Level
Basin2606	172.95	38.9	0.46	0.053	0.408



Stormwater Plans

Appendix C

pitt&sherry



pitt&sherry

21 Enterprise Drive
Stormwater Assessment

Contact

Joshua Coates
02 6210 1407
jcoates@pittsh.com.au

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —

Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport
Wagga Wagga



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 169834	FOLIO 39
EDITION 4	DATE OF ISSUE 10-Apr-2019

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.34 PM

DESCRIPTION OF LAND

City of HOBART

Lot 39 on Sealed Plan 169834

Derivation : Part of 87 Acres Gtd. to Perpetual Trustees

Execturos & Agency Co. of Tasmania Limited

Prior CT 161968/105

SCHEDULE 1

M736084 TRANSFER to AAT PTY LTD Registered 10-Apr-2019 at
12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP169834 FENCING COVENANT in Schedule of Easements

SP169834 WATER SUPPLY RESTRICTION

SP159761 FENCING COVENANT in Schedule of Easements

SP159761 WATER SUPPLY RESTRICTION

C704343 AGREEMENT pursuant to Section 71 of the Land Use
Planning and Approvals Act 1993 Registered
26-Apr-2006 at noon

D21121 AGREEMENT pursuant to Section 71 of the Land Use
Planning and Approvals Act 1993 Registered
06-Jul-2011 at noon

E11345 AGREEMENT pursuant to Section 71 of the Land Use
Planning and Approvals Act 1993 Registered
17-Jul-2015 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

the **List****FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



OWNER Patricia Anne Turner-Smith John Thomas Turner, Michelle Kaye Oxenbould		PLAN OF SURVEY		REGISTERED NUMBER SP169834
FOLIO REFERENCE FR 161968/105 & FR159828/1		BY SURVEYOR A.M. PEACOCK of PDA Surveyors 127 BATHURST STREET, HOBART		APPROVED EFFECTIVE FROM 27 JUL 2015 <i>Shirley Kawa</i> Recorder of Titles
GRANTEE Part of 87 Acres Gtd to Perpetual Trustees Executors & Agency Co. of Tasmania Ltd.		LOCATION CITY OF HOBART		
SCALE: 1:1000		LENGTHS IN METRES	SURVEYORS REF: S629M-1A	
MAPSHEET MUNICIPAL (S224-22)	LAST CODE No. 114 (S224-12)	LAST UPI No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN	

ENTERPRISE ROAD

GLOVER AVENUE

EDITH AVENUE

ENTERPRISE

RIGHT OF WAY (PRIVATE) 4.57 WIDE (P159828)

RIGHT OF WAY 'A' (PRIVATE) (SP114566)

RIGHT OF WAY 'B' (PRIVATE) (SP114566)

40 8030m² (P159828)

39 934m² (P159828)

29 1006m² (P159828)

RIGHT OF WAY (PRIVATE) 7.50 WIDE (P.169835) Bal.

ENTERPRISE ROAD

SEE ANNEXURE SHEET 1 (P159379)

RIGHT OF WAY & SERVICE EASEMENT (VARIABLE WIDTH) (CREATED BY C.947449, C.947450, C.947451 & C.947452)

RIGHT OF WAY & SERVICE EASEMENT (VARIABLE WIDTH) (CREATED BY C.947449, C.947450, C.947451 & C.947452)

SKETCH

COUNCIL DELEGATE

DATE 7-7-2015

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 169835	FOLIO 105
EDITION 2	DATE OF ISSUE 20-Feb-2019

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.47 PM

DESCRIPTION OF LAND

City of HOBART
 Lot 105 on Plan 169835
 Derivation : Part of 87 Acres Gtd. to Perpetual Trustees
 Execturos & Agency Co. of Tasmania Limited
 Prior CT 161968/105

SCHEDULE 1

M720222 TRANSFER to EBCO DEVELOPMENTS (TAS) PTY LTD
 Registered 20-Feb-2019 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 SP159761 FENCING COVENANT in Schedule of Easements
 SP159761 WATER SUPPLY RESTRICTION
 SP159761 BURDENING EASEMENT: Right of Carriageway in favour of
 Hobart City Council over the Right of Way 6.00 wide
 shown on P169835
 SP159761 BURDENING EASEMENT: a pipeline easement in favour of
 Hobart City Council over the Pipeline Easement 6.00
 wide shown on P169835 more fully set forth in C559483
 SP169834 BURDENING EASEMENT: Right of Carriageway (appurtenant
 to Lot 29 on Sealed Plan 169834) over the Right of
 Way 7.50 wide (SP169834) on Plan 169835
 C704343 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 26-Apr-2006 at noon
 D21121 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 06-Jul-2011 at noon
 E11345 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 17-Jul-2015 at noon

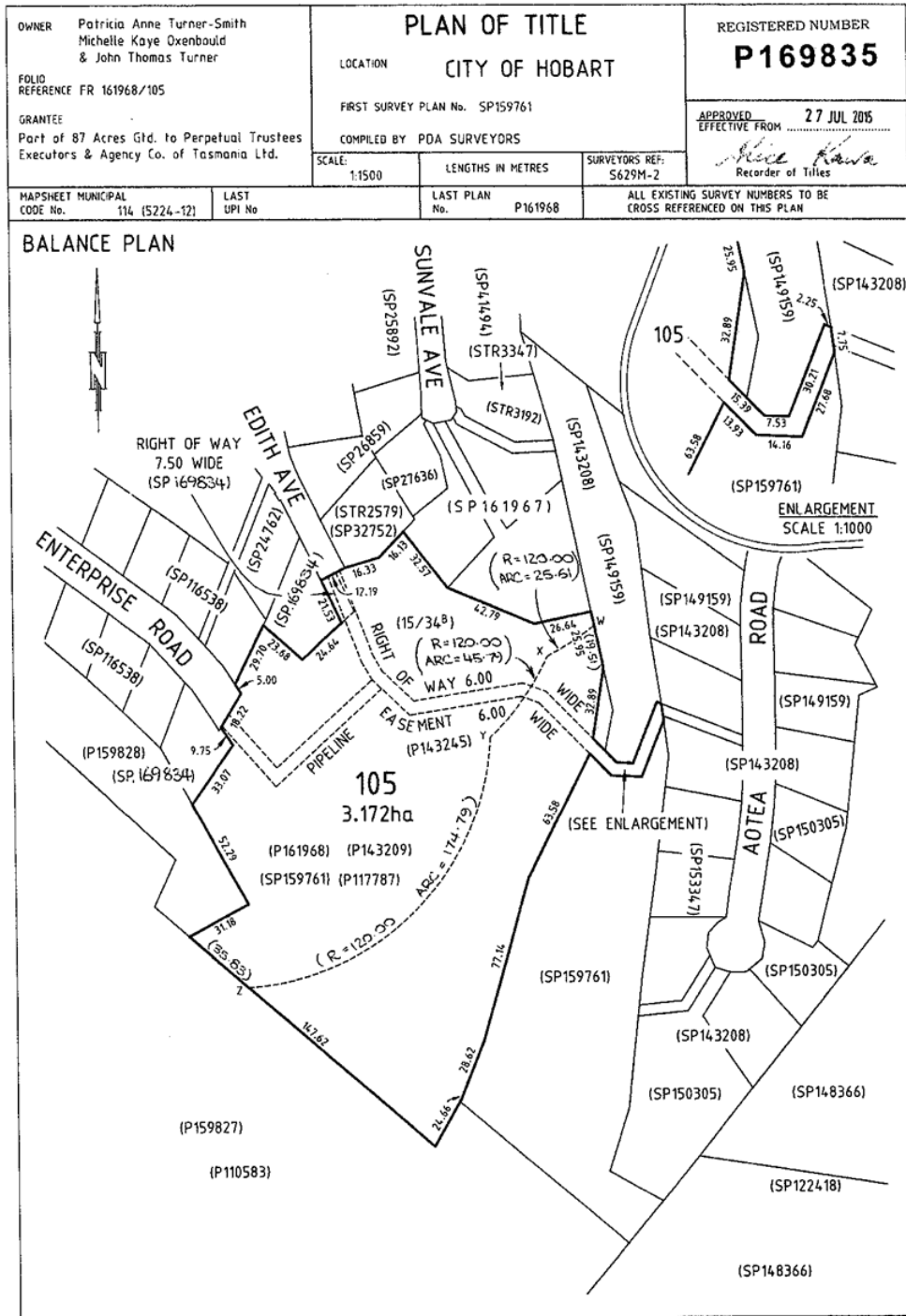
UNREGISTERED DEALINGS AND NOTATIONS



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 175780	FOLIO 1
EDITION 4	DATE OF ISSUE 20-Sep-2019

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.30 PM

DESCRIPTION OF LAND

City of HOBART
 Lot 1 on Plan 175780
 Being the land described in Conveyance 36/9064
 Excepting thereout Part of Lots 1, & 83 to 86 on SP4682 & Part
 of Lot 102 SP159761
 Derivation : Part of (50A-0R-0P) Granted to George Flexmore
 Prior CT 159827/1

SCHEDULE 1

M766306 TRANSFER to ENTERPRISE PRIVATE HOLDINGS PTY LTD
 Registered 16-Aug-2019 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 BURDENING EASEMENT: right of carriageway (appurtenant to Lot 3
 on Sealed Plan 54690 (formerly SP4682)) over the land
 marked Right of Way on Plan 175780
 C947447 BURDENING EASEMENT: a right of way and service
 easement (appurtenant to Lot 3 on Sealed Plan 54690)
 over the Right of Way and Service Easement 8.00 wide
 on Plan 175780 Registered 02-Jun-2010 at 12.02 PM
 C947448 BURDENING EASEMENT: a right of carriageway
 (appurtenant to Lot 3 on Sealed Plan 54690) over the
 Right of Way & Service Easement 8.00 wide on Plan
 175780 Registered 02-Jun-2010 at 12.03 PM
 C947449 BENEFITING EASEMENT: a right of carriageway over the
 Right of Way & Service Easement (Variable Width) on
 Plan 175780 Registered 02-Jun-2010 at 12.04 PM
 C947450 BENEFITING EASEMENT: a right of way and service
 easement over the Right of Way & Service Easement
 (Variable Width) on Plan 175780 Registered
 02-Jun-2010 at 12.05 PM
 E509 BURDENING EASEMENT: a right of carriageway and a
 service easement (appurtenant to Lot 1 on Plan
 175781) over the Right of Way & Services Easement 'B'
 Variable Width marked 'AFGN' on Plan 175780

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

- Registered 14-Sep-2018 at 12.01 PM
- E510 BURDENING EASEMENT: a right of carriageway and a service easement (appurtenant to Lot 1 on Plan 175781) over the Right of Way & Service Easement 'A' Variable Width marked 'ABCDEF' on Plan 175780
- Registered 14-Sep-2018 at 12.02 PM
- E511 BURDENING EASEMENT: a right of drainage (appurtenant to Lot 1 on Plan 175781) over the land marked Drainage Easement 'F' 3.00 wide on Plan 175780
- Registered 14-Sep-2018 at 12.03 PM
- E512 BURDENING EASEMENT: a right of drainage (appurtenant to Lot 1 on Plan 175781) over the land marked Drainage Easement 'E' 3.00 wide on Plan 175780
- Registered 14-Sep-2018 at 12.04 PM
- E536 BURDENING EASEMENT: a right of drainage in favour of the Hobart City Council over the land marked Drainage Easement 'F' 3.00 wide on Plan 175280 Registered 18-Oct-2018 at noon
- E192976 BURDENING EASEMENT: a right of carriageway and a service easement (appurtenant to Lot 40 on Sealed Plan 169834) over the Right of Way and Services Easement 'C' Variable Width marked 'AOPQRSTUVWXYZ' on Plan 175780 Registered 20-Sep-2019 at noon
- E192977 BURDENING EASEMENT: a right of carriageway and a service easement (appurtenant to Lot 40 on Sealed Plan 169834) over the Right of Way & Services Easement 'B' Variable Width marked 'AFGN' on Plan 175780 Registered 20-Sep-2019 at 12.01 PM
- E192978 BENEFITING EASEMENT: a right of carriageway and a service easement over the land marked Right of Way and Services Easement 'D' Variable Width on Plan 175780 Registered 20-Sep-2019 at 12.02 PM
- E192979 BENEFITING EASEMENT: a right of drainage over the land marked Drainage Easement 'F' 3.00 wide on Plan 175780 Registered 20-Sep-2019 at 12.03 PM

UNREGISTERED DEALINGS AND NOTATIONS

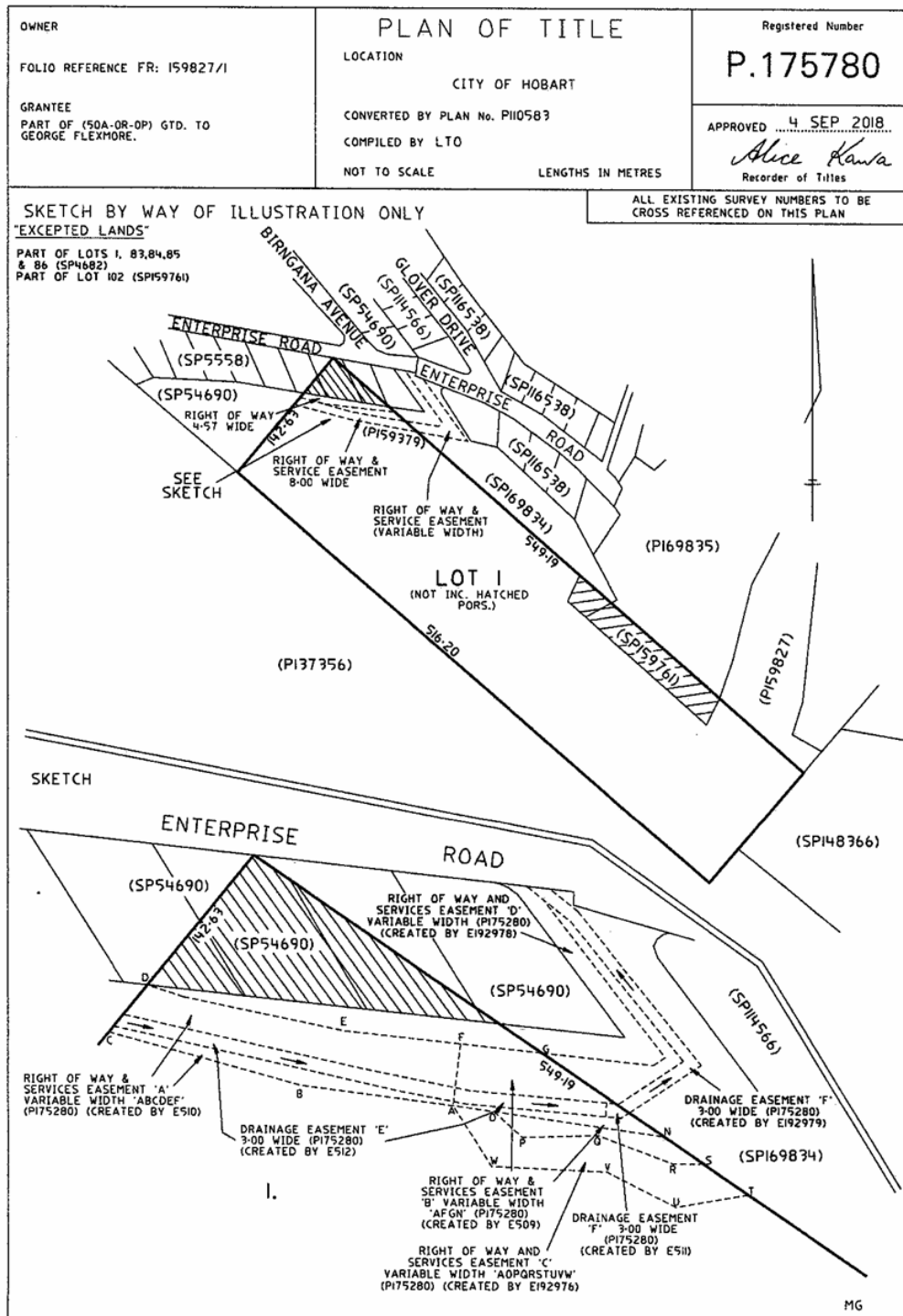
No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 175781	FOLIO 1
EDITION 1	DATE OF ISSUE 14-Sep-2018

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.44 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 175781

Derivation : Part of (50A-0R-0P) Granted to George Flexmore

Prior CT 54690/3

SCHEDULE 1

C949456 & E109448 TRANSFER to PATRICIA ANNE TURNER-SMITH

Registered 09-Apr-2018 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP54690 FENCING COVENANT in Schedule of Easements

C947447 BENEFITING EASEMENT: a right of way and service
easement over the Right of Way and Service Easement 8.
00 wide on Plan 175781 Registered 02-Jun-2010 at 12.
02 PMC947448 BENEFITING EASEMENT: a right of carriageway over the
Right of Way & Service Easement 8.00 wide on Plan
175781 Registered 02-Jun-2010 at 12.03 PMC947451 BENEFITING EASEMENT: a right of way and service
easement over the Right of Way & Service Easement
(Variable Width) on Plan 175781 Registered
02-Jun-2010 at 12.06 PMC947452 BENEFITING EASEMENT: a right of carriageway over the
Right of Way & Service Easement (Variable Width) on
Plan 175781 Registered 02-Jun-2010 at 12.07 PMSP54690 BENEFITING EASEMENT: a right of carriageway over the
land marked Right of Way 4.57 wide on Plan 175781E508 BENEFITING EASEMENT: a right of carriageway and a
service easement over the land marked Right of Way &
Services Easement 'D' Variable Width on Plan 175781
Registered 14-Sep-2018 at noonE509 BENEFITING EASEMENT: a right of carriageway and a
service easement over the Right of Way & Services
Easement 'B' Variable Width marked 'AFGN' on Plan
175781 Registered 14-Sep-2018 at 12.01 PM

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

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- | | |
|------|---|
| E510 | BENEFITING EASEMENT: a right of carriageway and a service easement over the Right of Way & Services Easement 'A' Variable Width marked 'ABCDEF' on Plan 175781 Registered 14-Sep-2018 at 12.02 PM |
| E511 | BENEFITING EASEMENT: a right of drainage over the land marked Drainage Easement 'F' 3.00 wide on Plan 175781 Registered 14-Sep-2018 at 12.03 PM |
| E512 | BENEFITING EASEMENT: a right of drainage over the land marked Drainage Easement 'E' 3.00 wide on Plan 175780 Registered 14-Sep-2018 at 12.04 PM |

UNREGISTERED DEALINGS AND NOTATIONS

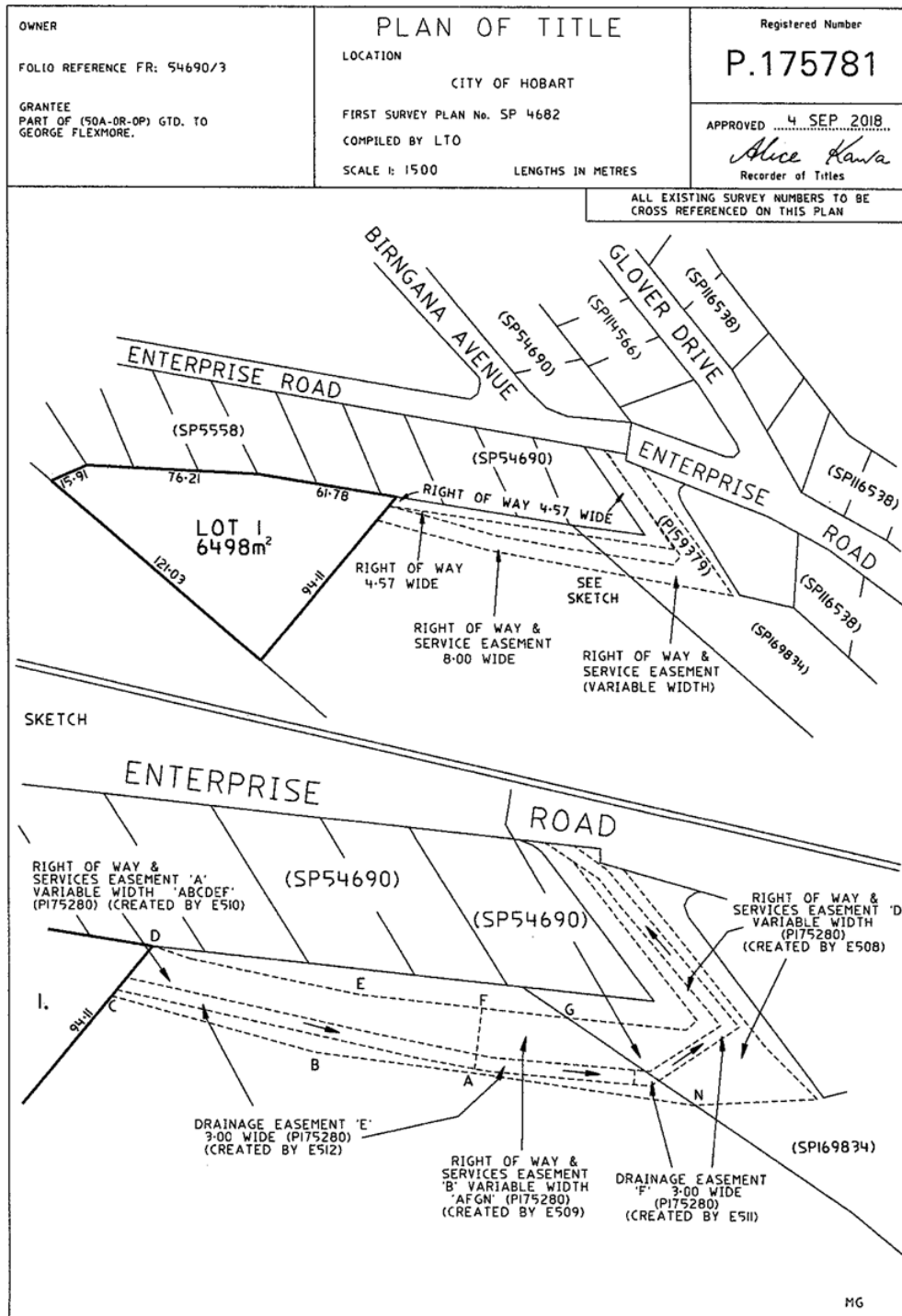
No unregistered dealings or other notations

the **List**

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 169835	FOLIO 105
EDITION 2	DATE OF ISSUE 20-Feb-2019

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.47 PM

DESCRIPTION OF LAND

City of HOBART
 Lot 105 on Plan 169835
 Derivation : Part of 87 Acres Gtd. to Perpetual Trustees
 Execturos & Agency Co. of Tasmania Limited
 Prior CT 161968/105

SCHEDULE 1

M720222 TRANSFER to EBCO DEVELOPMENTS (TAS) PTY LTD
 Registered 20-Feb-2019 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 SP159761 FENCING COVENANT in Schedule of Easements
 SP159761 WATER SUPPLY RESTRICTION
 SP159761 BURDENING EASEMENT: Right of Carriageway in favour of
 Hobart City Council over the Right of Way 6.00 wide
 shown on P169835
 SP159761 BURDENING EASEMENT: a pipeline easement in favour of
 Hobart City Council over the Pipeline Easement 6.00
 wide shown on P169835 more fully set forth in C559483
 SP169834 BURDENING EASEMENT: Right of Carriageway (appurtenant
 to Lot 29 on Sealed Plan 169834) over the Right of
 Way 7.50 wide (SP169834) on Plan 169835
 C704343 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 26-Apr-2006 at noon
 D21121 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 06-Jul-2011 at noon
 E11345 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 17-Jul-2015 at noon

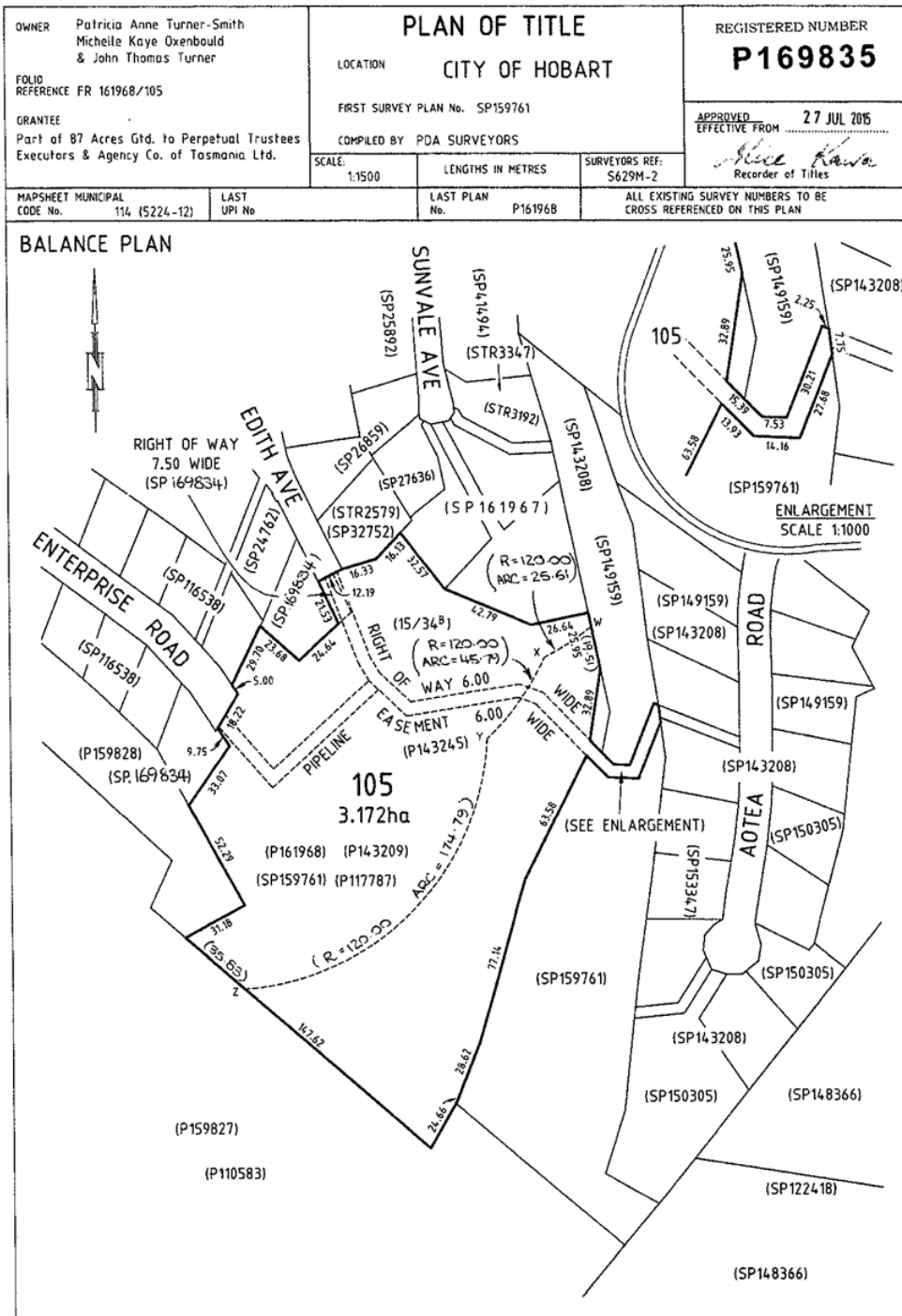
UNREGISTERED DEALINGS AND NOTATIONS



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 169834	FOLIO 40
EDITION 5	DATE OF ISSUE 20-Sep-2019

SEARCH DATE : 03-Nov-2020

SEARCH TIME : 01.40 PM

DESCRIPTION OF LAND

City of HOBART

Lot 40 on Sealed Plan 169834

Derivation : Part of 87 Acres Gtd. to Perpetual Trustees

Execturos & Agency Co. of Tasmania Limited

Prior CTs 159828/1 and 161968/105

SCHEDULE 1

M766302 TRANSFER to XANADU DEVELOPMENTS PTY LTD Registered
16-Aug-2019 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP169834 EASEMENTS in Schedule of Easements

SP169834 FENCING COVENANT in Schedule of Easements

SP169834 WATER SUPPLY RESTRICTION

E508 BURDENING EASEMENT: a right of carriageway and a
service easement (appurtenant to Lot 1 on Plan
175781) over the land marked Right of Way & Services
Easement 'D' Variable Width on Sealed Plan 169834
Registered 14-Sep-2018 at noon

E511 BURDENING EASEMENT: a right of drainage (appurtenant
to Lot 1 on Plan 175781) over the land marked
Drainage Easement 'F' 3.00 wide on Sealed Plan 169834
Registered 14-Sep-2018 at 12.03 PM

E535 BURDENING EASEMENT: a right of drainage in favour of
the Hobart City Council over the land marked Drainage
Easement 'F' 3.00 wide on Sealed Plan 169834
Registered 18-Oct-2018 at noon

E192976 BENEFITING EASEMENT: a right of carriageway and a
service easement over the Right of Way and Services
Easement 'C' Variable Width marked 'AOPQRSTUVW' on
Sealed Plan 169834 Registered 20-Sep-2019 at noon

E192977 BENEFITING EASEMENT: a right of carriageway and a
service easement over the Right of Way and Services
Easement 'B' Variable Width marked 'AFGN' on Sealed
Plan 169834 Registered 20-Sep-2019 at 12.01 PM

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

- E192978 BURDENING EASEMENT: a right of carriageway and a service easement (appurtenant to Lot 1 on Plan 175780) over the land marked Right of Way & Services Easement 'D' Variable Width on Sealed Plan 169834 Registered 20-Sep-2019 at 12.02 PM
- E192979 BURDENING EASEMENT: a right of drainage (appurtenant to Lot 1 on Plan 175780) over the land marked Drainage Easement 'F' 3.00 wide on Sealed Plan 169834 Registered 20-Sep-2019 at 12.03 PM
- SP159761 FENCING COVENANT in Schedule of Easements
- SP159761 WATER SUPPLY RESTRICTION
- C704343 AGREEMENT pursuant to Section 71 of the Land Use Planning and Approvals Act 1993 Registered 26-Apr-2006 at noon
- D21121 AGREEMENT pursuant to Section 71 of the Land Use Planning and Approvals Act 1993 Registered 06-Jul-2011 at noon
- E11345 AGREEMENT pursuant to Section 71 of the Land Use Planning and Approvals Act 1993 Registered 17-Jul-2015 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



FOLIO PLAN

RECORDED OF TITLES

Issued Pursuant to the Land Titles Act 1980



Tasmanian
Government

<p>OWNER Patricia Anne Turner-Smith John Thomas Turner, Michelle Kaye Oxenbould</p> <p>FOLIO REFERENCE FR 161968/105 & FR159828/1</p> <p>GRANTEE Part of 87 Acres Gtd to Perpetual Trustees Executors & Agency Co. of Tasmania Ltd.</p>	<p>PLAN OF SURVEY</p> <p>BY SURVEYOR A.M. PEACOCK of PDA Surveyors 127 BATHURST STREET, HOBART</p> <p>LOCATION</p> <p>CITY OF HOBART</p>	<p>REGISTERED NUMBER</p> <p>SP169834</p>
<p>SCALE 1:1000</p> <p>LENGTHS IN METRES</p> <p>SURVEYORS REF: S629M-1A</p>		<p>APPROVED <i>Alice Kawa</i> 27 JUL 2015</p> <p>Record of Titles</p>
<p>MAPSHEET MUNICIPAL (5224-22) LAST</p> <p>CODE No. 114 (5224-12) UPI No</p>	<p>LAST PLAN</p> <p>No. P161968, P159828</p>	<p>ALL EXISTING SURVEY NUMBERS TO BE</p> <p>CROSS REFERENCED ON THIS PLAN</p>

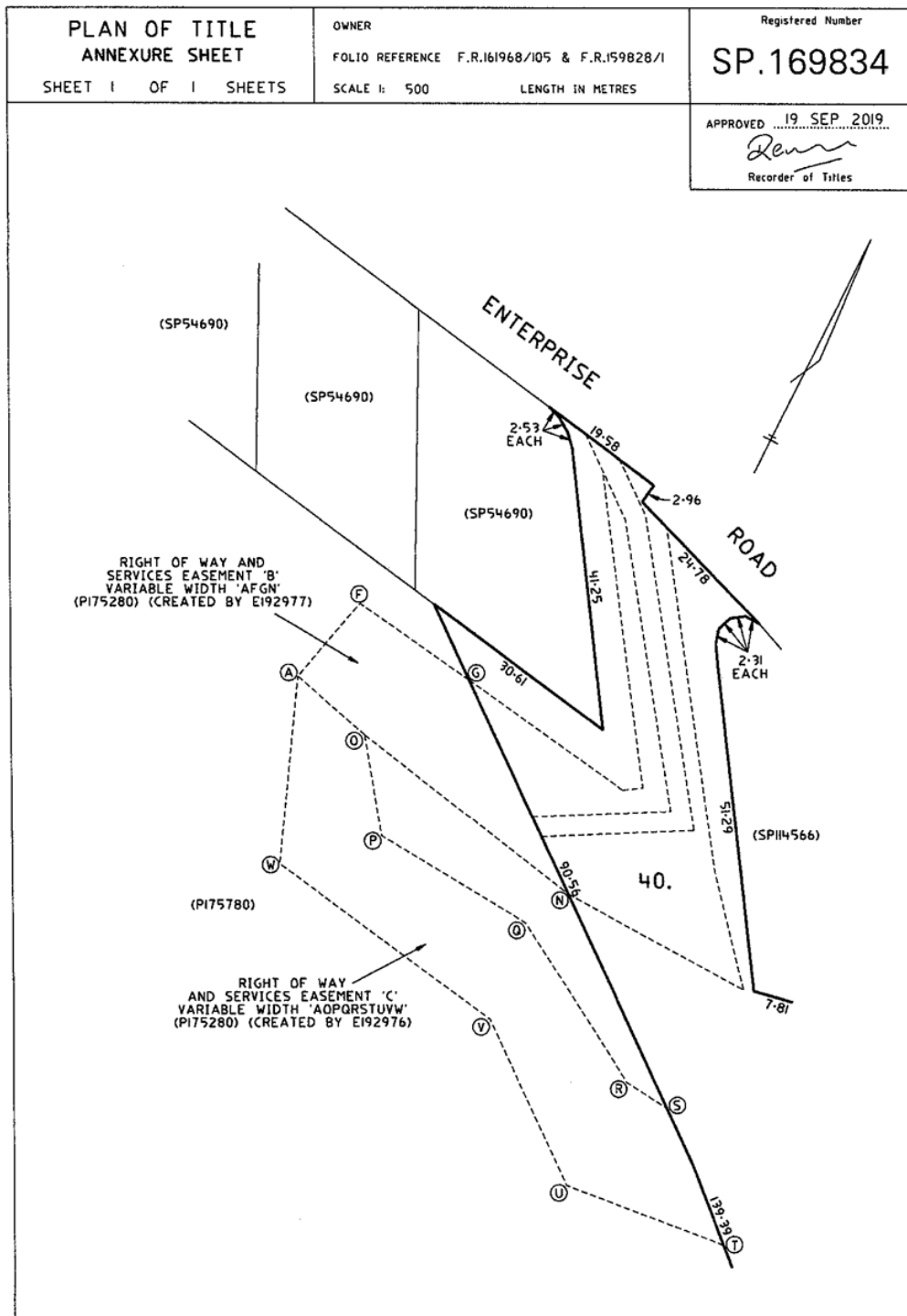
SKETCH

~~C.947450~~ & C.947452

the **List****FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



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Brisbane
Hobart
Launceston
Newcastle
Devonport

23 November 2020

Sam Bryan
development@taswater.com.au
GPO Box 1393
Hobart TAS 7001

Dear Sam

Re: PLN-20-740 – TWDA 2020/01828-HCC – Response to Request for Additional Information

Please see the following information in response to the request for additional information. The request for additional information dated 5 November 2020 is included for reference in Attachment A

Background

The proposed use is a private 20 lot development located at 21B Enterprise Drive. As part of a previous subdivision, a single sewer and water connection was provided by TasWater to the site. A DN100 PVC SN8 sewer connection and OD63 HDPE (PE100) PN16 water connection is provided at the entrance to the proposed site. The full As-Constructed plan is included in Attachment B, an excerpt of the connections is shown below in Figure 1.

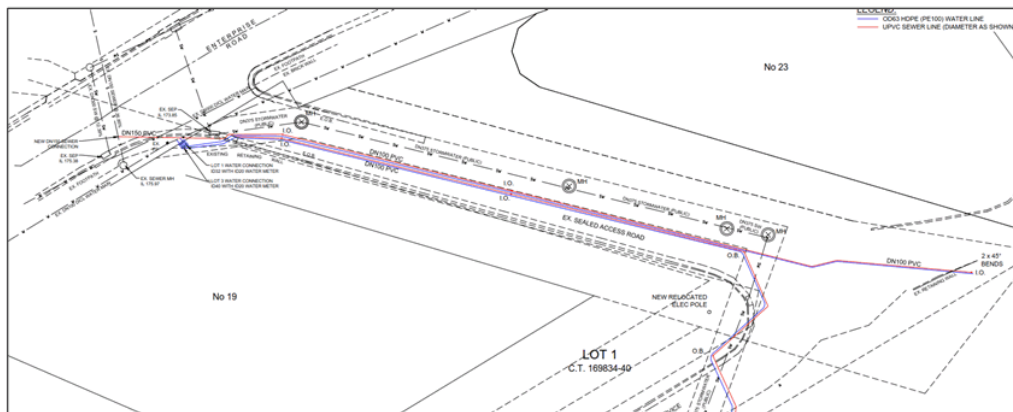


Figure 1: Water and Sewer Connection 21B Enterprise Road

The proposed development intends to make use of the existing water connection, although the pipe size will need to be increased to provide compliance for fire flows.



Sewer

In response to items 1 a), b) and c) (sewer flows), please see the flow calculation sheet provided in Attachment C. A summary of calculated flows is provided below

Case	Flow Rate
ADWF	0.1 L/s
PDWF	0.85 L/s
Design Flow (PDWF + GWI + RDI)	1.02 L/s

This proposed solution does contain a deep section of sewer (up to 8 metres deep), to allow the development to connect a sewer system through either public land or land to which the property has right to. To confirm the practicality of installing a private sewer connection at this depth, we have liaised with a directional drilling contractor. We were advised that this solution, although challenging, is a viable with drilling related construction methods.

To enable this solution to work, an additional 'shallow' main is required to provide connection points for the proposed lots. It would not be possible to directly connect to the 'deep' main.

Plans are included in Attachment E (HB19519-P4 and HB19519-P5) and present a plan and long-section of the proposed sewer. Note, the long section is only for the 'deep' sewer. This also shows the intended connection points for the sewer

Water

In response to items 1 d), e), f) and g) (water demand), please see the attached water demand calculation sheet provided in Attachment B. A typical sketch of the proposed water connection and horizontal alignment is included in Attachment E (HB19519-P8)

To confirm that the subject lot can be serviced by water, a water supply model has been developed. The following boundary condition information was provided by TasWater.

Scenario	Total Head (m)
Peak Day	215
Peak Day + 10 L/s Fire Flow	213

These boundary heads provided for the assumed connection location which is adjacent to fire plug A385247. This is shown in Figure 2.

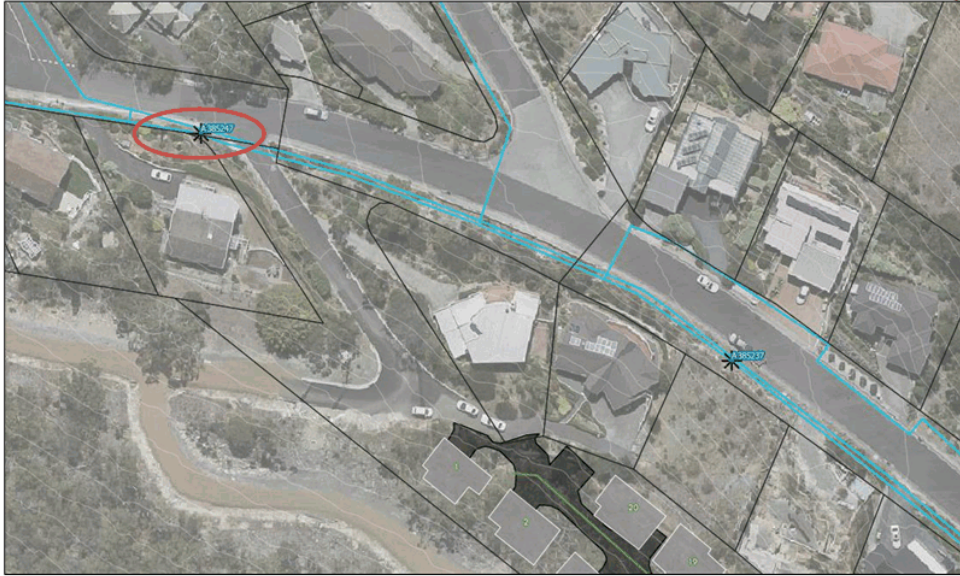


Figure 2: Boundary Condition (head) location

An EPANET model has been developed in accordance with the *TW WSA03-2011-3.1 MRWA V2.0 Supplement – Appendix B*. Both a peak day scenario and peak day plus fire flow scenario are assessed.

Peak Day Scenario

An average day demand of 685 L/ET/day has been applied to each lot. This has then been converted to a peak day demand of 1,542 L/ET/day (0.0178 L/s/ET). The residential diurnal pattern is also applied to each lot which incorporates the factor for peak hour demand (2.0). Each lot is assumed to be 1 ET (3 Bedroom Unit - RM03).

A DN100 water connection is assumed up to the proposed location of the fire hydrant, then DN50 thereafter. A Hazen-Williams roughness of 130 applied.

Figure 3 presents the model layout.

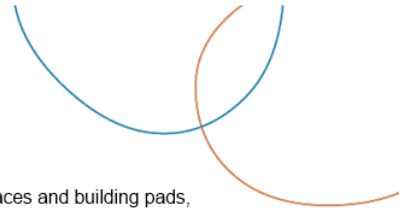


Table 1 presents elevations for each of the lots. To enable construction of roads surfaces and building pads, changes to elevation will occur. For lots 1 – 10, a cut of approximately 2 – 3 metres is required to construct buildings. Therefore, the adopted elevation for water supply modelling is the highest elevation on each of the lots post development.

Table 1: Lot Elevations

Lot Number	Existing Elevation (m AHD)	Design Elevation (m AHD) (Modelled)	Elevation at Connection Point (m AHD)
Lots 1, 2, 3 and 4	190	189.0	185.8
Lots 19 and 20	188	185.0	185.0
Lots 5, 6, and 7	190	189.0	185.8
Lots 16, 17 and 18	188	185.2	185.2
Lots 8 and 9	187	185.9	182.7
Lots 14 and 15	185	182.8	182.8
Lot 10	183	181.1	177.9
Lots 11, 12 and 13	180	177.3	177.2

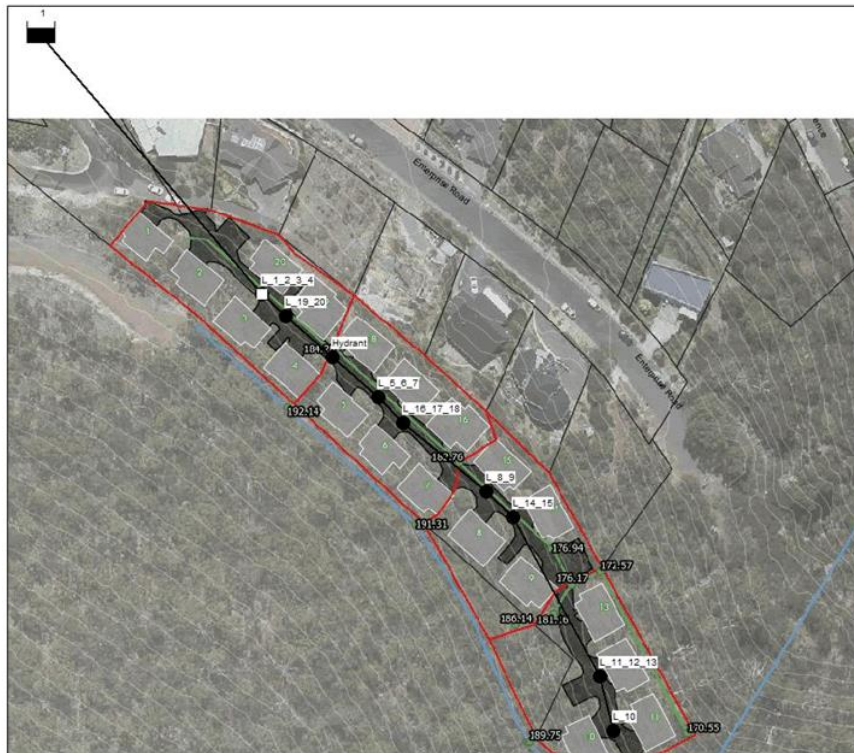


Figure 3: EPANET model layout

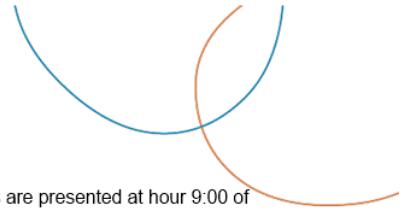


Table 2 presents the resulting pressure and heads for the peak day scenario. Results are presented at hour 9:00 of the simulation this corresponds to the peak hour demand (2.0 factor)

Table 2: Peak Day @ 9:00 hrs

Node ID	Demand LPS	Head (m)	Pressure (m)
L_1_2_3_4	0.14	214.99	25.99
L_19_20	0.07	214.99	25.99
L_5_6_7	0.11	214.98	25.98
L_16_17_18	0.11	214.98	29.78
L_8_9	0.07	214.96	29.06
L_14_15	0.07	214.95	32.15
L_11_12_13	0.11	214.94	37.64
L_10	0.04	214.94	33.84
Reservoir	-0.71	215.00	0.00

Table 2.5.3.3 from the supplement requires a minimum pressure of 250 kPa (25m) (Residential Steep Grade). The elevation adopted for lots is based upon the highest elevation of lots (developed condition).

Based on the modelling undertaken, the service pressure meets the minimum required pressure.

Peak Day Scenario + Fire Flow Scenario

The fire flow scenario adopts a fire hydrant at the most disadvantaged location within the proposed development. The hydrant demand is assumed to be 10 L/s, whilst the background demand is assumed to be 2/3 of the Peak Hour demand).

The fire hydrant must operate at 250 kPa, whilst the system residual pressure must be at least 100 kPa in the entire service zone.

Figure 4 and Figure 5 show the time series demand and pressure respectively for the fire hydrant. **Error! Reference source not found.** presents the residual system pressure whilst the fire hydrant is in operation.

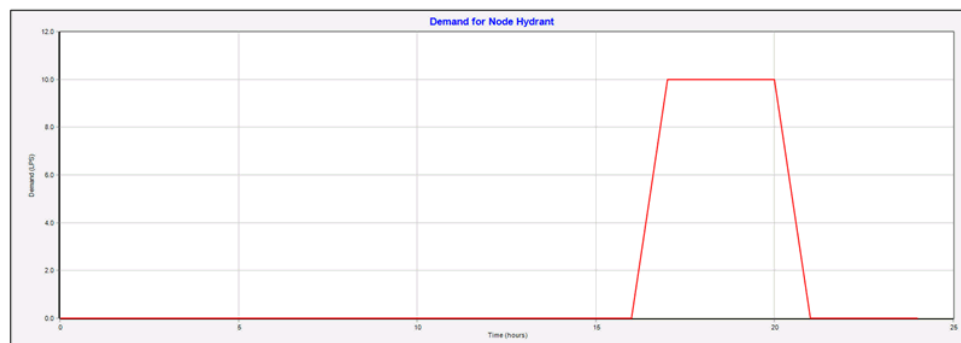


Figure 4: Fire Hydrant – Demand

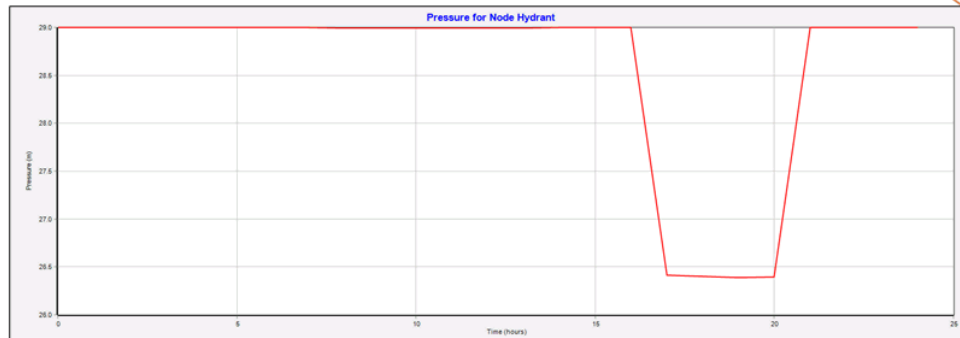


Figure 5: Fire Hydrant – Pressure

Table 3: Peak Day + Fire Flow @ 19:00 hrs

Node ID	Demand LPS	Head (m)	Pressure (m)
L_1_2_3_4	0.06	211.18	22.18
L_19_20	0.03	211.08	26.08
L_5_6_7	0.05	210.39	21.39
L_16_17_18	0.05	210.38	25.19
L_8_9	0.03	210.38	24.48
L_14_15	0.03	210.38	27.58
L_11_12_13	0.05	210.38	33.08
L_10	0.02	210.38	29.28
Hydrant	10.00	210.39	26.39
Reservoir	-10.32	213.00	0.00

The assessment suggests the sufficient flow is able to be provided for firefighting purposes whilst maintaining sufficient pressure in the remainder of the system.

The modelling undertaken does not show any significant loss in the system. This is likely attributed to low velocities in the water supply network. A peak hour flow rate for the developed is estimated to be 0.72L/s which equates to a velocity of approximately 0.1 m/s for a DN100 pipe.

The closest identified connection point for water supply is a DN100 DI/CL in Enterprise Road, adjacent to the fire plug (TasWater asset ID A385247). The connection location is shown below in Figure 2. As part of the recent subdivision, a OD63 HDPE (nominal DN50 internal) connection was provided by TasWater.

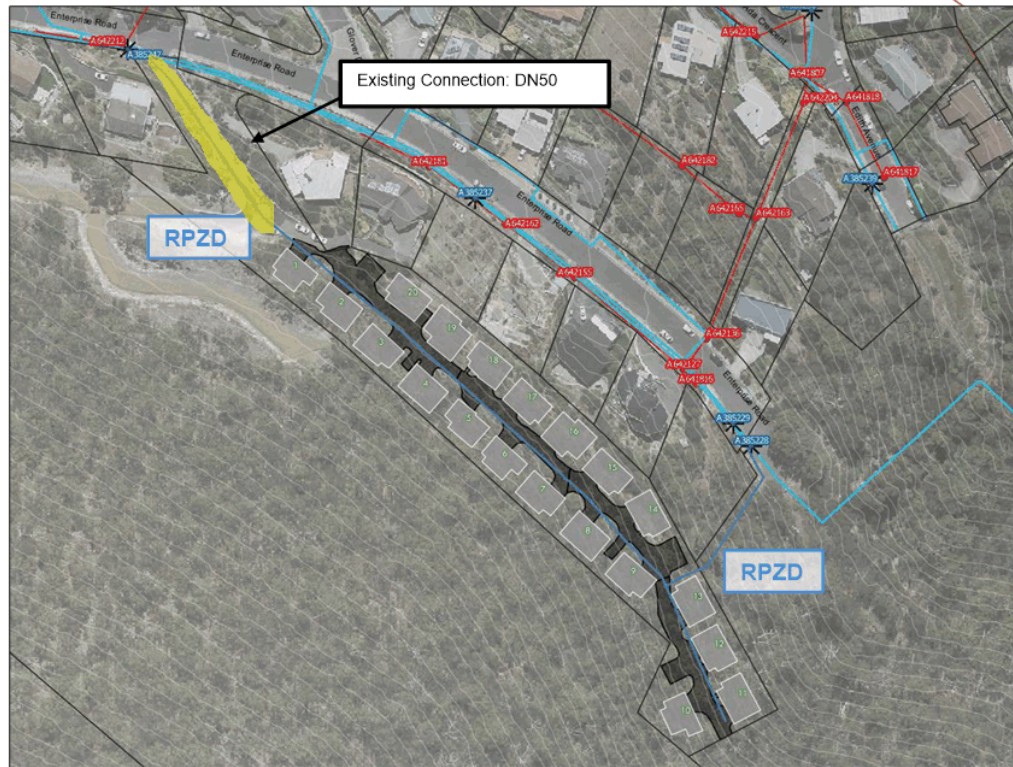


Figure 6: Proposed Water Service Connection

The following site-specific requirements are identified at this stage of the development process and should be considered throughout.

- There are two pressure zones that the proposed development can practically connect to. These are the Mount Nelson 'Bend 7' Pressure Zone, and the Enterprise Road Pump Pressure Zone. The pump pressure zone was introduced to address an existing water supply issue. Connection to this zone is not proposed. It is recommended that the proposed development connects to the Mount Nelson 'Bend 7' Pressure Zone (DN100 DICL). It is noted that the provided water connection is service by the Mount Nelson 'Bend 7' Pressure Zone.
- There is opportunity to loop the water main by connecting the eastern most end of the development to the existing water main. A suitable location is east of fire-plug (asset ID A38529, DN100 DICL). An easement would be required over No. 26 Edith Avenue to achieve the looped connection.
- As a hydrant is required within the proposed development. The minimum water main size should be DN100. This will require the upgrade of the existing water connection to DN100. The main supplying lots 10, 11, 12 and 13 are able to be service by a nominal DN50 main.
- To prevent back flow to the existing water supply system, a Reduced Pressure Zone Device (RPZD) will be required at both connection points to the proposed development. Indicative locations are provided in Figure 3.
- With regard to Table 8.8.8, TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA Edition V2.0, for general residential development, the maximum fire hydrant spacing is the lesser of 120m from the rear boundary of all properties to the hydrant measured along the hose-path length or 90m and at street intersections. To provide adequate coverage, two hydrants are required, one at the entrance the development (outside Lot 1) and another outside Lot 16.



Yours sincerely

Joshua Coates
Associate Civil Engineer

- Enc. Attachment A – Request for Additional Information
 Attachment B – Previous As-Constructed Plan
 Attachment C – Sewer Flow Calculation
 Attachment D – Water Demand Calculation
 Attachment E – Indicative Service Plan Water and Sewer



Request for Additional Information

For Planning Authority Notice

Council Planning Permit No.	PLN-20-740	Application date	2/11/2020
TasWater details			
TasWater Reference No.	TWDA 2020/01828-HCC	Date of response	05/11/2020
TasWater Contact	Sam Bryant	Phone No.	0474 933 294
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	21B ENTERPRISE RD, SANDY BAY	Property ID (PID)	9192359
Description of development	Multiple Dwellings x 20	Stage No.	
Additional information required			
<p>Additional information is required to process your request. To enable assessment to continue please submit the following:</p> <ol style="list-style-type: none"> 1. To allow TasWater to determine potential hydraulic service capacity limitations, please provide the following: <ol style="list-style-type: none"> a. Average dry weather sewage flow (ADWF) at the point of connection; b. Peak dry weather sewage flow (PDWF) at the point of connection; c. Total sewage flow at the point of connection; d. The required Peak day flow rate in L/s and the required residual pressure (kPa) at the point of connection. e. Peak day usage in L/day f. Probable simultaneous water demand (PSD) for the proposed development; g. The required fire flow rate in L/s and the required residual pressure (kPa) at the point of connection. <p style="margin-left: 40px;">NOTE: The pressures will need to include losses through the actual connection, the associated pipework and the elevation changes.</p> <ol style="list-style-type: none"> h. Calculations of the number of Equivalent Tenements. <p style="margin-left: 40px;">NOTE: The engineering design calculations must comply with AS/NZS 3500.0:2003 Plumbing and Drainage and the Sewerage and Water Codes of Australia - Melbourne Retail Water Agencies Integrated Code version(s) published by the Water Services Association of Australia, and as amended by TasWater's Supplements.</p> 2. Please provide a concept servicing plan for water & sewer services which shows the following: <ol style="list-style-type: none"> a. Indicative location of water extensions (if applicable) required to service the development; b. Indicative location of proposed TasWater easements in accordance with the relevant TasWater supplement (outline the minimum widths); c. The required location of property water & sewer connection(s) accurately dimensioned relative to the existing/proposed boundaries noting that: <ol style="list-style-type: none"> i. One sewer and one water property service connection must be provided to each lot; ii. The property water service for each lot must be sized appropriately and located just inside the property boundary at the road frontage in accordance with the standard property connection details contained in TasWater's Water Metering Guidelines; iii. The sewer property service connections for each lot must be sized appropriately and 			



- must be located at the low point of the lot just inside the property boundary;
- iv. Dedicated fire assemblies and domestic meters must be indicatively located;
 - v. Redundant connections must be shown to be cut and sealed.

Advice

Service Locations

Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure.

- A permit is required to work within TasWater's easements or in the vicinity of its infrastructure. Further information can be obtained from TasWater
- TasWater has listed a number of service providers who can provide asset detection and location services should you require it. Visit www.taswater.com.au/Development/Service-location for a list of companies
- TasWater will locate residential water stop taps free of charge
- Sewer drainage plans or Inspection Openings (IO) for residential properties are available from your local council.

To view our assets, all you need to do is follow these steps:

- 1) Open up webpage - <http://maps.thelist.tas.gov.au/listmap/app/list/map>
- 2) Click 'Layers'
- 3) Click 'Add Layer'
- 4) Scroll down to 'Infrastructure and Utilities' in the Manage Layers window, then add the appropriate layers.
- 5) Search for property
- 6) Click on the asset to reveal its properties

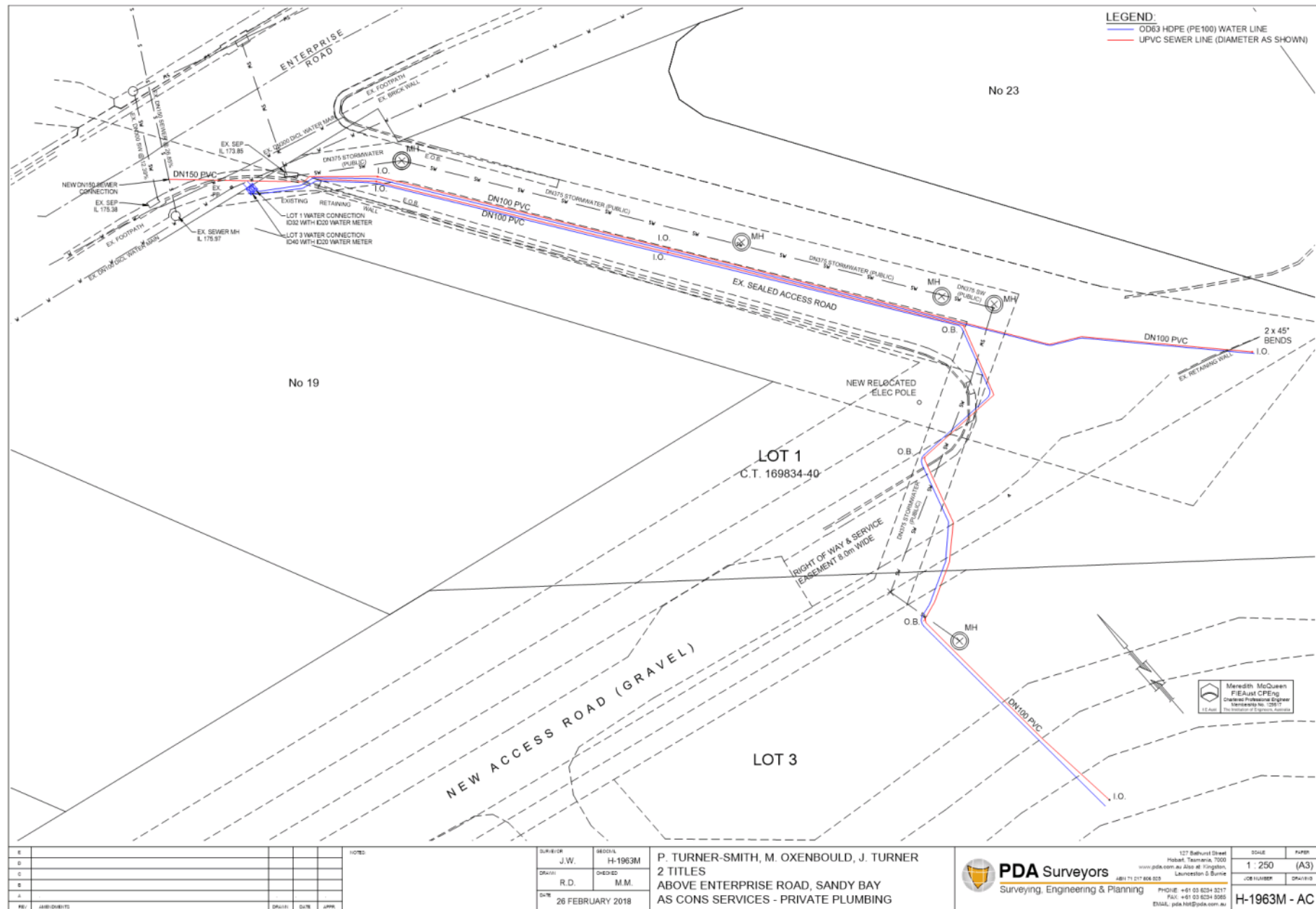
Authorised by

Jason Taylor

Development Assessment Manager

TASWATER CONTACT DETAILS

Email	development@taswater.com.au	Web	www.taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001		



pitt&sherry

Project: 21B ENTERPRISE DRIVE
Subject: SEWER FLOW CALCULATIONProject No.: HB/19519
Page: 1/2
Prepared by: J. COATES
Date: 9/1/20
Checked:

$$ADWF = ET \times \text{LOADING RATE (L/ET/DAY)}$$

$$ET: 20 \times 3 \text{ BEDROOM UNITS (ET=1)} \quad RM 03$$

$$\therefore ET = 20$$

$$\text{LOADING RATE} = 450 \text{ L/ET/DAY} \quad (\text{NEW RESIDENCES POST 2014})$$

$$\therefore ADWF = 20 ET \times 450 \text{ L/ET/DAY}$$

$$= 9000 \text{ L/DAY}$$

$$= 0.10 \text{ L/s}$$

$$PDWF = d \times ADWF$$

$$d \text{ DERIVED FROM FIGURE C1, APP C, WSA02-2014-3.1}$$

$$AREA_{DEV} = 0.7 H_A \rightarrow d = 8.2$$

$$\therefore PDWF = 8.2 \times 0.1042$$

$$= \underline{0.85 \text{ L/s}}$$

GW1

$$GW1 = 0.025 \times A_x \text{ PORTION WET} \quad * (\text{ASSUME PORTION WET} = 0.5)$$

$$= 0.025 \times 0.7 \times 0.5$$

$$= \underline{0.009 \text{ L/s}}$$

pitt&sherry

Project: 21B ENTERPRISE DRIVE
Subject: SEWER FLOW CALCULATIONProject No.: HB19519
Page: 2/2
Prepared by: J. COATES
Date: 9/1/20
Checked:

RDI (RATIONAL METHOD)

DRAINS

$$RDI = 0.028 \times A_{EFF} \times C \times I$$

$$A_{EFF} = A \times (DENSITY/150)^{0.5}$$

DENSITY < 150 EP/HA

$$EP = 3.5 \times N^2 \text{ SINGLE DWELLINGS (20)} \\ = 70$$

$$DENSITY = 70 EP / 0.7 HA \\ = 49 EP/HA$$

$$\therefore A_{EFF} = 0.70 \times \sqrt{(49/150)} \\ = 0.4$$

C = LEAKAGE SEVERITY COEFFICIENT (TABLE C1, APPC, W8702-2014-3-1)

$$S_{ASPECT} = 0.5$$

$$N_{ASPECT} = 0.2$$

$$\therefore C = 0.7$$

$$I_{1,2} = 12.3$$

$$FACTOR_{SIZE} = (40/0.7)^{0.12} \\ = 1.625$$

$$FACTOR_{CONTAIN} = 1.0$$

$$\therefore I = 12.3 \times 1.625 \times 1.0 \\ = 20.0$$

$$\therefore RDI = 0.028 \times 0.4 \times 0.7 \times 20 \\ = 0.16 L/s$$

$$DESIGN FLOW = PDWF + GWI + RDI \\ = 0.85 + 0.009 + 0.16 \\ = 1.02 L/s$$

pitt&sherryProject: 213 ENTERPRISE ROAD
Subject: WATER SUPPLY ASSESSMENTProject No.: HB19519
Page: 1
Prepared by: J. COATES
Date: 13/01/2020
Checked:

WATER SUPPLY ZONE: MT NELSON 'BEND 7' RESERVOIR

→ Ø 30m

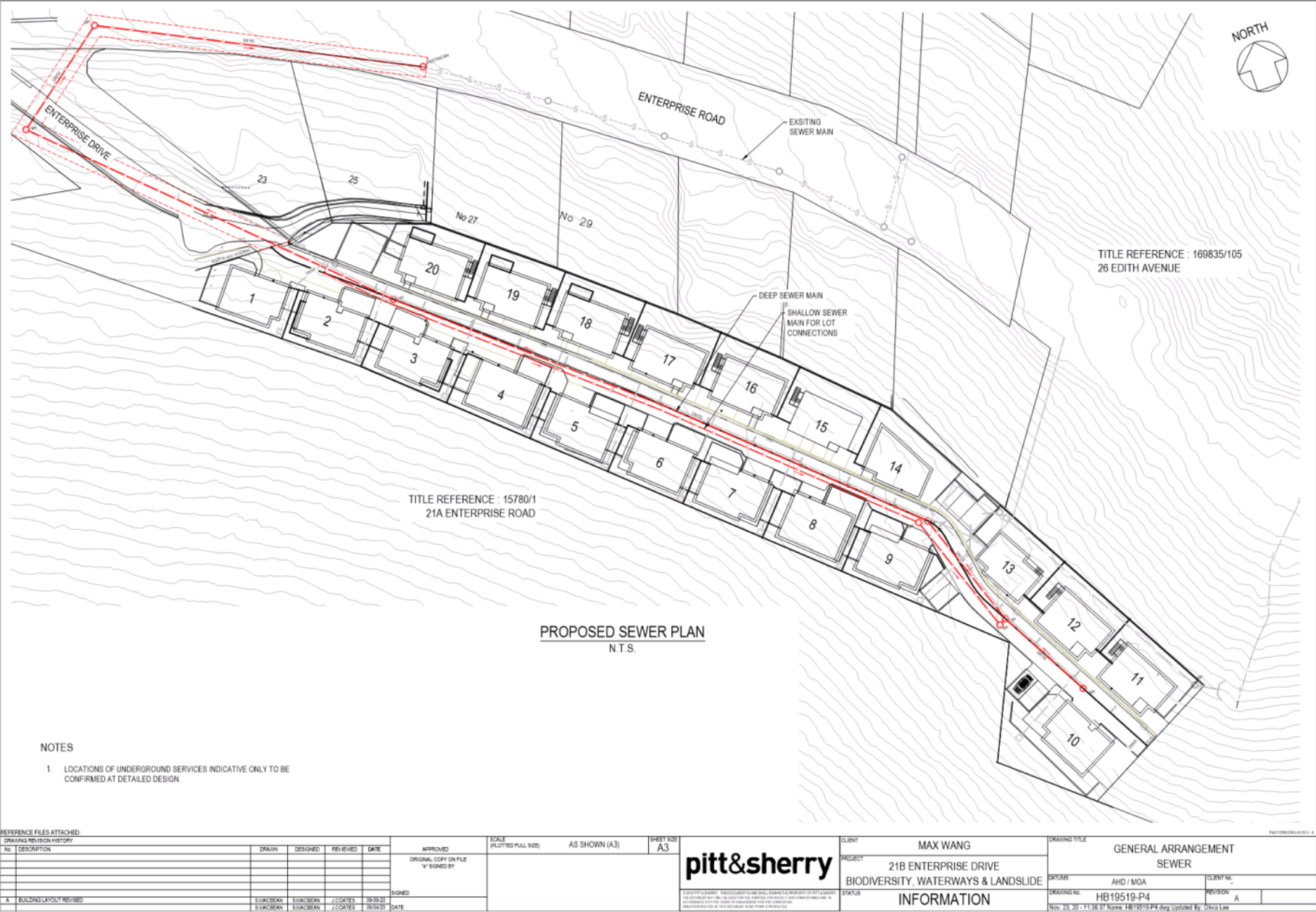
→ TOP WATER LEVEL = 220m AHD
BOTTOM WATER LEVEL = 214m AHD
1/3 FULL = 216m AHD

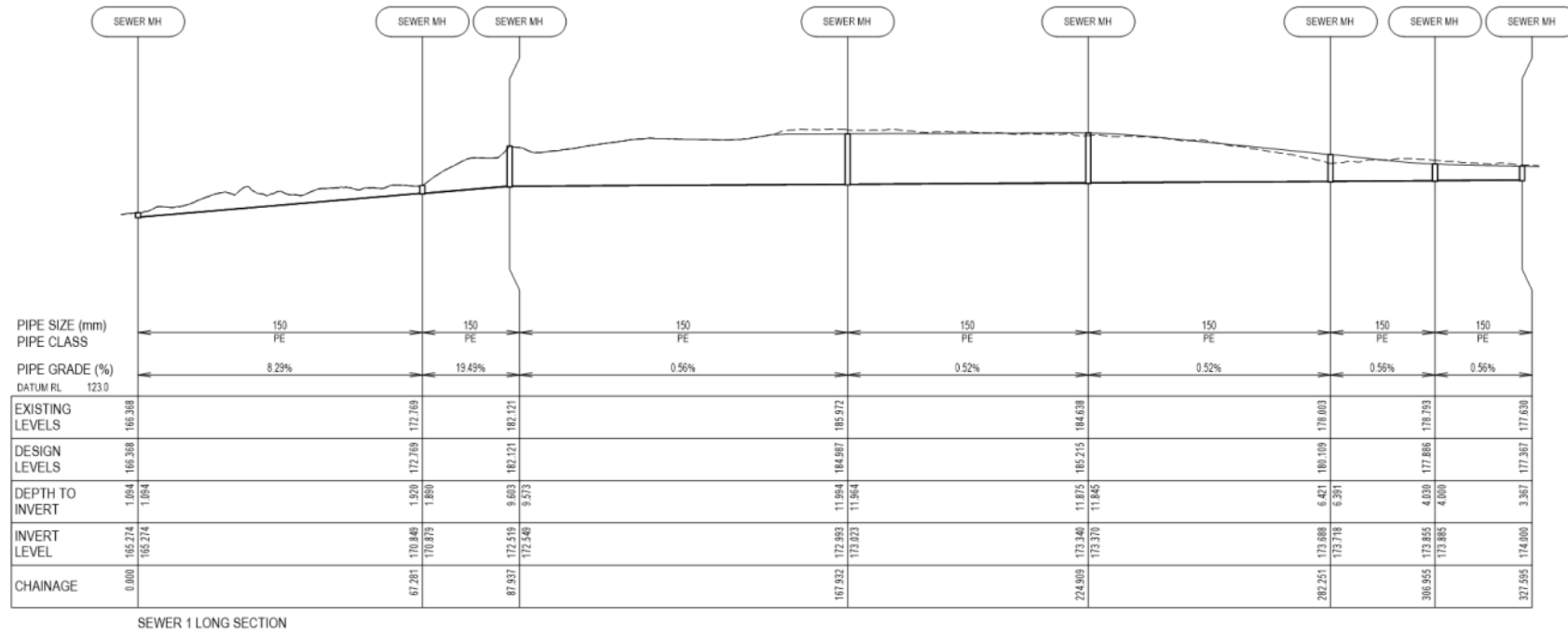
ELEVATION @ CONNECTION = 184m AHD

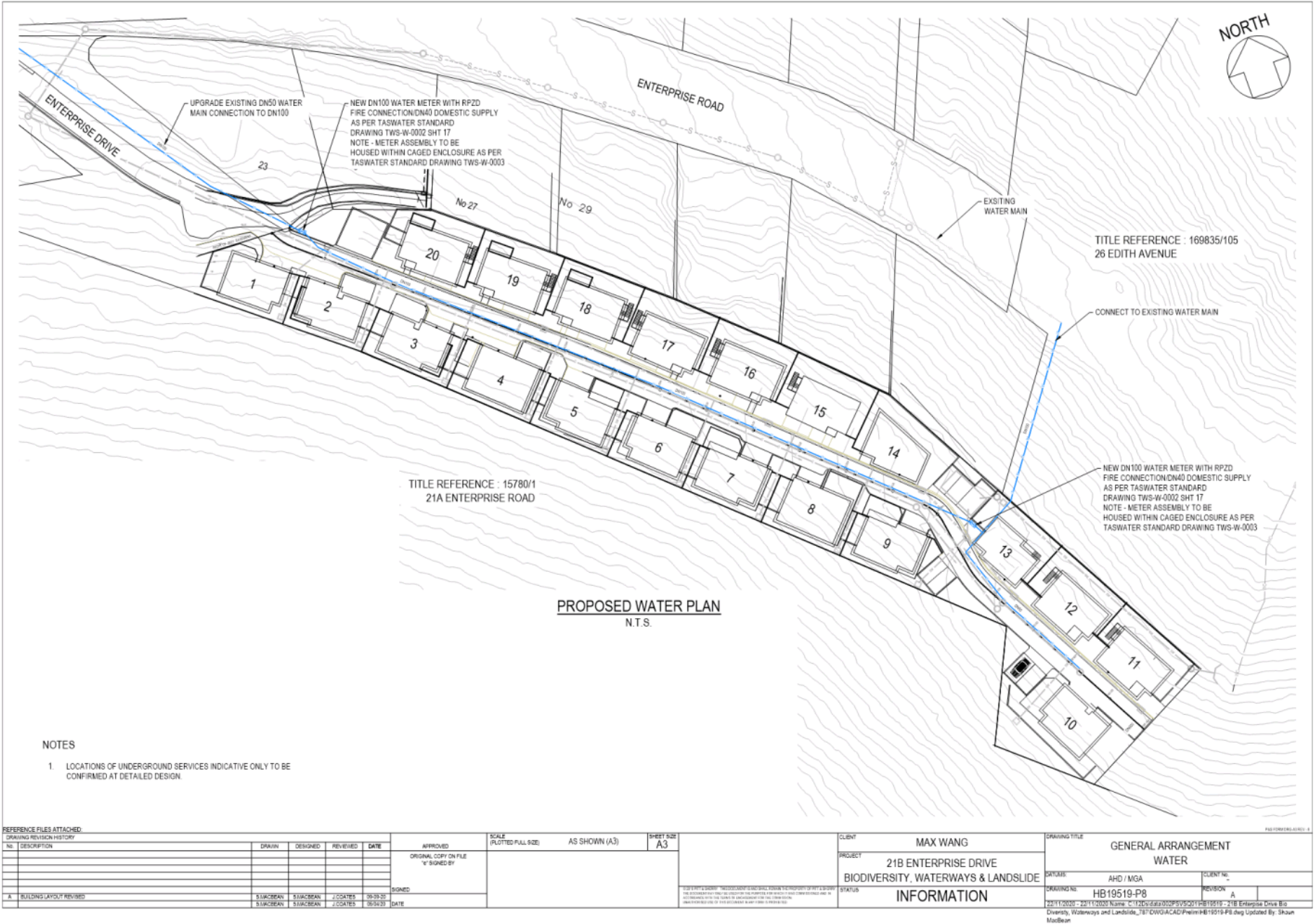
PEAK DAY DEMAND = 0.017836 L/ET/S

LOTS	ELEVATION	FLOW (ET=1)	FLOW (ET=0.8)
1, 2, 3, 4	188m AHD	0.0713 L/S	0.057 L/S
19, 20	183.5m AHD	0.0357 L/S	0.0286 L/S
5, 6, 7	188m AHD	0.0535 L/S	0.0428 L/S
16, 17, 18	183.5m AHD	0.0535 L/S	0.0428 L/S
8, 9	185m AHD	0.0357 L/S	0.0286 L/S
14, 15	178m AHD	0.0357 L/S	0.0286 L/S
10	183.5m AHD	0.0178 L/S	0.0142 L/S
11, 12, 13	175m AHD	0.0535 L/S	0.0428 L/S
		0.36 L/S	0.29 L/S

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18252-02

BUSHFIRE HAZARD REPORT
CONSTRUCTION OF A NEW MULTI UNIT DEVELOPMENT
21b ENTERPRISE ROAD, SANDY BAY
FOR
XANADU DEVELOPMENTS PTY LTD



PREPARED BY
N M CREESE
Accredited Bushfire Practitioner BFP-118
10th November 2020

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LARK & CREESE

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ATTACHMENT 1 - SUMMARY OF CONSTRUCTION REQUIREMENTS FOR BAL

ATTACHMENT 2 – DESIGN PLANS

ATTACHMENT 3 - BUSHFIRE HAZARD MANAGEMENT PLAN

Disclaimer:

AS 3959:2018 cannot guarantee that a dwelling will survive a bushfire attack, however the implementation of the measures contained within AS 3959:2018, this report and accompanying plan will improve the likelihood of survival of the structure. This report and accompanying plan are based on the conditions prevailing at the time of assessment. No responsibility can be accepted to actions by the land owner, governmental or other agencies or other persons that compromise the effectiveness of this plan. The contents of this plan are based on the requirements of the legislation prevailing at the time of report.



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1. SUMMARY:

This Bushfire Hazard Report has been prepared to support the design and construction of a new multi unit development at 21b Enterprise Road, Sandy Bay. The site has been deemed to be bushfire prone due to its proximity to the areas of bushfire prone vegetation surrounding the site.

This report identifies the protective features and controls that must be incorporated into the design and construction works to ensure compliance with the standards. Fire management solutions are defined in AS 3959:2018 *Construction of Buildings in Bushfire-Prone Areas*, *Building Amendments (Bushfire-Prone Areas) Regulations 2014* (16th March 2016), *National Construction Code 2016 Building Code Australia (Volume 2) (NCC)*, *Director's Determination, Requirements for Building in Bushfire-Prone Areas (Version 2.2, 6th February 2020) (The Determination)*.

Provided construction standards for **BAL-12.5** of AS 3959:2018 are incorporated into the design and new building works and the provision of the minimum Hazard Management Areas specified in Table 3 being provided, the new building works are capable of compliance with the provisions of AS 3959:2018 and as a result, the bushfire risk is reduced.

Access and water supply for firefighting purposes must comply with the requirements of *National Construction Code* and *Part 4.2* and *Part 4.3* of *The Determination*. An access of minimum carriageway width 4 metres, passing bays at 100 metre intervals and a turning area within the development site is required in compliance with *Part 4.2, The Determination*. The installation of two fire hydrants compliant with Bushfire-Prone Areas Advisory Note N°02-2014 will be required to comply with *Part 4.3, The Determination*.

A Hazard Management Area is to be established in compliance with *Part 4.4, The Determination*. A Hazard Management Area equal to the distances specified in **Error! Reference source not found.** will be required, and as a result, the bushfire risk to the site may be reduced. Hazard Management areas are to extend beyond the site boundaries to mitigate the bushfire threat. Formal agreements are to entered into with the owners of the properties located at No.26 Edith Avenue and No.21A Enterprise Road to enable establishment and maintenance of the bushfire threat within the hazard management areas.

The effectiveness of the measures and recommendations detailed in this report and AS 3959:2018 is dependent on their implementation and maintenance for the life of the development or until the site characteristics that this assessment has been measured from alter from those identified. No Liability can be accepted for actions by lot owner, Council or Government agencies which compromise the effectiveness of this report.

This report has been prepared by Nick Creese, principal of Lark & Creese Surveyors. Nick is a registered surveyor in Tasmania and is accredited by the Tasmanian Fire



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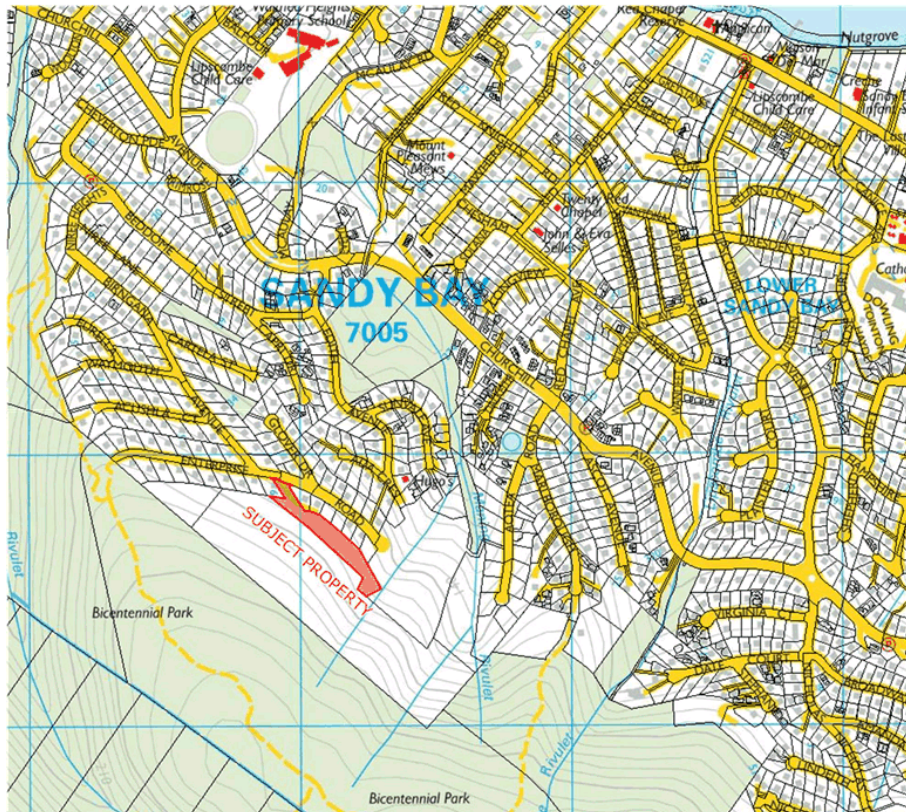
Service to prepare Bushfire Hazard Management Plans. Site survey carried out on the 29th June 2018.



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2. LOCATION:

Property address: 21b Enterprise Road, Sandy Bay
Title owner: Xanadu Developments Pty Ltd
Title reference: C.T. 169834/40
PID N°: 3410953
Title area: Approximately 8060 m²
Municipal area: Hobart
Zoning: General Residential

Image 1: Site location (Source *The LIST*)



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3. SITE DESCRIPTION:

The site is located within an existing residential area on Enterprise Road approximately 60 metres east of the intersection of Birngana Avenue and Enterprise Road, Sandy Bay. The site is located at an elevation ranging from 165 - 185 metres with grades falling to the north east in the order of 20°.

At the time of assessment the property was vacant and vegetated predominately by native vegetation that consisted of Eucalypts, smaller trees, shrubs and grasses. A shared bitumen driveway is constructed to the site boundary from Enterprise Road.

To the north, north east and north west of the development site were well established residential allotments that consisted of dwellings, outbuildings, hardstand areas and gardens. Beyond the residential properties to the north east of was Enterprise Road which consisted of bitumen footpaths and a bitumen carriageway.

To the east and south of the development site were large allotments that appeared to be vacant and vegetated by native vegetation that consisted of Eucalypts, smaller trees, shrubs and grasses.

Reticulated water supply is available to the site with domestic water supply requirements reliant on TasWater.

Planning controls are administered by the Hobart Council under the *Hobart Interim Planning Scheme 2015*. The site is zoned General Residential.



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Image 2: Looking south east towards development site



Image 3: Looking north west towards development site



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4. PROPOSED DEVELOPMENT:

The construction of 20 new Class 1A units are proposed for the site. Construction materials and boundary offsets are to be determined following this report.

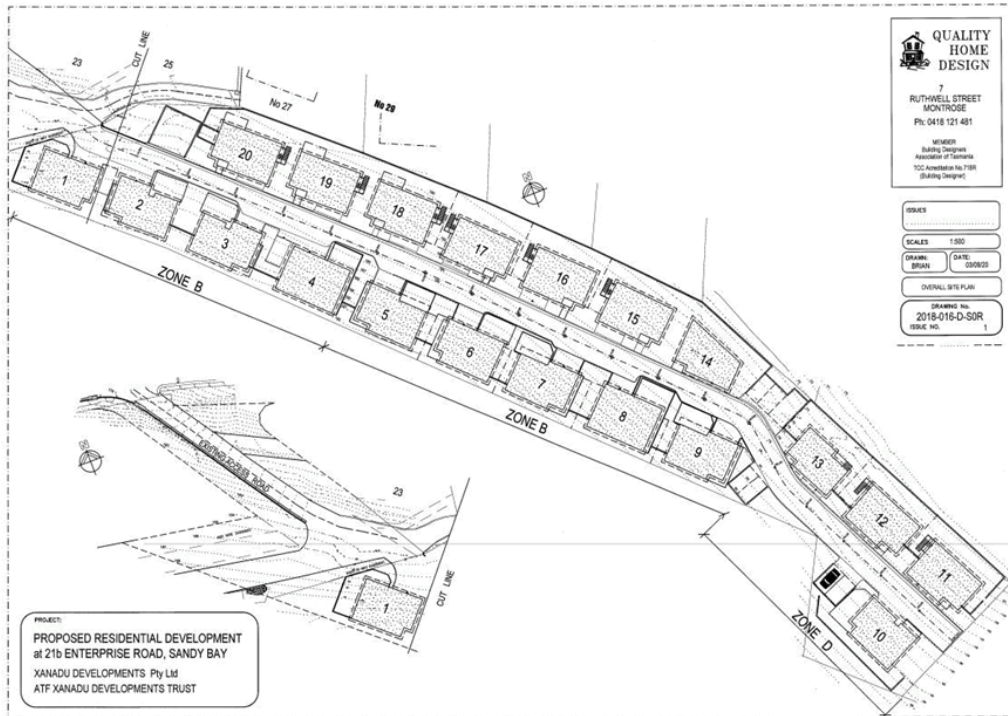


Image 4: Site plan



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5. BUSHFIRE ATTACK LEVEL:

Fire Danger Index (FDI): The Fire Risk Rating for Tasmania is adopted as 50.
Vegetation Classification:

Vegetation Assessment:

Following assessment of the characteristics of the site, the vegetation types, separation distances from development site and slope under the vegetation have been identified as shown in Table 1 below:

Direction:	Description:	Distance (m):	Slope:
North east:	Developed allotment - dwellings, outbuildings, hardstand areas, gardens	0-30	20° down
	Enterprise Road - bitumen footpaths, bitumen carriageway	30-50	
	Developed allotment - dwellings, outbuildings, hardstand areas, gardens	50-100	
	Native vegetation - Eucalypts, smaller trees, shrubs & grasses	0-100	
South east:	Native vegetation - Eucalypts, smaller trees, shrubs & grasses	0-100	Level
South west:	Native vegetation - Eucalypts, smaller trees, shrubs & grasses	0-100	16° up
North west:	Developed allotment - dwellings, outbuildings, hardstand areas, gardens	0-40	Level
	Enterprise Road - bitumen footpaths, bitumen carriageway	40-65	
	Developed allotment - dwellings, outbuildings, hardstand areas, gardens	65-100	

Table 1: Site Assessment

NOTE: To the north east and north west of the development site is an extensive area of developed residential allotments that consisted of dwellings, outbuildings, hardstand areas and gardens. Also to the north east was Enterprise Road which consisted of bitumen footpaths and a bitumen carriageway. As such the land to the north east and north west has been assessed as **Managed Land** under the provisions of *Part 2.2.3.2 (e) & (f), AS 3959:2018*. To the north east of the south eastern portion of the development site, to the south east and south west were large allotments that appeared to be vacant and were vegetated by Eucalypts with an understory that consisted of smaller trees, shrubs and grasses leading to an assessed foliage cover of >30% and as such has been assessed as **Classification A: Forest**.



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Vegetation Classification:

In consideration of vegetation classifications under *Table 2.3, AS 3959:2018* and as detailed above, the predominant vegetation, separation distances from development site and slope under the classified vegetation is assessed as shown in Table 2 below:

Direction:	Vegetation Type:	Distance:	Slope:	Exclusions:
North east:	Managed Land A: Forest	0-100 0-100	20° down	Part 2.2.3.2 (e) & (f) No
South east:	A: Forest	0-100	Level	No
South west:	A: Forest	0-100	16° up	No
North west:	Managed Land	0-100	Level	Part 2.2.3.2 (e) & (f)

Table 2: Predominate vegetation

Image 5: Aerial image of predominate vegetation (Source *The LIST*)



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Image 6: Predominate vegetation to the north east of site - **Managed Land**



Image 7: Predominate vegetation to the north east of south eastern portion of development site
- **Classification A: Forest**



Image 8: Predominate vegetation to the south east of site - **Classification A: Forest**



Image 9: Predominate vegetation to the south west of site - **Classification A: Forest**



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Image 10: Predominate vegetation to the north west of site - **Managed Land**



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Bushfire Attack Level Assessment:

Based on the predominate vegetation detailed above, and the separation distances provided between the predominate vegetation and the development site, the BAL for each elevation of the proposed dwelling has been determined from *Table 2.4.4, AS 3959:2018* as follows:

North east elevation:	BAL-LOW (Managed Land)
	BAL-FZ (A:Forest - south eastern end)
South east elevation:	BAL-FZ
South west elevation:	BAL-FZ
North west elevation:	BAL-LOW

With the establishment of appropriate hazard management areas, the increased risk associated with the exposure can be reduced. The expansion of the hazard management areas beyond the site boundaries to within the properties at No.26 Edith Avenue and 21A Enterprise Road will enable reduction of the bushfire threat to the site. The resulting bushfire attack level for each elevation can then be assessed as:

North east elevation:	BAL-12.5
North east elevation:	BAL-12.5
South west elevation:	BAL-12.5
North west elevation:	BAL-12.5

Table 3 details the hazard management areas (HMA) required to comply with that BAL, and the area available for compliance.

	NORTH EAST	SOUTH EAST	SOUTH WEST	NORTH WEST
BAL	BAL-12.5	BAL-12.5	BAL-12.5	BAL-12.5
VEGETATION TYPE	Managed Land A: Forest	A: Forest	A: Forest	Managed Land
SLOPE	20° down	Level	16° up	Level
HMA SPECIFIED TABLE 2.4.4	None 67-<100 metres	32-<100 metres	32-<100 metres	None
HMA REQUIRED	67 metres	32 metres	32 metres	To boundary
HAZARD MANAGEMENT AREA AVAILABLE	Minimum 4 metres to boundary plus additional 63 m HMA in adjoining property. Managed land to north.	Minimum 2 metres to boundary plus additional 28 m HMA in adjoining property,	Minimum 1.5 metres to boundary plus additional 30.5 m HMA in adjoining property,	To boundary. Managed land in adjoining properties.

Table 3: BAL assessment and Hazard Management area requirements.



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6. COMPLIANCE:

All building works shall comply with the specification for **BAL-12.5** under *Section 5* of AS 3959:2018. This includes the general provisions contained within AS3959-2009 and the following sub-sections:

- 5.1 General provisions
- 5.4 External walls
- 5.5 External glazed elements and assemblies and external doors
- 5.6 Roofs
- 5.7 Verandas, decks, steps, ramps and landings
- 5.8 Water and gas supply pipes

Maintenance Requirements (Hazard Management Area)				
	NORTH EAST	SOUTH EAST	SOUTH WEST	NORTH WEST
Hazard management area required	67 metres	32 metres	32 metres	To boundary
Management practices	Remove selected trees and shrubs within HMA. Establish garden and hardstand areas within development site. Slash or mow grasses to less than 100mm and remove fallen branches, bark and leaves regularly. Plant bushfire resisting plants where appropriate. Part 5 Agreements to be entered into with owners of 26 Edith Court and 21A Enterprise Road to permit continued management of HMA within those properties.			

Table 4: Maintenance requirements for Hazard Management Areas.

NOTE: Due to the need to extend the HMA beyond the title boundaries, it is the responsibility of the developer to establish and maintain the HMA until such time as permanent management of the adjoining properties occurs. A Part 5 Agreement (or similar) must be entered into with the adjoining land owners to ensure continued maintenance of the HMA until developed.

For further information please see;

- *Building for Bushfire. Planning and Building in Bushfire-Prone Areas for Owners and Builders.*
(http://www.fire.tas.gov.au/userfiles/tym/file/131392_Building_for_Bushfires_web.pdf)



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Provided the management practices as described above are implemented, they will achieve the required Hazard Management areas, and the continuations of these practices are sufficient to comply with this assessment. Any alteration to the current management practices, or vegetation surrounding the site, within the prescribed management areas must comply with the following:

- Establishing non-flammable areas around the dwelling such as paths, patios, driveway, lawns etc.
- Locating dams, orchards, vegetable garden, effluent disposal areas etc on the bushfire prone side of the building
- Providing heat shields and ember trap on the bushfire prone side of the dwelling such as non-flammable fencing, hedges, separated garden shrubs and small tress, Avoid the use of highly flammable plants. See Tasmanian Fire Service web site (www.fire.tas.gov.au) publications - Fire resisting garden plants.
- Ensure flammable materials such as wood piles, fuels and rubbish heaps are stored away from the dwelling.
- Replace highly flammable vegetation with low flammability species.
- Provided separation between significant trees such that groups are no greater than 20 metres in width, and more than 20 metres of the other groups of significant trees. Note that the retention of some trees can screen a dwelling from windborne embers.
- Regular slashing of mowing of grass to a height of less than 100 mm.
- Removal of ground fuels such as leaves, bark, fallen branches etc on a regular basis.
- Ensuring no trees overhang the dwelling so that vegetation falls onto the roof.



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Building Regulation 2014:

Compliance with the *Building Regulations 2014* is achieved through the implementation of the access requirements of *NCC* and *The Determination*:

Compliance with *P2.3.4, National Construction Code 2016* is achieved through implementation of the provisions detailed under *Part 4 of The Determination* as follows:

Part 4.2 Property Access:

The access to the site has been measured as being approximately 270 metres from the edge of Enterprise Road, is required to service numerous units and access for fire appliances to fire hydrants within the development site the requirements of *Part 4.2* and *Table 4.2, The Determination* apply as follows:

Table 4.2 Standards for Property Access		
B	Property access length is 30 metres or greater; or access for fire appliance to a water connection point.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) All-weather construction; (b) Load capacity of at least 20 tonnes, including for bridges and culverts; (c) Minimum carriageway width of 4 metres; (d) Minimum vertical clearance of 4 metres; (e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway; (f) Cross falls of less than 3° (1:20 or 5%); (g) Dips less than 7° (1:8 or 12.5%); (h) Curves with a minimum inner radius of 10 metres; (i) Maximum gradient of 15° (1:3.5 or 28%), for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and (j) Terminating with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> (i) A turning circle with a minimum inner radius of 10 metres; (ii) A property access encircling the building; or (iii) A hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long.
D	Property access length is greater than 30 metres, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to access:</p> <ul style="list-style-type: none"> (a) Complies with Requirements B above; and (b) Passing bays of 2 metres additional carriageway width and 20 metres length must be provided every 100 metres.



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Part 4.3 Water Supply for fire fighting:

Reticulated water supply is available to the site with a fire hydrant and the addition of a further 2 fire hydrants within the development site in accordance with the requirements of *Part 4.3* and *Table 4.3A, The Determination* as follows:

Table 4.3A Reticulated Water Supply for Fire fighting		
A	Distance between building area to be protected and water supply	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) The building area to be protected must be located within 120 metres of a fire hydrant; and (b) The distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
B	Design Criteria for fire hydrants	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) Fire hydrant systems must be designed and constructed in accordance with TASWater Supplement to Water Supply Code of Australia WSA 03-2011-3.1 MRWA Edition 2.0; and (b) Fire hydrants are not installed in parking areas.
C	Hardstand	<p>A hardstand area for fire appliances must be provided:</p> <ul style="list-style-type: none"> (a) No more than three metres from the hydrant, measured as a hose lay; (b) No closer than six metres from the building area to be protected; (c) With a minimum width of three metres constructed to the same standard as the carriageway; and (d) Connected to the property access by a carriageway equivalent to the standard of the property access.

Part 4.4 Hazard Management Areas:

This report and accompanying Bushfire Hazard Management Plan details the extent of the Hazard Management Area (HMA) of sufficient dimension to accord with *Table 4.4 B, The Determination*. The dimension of the HMA is to be in accordance with *Table 2.4.4, AS 3959:2018* and is to be maintained in a reduced fuel condition at all times. A Part 5 Agreement must be entered into with the adjoining land owners at No.26 Edith Avenue and No.21a Enterprise Road to permit the establishment and management of the HAM within those lot until such time as those properties become permanently maintained in a low fuel condition.



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7. CONCLUSIONS & RECOMMENDATIONS:

This Bushfire Hazard Report and Bushfire Hazard Management Plan have been prepared to support the design and construction of a new multi unit development. The report has reviewed the bushfire risks associated with the site, and determined the fire management strategies that must be carried out to ensure the development on the site is at a reduced risk from bushfire attack. Provided the elements detailed in this report are implemented, the development on the site is capable of compliance with AS 3959:2018 and the Tasmania Fire Service Guidelines and any potential bushfire risk to the site is reduced.

The new building works must comply with the requirements for **BAL-12.5** of AS 3959:2018 as specified in Table 3 and Part 6 of this report. The Council approval issued for the building works should contain conditions requiring that the protective elements defined in this report and AS 3959:2018 are implemented during the construction phase and maintained by the lot owner for the life of the structure.

Site access must have a minimum carriageway width of 4 metres, passing bays at maximum 100 metres intervals and either a circular, "T" or "Y" turning area at the building site in compliance with *Part 4.2, The Determination*. A minimum of two fire hydrants compliant with BHAN 02-2014, must be installed within the development site in order to achieve the necessary coverage of 120 m hose lay from the furthest point of each unit in order to comply with *Part 4.3, The Determination*.

A Part 5 agreement is to be entered into with the owners of No.26 Edith Avenue and No.21a Enterprise Road to enable establishment and management of the HMA specified in this report.

Although not mandatory, any increase in the construction standards above the assessed Bushfire Attack Level will afford improved protection from bushfire and this should be considered by the owner, designer and/or the builder prior to construction commencing. Hazard Management Areas must be established and maintained in a minimal fuel condition in accordance with this plan and the TFS guidelines. It is the owner's responsibility to ensure the long term maintenance of the Hazard Management Areas in accordance with the requirements of this report.

This Report does not recommend or endorse the removal of any vegetation within, or adjoining the site for the purposes of bushfire protection without the explicit approval of the local authority.

A blue ink signature of N M Creese.

N M Creese
Bushfire Management Practitioner BFP-118



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8. REFERENCES:

- *AS 3959:2018 - Construction of Building in Bushfire-Prone Areas.*
- *Building Amendments (Bushfire-Prone Areas) Regulations 2014 (16th March 2016).*
- *National Construction Code 2016 Building Code of Australia (Volume 2).*
- *Director's Determination - Requirements for Building in Bushfire-Prone Areas (Version 2.2, 6th February 2020).*
- *Guidelines for Development in Bushfire-Prone Areas- Tasmania Fire Service.*
- *The LIST - Department of Primary Industry Parks Water & Environment.*
- *Bushfire Prone Areas Advisory Note N°01-2014 (Version 3, 8th November 2017) - Tasmania Fire Service (BHAN 01-2014).*
- *Bushfire Prone Areas Advisory Note N°02-2014 (Version 2, 11th April 2014) - Tasmania Fire Service (BHAN 02-2014).*



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9. GLOSSARY

AS 3959:2018	Australian Standards AS 3959:2018 <i>Construction of buildings in bushfire-prone areas.</i>
BAL (Bushfire Attack Level)	A means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire. The following BAL levels, based on heat flux exposure threshold are used within AS3959-2009; BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40, BAL-FZ.
Bushfire	An unplanned fire burning vegetation.
Bushfire Hazard Management Plan	A plan showing means of protection from bushfire in a form approved in writing by the Chief Officer.
Bushfire-Prone Area	An area that is subject to, or likely to be subject to, bushfire attack. Land that has been designated under legislation; or Has been identified under environmental planning instrument, development control plan or in the course of processing and determining a development application.
Carriageway (also vehicular access)	The section of the road formation which is used by traffic, and includes all the area of the traffic lane pavement together with the formed shoulder.
Classified vegetation	Vegetation that has been classified in accordance with Clause 2.2.3 of AS3959-2009.
FDI (Fire Danger Index)	The chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both long- and short-term drought effects.
Hazard Management Area	The area between a habitable building or building area and bushfire-prone vegetation, which provides access to a fire front for fire fighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire.
Hose lay	The distance between two points established by a fire hose laid out on the ground, inclusive of obstructions.
Predominate vegetation	The vegetation that poses the greatest bushfire threat to the development site.
Gradient under	The slope of the ground under the classified vegetation.
Distance to	The distance between the building, or building area to the classified vegetation.
Fire fighting water point	The point where a fire appliance is able to connect to a water supply for fire fighting purposes. This includes a coupling in the case of a fire hydrant, offtake or outlet, or the minimum water level in the case of a static water body (including a dam, lake or pool).
Water supply - Reticulated (Fire hydrant)	An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting.
Water supply - Static	Water stored on a tank, swimming pool, dam, or lake, that is available for fire fighting purposes at all times.



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ATTACHMENT 1 SUMMARY OF CONSTRUCTION REQUIREMENTS FOR BAL-12.5, AS 3959:2018

GENERAL:

- Buildings assessed as being BAL-12.5 shall conform with Section 3 and Section 5 of AS 3959:2018.
- All external finishes shall ensure gaps no greater than 2mm are present.

SUB-FLOOR SUPPORTS:

- No special construction standards if the subfloor space is enclosed with a wall that conforms with Clause 5.4 or a mesh compliant with Clause 3.6.

FLOORS:

- The bearers, joists and flooring, less than 400 mm above ground level, shall be of a non-combustible material or bushfire resisting timber or a combination of both.

WALLS:

- Any wall that is less than 400mm above ground level, a horizontal surface, or surface less than 18° from the horizontal, must be constructed of a non-combustible material and/or bushfire resisting timber.
- All vents and weepholes shall be screened with a mesh.

WINDOWS:

- Any glazing less than 400mm above ground level, any horizontal surface, or surface less than 18° from the horizontal must be 4mm thick Grade A safety glass. Framing material must be of bushfire resisting timber, or metal, or metal-reinforced uPVC. The openable portion of the window shall be screened.

DOORS:

- Side hung external doors - Doors shall be protected by bushfire shutters, or screens, or be constructed of a bushfire resisting material.
- Any glass elements shall be glazed with Grade A safety glass 4mm thick.
- Weather strips, draft excluders or draft seals shall be installed where applicable.
- Sliding doors - Shall be protected by bushfire shutters, or screens, or constructed of a bushfire resisting material. Glazing elements to be Grade A safety glass of 4 mm thickness.

VEHICLE ACCESS DOORS:

- Any part of the vehicle access door less than 400mm from the ground shall be of a bushfire resisting material.
- The door shall be protected with a suitable weather strips, draught excluders, draught seals or brushes where applicable.

ROOFS:

- Roofing material and roof-covering accessories shall be non-combustible. Ridge capping and under corrugations to be sealed. Roof ventilation openings, eg gable and roof vents, shall be fitted with ember guards.
- Tiled roofs;
 - To be fully sarked located on top of roof framing, may be under battens.
- Sheet roofs;
 - To be fully sarked located on top of roof framing, may be under battens; or
- All gaps sealed at the fascia, wall line, hips and ridges by a mesh or a non-combustible material.
- Veranda, carport and awning roofs
 - That are part of the main roof space shall meet all the requirements for the main roof.
 - That are separated from the main roof space by an external wall confirming with Clause 6.4 shall have a non-combustible roof covering, except where the roof covering is a translucent or transparent material.

ROOF PENETRATIONS:

- Any roof penetration (with the exception of flues and chimneys) shall be covered with a bushfire resisting mesh. Roof lights and skylights must be fitted with a Grade A safety glass diffuser.

VERANDAS, DECKS, STEPS, RAMPS AND LANDINGS:

- Any decking, stair treads and trafficable surfaces that are less than 300mm horizontally, and 400mm vertically from a glazed element shall be constructed of non-combustible material.
- Veranda posts shall be mounted on galvanized mounted shoes or stirrups with a clearance of not less than 75 mm above finished ground level, or those less than 400 mm from the surface of the deck or ground shall be made of bushfire resisting material and/or bushfire resisting timber.

WATER AND GAS SUPPLY PIPES:

- Any above ground pipes shall be metal.

Note: Non-combustible means material such as cement sheeting, brick and blockwork, corrugated iron sheeting, or other non-flammable material as determined by AS 1530.1 or the National Construction Code.

WARNING: This summary is not a complete list of works required to comply with AS 3959:2018. Refer to the original document for full requirements.

PROPOSED DEVELOPMENT
at
No.21b ENTERPRISE ROAD
SANDY BAY

for XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

REVISED DOCUMENTATION



7
RUTHWELL STREET
MONTROSE
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BRIAN RICHARDSON
TCC Accreditation No.716R
(Building Designer)
MEMBER
Building Designers
Association of Tasmania

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	1-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	1-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	1-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	1-D	05/02/20	4	ELEVATIONS
2018-016	2-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	2-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	2-A	05/02/20	4	ELEVATIONS
2018-016	3-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	3-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	3-C	05/02/20	4	ELEVATIONS
2018-016	4-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	4-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	4-C	05/02/20	4	ELEVATIONS
2018-016	5-A	08/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	5-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	5-C	08/10/19	2	ELEVATIONS
2018-016	6-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	6-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	6-C	05/02/20	4	LEVEL 3 FLOOR PLAN
2018-016	6-D	05/02/20	4	ELEVATIONS
2018-016	7-A	13/01/19	1	LEVEL 1 FLOOR PLAN
2018-016	7-B	13/01/19	1	LEVEL 2 FLOOR PLAN
2018-016	7-C	13/01/19	1	ELEVATIONS
2018-016	8-A	05/02/20	4	LEVEL 1 FLOOR PLAN
2018-016	8-B	05/02/20	4	LEVEL 2 FLOOR PLAN
2018-016	8-C	05/02/20	4	ELEVATIONS
2018-016	9-A	08/10/19	2	LEVEL 1 FLOOR PLAN
2018-016	9-B	08/10/19	2	LEVEL 2 FLOOR PLAN
2018-016	9-C	08/10/19	2	ELEVATIONS
2018-016	10-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	10-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	10-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	10-DR	30/07/20	1	ELEVATIONS
2018-016	11-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	11-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	11-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	11-DR	30/07/20	1	ELEVATIONS
2018-016	12-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	12-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	12-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	12-DR	30/07/20	1	ELEVATIONS
2018-016	13-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	13-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	13-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	13-DR	30/07/20	1	ELEVATIONS

DRAWINGS by QUALITY HOME DESIGN

PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	14-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	14-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	14-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	14-DR	30/07/20	1	ELEVATIONS
2018-016	15-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	15-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	15-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	15-DR	30/07/20	1	ELEVATIONS
2018-016	16-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	16-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	16-CR	30/07/20	1	ELEVATIONS
2018-016	17-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	17-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	17-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	17-DR	30/07/20	1	ELEVATIONS
2018-016	18-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	18-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	18-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	18-DR	30/07/20	1	ELEVATIONS
2018-016	19-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	19-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	19-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	19-DR	30/07/20	1	ELEVATIONS
2018-016	20-AR	30/07/20	1	LEVEL 1 FLOOR PLAN
2018-016	20-BR	30/07/20	1	LEVEL 2 FLOOR PLAN
2018-016	20-CR	30/07/20	1	LEVEL 3 FLOOR PLAN
2018-016	20-DR	30/07/20	1	ELEVATIONS

TITLE REFERENCE - VOLUME 17593 FOLIO 6
 OWNER - XANADU DEVELOPMENTS Pty Ltd ATF XANADU DEVELOPMENTS TRUST
 PROPERTY ID 3604782

TOTAL FLOOR AREA OF EACH RESIDENCE - SEE DRAWINGS

DESIGNED WIND SPEED - N3 (50m/s)

SOIL CLASSIFICATION - CLASS - M
 ASSESSED BY J.P. Cumming

CLIMATE ZONE 7 FOR THERMAL DESIGN

CORROSION ENVIRONMENT - NO

BUSHFIRE PRONE AREA - YES - See REPORT

ALPINE AREA - NO ASSESSMENT REQUIRED

SITE ASSESSMENT - NO KNOWN HAZARDS



**QUALITY
HOME
DESIGN**

7

RUTHWELL STREET
MONTROSE

Ph: 0418 121 481

BRIAN RICHARDSON

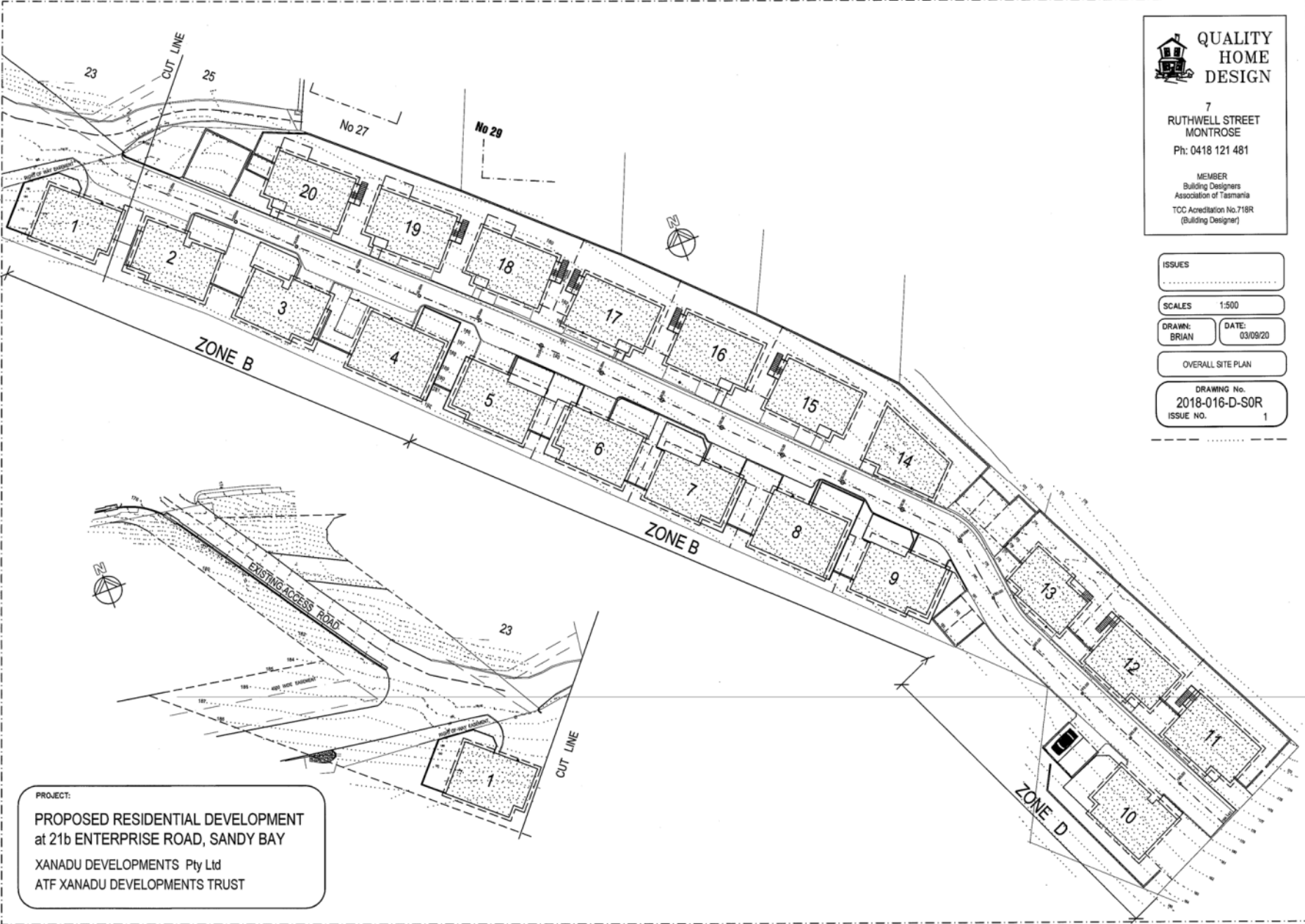
TCC Accreditation No. 718R

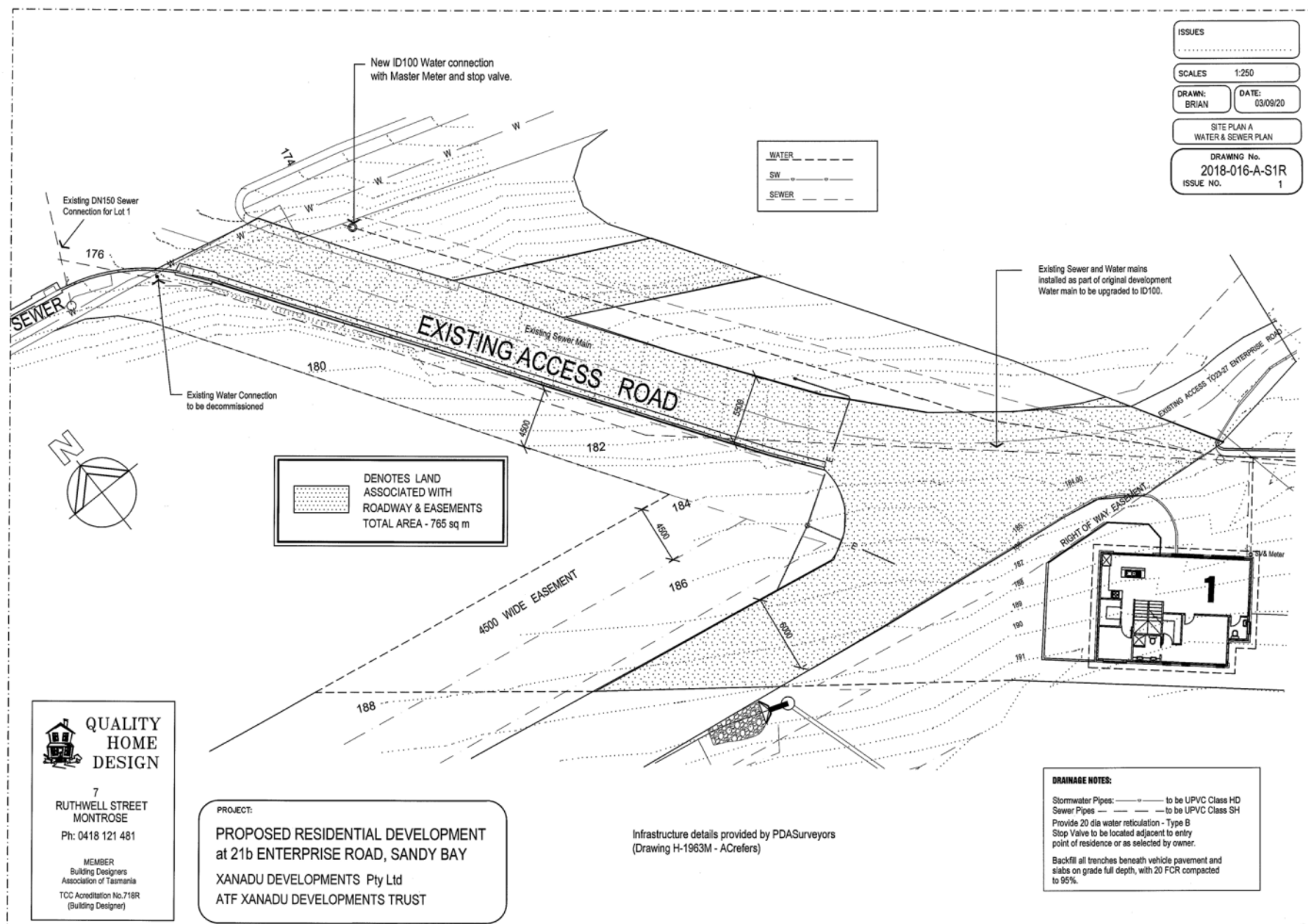
(Building Designer)

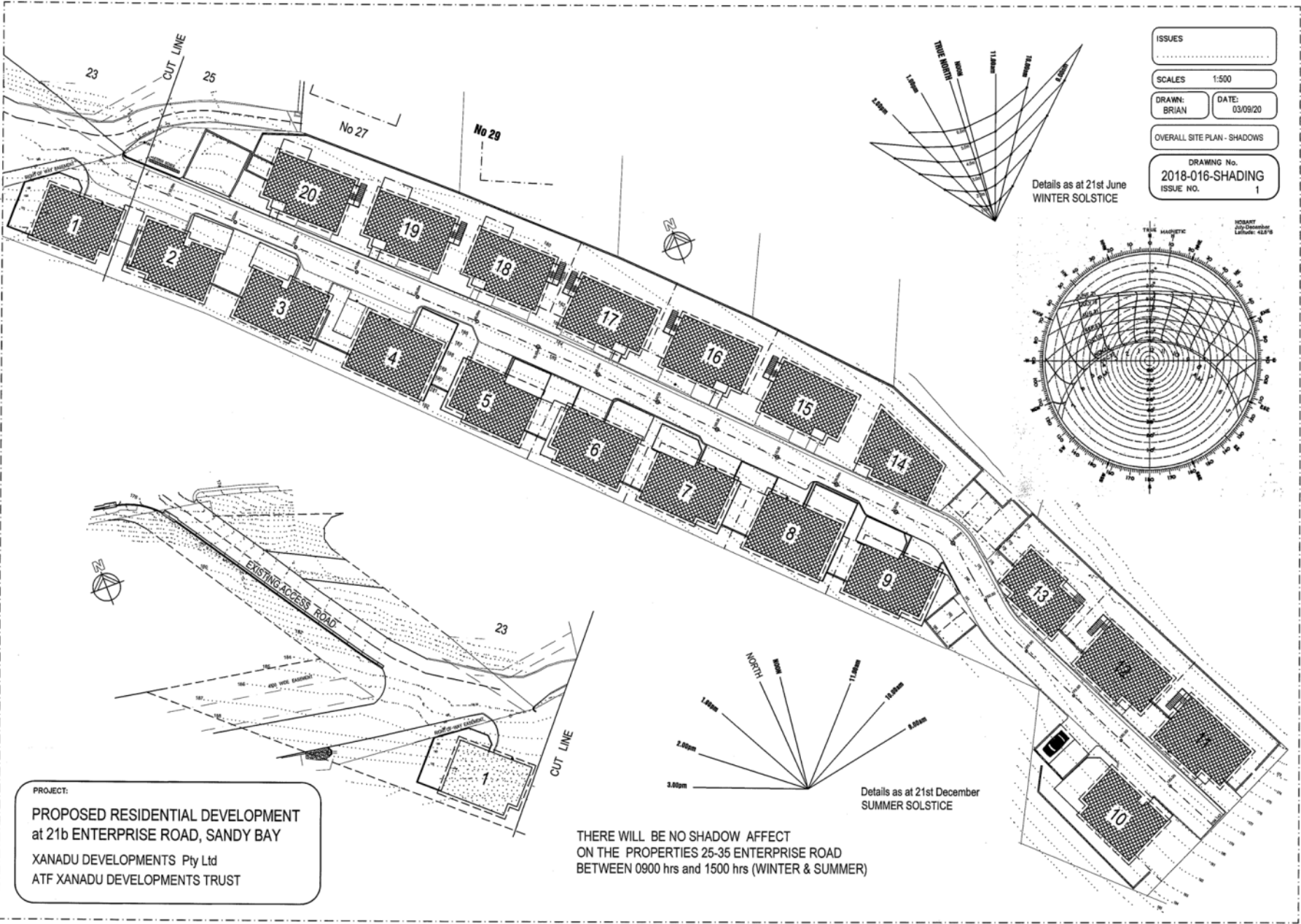
MEMBER

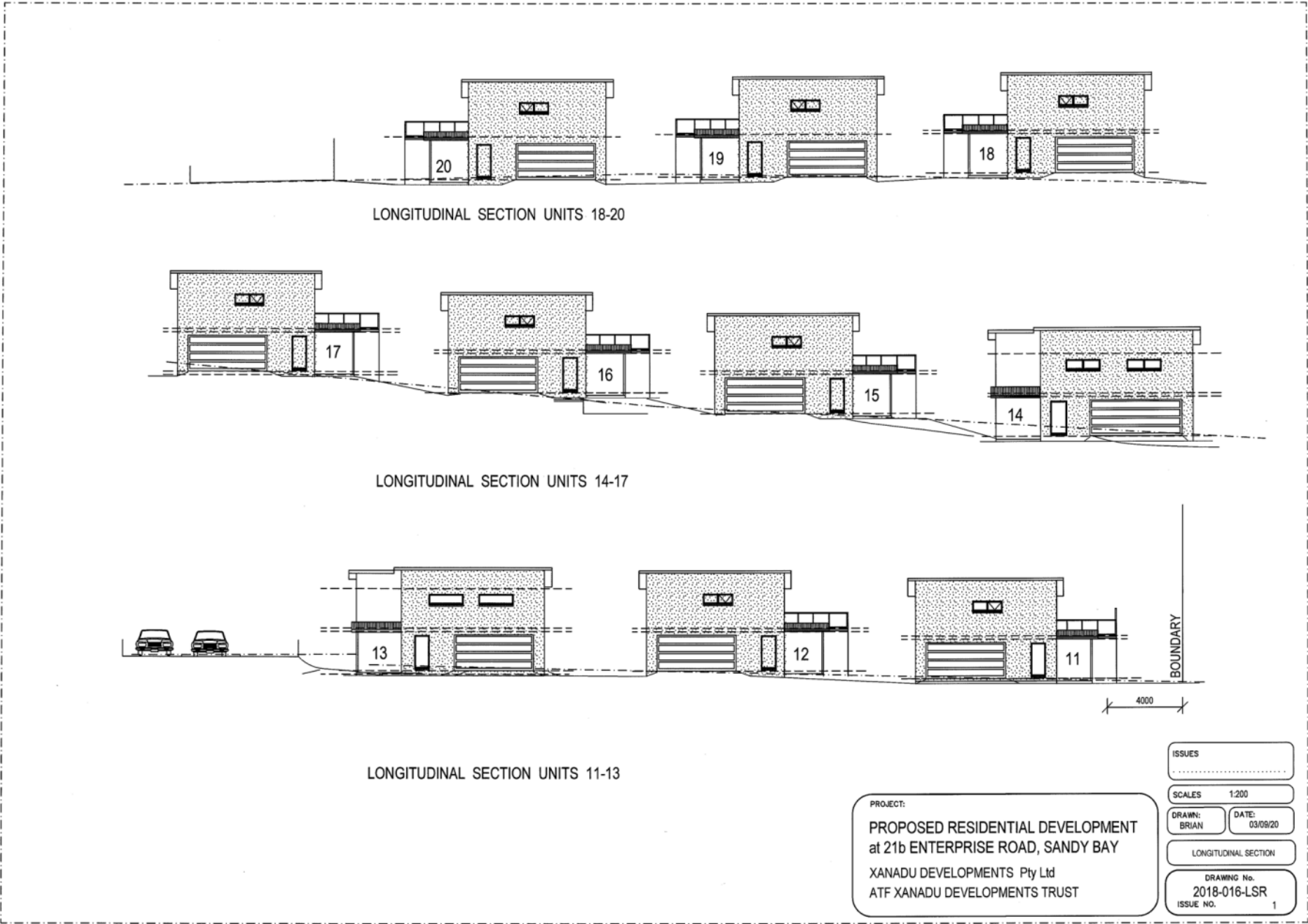
Building Designers
Association of Tasmania

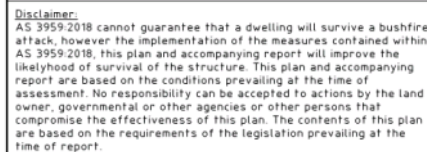
PROJECT No.	DWG No.	DATE OF ISSUE	ISSUE No.	
2018-016	SOR	03/09/20	1	OVERALL SITE PLAN
2018-016	A-S1R	03/09/20	1	SITE LAYOUT PLAN - ZONE A
2018-016	SHADOW	03/09/20	1	SITE LAYOUT PLAN - ZONE A
2018-016	LS-R	03/09/20	1	LONGITUDINAL SECTION
2018-016	B-SOR	03/09/20	1	ZONE B SITE PLAN
2018-016	B-S1R	03/09/20	1	ZONE B SETOUT PLAN
2018-016	B-S2R	03/09/20	1	ZONE B POS PLAN
2018-016	B-S3R	03/09/20	1	ZONE B LANDSCAPE PLAN
2018-016	B-S3a	18/02/20	1	LANDSCAPE NOTES
2018-016	B-S3-ST	03/09/20	5	ZONE B STRATUM BOUNDARIES
2018-016	B-S4R	03/09/20	1	CROSS SECTION LOCATIONS
2018-016	B-S4-1R	03/09/20	1	CROSS SECTION - UNIT 1
2018-016	B-S4-2R	03/09/20	1	CROSS SECTION - UNITS 3-20
2018-016	B-S4-3R	03/09/20	1	CROSS SECTION - UNITS 4-19
2018-016	B-S4-4R	03/09/20	1	CROSS SECTION - UNITS 5-18
2018-016	B-S4-5R	03/09/20	1	CROSS SECTION - UNITS 6-17
2018-016	B-S4-6R	03/09/20	1	CROSS SECTION - UNITS 7-16
2018-016	B-S4-7R	03/09/20	1	CROSS SECTION - UNITS 8-15
2018-016	B-S4-8R	03/09/20	1	CROSS SECTION - UNIT 14
2018-016	B-S4-9R	03/09/20	1	CROSS SECTION - UNIT 9
2018-016	B-S4-10R	03/09/20	1	CROSS SECTION - UNITS 10-11
2018-016	B-S5R	03/09/20	1	SITE PLAN - LEVELS
2018-016	B-S6R	03/09/20	1	ZONE B - 0900 hrs SHADOWS
2018-016	B-S6R	03/09/20	1	ZONE B - 1200 hrs SHADOWS
2018-016	B-S6R	03/09/20	1	ZONE B - 1500 hrs SHADOWS
2018-016	B-S9R	03/09/20	1	TYPICAL CROSS SECTION
2018-016	B-S10R	03/09/20	1	TYPICAL BUILDING FOOTPRINT
2018-016	C-S0R	03/09/20	1	ZONE C SITE PLAN
2018-016	C-S1R	03/09/20	1	ZONE C SETOUT PLAN
2018-016	C-S2R	03/09/20	1	ZONE C POS PLAN
2018-016	C-S3R	03/09/20	1	ZONE C LANDSCAPE PLAN
2018-016	C-S5R	03/09/20	1	SITE PLAN - LEVELS
2018-016	C-S6R	03/09/20	1	ZONE C - 0900 hrs SHADOWS
2018-016	C-S7R	03/09/20	1	ZONE C - 1200 hrs SHADOWS
2018-016	C-S8R	03/09/20	1	ZONE C - 1500 hrs SHADOWS
2018-016	D-S0R	03/09/20	1	ZONE D SITE PLAN
2018-016	D-S1R	03/09/20	1	ZONE D SETOUT PLAN
2018-016	D-S2R	03/09/20	1	ZONE D POS PLAN
2018-016	D-S3R	03/09/20	1	ZONE D LANDSCAPE PLAN
2018-016	D-S5R	03/09/20	1	SITE PLAN - LEVELS
2018-016	D-S6R	03/09/20	1	ZONE D - 0900 hrs SHADOWS
2018-016	D-S7R	03/09/20	1	ZONE D - 1200 hrs SHADOWS
2018-016	D-S8R	03/09/20	1	ZONE D - 1500 hrs SHADOWS

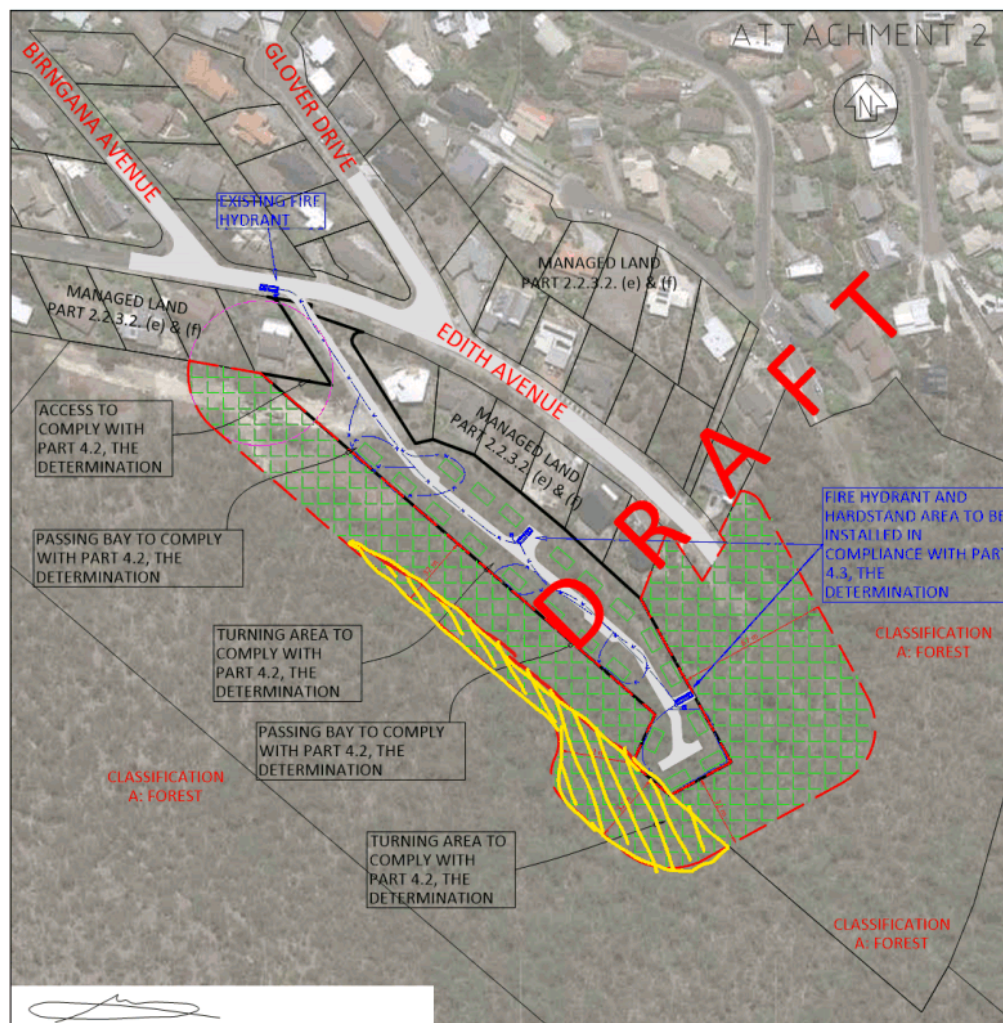












N M Creese
 Accredited Bushfire Management Practitioner
 BFP-118 27th July 2018

Disclaimer:
 AS 3959-2009 cannot guarantee that a dwelling will survive a bushfire attack, however the implementation of the measures contained within AS 3959-2009, this plan and accompanying report will improve the likelihood of survival of the structure. This plan and accompanying report are based on the conditions prevailing at the time of assessment. No responsibility can be accepted to actions by the land owner, governmental or other agencies or other persons that compromise the effectiveness of this plan. The contents of this plan are based on the requirements of the legislation prevailing at the time of report.

Assessed bushfire attack level:
BAL-12.5



SITE GRADIENT

NOTES:

1) Design and construction standards for all the new units are to comply with BAL-12.5 of AS 3959-2009.

2) Hazard management areas are to be established and maintained in a reduced fuel condition to the dimensions quoted in this plan in the following manner:

- Remove ground fuels included dead and fallen vegetation, slashing of grasses to less than 100 mm in height.

Other measures that may be implemented include;

- Establishing non-flammable areas around the dwelling such as paths, patios, driveways, lawns etc.
- Locating dams, orchards, vegetable gardens, effluent disposal areas etc on the bushfire prone side of the building.
- Providing heat shields and ember traps on the bushfire prone side of the dwelling such as non-flammable fencing, hedges, separated garden shrubs and small trees. Avoid the use of highly flammable plants.
- Ensure flammable materials such as wood piles, fuels and rubbish heaps are stored away from the dwelling.
- Replace highly flammable plants with low flammability species.
- Provide horizontal separation between tree crowns and vertical separation between ground fuels and overhead branches.
- Provide separation between significant trees such that groups are no greater than 20 metres in width, and more than 20 metres of other groups of significant trees. Note that retention of some trees can screen a dwelling from wind borne embers.
- Regular slashing or mowing of grass to a height of less than 100mm.
- Removal of ground fuels such as leaves, bark, fallen branches etc on a regular basis.
- Ensuring no trees overhang the dwelling so that vegetation falls onto the roof.

See attached report and TFS guidelines for further information.

3) Compliance with the provisions of Part 3.7.4.1 (Vehicular access) National Construction Code 2016 (Volume 2) (NCC) and Determination Director of Building Control Requirements for Building in Bushfire-Prone Areas (Version 2, 23rd February 2017) (The Determination) is achieved as follows:

A Class 1 building in a designated bushfire prone area and the fire fighting water supply access points must be accessible by a private access road which is designed, constructed and maintained to a standard not less than Part 4.2 of the Determination to the following standards:

- All-weather construction
- Load capacity of at least 20 tonnes, including for bridges and culverts
- Minimum carriageway width of 4 metres
- Minimum vertical clearance of 4 metres
- Minimum horizontal clearance of 0.5 metres from the edge of the carriageway
- Cross fall of less than 3° (1:20 or 5%)
- Dips less than 7° (1:8 or 28%) for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads
- Curves with a minimum inner radius of 10 metres;
- Maximum gradient of 15° (1:3.5 or 28%), for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and
- Terminated with a turning area for fire appliances provided by one of the following;
- A turning circle with a minimum inner radius of 10 metres or, a property access encircling the building, or a hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long.

See Table 4.2 of The Determination for further details.

Access to the site has been assessed as being approximately 270 metres long and needs to be constructed to the above standards in order to comply with Part 3.7.4.1 NCC and Part 4.2 The Determination.

4) Compliance with the provisions of Part 3.7.4.2 Water Supply (NCC) and Part 4.3 Water supply for Fire fighting (The Determination) is achieved as follows:

Part 4.3 Water Supply for Fire Fighting;

A fire hydrant has been identified at the intersection of Edith Avenue and the access to the site. The addition of two further fire hydrants and associated hardstand areas within the development site are required in order to comply with Part 4.3, The Determination.

NOTE: It has been assumed that under the provisions of Bushfire Prone Areas Advisory Note N°02-2014 that the fire hydrant at the road frontage and the additional two fire hydrants will be compliant with the above standards.

See Table 4.3A of The Determination for further details.

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 Land & Engineering Surveyors

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 Web: www.larkandcreese.com.au

BUSHFIRE HAZARD MANAGEMENT PLAN

Owner: J.T. Turner, P.A. Turner-Smith & M.K. Oxenbould

Location: 26 EDITH AVENUE, SANDY BAY

Title Reference: C.T. 169834/40

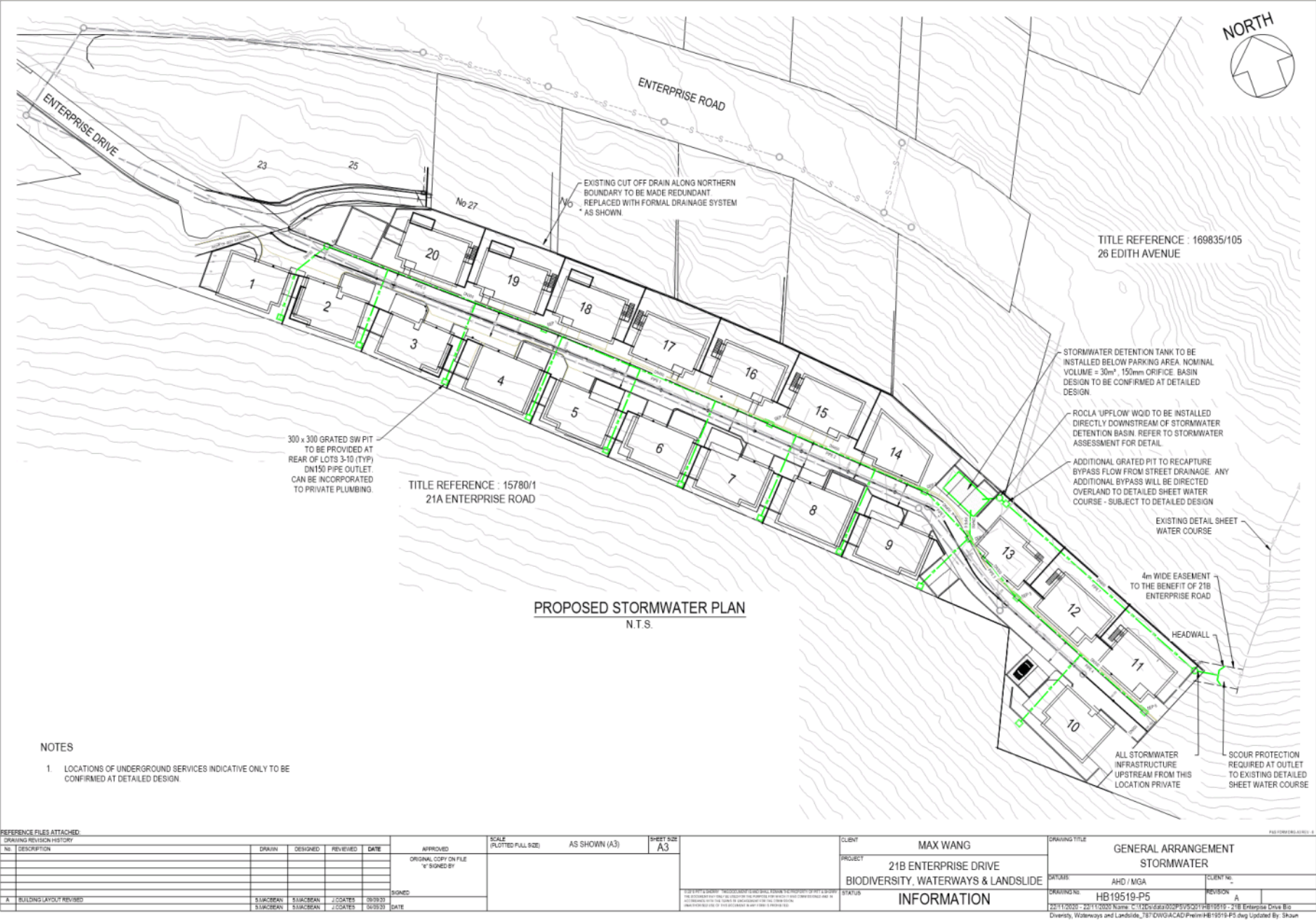
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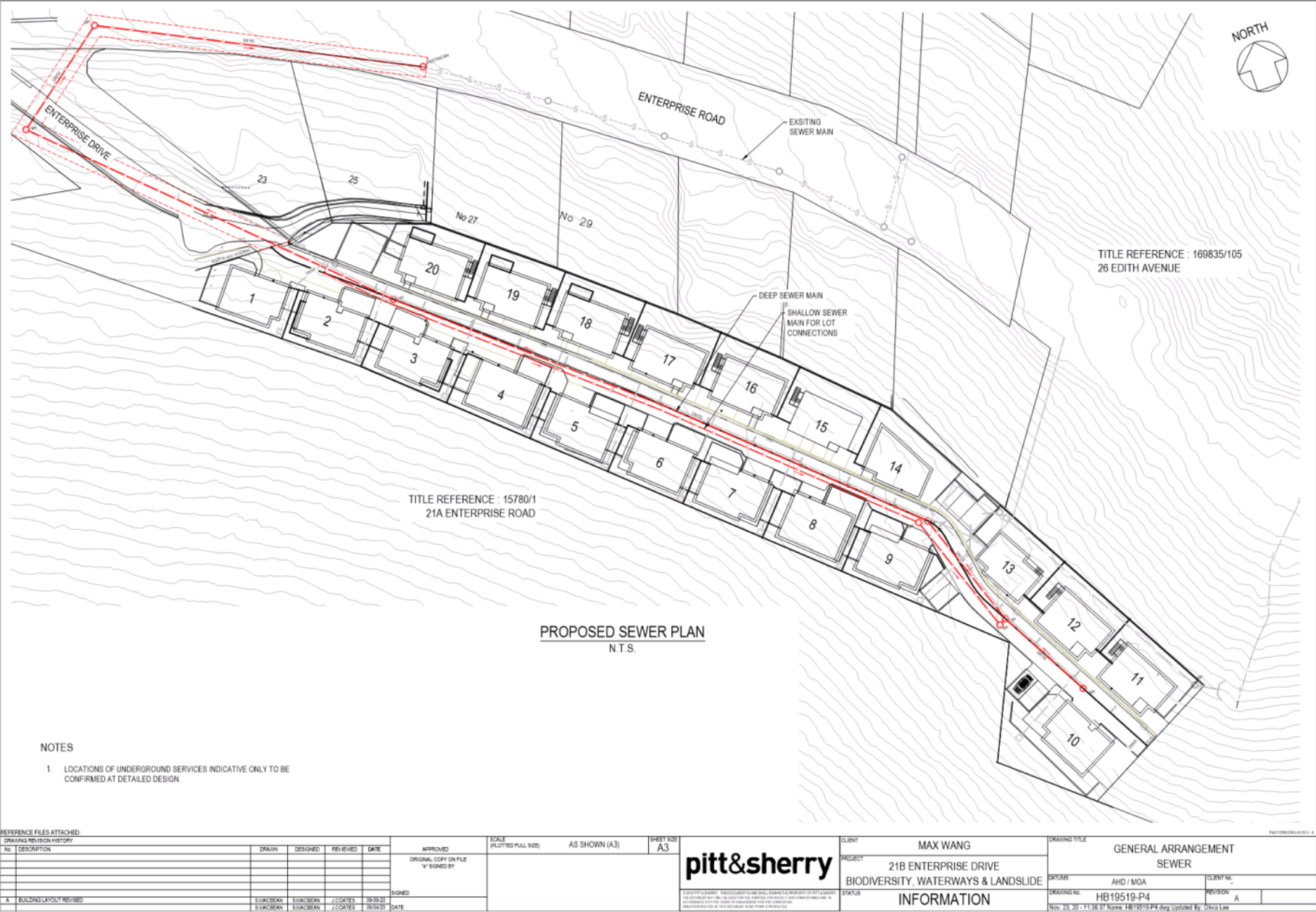
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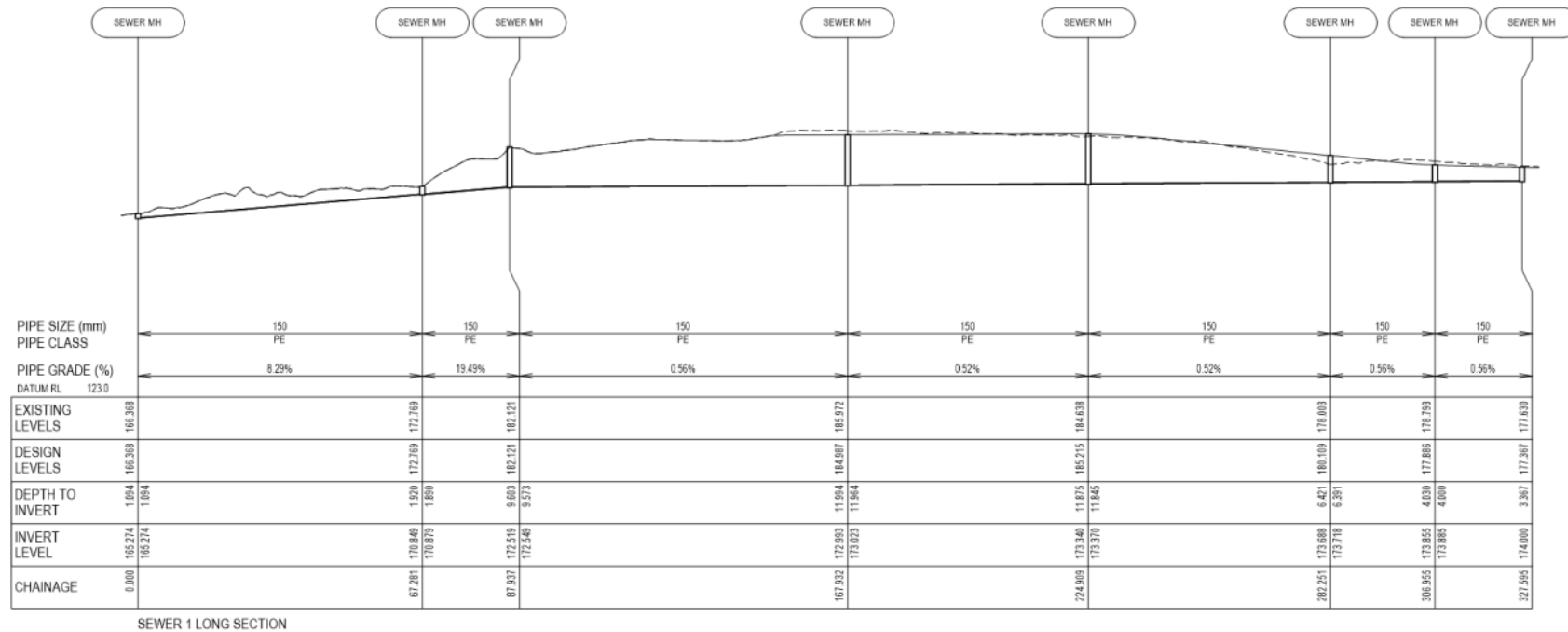
Date: 27th July 2018

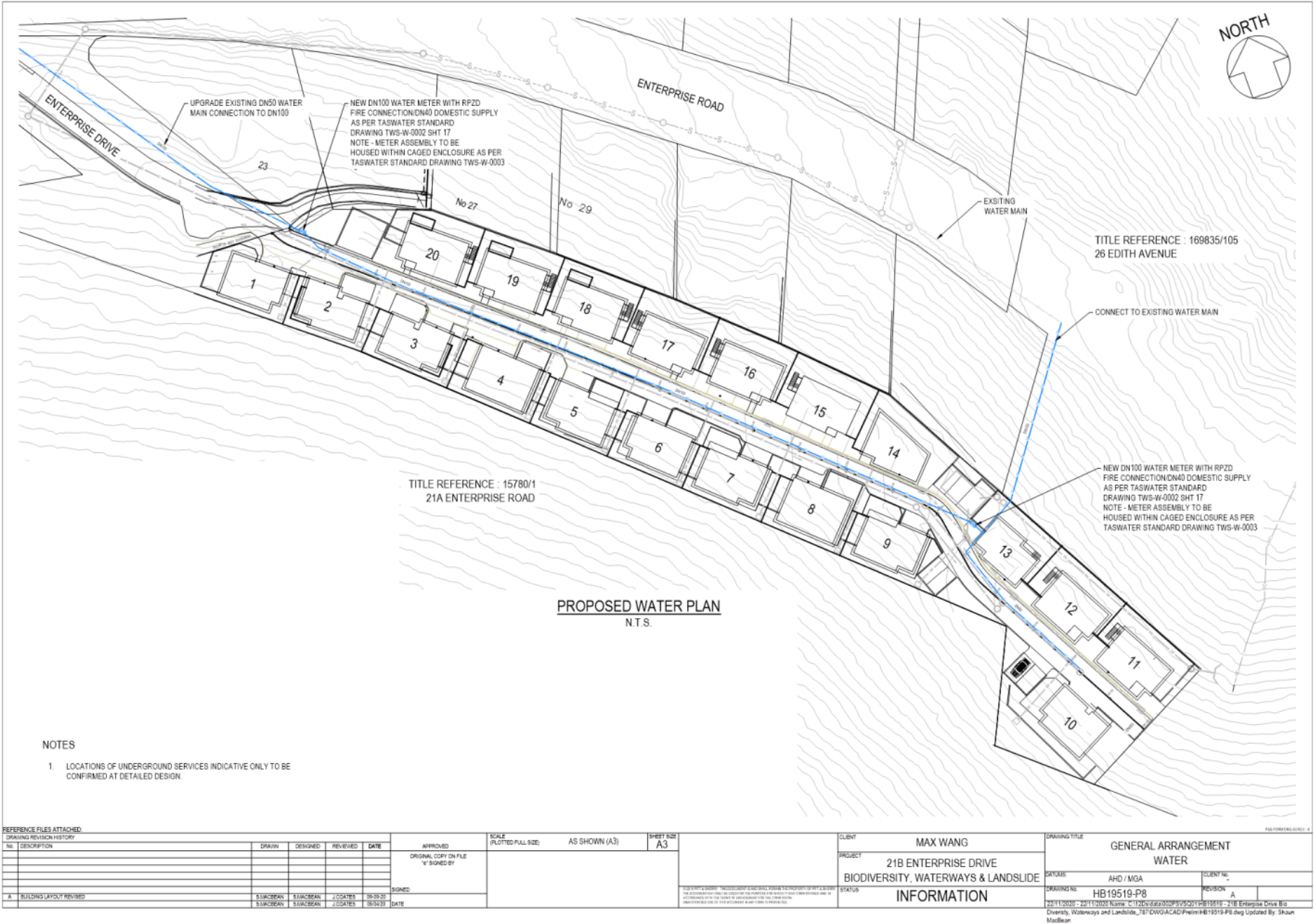
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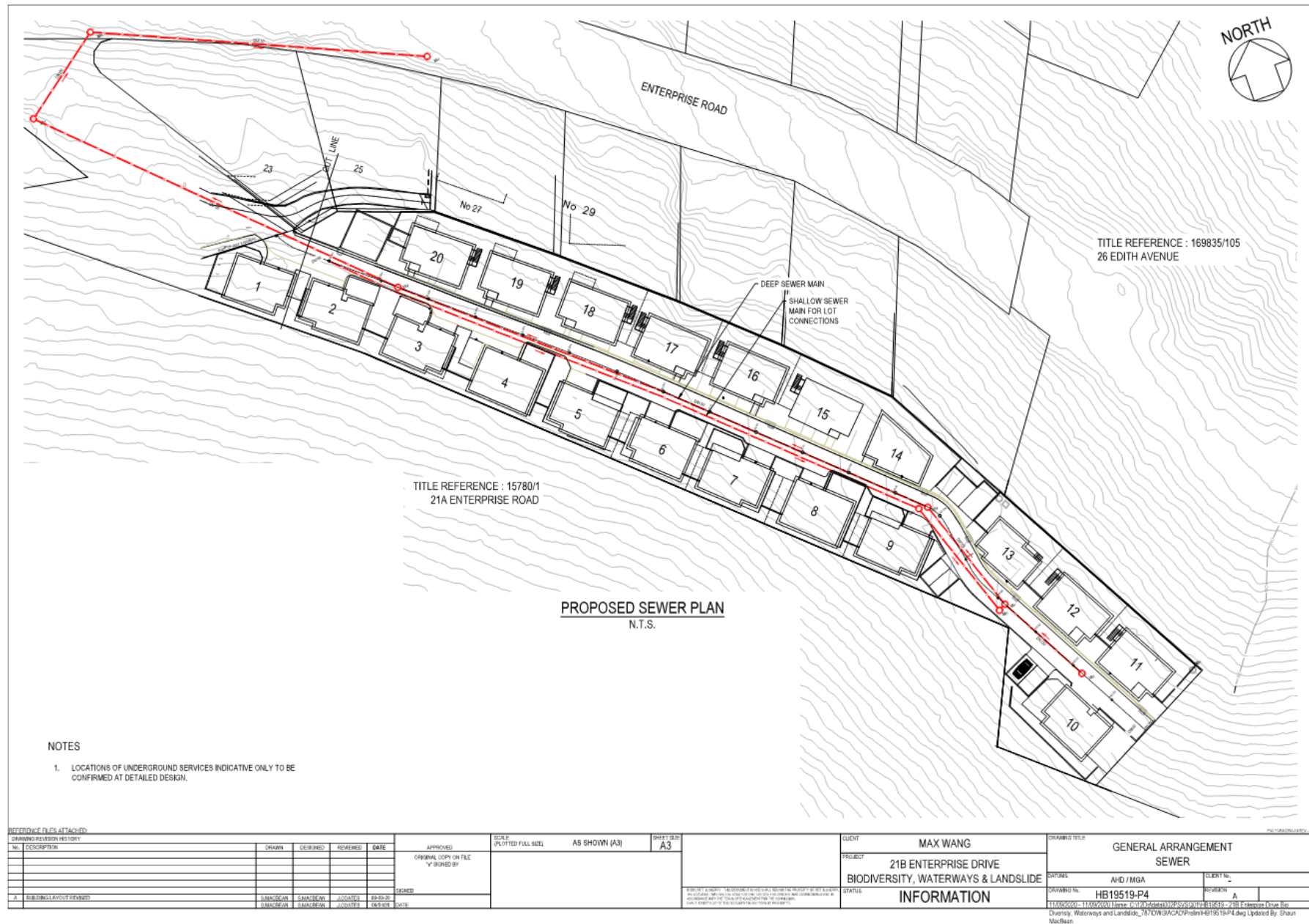
Note: This plan has been prepared for the purpose of compliance with AS3959-2009 and Tasmanian Fire Service Guidelines. This plan is not to be used for any other purpose without the express permission of Lark & Creese Pty Ltd. The details depicted on this plan have been obtained from a combination of field survey, aerial photography and mapping and as such may not represent the precise nature of the site.





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23 November 2020

Ben Ikin
Senior Statutory Planning
City of Hobart

Dear Ben

Re: Application No. PLN-20-740

Please see the following response to the letter dated 11 November 2020 in relation to PLN-20-740. It is understood that not all technical information was submitted. All technical documents have now been uploaded to the portal. Please see the following which responds to specific items detailed in the Request for Additional Information dated 11 November 2020.

Parking and Access

PA2.2: Plans have been prepared showing the pedestrian sight triangles and vehicular sight lines at the boundary to the site. The sight triangles for pedestrians will be kept clear as per AS2890.1-2004. The sight distance to the approaching traffic to the north from Enterprise Road is approximately 70m. The sight distance to the west is greater than 50m. The sight distance to the east is past the property boundary for No 23. Updated plans have been included in the latest *Traffic Impact Assessment Rev01 - Appendix A*.

PA2.1: The site plan has been updated to show that property access will be achieved from the existing sealed portion of the shared driveway to No 21, 21A, 23 and 25 Enterprise Drive. The updated plans are included in the latest *Traffic Impact Assessment Rev01 - Appendix A*.

PA3: The updated plans showing the passing areas and driveway widths are included in the latest *Traffic Impact Assessment Rev01 - Appendix A*.

PA5.1: The plans showing the layout and dimensions of car parking spaces, circulation roadways, turning areas and driveways are included in the latest *Traffic Impact Assessment Rev01 - Appendix A*. As per **PA3**, the driveway widths are shown on the same plans. The grades and crossfall of the circulating road and driveways are shown in the latest *Traffic Impact Assessment Rev01 - Appendix B*. This includes the long sections along the centreline of the driveway and the driveways for Numbers 1-10 as requested. The grades of the turning areas and parking spaces are shown in *Traffic Impact Assessment Rev01 - Appendix A*.

On-site turning has been shown to be achieved with an 8.8m service vehicle in the swept paths in *Traffic Impact Assessment Rev01 - Appendix E*, exceeding the requirements of the B99 vehicle. Swept paths for B85 passenger vehicles have also been presented in *Appendix E*, showing that vehicles can safely enter and exit the driveways and garages for Unit 14 and Unit 16 where aisle widths did not comply with AS2890.1-2004. All other driveways and garages meet the minimum access aisle width of 6.0m.

Plans showing the layout and extent of proposed safety barriers and wheel stops have been included in *Traffic Impact Assessment Rev01 - Appendix A*. Sections showing the garage headroom meeting the minimum of 2.2m as



per AS2890.1-2004 have been included in *Traffic Impact Assessment Rev01 - Appendix A*.

PA7: Traffic Impact Assessment Rev01 has been prepared and attached to demonstrate that the additional traffic and movements from the development will not have a negative impact on the existing form and function of Enterprise Road. Sight distance from the shared driveway onto Enterprise Road has been assessed in *Section 4.2* and includes a recommendation to remove some vegetation to improve sight distance at the intersection.

Solid Waste Management Plan

Waste will be collected along the development road outside all of the units except for Unit 10-13 A storage area will be provided as discussed in the *Traffic Impact Assessment Rev01, Section 3.4*. Waste will be collected by a private waste removal contractor. The turning path presented in *Traffic Impact Assessment Rev01 – Appendix E* demonstrates that a service vehicle is able to enter the development site, turn and exit in a forward direction.

Landslide

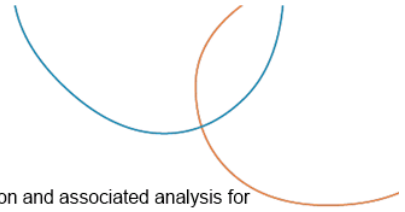
LC1: It will be important when removing trees that the root systems are not removed so that the extra disturbance associated with rapid removal of root systems does not occur. Keeping scattered groups of trees as recommended in the bushfire report will assist in retaining support for the slopes and reduce the risk of any large ground movement. These scattered clumps and any retained low vegetation will assist in reducing the risk of rocks rolling down slope and will also provide barriers that may slow or stop rolling rocks. The general intent and detail of the bushfire plan is not at odds with the landslide risk management measures for this area.

This comment has been included in the updated Landslide Risk Management Report

Stormwater

SW1: The stormwater analysis report dated 423 November 2020 provides a detailed description and associated analysis for stormwater management. In response to the specific items identified in the request for additional information, see the following responses.

1. The plan included in Appendix C of the Stormwater Analysis Report (23 November 2020) shows the proposed drainage system. The entirety of the drainage system is privately owned apart from the outlet which direct stormwater to Maning Rivulet. This is indicated on the plan
2. The existing cut-off drain is removed as part of this proposed development and replaced with a formal drainage system. A discussion and associated analysis is presented in Section 2.4 of the Stormwater Analysis Report (23 November 2020).
3. There is no cut-off drain proposed for this development. Nor is any part of the existing cut-off drain utilised for the proposed drainage system. The proposed stormwater layout is provided in Appendix C of the Stormwater Analysis Report. A schematic of the intended operation of the detention system and how they system provides redundancy to limit the risk of overflow on adjacent property is provided in Figure 11 of the Stormwater Analysis Report (23 November 2020).
4. There is no cut-off drain proposed for this development. The only easement is that over 26 Edith Avenue such that the proposed development is able to access the public stormwater system.
5. No works are proposed on any cut-off drains. The existing cut-off drain is to be made redundant and replaced with a formal drainage system as presented in Appendix C of the Stormwater Analysis Report (23 November 2020).
6. The existing cut-off drain is to be made redundant and replaced with a formal drainage system as presented in Appendix C of the Stormwater Analysis Report (23 November 2020). This is noted on the plan.



SW7: The stormwater analysis report dated 4 May 2020 provides a detailed description and associated analysis for stormwater management. In response to the specific items identified in the request for additional information, see the following responses.

1. Detail of management of flows for the 1% AEP event, inclusive of 30% increase in rainfall intensity, are provided in Section 2.4 of the Stormwater Analysis Report (23 November 2020). Further detail is provided in Appendix B.
2. Discussion on overland flow paths is provided in Section 2.4 of the Stormwater Analysis Report (23 November 2020). The site does not have a designated overland flow path passing through, but rather sheet flow generated from pervious areas upstream, then concentrating within the road drainage system.
3. A detention system is proposed for the site. A schematic on the performance of the proposed detention system is shown in Figure 11 of the Stormwater Analysis Report (23 November 2020). The flow rates presented are for the 1% AEP + 30% increase in rainfall intensity.

Yours sincerely

Joshua Coates
Associate Civil Engineer

Enc. Attachment A – Request for Additional Information



Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

11 November 2020

Brian Richardson
7 Ruthwell Street
MONTROSE TAS 7010

mailto: bgr01@bigpond.com

Dear Sir/Madam

**21B ENTERPRISE ROAD & 21A ENTERPRISE ROAD & 26 EDITH AVENUE (CT
169835/105) & 35 ENTERPRISE ROAD, SANDY BAY & ADJACENT ROAD RESERVE
20 MULTIPLE DWELLINGS AND ASSOCIATED WORKS
APPLICATION NO. PLN-20-740**

I refer to the above planning permit application received on 28 October 2020.

Under section 54 of the *Land Use Planning and Approvals Act 1993*, you are required by the Council to provide the following additional information and submit it in electronic (PDF) format:

Please provide information requested by TasWater under TWDA 2020/01828-HCC date of response 5 November 2020.
(Sent by separate email).

Parking and Access

To enable the Council to assess the application against the relevant provisions of the Parking and Access Code of *Hobart Interim Planning Scheme 2015* please provide:

PA 2.2 Scaled and dimensioned drawing(s) demonstrating vehicular and pedestrian sight distances.

To satisfy Hobart Interim Planning Scheme 2015 clause E6.7.2 Acceptable Solution A1, clause E5.6.4 Acceptable Solution A1, and AS/NZS 2890.1:2004 Section 3, the scaled and dimensioned design drawings must include:

- Plan view and elevation showing pedestrian sight lines 2.0m either side of the vehicular access (i.e. driveway entrance) at the boundary to the site in

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Hobart City Council

accordance with AS/NZS 2890.1:2004 Section 3.2.4. Pedestrian sight lines must be entirely within the subject property;

- Plan view and elevation showing vehicular sight lines either side of the vehicular access (i.e. driveway entrance) 2.5m from the road frontage in accordance with AS/NZS 2890.1:2004 Section 3.2.4;

Where the design drawing(s) do not comply with the above clause(s) and Australian Standard(s), provide a certification by a suitably qualified engineer that the design provides for a safe, efficient and convenient access. This will then be assessed under performance criteria of the Hobart Interim Planning Scheme 2015.

PA 2.1 Scaled and dimensioned drawing(s) demonstrating the vehicular access design, or a design that provides safe and efficient access.

To satisfy Hobart Interim Planning Scheme 2015 clause E6.7.2 Acceptable Solution A1 and AS/NZS 2890.1:2004 Section 3, the scaled and dimensioned design drawings must include:

- Site plan showing the location of the proposed vehicular access including; driveway width at the property boundary,
- Clarify if access to the development will be through the gravel driveway that passes through 21A Enterprise Rd, or whether it will come straight off the existing sealed portion of driveway closer to the entrance

Where the access design drawing(s) do not comply with the Australian standards AS/NZS 2890.1:2004 provide a certification by a suitably qualified engineer that the design provides for a safe and efficient access, this will then be assessed under Performance Criteria.

PA 3 Scaled and dimensioned plan(s) demonstrating on site vehicular passing areas along the vehicular access driveway, or a design that ensures safe, efficient and convenient access.

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.3 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

- Plan view of vehicular passing areas every 30m along the vehicular access driveway, with the first passing area at the kerb.

Where the design drawing(s) do not comply with the above clauses, provide a certification by a suitably qualified engineer that the design provides for a safe, efficient and convenient access. This will then be assessed under performance

criteria of the Hobart Interim Planning Scheme 2015.

PA5.1 Scaled and dimensioned plan(s) showing the layout of car parking spaces, turning areas, driveway and access designed to comply with AS/NZS 2890.1:2004 or a design which ensures that parking areas enable safe, easy and efficient use.

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.5 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

- A layout of car parking spaces, access aisles, circulation roadways and ramps, turning areas and driveway that is designed to comply with Section 2 of AS/NZS 2890.1:2004 and must have sufficient headroom to comply with Section 5.3 of AS/NZS 2890.1:2004.

Where the design drawing(s) do not comply with the above clauses, provide a certification by a suitably qualified engineer that the design is safe and ensures ease of access, egress and manoeuvring on site. This will then be assessed under performance criteria of the Hobart Interim Planning Scheme 2015.

To satisfy clauses E6.7.5 Acceptable Solution A1, AS/NZS 2890.1:2004 Section 2 and AS/NZS 2890.1:2004 Section 5.3, scaled and dimensioned design drawings must include:

-
- Plan view showing the minimum width of entire driveway;
-
- Plan view and long section along the proposed driveway centreline, starting at Enterprise Rd and finishing at the garage of Unit 11, showing the gradient and elevation of the full driveway's finished surface level and existing natural surface level; including transitions at change of grades, where required to comply with AS/NZS 2890.1:2004 Section 2.5.3(d) to ensure vehicles do not bottom out;
-
- Long section along the proposed driveway centerline and into the garage of all the units on the uphill side (for units 1-10), showing the gradient and elevation of the full driveway's finished surface level including transitions at change of grades, where required to comply with AS/NZS 2890.1:2004 Section 2.5.3(d) to ensure vehicles do not bottom out as they enter these units;
-
- Plan view showing gradient of the turning areas;
-

- Plan view showing gradient of the parking areas;
-
- Plan view demonstrating onsite turning for a B99 vehicle such that vehicles can enter and exit the property in a forward direction.
-
- Clarify if aisle width will comply with AS2890 or will be otherwise adequate for access into the unit garages, or otherwise use swept paths to demonstrate that vehicles can safely get in/out of parking spaces without hitting any structures or other vehicles
-
- Plan view showing the extent of any proposed vehicle safety barriers, where required to satisfy AS/NZS 2890.1:2004 Section 2.4.5.3, clearly specifying heights of drops from the driveway / parking area to lower levels where vehicle safety barriers and/or wheelstops are not required;
- Construction details in a typical driveway cross-section, including vehicle safety barriers if required;
-
- Elevation or section view showing sufficient headroom to satisfy Section 5.3 of AS/NZS 2890.1:2004.

Where the design drawing(s) do not comply with the above clause and/or AS/NZS 2890.1:2004 provide a certification by a suitably qualified engineer that the design provides for a safe and efficient access, this will then be assessed under Performance Criteria of the Hobart Interim Planning Scheme 2015.

PA 7 A traffic impact statement prepared by a suitably qualified engineer that demonstrates that the intersection between the driveway to 21B Enterprise Rd and Enterprise Rd can safely cope with the additional vehicle traffic that will be generated by this proposed development. The statement must include adequate sight distances for safe vehicle exit maneuvers and any changes that might be required to upgrade the intersection to a satisfactory standard.

Solid Waste Management Plan


A plan to demonstrate how solid waste (including recycling) from the proposed dwellings will be stored, handled and removed from site. Explain where rubbish bins will be stored and how and where they will be loaded onto trucks. Clarify who will collect waste. Note that Council garbage trucks normally will not collect waste from within private property and don't venture into private driveways. A private waste removal contractor may be required.

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Stormwater Code

To enable the Council to assess the application against the relevant provisions of the Stormwater Management Code of *Hobart Interim Planning Scheme 2015*, please provide:

- Sw 1** A site plan to demonstrate how stormwater from the proposed development (including roofed areas and impervious surfaces - driveways etc) will be disposed of via gravity to public stormwater infrastructure.
1. This must clearly delineate private vs public (pipes, outlets and cut-off drains), and existing vs proposed, including existing cut-off drain (to be retained, upgraded and abandoned) and proposed stormwater pits, pipes and cut-off drains (proposed new and proposed under separate development application but not constructed yet).
 1. Council is still not able to clearly identify which pipes on drawing HB19519-P4 are proposed to be (1) Council Stormwater Assets, (2) private assets of title 175780/1 and/ private assets of title 169834/40 (and which titles each lot's assets will be located).
 2. Show the cut-off drain's existing and proposed location, clearance from proposed buildings and any clashing of fence lines etc.
 1. Council is still not clear what the proposal is for the existing cutoff drain at the lower north eastern side of the property. Please show proposed alterations to it, and demonstrate how the 1% AEP overland flows will be conveyed safely and legally to the watercourse.
 3. The plan must clearly show how the Overland Flow Path and pipe discharge reaches the minor tributary, and any works required.
 1. Council's records show this then turning into 26 Edith below Unit 13, however Council had previously approved plans redirecting it within the property boundary for its full length, discharging near the proposed headwall. Council does not have any records of these works being completed, and the existing drain has insufficient access for maintenance. Previous stormwater reports have stated the existing cutoff drain would be utilized for the overland flow (collected by the driveway) from near the detention tank. This no longer appears to be proposed. Please show the path of any concentrated overland flow from the vicinity of the detention tank, and how impact on downslope properties is minimised. Please show the location of the entire existing cut-off drain (now proposed to be removed).
 2. Advice: It is unlikely that private stormwater system (including cut-off drains and pipes) (which are not contained within the lot boundaries of the owner of the private assets) will be approved under the Building Act 2016 or Urban Drainage Act 2013. Please contact Council Senior Development Engineer on 6238 2113 to discuss further.

4. Show any required easements and access for the maintenance of the cut-off drain and whom the easements will burden/benefit.
 1. Council is unclear whom the benefitting party will be for each easement proposed.
5. Please confirm that the previously submitted plans for the realignment, deepening and improvement of the existing cut-off drain near the North Eastern boundary, such that it had adequate capacity and was fully contained within the Lot boundary has been completed. If works haven't happened then a plan/section is required to be submitted showing the cut-off drain has adequate capacity for 1%AEP+CC, free board and will be easy to maintain. This must be privately owned and maintained.
6. Show any redundant sections of existing cut-off drain within the proposed development which is proposed to be abandoned.

Advice:

- *Council have no records that the cut-off drain on 26 Edith Avenue. Please provide documentation demonstrating that the cut-off drain has been constructed.*
- *Please contact Sarah Zehmeister (Council Stormwater Engineering Officer) on 6238 2912 to discuss further.*

Sw 7 A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following: designed to accommodate a storm with an ARI of 100 years.

1. The overall drainage system (including suitable overland flow paths) catering for the 100yr ARI events (including 30% loading for climate change).
2. Clearly show all overland flow paths for the developed site, that they avoid private property as far as practicable, how they will contain flows and how they will be contained within appropriate easements.
3. Council infrastructure has limited receiving capacity. Show any required measures (such as surcharge points, flow paths, detention) to ensure the 100yr ARI flows from the site can be safely managed.

Advice:

- *The current architectural drawings indicate that the driveway slopes downhill in some cases at over 20% gradient. The Pitt&Sherry Stormwater Assessment dated 19/9/19 indicates that the driveway will act as the overland flow path. This is not consistent with the architectural drawings. Please provide multiple cross sections of the driveway between Unit 20 and Unit 14 showing how overland flow*

will be contained for the 100 yr ARI plus climate change. Please note that floor levels of dwellings should be 300mm above the overland flow path level in order to comply with the National Construction Code and the Building Act 2016 (and as recommended in the Pitt&Sherry Stormwater Assessment dated 19/9/19).

- *Please contact Sarah Zehmeister (Council Stormwater Engineering Officer) on 6238 2912 to discuss further.*

Please provide the full Bushfire Hazard Management Plan for this development, updated with the current dwelling, driveway and services layout.

Please explain all the features shown on the accompanying map, including the yellow hatched area and the purple circle.

Please indicate on the Landscape Plans what the plant symbols mean and indicate where the specified species are to be planted.

Please submit the full Traffic Impact Assessment (TIA) report from the previous application PLN-19-314 to the portal.

Please submit your additional information through the City of Hobart [online services development portal](#). Additional information submitted in any other way will not be accepted.

Please note that if the additional information is lodged by 5:15pm on a day that the Council is open for business, the information will be accepted on that day. In any other case, the information will be accepted on the next day the Council is open for business.

Under the Act, the Council has 42 days to determine your application (excluding the period from the date of this request until the information is received to the Council's satisfaction).

You may appeal to the Resource Management and Planning Appeal Tribunal against this request within 14 days from the day on which this notice was served on you.

Please also note that the additional information must be received to the Council's satisfaction, within two years of the request being made, otherwise the application will lapse in accordance with section 54(2AA) of the *Land Use Planning and Approvals Act 1993*.

Please telephone Richard Bacon on 03) 6238 2866 if you have any queries regarding this letter.


Yours faithfully

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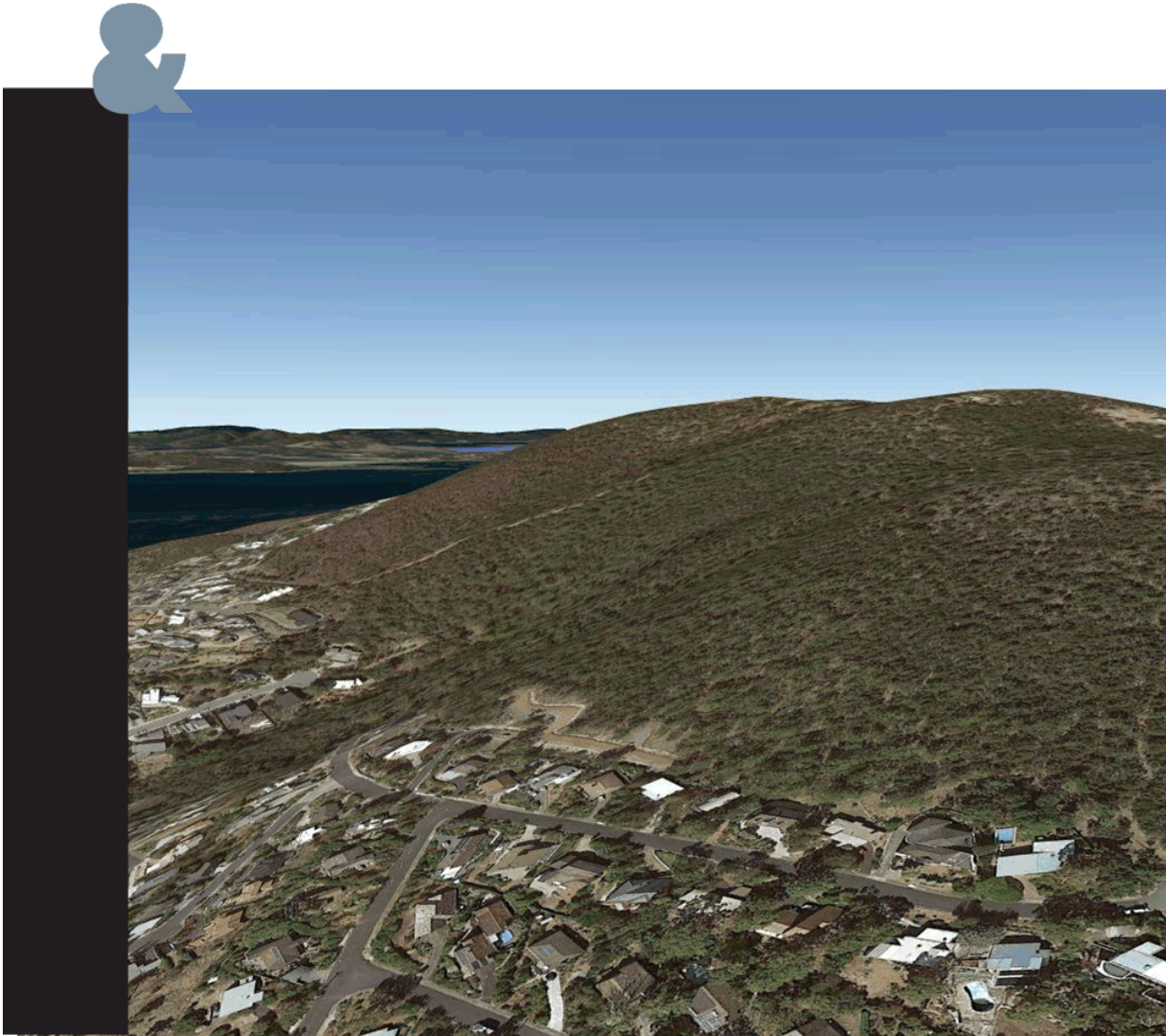
21 Enterprise Road
Stormwater Assessment

Prepared for
Max Wang

Client representative
Max Wang

Date
23 November 2020

Rev 02



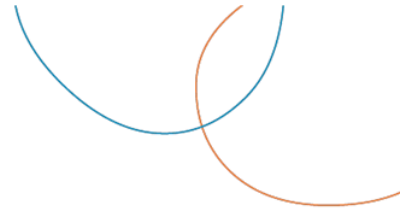


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Appendices

- Appendix A** — Water Quality Management Products
- Appendix B** — DRAINS Modelling outputs
- Appendix C** — Stormwater Plan



Prepared by — Joshua Coates		Date — 4 May 2020
Reviewed by — Hamish Peacock		Date — 4 May 2020
Authorised by — Joshua Coates		Date — 4 May 2020

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
0	Draft issue to Client	JC	HP	JC	19/09/19
01	Update in response to RFI	JC	HP	JC	04/05/20
02	Included revised lot layout (APP – C)	JC	HP	JC	23/11/20

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Executive Summary

This stormwater report has been updated to reflect changes recommended by City of Hobart provide in a request for information dated 30 April 2020. This request relates primarily to the previously proposed cutoff drain and overland flow management. Any previous reporting or correspondence relating to overland flow management is now superseded. Reference should be made to this report.

A summary of changes is provided below.

- An existing cut-off drain services properties downstream of the subject site. This drain is proposed to be made redundant. It is recommended to replace the cut off drain with an enlarged pit and pipe stormwater system. The outlet pipe and upstream system has been sized to accept flow for the 1% AEP event + CC
- The initial stormwater management solution suggested overland flow be managed within the proposed road corridor. Further explanation and more detailed analysis has been undertaken to show that this solution is able to work with the current proposed development layout and level. By providing suitable pit inlets, minimal flow is expected in the road reserve and current adopted floor levels on lots 20 to 11 will be appropriate provided standard kerb and channel is adopted for the road.
- Based on the latest advice provided on 30 April 2020 by City of Hobart, and following discussion with City of Hobart officers on 1 May 2020. It is proposed to revert the proposed stormwater management system to the initial recommendation. This is:
 - Natural overland flow from the upstream catchment to be directed to pits at the rear of each lot. It will be the responsibility of the property owner to maintain the pit as it will be to benefit their own property.
 - In the event of storm exceeding the capacity of these on lot pits, overland flow will be directed between lots to the road reserve.
 - Stormwater inlet pits are proposed within the road reserve, with any bypass flow directed towards the proposed stormwater detention basin.
 - Any flow exceeding the capacity of the basin, or that bypasses the basin will be directed towards an inlet structure (subject to detailed design). This may be incorporated into the detention system proposed below the parking area. An enlarged stormwater pipe at the outlet of the site is proposed with additional inlet pits capable of accepting the design flow. This aims to replicate to intention of the existing cut-off drain.

One of the primary concerns with directing water through the site is nuisance flooding of lots 11 to 20. It is recommended that a standard KC kerb be adopted. This provides 150mm barrier for stormwater. The longitudinal grade is greater than 3% through most of the site meaning flow will preferentially be directed longitudinally as opposed to laterally.

The analysis undertaken for the 1% AEP event plus 30% increase in rainfall shows minimal depth within the kerb and channel.

With the further detailed analysis now undertaken, a minimum 300mm freeboard can be omitted as the subject lots are not considered to be flood prone. It is recommended that lots do have a minimum floor level of 100mm above top of kerb. This would provide additional insurance that new properties would not be subject to nuisance flooding.

1. Introduction

Pitt&sherry have been engaged to undertake a stormwater assessment to support a development application for a subdivision in Enterprise Road, Sandy Bay. The land is currently zoned as General Residential. Figure 1 presents the proposed development extent and associated points of interest.



Figure 1: Subject Site and Points of Interest

This report details the stormwater assessment, including all assumptions and limitations, in response to the requirements provide in the planning letter for City of Hobart dated 8 July 2019.

2. Stormwater Assessment

2.1 SW1 – Stormwater Disposal

SW1: A site plan to demonstrate how stormwater from the proposed development (including roofed areas and impervious surfaces - driveways etc.) will be disposed of via gravity to public stormwater infrastructure.

A site plan is to be provided that demonstrates how the proposed development intends to dispose of stormwater generated from impervious surfaces (roof areas, driveways, footpaths, etc.) via gravity to the public stormwater system.

The site generally grades in a north-west direction with slopes of approximately 40%. The access road for the proposed development is generally aligned along the contour. This is presented below in Figure 2.

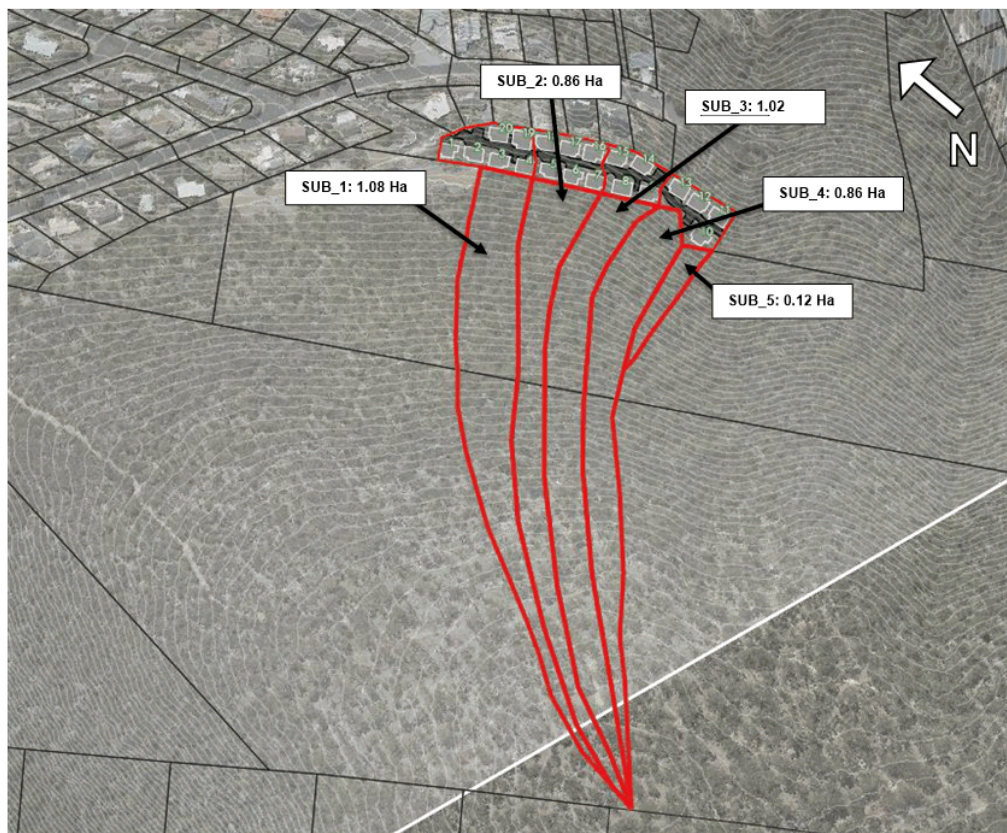


Figure 2: Proposed Development Layout and Upstream Catchments

The proposed development layout provides longitudinal fall in a south-east direction. A piped drainage system within the roadway is proposed that enables the collection of stormwater from roof and road areas. Stormwater will be directed towards the natural depression at the south-eastern most corner of the proposed development. This discharge location is selected for the following reasons.



- It adequately services the proposed development site;
- It provides reasonable opportunity for any additional development upstream to have access to a part of the stormwater system
- It directs stormwater away from existing development and returns flow to the natural depression.
- It replicates the discharge location under existing conditions.

The proposed stormwater discharge location is mapped as a 'Minor Tributary' on 1:25,000 topographic maps (TheLIST). Appropriate energy dissipation and erosion protection at the outlet to Manning Rivulet will be required.

An easement over 26 Edith Avenue will be required to ensure the proposed stormwater system has legal access to the public stormwater system.

2.2 SW5 – Stormwater Quality

SW5: A report prepared by a suitably qualified person, demonstrating:

- *That the stormwater system for the new development incorporates water sensitive urban principles for the treatment and disposal of stormwater.*
- *A concept stormwater treatment report, including associated plans and calculations, demonstrating that the proposed stormwater system will achieve the State Stormwater Strategy targets. If this treatment cannot be achieved, demonstrate why it is not feasible. Council notes carpark treatment should target fine sediments and hydrocarbons.*

The proposed stormwater system must incorporate water sensitive urban design principles for the treatment and disposal of stormwater. The *Hobart Interim Planning Scheme 2015* suggest the pollutant load reduction targets in accordance with the *State Stormwater Strategy 2010*. These are:

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.
45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.
45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.

Based on the proposed development layout, a MUSIC model has been developed to determine pollutant loads from the proposed development, and to provide a recommendation for a suitable water quality management system.

To achieve these pollutant load reduction targets, *Hudson Civil 'pit traps'* are proposed on all stormwater gully pits (five in total) and a *Rocla 'Upflow' Standard (DN1200)* is proposed at the end of line, immediately downstream of the proposed detention structure (refer to Section 2.3.3).

A schematic of the MUSIC model is presented below in Figure 3.

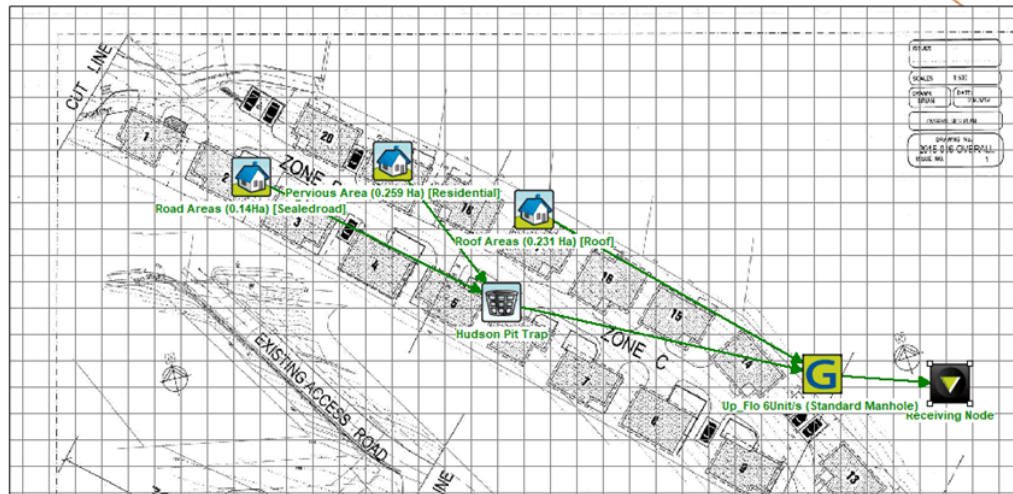


Figure 3: MUSIC Model Schematic

The proposed water quality management system achieves the required pollutant load reduction targets. The treatment train effectiveness is provided in Table 1.

Table 1: Treatment Train Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.19	1.19	0
Total Suspended Solids (kg/yr)	212	16.3	92.3
Total Phosphorus (kg/yr)	0.434	0.131	69.8
Total Nitrogen (kg/yr)	2.67	1.41	45.8
Gross Pollutants (kg/yr)	42.6	1.97	95.4

Details of the proposed water quality management measures are presented in Appendix A.

2.3 SW6 – Stormwater Quantity

SW6: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following:

- accommodate a storm with an ARI of 20 years (non industrial zoned land) or
- accommodate a storm with an ARI of 50 years (industrial zoned land) when the land serviced by the system is fully developed
- Stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure

A stormwater system is to be provided that can convey a storm with an ARI of 20 years and stormwater discharging from the subject site under post development conditions is to be no greater than the flow under pre-developed conditions.

The existing catchment contributing to the subject site is bush and scrub, assumed to be pervious. No defined channel directs stormwater to the site but rather distributed sheet flow.

There is existing development downstream of the subject site (properties 23 to 35 Enterprise Road) that would receive flow from the upstream catchment. A cut-off drain exists upstream of these properties which captures and directs from in a south-easterly direction towards a natural creek. This ultimately contributes to Maning Rivulet.

This flow behavior will be maintained as part of the proposed development, although formalised with the pit and pipe stormwater system. The access road kerb and gutter will act as the cut off drain, directing stormwater to a piped stormwater system via gully pits.

It is proposed that pits be placed at the rear of each of lots 3 to 10. The purpose of these pits will be to collect stormwater from the upstream catchment and direct it to the piped drainage system.

The proposed stormwater system is sized based upon the direct area (development site) and the existing upstream catchment. The proposed stormwater system is shown below in Figure 4:

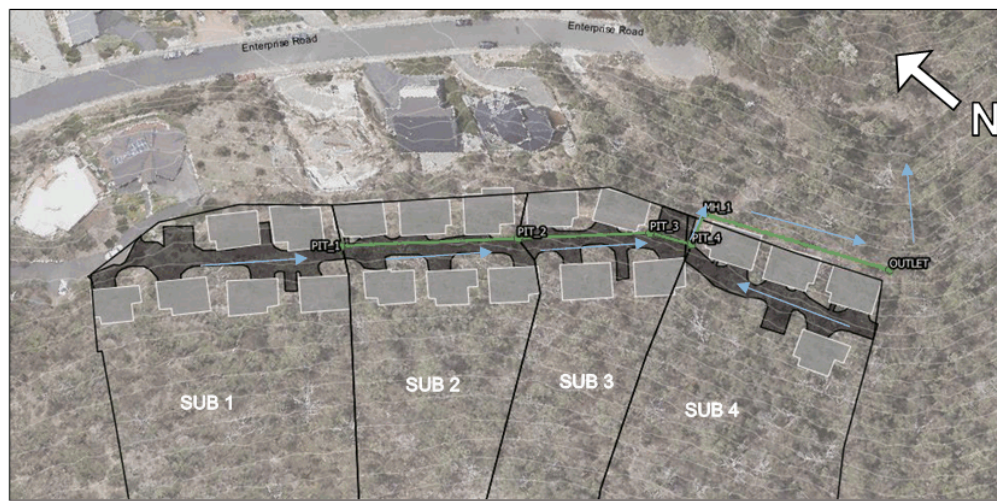


Figure 4: Proposed Stormwater System

The existing cut-off drain will serve as the point at which a peak flow rate is calculated for the base case (pre-development scenario). This allows for the impact of the proposed development to be appropriately quantified and managed accordingly.

2.3.1 Hydrologic / Hydraulic Analysis

A DRAINS hydrologic / hydrologic model has been prepared to appropriately size the stormwater system. The following input parameters are adopted:

Table 2: Hydrologic Model Parameters

Hydrologic Model:	ILSAX
Paved Depression Storage:	1 mm
Supplementary Depression Storage:	1 mm
Grassed Area Depression Storage:	5 mm
Soil Type:	Type 3 (slow infiltration rates, may have layers that impede downward

	movement of water)
Antecedent Moisture Condition (AMC):	3 (Rather wet, equates to approximately 12.5mm to 25mm in the preceding 5 days)

The stormwater assessment has been undertaken in accordance with principles set out in *Australian Rainfall and Runoff 2019*. As such, the ensemble approach for temporal variation is adopted.

Rainfall data (depths and temporal patterns) is extracted for the site at the following co-ordinates:

Latitude:	42.9125 (S)	Longitude:	147.3375 (E)
-----------	-------------	------------	--------------

2.3.2 Total Catchment (Stormwater System Assessment)

The peak flow rates for the 5% and 1% AEP at the proposed development outlet are provided below in Table 3. These flow rates take account of the upstream catchment and are used to appropriately size stormwater infrastructure.

ID	Catchment Area (Ha)
Sub_1	1.08
Sub_2	0.86
Sub_3	1.02
Sub_4	0.86
Sub_5	0.12

Table 3: Peak Flow Rates – Total Catchment

AEP	Peak Flow Rate (m³/s) Existing	Peak Flow Rate (m³/s) Developed
5% AEP	0.158	0.156
1% AEP + CC	0.578	0.567

The catchment areas and associated portion impervious associated with these flows are presented in Table 4.

Table 4: Total Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4	SUB_5
Area US (Bush) (Ha)	1.08	0.86	1.02	0.86	0.12
Area on Subject Site (Ha)	0.18	0.17	0.15	0.18	
Road Area (Ha)	0.045	0.028	0.033	0.034	
Roof Area (Ha)	0.069	0.068	0.047	0.047	
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081	
% Impervious	8%	9%	6%	4%	

The results show that the peak flow rate is either maintained or reduced as a result of development. This is due to the change in catchment response time as a result of the change in land-use. The proposed development site is located at

the bottom of the subject catchment.

These results are used for sizing stormwater infrastructure to convey both flow generated from the proposed development and flow generated from the upstream catchment. These flows are not used to determine the size of any stormwater detention.

Based on the assessment undertaken, DN450 pipes and standard 1800mm single grated pits provide sufficient capacity to convey flow through the proposed development for the 5% AEP storm event. A maximum pit spacing of 50m proposed. A typical hydraulic grade line for the 5% AEP event system is provided below in Figure 5.

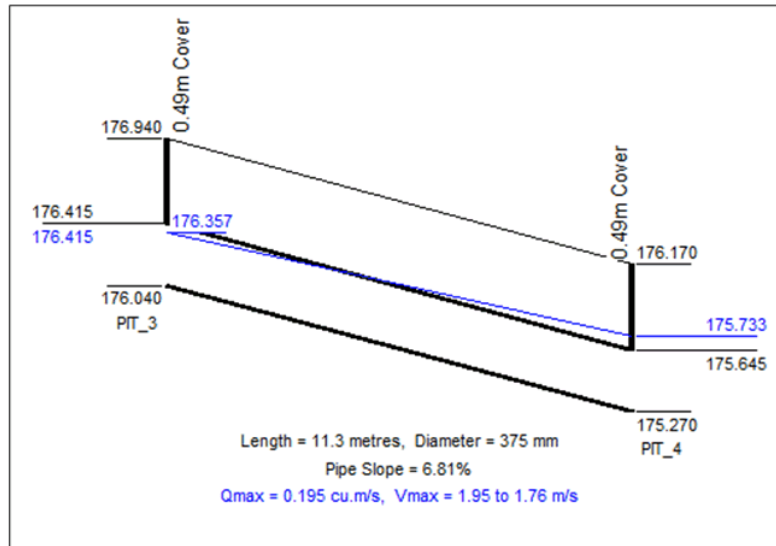


Figure 5: Hydraulic Grade Line – 5% AEP – Pit_3 to Pit_4

DN450 pipes are proposed to assist with conveying flow for the 1% AEP event + CC.

2.3.3 Local Catchment (Detention Assessment)

The position of the proposed development relative to the downstream catchment suggests any change in land-use will likely have an impact in receiving waters further downstream. To determine what this impact is, flow rates generated from the site, in isolation of the upstream catchment are calculated.

Table 5: Peak Flow Rates – Local Catchment

AEP	Peak Flow Rate (m ³ /s) Existing	Peak Flow Rate (m ³ /s) Developed	Peak Flow Rate (m ³ /s) Developed with Basin
5% AEP	0.040	0.084	0.042
1% AEP + CC	0.172	0.221	0.231

The local catchment areas and percentage impervious associated with these flows are presented in Table 6

Table 6: Local Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4
--	-------	-------	-------	-------

Total Area (Ha)	0.18	0.17	0.13	0.15
Road Area (Ha)	0.045	0.028	0.033	0.034
Roof Area (Ha)	0.069	0.068	0.047	0.047
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081
% Impervious	63%	56%	62%	54%

A minimum time of concentration of 5 minutes is adopted for impervious areas. For pervious areas a time of concentration is derived from the catchment parameters. These are:

Overland Flow Path Length:	10 m
Overland Flow Path Slope:	5%
Retardance Co-efficient n*:	0.05

A detention system is proposed as part of the development, although it is recommended that Council consider the development in the context of the catchment to ensure it is appropriate in this use case. In some instances, the incorporation of detention structures can in-fact increase flood levels.

Notwithstanding, a detention structure is sized that limits the peak discharge from the proposed development site to 0.04 m³/s.

A detention structure with volume of 23 m³, orifice outlet of 129mm and maximum depth of 1.5m is required to reduce post development flowrates to pre-developed conditions for the 5% AEP storm. A schematic of how the basin is modelled is presented below in Figure 6.

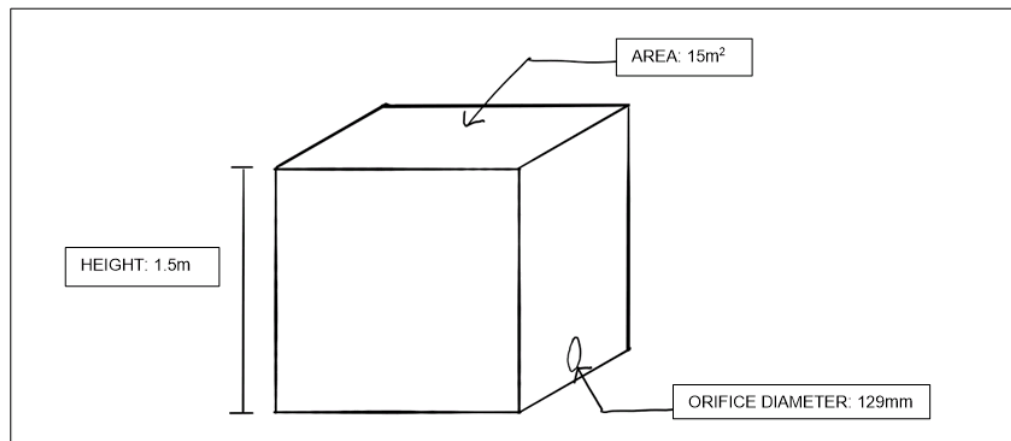


Figure 6: Detention Basin Schematic

Based on a review of the preliminary development layout, the most suitable location for a detention structure of this size is beneath the parking / turning bay between lots 13 and 14. It is likely the location where the road surface is proposed will require fill. This location would make a good candidate for a detention tank.

Either a constructed storage area or an off the shelf storage system is reasonable to service the required storage

volume.



Figure 7: Possible Detention Tank Location

Full hydraulic modelling results are provided in Appendix B.



2.4 SW7 – Overland Flow Path

SW7: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following: designed to accommodate a storm with an ARI of 100 years.

- *A piped stormwater system sized to handle at least the 20yr ARI event based on a possible future fully-developed catchment, with the overall drainage system (including suitable overland flow paths) catering for the 100yr ARI events (including 30% loading for climate change).*
- *Clearly show all overland flow paths for the developed site, that they avoid private property as far as practicable, and how they will be contained within appropriate easements.*
- *Council infrastructure has limited receiving capacity. Show any required measures (such as surcharge points, flow paths, detention) to ensure the 100yr ARI flows from the site can be safely managed*

The proposed development is to accommodate overland flow from an 1% AEP storm. An assessment has been undertaken to calculate the likely 1% AEP flow arriving at the site, inclusive of a 30% increase in rainfall to account for climate change.

Under existing conditions, existing properties on Enterprise Drive manage flow from the upstream catchment by use of a cut of drain. This does not appear to be a formal drainage asset and the drain is not located within the properties to which it provided benefit to.

The proposed development provides an opportunity for a formal drainage system to be designed, capable of directing flow away from existing properties on Enterprise Drive. The following considerations have informed the assessment and proposed stormwater management solution.

- A cut off drain upstream of properties will concentrate flow. At the downstream end of the system a substantial inlet structure would be required to ensure flow is not directed towards property. Given the upstream catchment, there is a high debris load potential, meaning pit blockage is likely.
- Evenly distributed flow is easy to capture with distributed pits. This means each property owner is responsible to manage their own overland flow. This is fair and equitable and doesn't require a single property owner to take the burden of all stormwater.
- By providing several pit inlets, less flow will be directed overland and hence less flow within the road area. This reserves the road area for direct drainage.
- It is the preference of City of Hobart to not have Cut-off drain located above the existing development.

To ensure flow can be directed to a piped drainage system, several opportunities for a stormwater inlet are proposed. These are:

- Private stormwater pits located at the rear of lots 3 to 10. The purpose of these pits is to capture flow from the upstream vegetated catchment. By adopting several distributed pits minimises the hydraulic load on any single pit, providing greater confidence that the system will perform as intended.
- Allowance for flow to pass through lots 3 – 10 to the road reserve in the event of pit blockage.
- Pit inlets on the downstream side of road to collect stormwater.

The proposed road kerb and gutter will act as the cut off drain. Any flow intercepted from the upstream catchment will be captured within kerb and channel and either directed to the pit and pipe drainage system, or if pit inlet capacity is exceeded, direct overland flow within the road surface to the parking bay positioned between lots 13 and 14.

This system will provide suitable flood conveyance to mitigate flood impact of existing properties on Enterprise Drive and lots 11 to 20 of the proposed development (Northern side of road)

For lots 1 to 10, overland flow generated from the upstream catchment may impact lots. It is not considered appropriate to install cutoff drains on upstream properties not owned by the proponent to protect downstream properties. Existing property owners will have little control as to how the land will be managed and it would not be possible to guarantee the operation of the cutoff drain over the life of the proposed development.

A more robust method to manage overland flow is to allow for and to design for flow to naturally pass around each of lots 1 – 10. The following provides reasoning as to why this method is adopted.

As part of a separate development upstream, a cut-off drain has been constructed that diverts flow away from the site. This means lots 1 and 2 do not require any upstream flow management.

The intended operation is for overland flow to be locally directed to small drainage pits (our alternate suitable solution) at the rear of each lot (lots 3 – 10). Flow can either be directed over the retaining wall, or formally directed through small channels installed on the top of the retaining wall. In the event a pit becomes blocked, or a flow rate is produced in excess of the inlet capacity of the pit, overland flow is to be directed around lots to the road reserve.

Local shaping and grading around lots should be included ensure flow does not enter buildings.

A detailed hydraulic assessment has been undertaken to determine the type of pit inlets required to ensure flow is managed accordingly. The 1% AEP event + 30% increase in rainfall intensity is adopted.

A nominal 300x300 grated pit is adopted with a minimum pit depth of 600mm. The pit is assumed to be a sag pit and be able to develop a maximum of 200mm head above the surface of the pit. For depths above 200mm, is directed between lots to the road reserve. The adopted pit inlet curve for internal lot pits (300x300 square pit) is shown below in Figure 8.

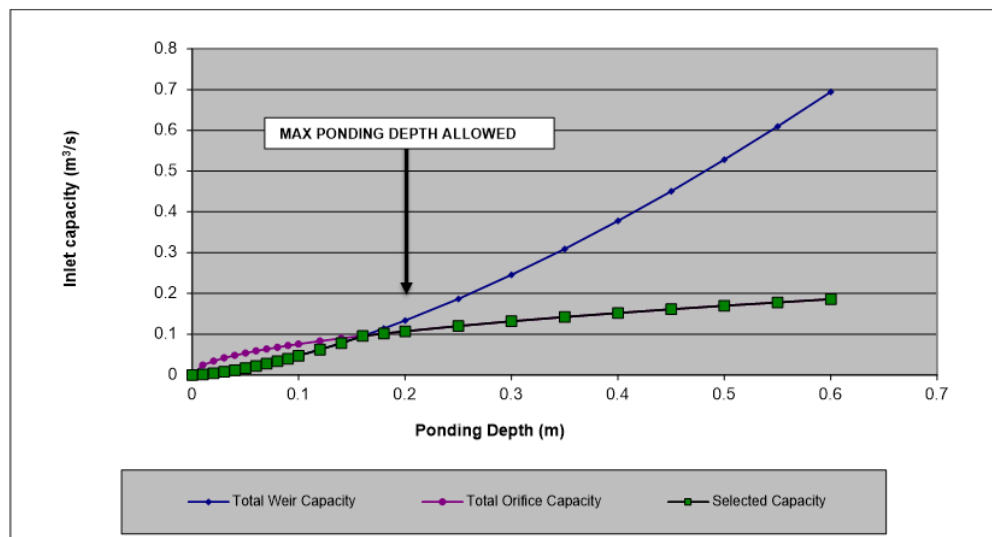


Figure 8: 300x300mm Sag Pit inlet curve

The capacity of the receiving DN150 pipe is approximately 20-30 L/s. The pit (even with a portion blocked) will have capacity to make best use of the pipes drainage system.

The upstream catchment has been distributed over each of the lots. The contributing catchment areas for each of the lots assessed is presented in Table 7.

Each pit will require a DN150 pipe outlet. This is assumed to be integrated into the building plumbing. The retaining wall proposed at the rear of lots will have a drainage system. It is expected that this pit system can be easily integrated.

Table 7: Upstream Contributing Catchment Areas.

Sub catchment	Lot	Area (Ha)	Total (Ha)
Sub 1	Lot 3	0.54	1.08
	Lot 4	0.54	
Sub 2	Lot 5	0.28	0.84
	Lot 6	0.28	
	Lot 7	0.28	
Sub 3	Lot 8	0.51	1.02
	Lot 9	0.51	
Sub 4	No Lot	0.86	0.86
Sub 5	Lot 10	0.12	0.12
TOTAL			3.94

The suggested location for the pit is shown below in Figure 9. (to be confirmed at detailed design). Fences should have a small opening to ensure flow does not build and is able to freely pass through or under.

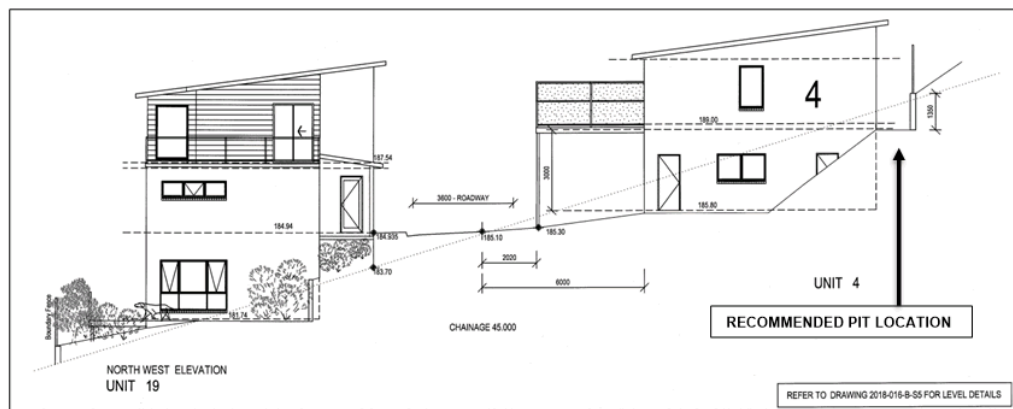


Figure 9: Recommended Pit Location

For the 1% AEP + 30% increase in rainfall intensity (allowance for climate change). Most pits perform well with less than 100mm of ponding above the pit and no overland flow contributing to the road reserve. The most critical lots are Lots 8 and 9. The peak ponding depth above pits is 260mm. These are the only two lots that are expected to contribute overland flow to the road reserve.

With the increased pit inlet capacity provided, the load on stormwater system located within the road has increased. The size of the underground drainage system has been increased to allow for conveyance of the 1% AEP + CC flow rate. Details of the proposed piped drainage system are provided in Appendix B.

This proposed approach limits the amount of flow being directed onto the road area. Figure 10 shows the cross section for the part of the road with most flow being contributed.

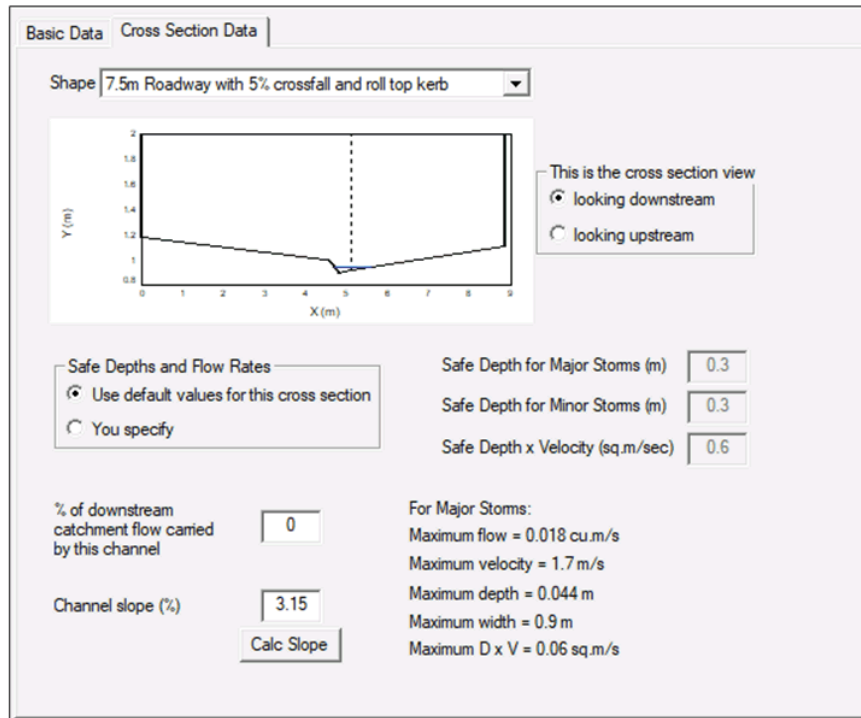


Figure 10: Flow within kerb -1% AEP + CC: downstream of Pit 1

This solution does direct more flow to the piped drainage system and hence the proposed detention structure. Therefore, in a rare storm event, the detention structure is expected to spill. Space allowed for stormwater detention will be large enough to incorporate a weir system such that flow can be attenuated through a suitably sized low-level outlet, but for more extreme events, flow will be directed over a weir to a stormwater pit with suitable depth and outlet configuration.

The assessment undertaken allows for flow to be directed through piped system and ultimately to Maning Rivulet.

Outlet pipe and upstream infrastructure has been sized to convey flows for the 1% AEP event + CC to the discharge point at Maning's Rivulet. Based on the estimated flow rates contributing to the site, a suitable stormwater management system can be implemented that does not adversely impact downstream property owners, and in fact, improves stormwater management by implementing a formal drainage system. A schematic in Figure 11 shows flow contributing to the downstream end of the site.

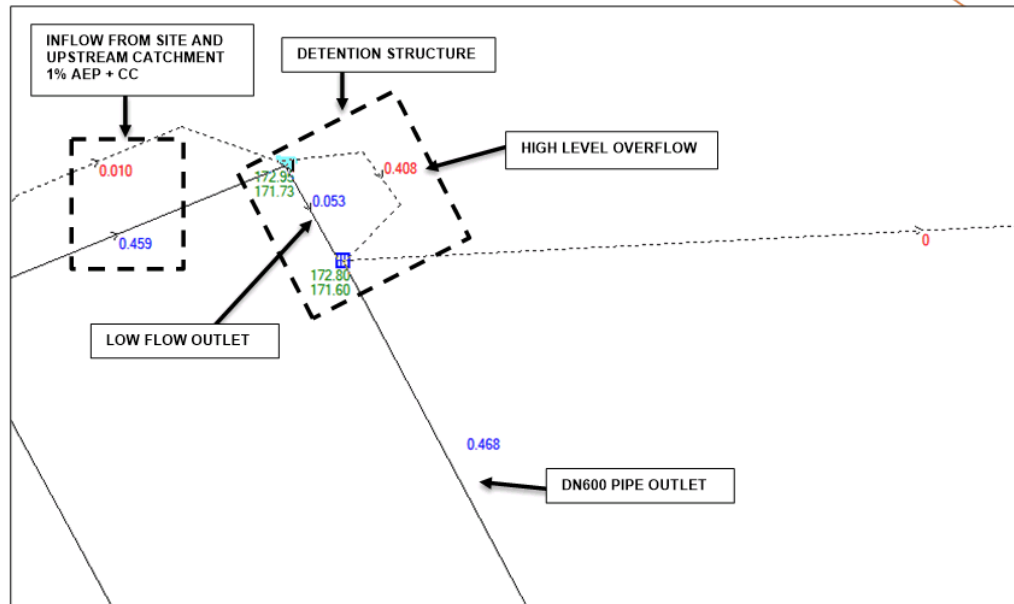


Figure 11: Detention system schematic: flows presented for 1% AEP + CC

The analysis undertaken presents a suitable solution although alternate option could be:

- Drainage from the upstream catchment could be directed to a small channel / gutter mounted on the side of the retaining wall. This could direct water to a rain head similar to those used on industrial roofing systems. This would be expected to provide a similar capacity or improved pipe inlet capacity.

These options should be explored at a detailed design phase to ensure the best stormwater management solution is adopted the best benefits the ultimate user.

It is noted that the interim climate change factors available on the *Australian Rainfall and Runoff Data Hub* suggests a maximum increase in rainfall intensity of 16.3% (year 2090, RCP 8.5). The adoption of a 30% increase is conservative and provides added insurance that the proposed system is suitable sized.

The site will have some pipes that exceed 10% longitudinal grade. A suitable design will be required that considers steep grades. Either anchor blocks or drop structures will be required to be adopted at the detailed design phase.



Water Quality Management Products



Appendix A

pitt&sherry



PIT TRAPS

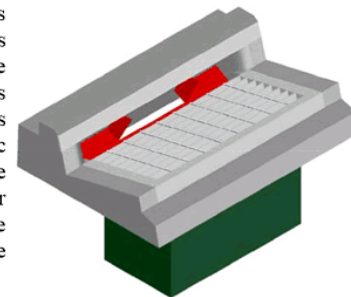
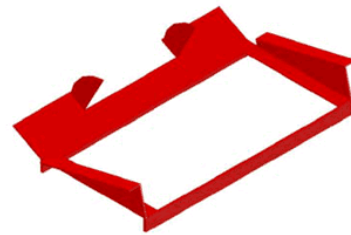
Hudson Environmental 'Pit Trap' - At source pollution control

Hudson Environmental has launched its '*Pit Trap*' into the Tasmanian market to expand our range of stormwater quality improvement devices to include '*at source*' to complement our range of '*end of line*' devices.

The '*Pit Trap*' is manufactured in Tasmania and is available off the shelf to suit Hudson Civil Products precast kerb and grate units. We can also manufacture one off traps to be retrofitted on site for existing pits.

Benefits of a Hudson Environmental 'Pit Trap'

- Our basket is fabricated from corrosion resistant lightweight Aluminium allowing the capture of pollutants above 4mm
- Optional Polyester liner for the capture of finer particles down to 1mm and smaller.
- Captured materials remain in a dry state eliminating odours, mosquitos and reducing the weight of the basket for cleaning purposes.
- Baskets supplied in a 'mechanical empty only' design without handles to eliminate employees removing the trap by hand with the associated risks of strain injuries.
- Our Polyester liner comes with stainless steel fixings and penetrations are made with stainless steel eyelets. This liner is then attached to the aluminium basket to alleviate any strain on the liner when being emptied or manhandled.
- Built in bypass on top of the large surface area of the basket allows high flows to enter the drainage system without the remobilisation of pollutants.
- Large capacity basket holds 0.15 m³ when full.



A simple design for a simple problem

The '*Pit Trap*' design is based on a common sense approach to the problems of gross pollutants entering the stormwater system and therefore our creeks and estuaries. Our design simply consists of a robust aluminium sub frame which is positioned in the grate seat into which an aluminium basket is lowered into position. This basket in its basic form will collect all pollutants larger than 4mm. Items that fall into this category are cigarette butts, plastic drinking bottle caps and large type aggregates. For additional performance to collect pollutants above 1mm, we offer an additional welded polyester liner that is simply fitted inside the aluminium basket. These baskets can be cleaned by either hi-ab truck or pump trucks. We do not encourage the use of handles as the force and location of the lift is potentially very dangerous.

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HUDSON
CIVIL PRODUCTS

Hobart Office:
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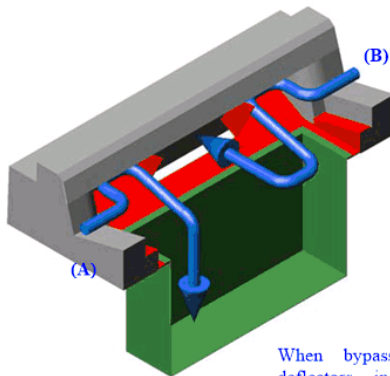


PIT TRAPS

Why use a rigid basket?

Hudson Environmental, as a division of Hudson Civil Pty Ltd, is a locally owned business specifically targeting the Tasmanian market. We do not have the problems that large mainland and multinational company's face when trying to cover a market the size of Australia.

Basically, a rigid frame makes sense unless you are freighting them large distances like across Bass Strait and the Nullarbor as the costs are prohibitive. As we are not affected by these cost restrictions, we have the ability to design products that are constructed from the most suitable designs and materials.



When bypass occurs (B), the deflectors induce a flow that prevents remobilisation of pollutants previously captured (A).

Maintenance

When the basket is full, excess water is diverted through the bypass at the back of the pit (a large amount of water will still pass through the basket even when full). ALL baskets when full will allow the remobilisation of pollutants so an adequate maintenance regime must be put in place to ensure the correct operation of the baskets.

Construction site filters

We also provide filter fabric liners for installation when site works produce an increased amount of fine particles. These liners are disposable one use items and are both more cost effective and reliable than traditional 'silt socks'.



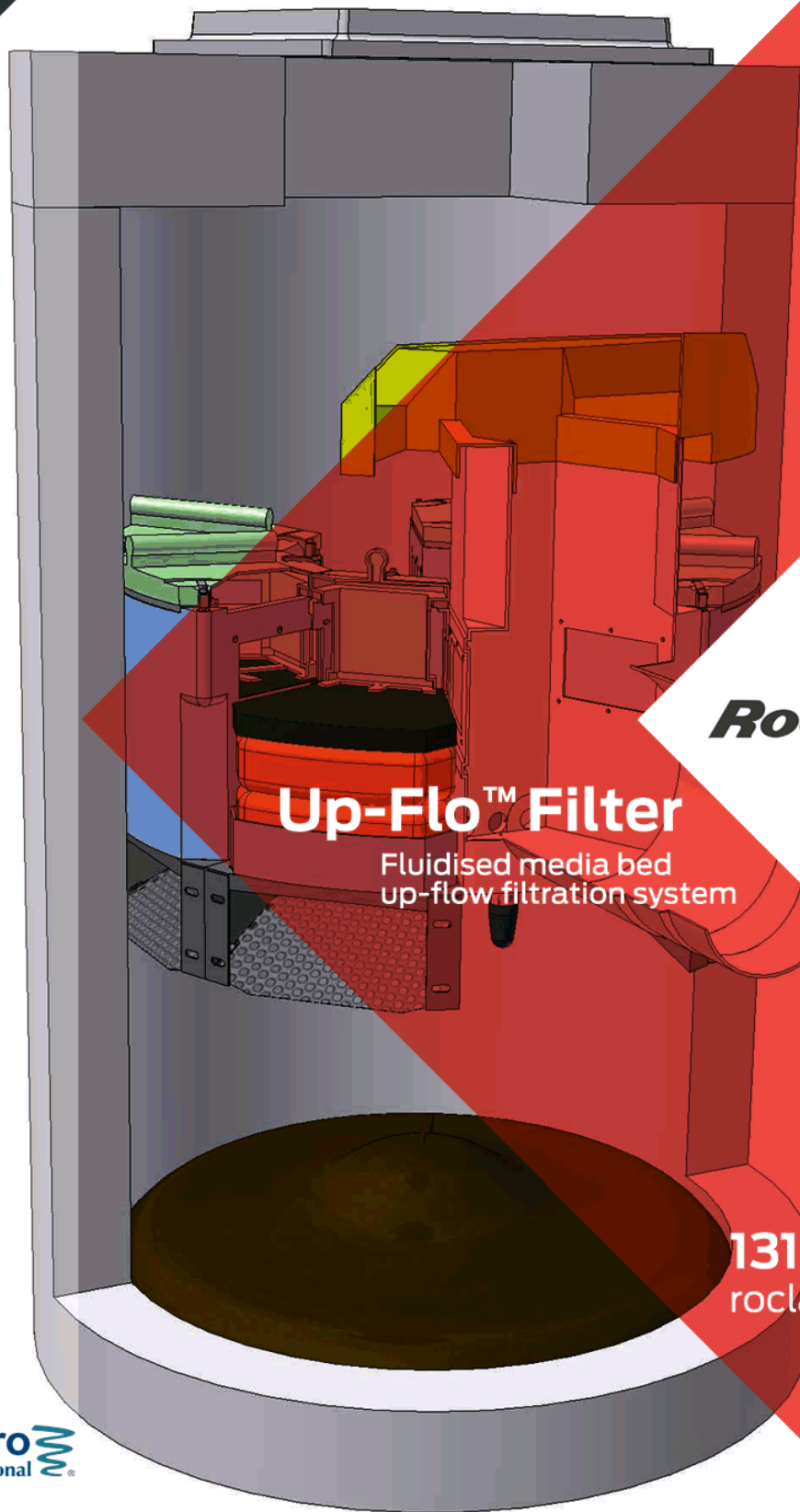
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CIVIL PRODUCTS

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PRODUCT
BROCHURE



Up-Flo™ Filter

Fluidised media bed
up-flow filtration system

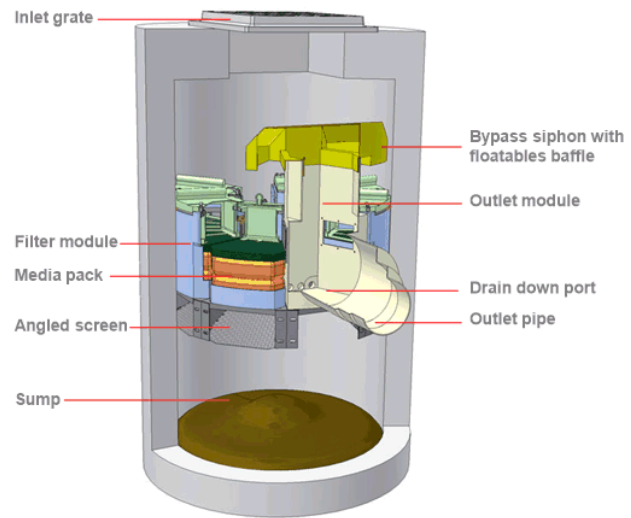
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Hydro
International 

FLUIDISED MEDIA BED UP-FLOW FILTRATION SYSTEM

The Rocla Up-Flo™ Filter is the most efficient high-rate stormwater filtration technology available for the removal of sediments, nutrients, metals and hydrocarbons from stormwater runoff.

As the industry's only fluidized bed upflow filtration technology, the Up-Flo™ Filter provides a higher level of treatment, a higher rate of filtration, longer life of filter media and a longer maintenance cycle than other filter systems.



APPLICATIONS

- New developments
- Industrial and commercial facilities
- Source control
- Sediment and hydrocarbon control
- Nutrient control
- Heavy metal control
- Wetlands protection
- Retrofit

ADVANTAGES

- Available in multiple configurations
- Small footprint
- Removes >70% total suspended solids (TSS) with a mean particle size of 20 microns
- Low head requirements
- Higher flow capacity resulting in smaller footprint
- Includes a 4mm pre-screening
- Uses a patented CPZ™ media
- Patented drain-down prevents media degradation
- Long media life and maintenance cycle
- Easy installation
- Low maintenance

HOW IT WORKS

During a storm event, stormwater enters the chamber via an inlet pipe or inlet grate and fills the chamber, as flow is directed up through the angled screen and filter modules. Flow is evenly distributed across the media for maximum treatment.

Gross debris and sediment settle out in the sump. Oil and floatables rise to the surface of the water.

Treated water flows out of the filter module to the outlet module and into the outlet pipe.

Excess flows are discharged to the outlet using a siphon bypass, which also acts as a floatables baffle, preventing the escape of oil and floatable trash.

To guard against pollutant leaching and filter media degradation between storm events, water drains out of the chamber through the filtered drain-down port as the storm subsides.

CPZ™ MIX

- Over 70% removal of metals, nutrients & TSS
- TSS removal down to 1 micron particle
- 1.6 l/s per module

The industry's only fluidised
bed upflow filtration
technology

PRODUCT SELECTION TABLE

UFF Model Type	Chamber Size	Number of Modules	Maximum Treatment Flow (L/s)	Peak Syphonic Bypass Flow (L/s)	Min Standard Headloss (mm)	Sump Storage Capacity (Litres)
Standard	DN1200	1 - 6	9.6	170	500	700
Small Vault	DN1800	7 - 8	12.8	225	500	1580
Medium Vault	DN2400	9 - 14	22.4	400	500	2800
Large Vault	DN2700	15 - 19	30.4	535	500	3550
Special	As required	>19	>30.4	>535	500	As designed

FILTER MODULES

Each filter module has a typical treatment flow rate of 1.6 L/sec.

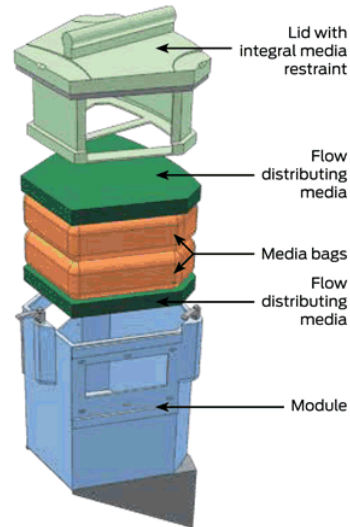
SIZING AND DESIGN

The Rocla Up-Flo™ Filter is sized to treat a specified runoff area or a design flow rate for a water quality design storm.

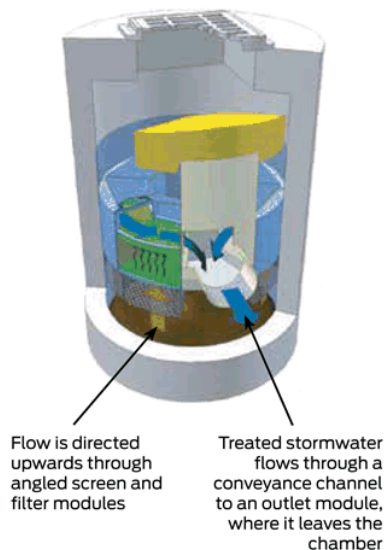
The number of modules is determined by the treatment objectives and the size of the runoff area. This is based on each individual filter module treatment flowrate.

The flexibility of the system allows effective design for sites with low hydraulic drops. Rocla Water Quality's expert PAD engineering team can assist in designing a system that is right for each situation.

To allow easier access to the individual modules the design includes removeable lids that can be temporarily stacked adjacent to the inlet.



Design developed at the University of Alabama. Data is collected through extensive field testing by the University of Alabama. No chemical exhaustion of media after 12 months of field testing.



INSTALLATION

Installing a Rocla Up-Flo™ Filter is as simple as installing a standard precast pit and connecting to the stormwater system.

MAINTENANCE

Maintenance is simple, with easy access to the sump and replaceable media packs. A vacuum truck is used to remove sediment and other pollutants from the sump and the media packs are replaced manually. Unlike other filtration systems, no specialised heavy lifting equipment is needed.



CONCRETE PRODUCTS | PIPE | ENGINEERING CAPABILITY



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Before application in a particular situation, Rocla recommends that you obtain appropriate independent qualified expert advice confirming the suitability of product(s) and information in question for the application proposed.

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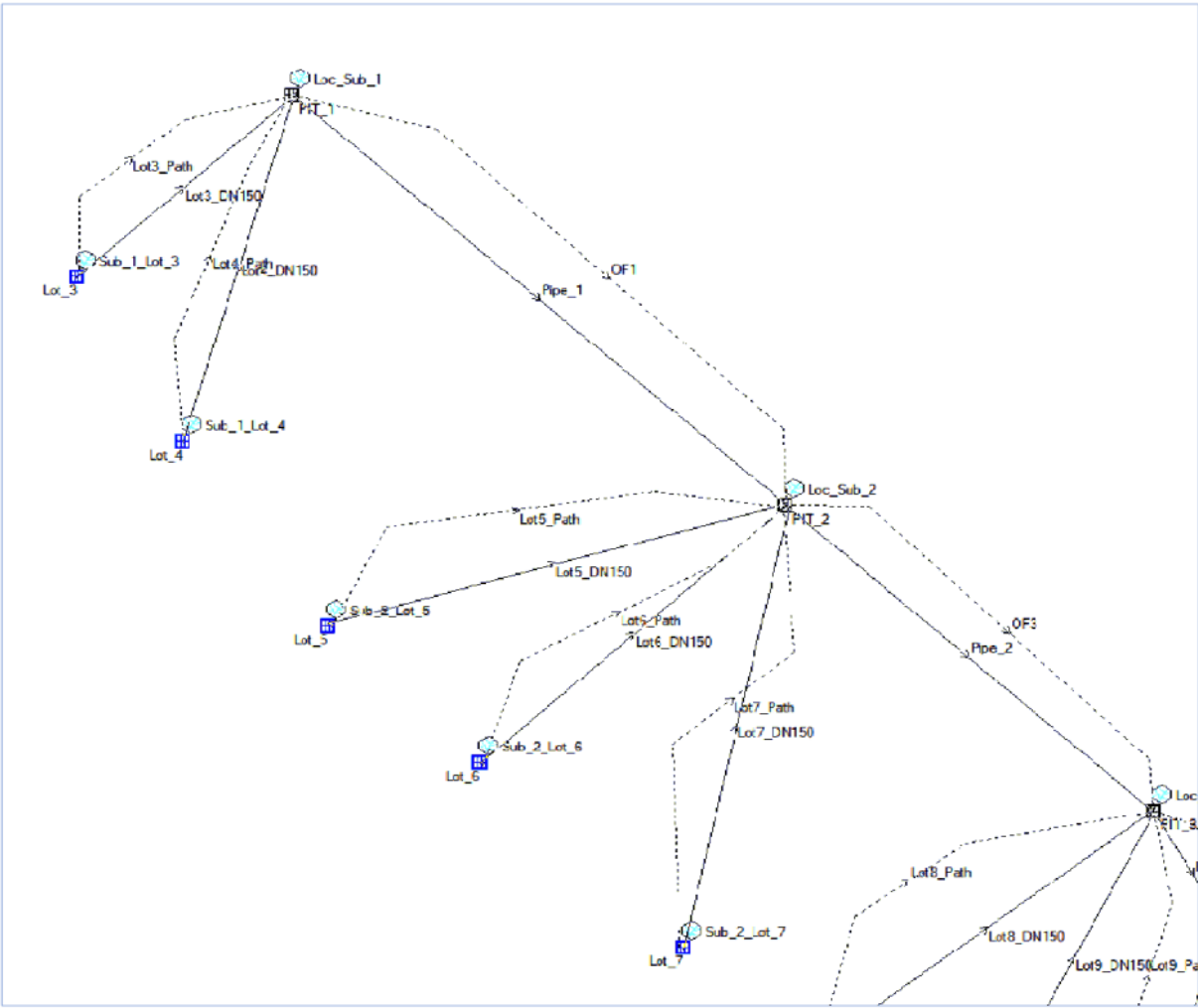


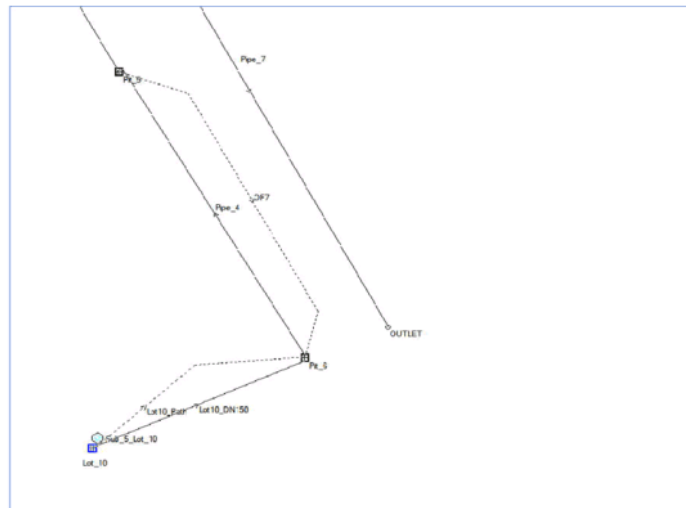
DRAINS Modelling outputs

Appendix B

(Includes previous analysis prepared for detention basin analysis plus additional analysis associated with overland flow analysis for upstream catchment)

PIT / NODE DETAILS		Version 15																				
Name	Type	Family	Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor	x	y	Bolt-down lid	id	Part Full Shock Loss	Inflow Hydrograph	Pit is	Internal Width (mm)	Inflow is Misaligned	Minor Safe Pond Depth (m)	Major Safe Pond Depth (m)		
Overflow	Node					0	172	0	0	527652.168	5248296.505	No	1630		No	New	300	No	0.1	0.2		
Lot_3	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.613	0.2	0	0	527536.182	5248344.477	No	22711541	1 x Ku	No	New		No				
PIT_1	OnGrade	IPWEA Pits, 3% crossfall, 3% grade	Single Grated Pit	5.9	185.1	185.1		0	0	527550.921	5248358.295	No	1	1 x Ku	No	New		No				
PIT_2	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	5.9	183.65	183.65		0	0	527584.797	5248327.153	No	2	1 x Ku	No	New		No				
PIT_3	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	5.4	180.1	180.1		0	0	527610.056	5248303.917	No	3	1 x Ku	No	New		No				
PIT_4	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	179	179		0	0	527615.557	5248294.102	No	4	1 x Ku	No	New		Yes				
Recapture_Pit	Sag	IPWEA Pits, 3% crossfall, 1% grade	Single Grated Pit	1.6	4	172.5	0.4	0	0	527624.947	5248295.087	No	22404460	1 x Ku	No	New			0.15	0.4		
OUTLET	Node					170.55		0	0	527647.079	5248253.214	No	6		No	New						
Lot_4	Sag	Small Pits	300x300 Grated Pit	0.25	4	189	0.2	0	0	527543.433	5248332.047	No	22711546	1 x Ku	No	New			0.1	0.2		
Lot_5	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.9	0.2	0	0	527553.348	5248317.989	No	22711548	1 x Ku	No	New			99999			
Lot_6	Sag	Small Pits	300x300 Grated Pit	0.25	4	188.96	0.2	0	0	527563.854	5248307.63	No	22711550	1 x Ku	No	New			99999			
Lot_7	Sag	Small Pits	300x300 Grated Pit	0.25	4	187.6	0.2	0	0	527577.764	5248293.572	No	22711551	1 x Ku	No	New			99999			
Lot_8	Sag	Small Pits	300x300 Grated Pit	0.25	4	185.9	0.2	0	0	527587.177	5248285.96	No	22711556	1 x Ku	No	New			99999	0.2		
Lot_9	Sag	Small Pits	300x300 Grated Pit	0.25	4	183.7	0.2	0	0	527596.978	5248281.781	No	22711558	1 x Ku	No	New			99999			
Lot_10	Sag	Small Pits	300x300 Grated Pit	0.25	4	181.05	0.2	0	0	527623.194	5248242.372	No	22711560	1 x Ku	No	New			99999			
Pit_6	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	177	177		0	0	527640.417	5248250.448	No	22711616	1 x Ku	No	New						
Pit_5	OnGrade	IPWEA Pits, 3% crossfall, 8% grade	Single Grated Pit	1.3	178	178		0	0	527625.324	5248276.049	No	22711606	1 x Ku	No	New						
HW1	Headwall			0.5	180	180		0	0	527613.429	5248277.584	No	2329272									
DETENTION BASIN DETAILS																						
Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length(m)	id							
Basin2606	171	20		Orifice		150	171.1			527623.556	5248297.366	No			17528890							
	172	20																				
	173	20																				
SUB-CATCHMENT DETAILS																						
Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%)	Grass Slope %	Supp Slope %	Paved Rough	Grass Rough	Supp Rough	Lag Time or Factor	Gutter Length (m)	Gutter Slope %	Gutter FlowFactor	Rainfall Multiplier
Sub_1_Lot_3	Lot_3	0.54	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Loc_Sub_1	PIT_1	0.18	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Loc_Sub_2	PIT_2	0.17	56	44	0	5	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0	0	0	0	1
Loc_Sub_3	PIT_3	0.13	62	38	0	0	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0	0	0	0	1
Loc_Sub_4	PIT_4	0.15	54	46	0	5	0	0	0	10	-1	0.1	5	-1	0.015	0.05	-1	0	0	0	0	1
Sub_1_Lot_4	Lot_4	0.54	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_2_Lot_5	Lot_5	0.28	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_2_Lot_6	Lot_6	0.28	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_2_Lot_7	Lot_7	0.28	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_3_Lot_8	Lot_8	0.51	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_3_Lot_9	Lot_9	0.51	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_5_Lot_10	Lot_10	0.12	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sub_4	HW1	0.86	0	100	0	5	30	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PIPE DETAILS																						
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe is	No. Pipes	Chg From	At Chg	Chg (m)	RI (m)	Chg (m)	RI (m)	etc (m)			
Lot3_ON150	Lot_3	PIT_1	15	188.013	184.5	23.42	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_3	0								
Pipe_1	PIT_1	PIT_2	46.09	183.38	181.96	3.3	Concrete, under roads	450	450	0.3	New	1	PIT_1	0								
Pipe_2	PIT_2	PIT_3	33.6	181.86	179	8.51	Concrete, under roads	450	450	0.3	New	1	PIT_2	0								
Pipe_3	PIT_3	PIT_4	11.3	179	177	17.7	Concrete, under roads	450	450	0.3	New	1	PIT_3	0								
Pipe_6	PIT_4	Basin2606	8.6	175.774	171.67	47.72	Concrete, under roads	450	450	0.3	NewFixed	1	PIT_4	0								
Basin_Out	Basin2606	Recapture_Pit	5	171.67	171	13.4	Concrete, under roads	450	450	0.3	NewFixed	1	Basin2606	0								
Pipe_7	Recapture_Pit	OUTLET	44	171	169.65	3.07	Concrete, under roads	600	600	0.3	NewFixed	1	Recapture_Pit	0								
Lot4_ON150	Lot_4	PIT_1	15	188.6	184.5	27.33	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_4	0								
Lot5_ON150	Lot_5	PIT_2	15	188.3	183.05	35	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_5	0								
Lot6_ON150	Lot_6	PIT_2	15	188.36	183.05	35.4	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_6	0								
Lot7_ON150	Lot_7	PIT_2	15	187	183.05	26.33	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_7	0								
Lot8_ON150	Lot_8	PIT_3	15	185.3	179.5	38.67	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_8	0								
Lot9_ON150	Lot_9	PIT_3	15	183.1	179.5	24	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_9	0								
Lot10_ON150	Lot_10	Pit_6	15	180.45	176.4	27	uPVC, under roads, 1%	150	154	0.03	New	1	Lot_10	0								
Pipe_4	Pit_6	Pit_5	29.2	176.02	175.874	0.5	Concrete, under roads	450	450	0.3	New	1	Pit_6	0								
Pipe_5	Pit_5	PIT_4	20	175.874	175.774	0.5	Concrete, under roads	450	450	0.3	New	1	Pit_5	0								
Culvert_Connect	HW1	PIT_4	10	179.2	177	22	Concrete, under roads	450	450	0.3	NewFixed	1	HW1	0								
OVERFLOW ROUTE DETAILS																						
Name	From	To	Travel Time (min)	Spill Level (m)	Crest Level (m)	Weir Coeff. C	Cross Section	Safe Depth Major Storms (m)	Safe Depth Minor Storms (m)	Safe DvV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id	U/S IL	D/S IL	Length (m)						
Lot3_Path	Lot_3	PIT_1	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711762	188.813	185.1	15						
OF1	PIT_1	PIT_2	0.3				7.5m Roadway with 5%	0.3	0.3	0.6	3.15	0	1620	185.1	183.65	46						
OF3	PIT_2	PIT_3	0.1				7.5m Roadway with 5%	0.3	0.3	0.6	10.73	0	1622	183.65	180.1	33.1						
OF5	PIT_3	PIT_4	0.1				7.5m Roadway with 5%	0.3	0.3	0.6	9.65	0	1624	180.1	179	11.4						
OF8	PIT_4	Basin2606	0.1				7.5 m roadway with 3%	0.3	0.15	0.4	43.37	0	1627	179	172.57	8.3						
Basin-Spill	Basin2606	Recapture_Pit	0.1	172.57	1.8	1.6	Swale with 1:4 sidesloz	0.45	0.3	1	1.4	0	22711749	172.57	172.5	5						
OF41514	Recapture_Pit	Overflow	0.8				Swale with 1:4 sidesloz	0.45	0.3	1	0.59	0	22404467	172.65	172.4	42.2						
Lot4_Path	Lot_4	PIT_1	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711765	189.2	185.1	15						
Lot5_Path	Lot_5	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711770	189.1	183.65	15						
Lot6_Path	Lot_6	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711772	189.16	183.65	15						
Lot7_Path	Lot_7	PIT_2	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711775	187.8	183.65	15						
Lot8_Path	Lot_8	PIT_3	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711777	186.1	180.1	15						
Lot9_Path	Lot_9	PIT_3	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711781	183.9	180.1	15						
Lot10_Path	Lot_10	Pit_6	0.1				4 m wide pathway	0.3	0.15	0.4	5	0	22711784	181.25	177	15						
OF7	Pit_6	Pit_5	0.2				7.5m Roadway with 5%	0.3	0.3	0.6	3.44	0	22711759	178	177	29.1						
Sub4_Overflow	HW1	PIT_4	0.1	180	0.6	1.6	Swale with 1:4 sidesloz	0.45	0.3	1	5	0	23292946	180	179	15						





DRAINS results prepared from Version 2019.092

PIT / NODE DETAILS		Version 8						
Name	Max HGL	Max Pond	Max Surface	Max Pond	Min	Overflow	Constraint	
		HGL	Flow Arriving	Volume	Freeboard	(cu.m/s)		
			(cu.m/s)	(cu.m)	(m)			
Lot_3	188.79	188.87	0.078	0.2	0	0.018	Outlet System	
PIT_1	183.76		0.118		1.34	0.018	Inlet Capacity	
PIT_2	182.43		0.1		1.22	0.015	Inlet Capacity	
PIT_3	179.56		0.115		0.54	0.01	Inlet Capacity	
PIT_4	176.19		0.085		2.81	0.01	Inlet Capacity	
Recapture_Pit	171.6	172.8	0.621	1.3	0.9	0	Inlet Capacity	
OUTLET	169.9		0					
Lot_4	189.2	189.27	0.078	0.2	0	0.023	Outlet System	
Lot_5	188.78	188.97	0.04	0.2	0.12	0	Inlet Capacity	
Lot_6	188.84	189.03	0.04	0.2	0.12	0	Inlet Capacity	
Lot_7	187.48	187.67	0.04	0.2	0.12	0	Inlet Capacity	
Lot_8	186.07	186.16	0.073	0.2	0	0.015	Outlet System	
Lot_9	183.87	183.96	0.073	0.2	0	0.015	Outlet System	
Lot_10	180.58	181.09	0.017	0	0.47	0	Inlet Capacity	
Pit_6	176.2		0		0.8		None	
Pit_5	176.2		0		1.8	0	None	
HW1	179.51		0.124		0.49	0	None	

SUB-CATCHMENT DETAILS									
Name	Max	Paved	Grassed	Paved	Grassed	Supp.	Due to Storm		
	Flow Q	Max Q	Max Q	Tc	Tc	Tc			
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)			
Sub_1_Lot_3	0.054	0	0.054	5	30	10	1% AEP, 1 hour burst, Storm 4		
Loc_Sub_1	0.07	0.046	0.024	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_Sub_2	0.066	0.039	0.027	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_sub_3	0.053	0.036	0.018	0	1.64	0	1% AEP, 5 min burst, Storm 1		
Loc_Sub_4	0.058	0.033	0.025	5	1.64	0	1% AEP, 5 min burst, Storm 1		
Sub_1_Lot_4	0.054	0	0.054	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_5	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_6	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_2_Lot_7	0.028	0	0.028	5	30	0	1% AEP, 1 hour burst, Storm 4		
Sub_3_Lot_8	0.051	0	0.051	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_3_Lot_9	0.051	0	0.051	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_5_Lot_10	0.012	0	0.012	5	30	10	1% AEP, 1 hour burst, Storm 4		
Sub_4	0.086	0	0.086	5	30	10	1% AEP, 1 hour burst, Storm 4		

PIPE DETAILS					
Name	Max Q	Max V	Max U/S	Max D/S	Due to Storm
	(cu.m/s)	(m/s)	HGL (m)	HGL (m)	
Lot3_DN150	0.036	5.9	188.165	184.556	1% AEP, 1 hour burst, Storm 4
Pipe_1	0.118	1.5	183.631	182.426	1% AEP, 1 hour burst, Storm 10
Pipe_2	0.241	1.85	182.204	179.561	1% AEP, 1 hour burst, Storm 9
Pipe_3	0.344	8.01	179.381	177.126	1% AEP, 1 hour burst, Storm 9
Pipe_6	0.459	2.17	176.194	172.947	1% AEP, 1 hour burst, Storm 9
Basin_Out	0.053	0.33	172.113	171.601	1% AEP, 1 hour burst, Storm 9
Pipe_7	0.468	4.22	171.446	169.899	1% AEP, 1 hour burst, Storm 9
Lot4_DN150	0.031	6.12	188.746	184.549	1% AEP, 1 hour burst, Storm 4
Lot5_DN150	0.028	6.69	188.442	183.093	1% AEP, 1 hour burst, Storm 4
Lot6_DN150	0.028	6.72	188.502	183.092	1% AEP, 1 hour burst, Storm 4
Lot7_DN150	0.028	5.88	187.142	183.097	1% AEP, 1 hour burst, Storm 4
Lot8_DN150	0.036	5.17	185.452	179.561	1% AEP, 1 hour burst, Storm 4
Lot9_DN150	0.036	5.17	183.252	179.561	1% AEP, 1 hour burst, Storm 4
Lot10_DN150	0.012	5.11	180.55	176.428	1% AEP, 1 hour burst, Storm 4
Pipe_4	0.014	0.24	176.203	176.198	1% AEP, 30 min burst, Storm 9
Pipe_5	0.022	0.18	176.197	176.194	1% AEP, 10 min burst, Storm 1
Culvert_Connect	0.086	6.17	179.404	177.064	1% AEP, 1 hour burst, Storm 4

OVERFLOW ROUTE DETAILS									
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm	
Lot3_Path	0.018	0.018	1.401	0.045	0.06	4	8.43	1% AEP, 1 hour burst, Storm 4	
OF1	0.018	0.018	1.796	0.044	0.06	0.86	1.67	1% AEP, 5 min burst, Storm 1	
OF3	0.015	0.015	1.081	0.034	0.06	0.62	2.32	1% AEP, 10 min burst, Storm 7	
OF5	0.01	0.01	1.154	0.033	0.13	0.62	12.58	1% AEP, 5 min burst, Storm 1	
OF8	0.01	0.01	0.391	0.377	0.13	8.86	12.67	1% AEP, 5 min burst, Storm 1	
Basin-Spill	0.408	0.408	1.158	0.303	0.34	2.43	1.11	1% AEP, 1 hour burst, Storm 9	
OF41514	0	0	0.752	0	0	0	0		
Lot4_Path	0.023	0.023	1.401	0.045	0.06	4	8.55	1% AEP, 1 hour burst, Storm 4	
Lot5_Path	0	0	1.401	0	0	0	0		
Lot6_Path	0	0	1.401	0	0	0	0		
Lot7_Path	0	0	1.401	0	0	0	0		
Lot8_Path	0.015	0.015	1.401	0.013	0.06	1.26	11.55	1% AEP, 1 hour burst, Storm 4	
Lot9_Path	0.015	0.015	1.401	0.013	0.05	1.26	8.77	1% AEP, 1 hour burst, Storm 4	
Lot10_Path	0	0	1.401	0	0	0	0		
OF7	0	0	1.771	0	0	0	0		
Sub4_Overflow	0	0	1.598	0	0	0	0		

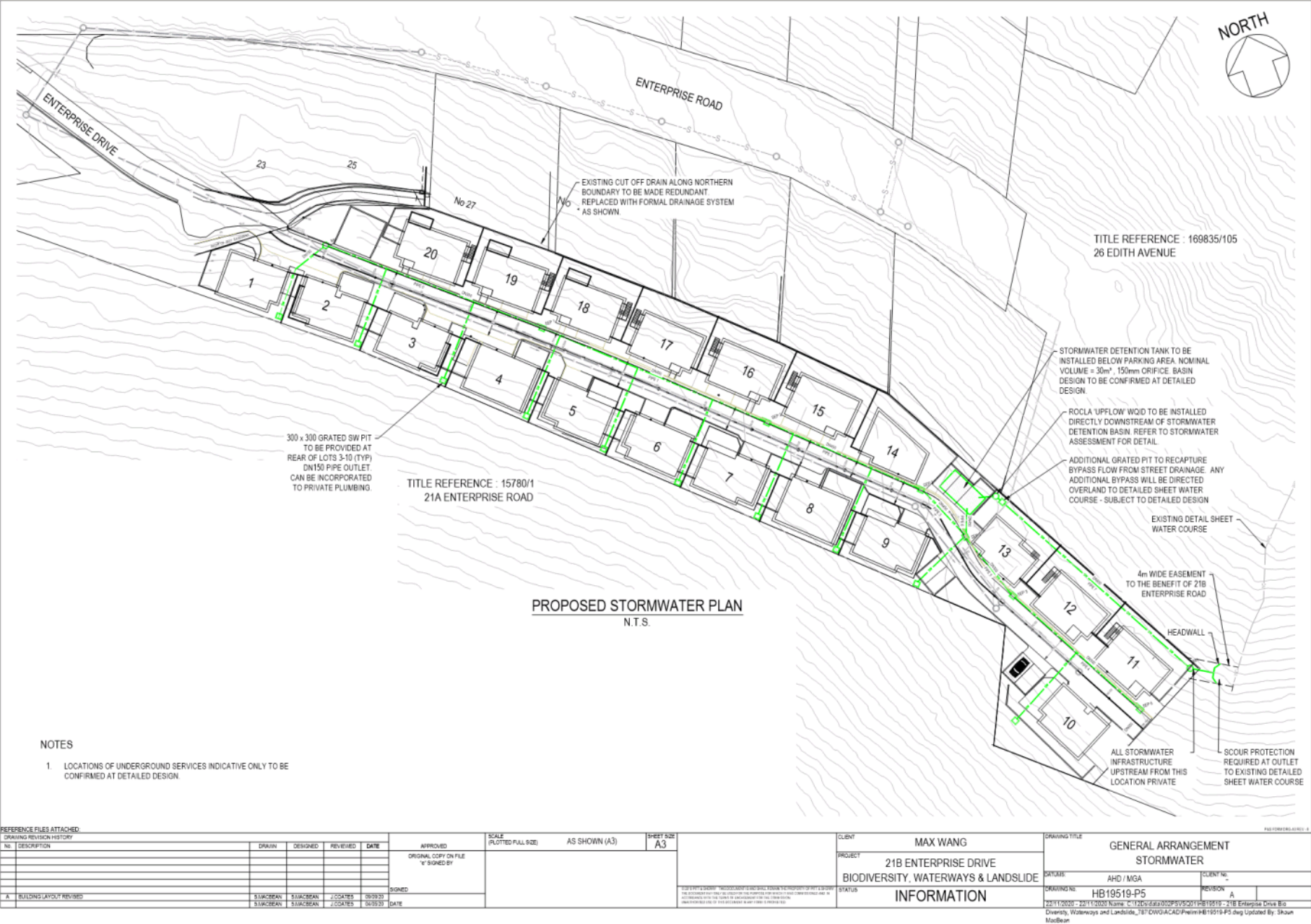
DETENTION BASIN DETAILS					
Name	Max WL	MaxVol	Max Q	Max Q	Max Q
			Total	Low Level	High Level
Basin2606	172.95	38.9	0.46	0.053	0.408



Stormwater Plans

Appendix C

pitt&sherry





21 Enterprise Drive
Stormwater Assessment

Contact

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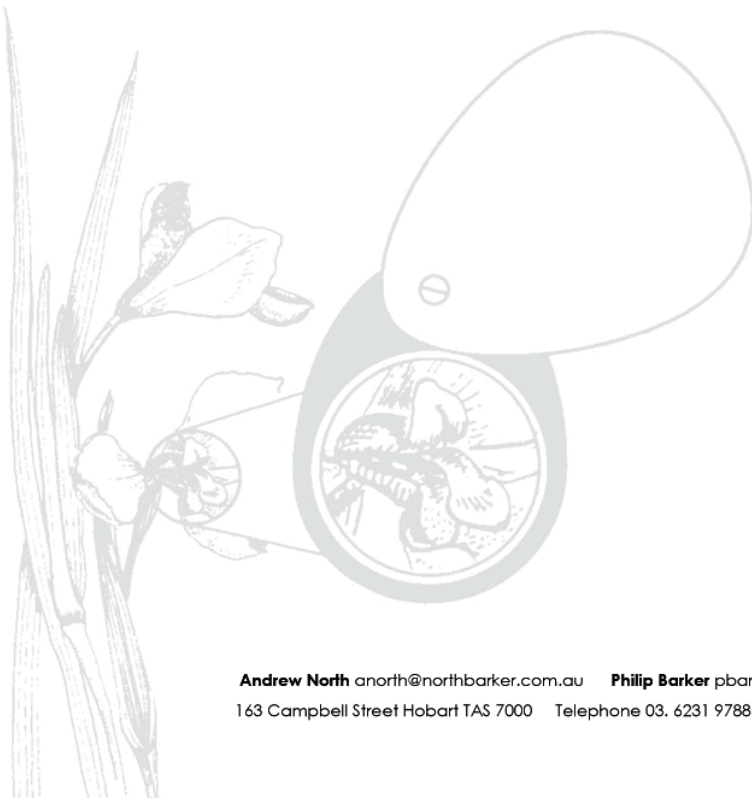


21b Enterprise Road, Sandy Bay

Natural Values Determination

28th October 2019

Max Wang
WAN001



Andrew North anorth@northbarker.com.au **Philip Barker** pbarker@northbarker.com.au
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21b Enterprise Road, Sandy Bay
 Natural Values Assessment

Summary	
Proponent	Max Wang
Proposal	Housing development at 21b Enterprise Road, Sandy Bay – the areas dealt with in this report are areas outside the lot but within the bushfire hazard management area and under the Biodiversity and Waterway and Coastal Protection Area Codes
Scheme	Hobart Interim Planning Scheme 2015
Zone	Environmental Management (D29) - the area outside the lot but still within the bushfire hazard management area is in this zone.
Overlays	Biodiversity (E10) and Waterway and Coastal Protection Area Codes (E11) - the area outside the lot but within the bushfire hazard management area overlaps with these overlays.
Vegetation	<i>Eucalyptus pulchella</i> woodland and forest (DPU) – not threatened
Threatened flora	None recorded
Impact	No significant impact
Threatened fauna	None recorded
Impact	No significant impact
EPBC Act	No significant impact to MNES
TSP Act	No permit to take required
Impact summary	Confined to a small area of DPU (0.31 ha) required for bushfire hazard management. This area does overlap with the Biodiversity overlay and the waterway, but significant impacts are not expected given the potential to limit clearing to just that required for bushfire hazard management. It is estimated that no more than 5 small to medium trees will be removed (all less than 70 cm DBH), and that the shrub layer will be removed in this area.

1. Project Details

Background: The proponent has submitted an application for a planning permit to develop 20 multiple dwellings at 21b Enterprise Road, Sandy Bay (Application No. PLN-19-314). Hobart City Council have since requested a natural values report over an area covered by the Biodiversity Code where bushfire hazard management is required as well as consideration of an area covered under the Waterway and Coastal Protection code. North Barker have thus been contacted to undertake a natural values assessment of these locations in consideration of the Biodiversity Code and Waterway and Coastal Protection Code under the *Hobart Interim Planning Scheme 2015*.

Date of Field Survey: 23rd October 2019

Field Survey, Report and Photos: Dave Sayers

Project Management: Richard White

Methods: Plant species composition of the search area was surveyed using an area search based on the Timed Meander Search Procedure¹. Fauna habitat was assessed concurrently. Vegetation was classified according to TASVEG 3.0 units, with boundaries determined in the field.

The Tasmanian Natural Values Atlas database was searched for records of threatened species and vegetation types within a 5 km radius. The possibility of threatened values known from within this radius occurring within the impact area has been considered in the interpretation of results.

Limitations: The field survey was undertaken in spring. Values that are seasonal may have been overlooked or absent; the quality of fauna habitat, including the presence of tree hollows, was assessed from ground level only.

2. Site Values

Lot Characteristics: 21b Enterprise Road is a 0.8 ha block with a north-east aspect on the slopes of Mt Nelson at an altitude of approximately 180 m asl. Maning Rivulet occurs to the north. Surrounding land use is a combination of low-density residential land (north) and native bushland (south). Geology is Jurassic dolerite.

Vegetation (Figure 2): The vegetation within the search area is dominated by *Eucalyptus pulchella* dry forest and woodland (DPU) (Figure 1). The grassy/shrubby *Eucalyptus pulchella* forest is widespread on the hills of Mt Nelson. The canopy is dominated by white peppermint *Eucalyptus pulchella*, with the occasional white gum *Eucalyptus viminalis* (Plates 1-3). Understorey shrubs and small trees include hop bush *Dodonaea viscosa*, black wattle *Acacia mearnsii*, Tasmanian blanketleaf *Bedfordia salicina*, bull oak *Allocasuarina littoralis*, silver wattle *Acacia dealbata* and native cherry *Exocarpos cupressiformis*. The shrub and herb layer is species poor and prominent species are peach berry heath *Lissanthe strigosa*; variable saw sedge *Lepidosperma laterale*, velvet tussockgrass *Poa rodwayi* and native cranberry *Astroloma humifusum*.

To the east of the property and within the bushfire hazard management area is an ephemeral upper tributary to Maning Rivulet. It is expected that water will only flow into this during high rainfall events, and for short periods. A small increase in *Lepidosperma laterale* is evident here.

DPU is not listed as a threatened community under the Tasmanian Nature Conservation Act 2002 (NCA) or the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA). There is around 130,000 ha of the 173,000 pre 1750 extent remaining within the South-East bioregion with 26.7% in reserves.

¹ Goff *et al.* 1982

21b Enterprise Road, Sandy Bay
Natural Values Assessment



Plate 1 – Typical view of the white peppermint community (DPU) in the survey area



Plate 2 – An ephemeral tributary to Maning Rivulet is present to the south east of the property.

Plant Species of Conservation Significance: 20 vascular plant taxa were recorded within the area under the biodiversity code or within the waterway buffer (Appendix A) with 1 introduced species. No threatened flora species was observed.

21b Enterprise Road, Sandy Bay
Natural Values Assessment

The Tasmanian *Natural Values Atlas*² lists observations of one threatened species within 500 m of the property. Numerous records are known within 5 km; however, the majority of these species do not have suitable habitat onsite or are considered very unlikely to be overlooked.

Threatened flora within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Diuris palustris</i>	swamp doubletail	e		n	1	01-Nov-1895

The swamp doubletail orchid is a coastal species with no likelihood of occurring onsite. The only other species with a moderate chance of occurring based on habitat is tall wallabygrass *Rytidosperma indutum*; however, this species was not recorded and is unlikely to be overlooked.

Fauna and Fauna Habitat of Conservation Significance: No mature trees and no potential tree hollows were observed. One location with large dolerite boulders contains some potential for use by native mammals as a lay-up (Figure 1, Plate 3). The area was searched and no signs of recent usage was evident.

Three threatened fauna species are known from within 500 m of the study area: the swift parrot *Lathamus discolor*, the eastern barred bandicoot *Perameles gunnii* and masked owl *Tyto novaehollandiae*. Several others have the potential to occur based on predicted range boundaries and habitat mapping³.

Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Lathamus discolor</i>	swift parrot	e	CR	mbe	1	10-Sep-1975
<i>Perameles gunnii</i>	eastern barred bandicoot		VU	n	1	26-Nov-1973
<i>Tyto novaehollandiae</i>	masked owl	pe	PVU	n	1	01-Jan-1950

Unverified Records

No unverified records were found!

Threatened fauna within 500 metres

(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
<i>Lathamus discolor</i>	swift parrot	e	CR	mbe	1	0	1
<i>Antipodia chaostola</i>	chaostola skipper	e	EN		1	0	0
<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>	spotted-tail quoll	r	VU	n	1	0	0
<i>Litoria raniformis</i>	green and gold frog	v	VU	n	1	0	0
<i>Discocharopa vigens</i>	Ammonite Pinwheel Snail	e	CR		1	0	0
<i>Prototroctes maraena</i>	australian grayling	v	VU	ae	1	0	0
<i>Pseudemoia pagenstecheri</i>	tussock skink	v		n	1	0	0
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	2	0	0
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>	masked owl (tasmanian)	e	VU	e	1	0	1
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	0	1
<i>Pardalotus quadragintus</i>	forty-spotted pardalote	e	EN	e	1	0	0
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	1	0	0
<i>Perameles gunnii</i>	eastern barred bandicoot		VU	n	1	0	1
<i>Aquila audax</i> subsp. <i>fleayi</i>	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
<i>Dasyurus viverrinus</i>	eastern quoll		EN	n	0	0	1

Eastern barred bandicoots may be present in the area. No suitable masked owl breeding hollows were recorded but this species may forage in the area. There is no suitable foraging or breeding habitat for swift parrot.

² Natural Values Report: nvx_1_22-Oct-2010

³ Natural Values Report: nvx_1_22-Oct-2010

21b Enterprise Road, Sandy Bay
Natural Values Assessment



Plate 3 - Large dolerite boulders have formed a small entrance that may be used by native animals. No evidence of recent usage was observed. There are many access points and it is easy to see through the feature thus it is unlikely to be used for breeding by any species.

21b Enterprise Road, Sandy Bay
Natural Values Assessment

Weeds: One species listed as declared under the Tasmanian *Weed Management Act 1999* was recorded (boneseed *Chrysanthemoides monillifera* subsp. *Monillifera*, Figure 1). This species is classed as Zone B under the WMA where containment is the goal.



Plate 4 – boneseed is prevalent around the entrance as well as along the man-made drainage line within the property.

21b Enterprise Road, Sandy Bay
Natural Values Assessment

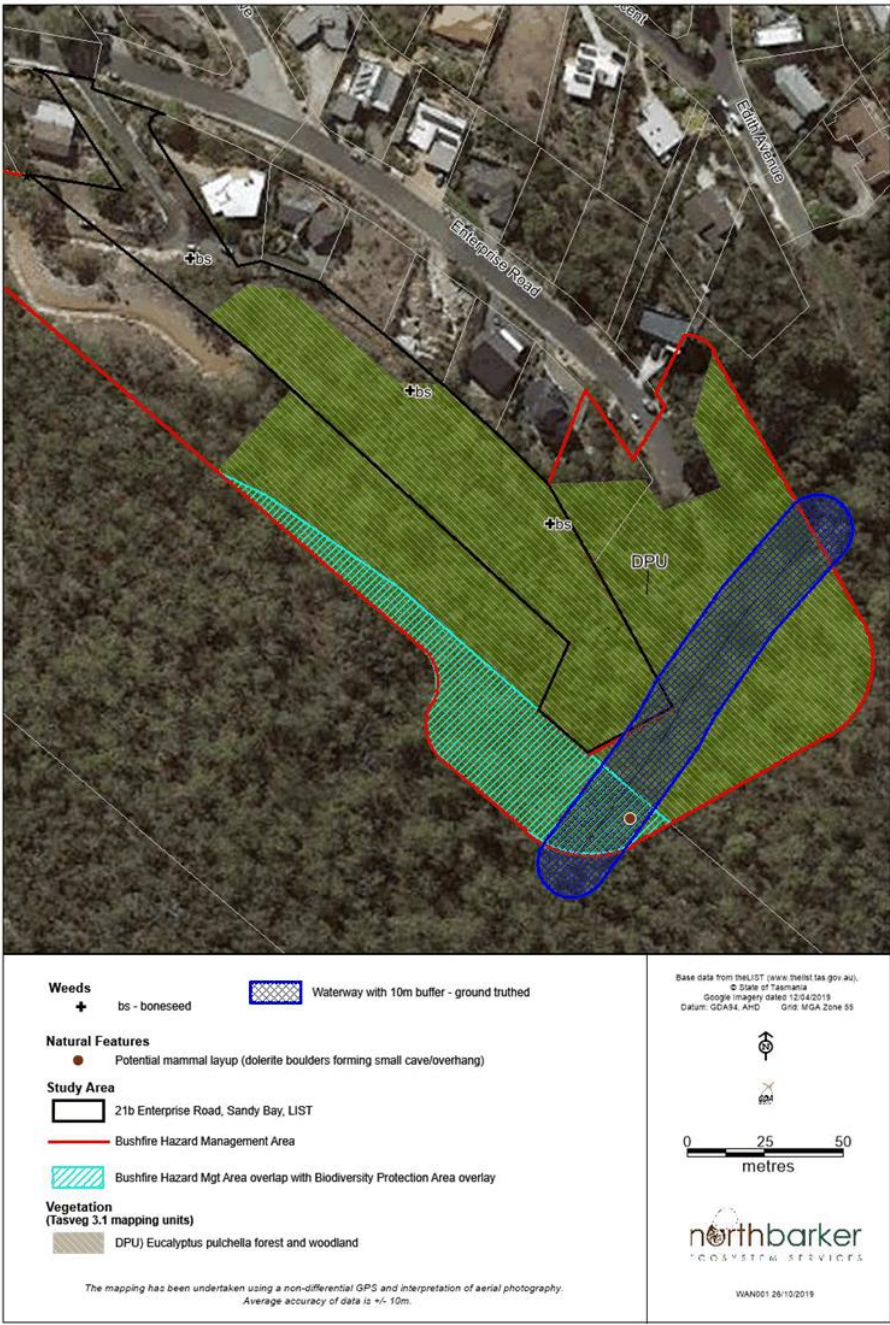


Figure 1: Vegetation, weeds and potential fauna habitat

21b Enterprise Road, Sandy Bay
 Natural Values Assessment

3. Impact Assessment and Scope for Mitigation

These comments are in relation to impact within the Biodiversity overlay and waterway.

Vegetation Communities

There is 0.31 ha of white peppermint forest (DPU) under the Biodiversity Protection overlay and Bushfire Hazard Management Area (Figure 1). The bushfire management plan does not require all the trees to be removed thus the majority of impact is to the tall shrub layer and below. It is estimated that 5 small to medium sized white peppermints (dbh less than 70 cm) may be impacted in order to meet the requirements of the bushfire management plan, in addition to the removal of the shrub layer. It is understood that there are no additional works outside the lot required for landslide management.

Threatened Flora Species

No threatened flora species present.

Threatened Fauna Habitat

There are no trees providing important habitat for threatened fauna requiring removal. No significant impacts to threatened fauna or threatened fauna habitat are expected.

Weeds

Earthworks on site are likely to stimulate germination of weeds. The use of machinery and vehicles during construction also brings an increased risk of spreading existing weeds within the locality. Prior to construction works the boneseed infestations should be removed. Post construction works; any declared weeds such as boneseed seen germinating should be treated to prevent their spread onsite.

4. Hobart Interim Planning Scheme 2015

The property is zoned general residential and an area within the bushfire hazard management area is subject to the Biodiversity Code E10 (Figure 1).

Biodiversity Code E10

Vegetation subject to the biodiversity code accords to *Eucalyptus pulchella* forest (DPU). This conforms to the definition of a **Low Priority Biodiversity Value** being one of 'all other native vegetation communities' – table E10.1.

No threatened fauna or critical habitat was recorded.

Development standards affecting Moderate Priority Biodiversity Values are required to meet Performance Criteria:

In order to meet the Code, E10.7.1 for Buildings and works needs to be met.

Objective:

To ensure that development for buildings and works that involves clearance and conversion or disturbance within a Biodiversity Protection Area does not result in unnecessary or unacceptable loss of priority biodiversity values.

Acceptable Solution A1

Clearance and conversion or disturbance must comply with **one** of the following:

(a) be within a Building Area on a plan of

(a) not met

(b) Zoning is general residential and for multiple dwellings. Not met

(c) does not apply as the zoning is general

21b Enterprise Road, Sandy Bay
 Natural Values Assessment

<p>subdivision approved under this planning scheme;</p> <p>(b) the development is for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and</p> <p>(i) clearance and conversion or disturbance is confined to Low Priority Biodiversity Values.</p> <p>(ii) the area of clearance and conversion is no more than 3,000 m²;</p> <p>(iii) the area of disturbance is no more than 6,000 m²;</p> <p>(c) the development is other than for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and</p> <p>(i) clearance and conversion or disturbance is confined to Low Priority Biodiversity Values.</p> <p>(ii) the area of clearance and conversion is no more than 1,500 m²;</p> <p>(iii) the area of disturbance is no more than 3,000 m².</p>	<p>residential.</p> <p>The Acceptable Solution A1 cannot be met therefore the Performance Criteria need assessment.</p>
<p>Performance Criteria</p>	
<p>Clearance and conversion or disturbance must satisfy the following:</p> <p>DPU – low priority</p> <p>(a) if low priority biodiversity values:</p> <p>(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;</p> <p>(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;</p> <p>(b) for moderate priority biodiversity</p>	<p>(a)</p> <p>(i) The only area subject to the code is a bushfire management area outside the lot – this is a relatively small area, requiring selective clearing. It is understood that ~5 trees (all < 70 cm dbh), will be removed and that the shrub layer will also be impacted. Some trees and ground cover species will be retained.</p> <p>(ii) The multiple dwellings have been assessed to BAL 12.5. Disturbance to the vegetation will occur on the adjacent lot which is where 0.31 ha of DPU occurs under the Biodiversity Protection overlay. In order to satisfy bushfire hazard management some impact is necessary to the community. However, not all trees require removal (~5 small to medium trees), and disturbance is largely limited to the shrub</p>

21b Enterprise Road, Sandy Bay
Natural Values Assessment

values	<p>layer.</p> <p>Based on the above, these impacts appear reasonable within the biodiversity protection area in order to meet this performance requirement.</p>
--------	---

Waterway & Coastal Protection Code E11

An ephemeral tributary to Maning Rivulet is adjacent to 21b Enterprise Road and within the bushfire hazard management area. Figure 1 shows the location of this waterway combined with a 10 m buffer from the waterway edges. A portion of this overlay is also within 21b Enterprise Road. The application is required to meet 11.7.1 of this Code. The Acceptable Solution A1 cannot be met so the Performance Criteria must be met, these are addressed under each criterion in bold.

E11.7.1 Buildings and Works

<p>A1</p> <p>Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.</p> <p>This is not met therefore go to P1</p>	<p>P1</p> <p>Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:</p> <p>(a) avoid or mitigate impact on natural values;</p> <p>Impact is primarily confined to a small area of the 10 m waterway natural values where there is overlap with the lot. Additionally, there will be some disturbance in the overlap with the bushfire hazard management area; it is understood that not all vegetation will require removal in this area, and that the ground and tree layers may largely be retained. Ensuring trees are retained within the buffer will reduce impact. This, combined with the implementation of a sedimentation and erosion plan will limit the potential for erosion and run off.</p> <p>(b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;</p> <p>A sedimentation and erosion plan will help to reduce any potential impact from run off from the development of the lot in the east to the waterway.</p> <p>(c) avoid or mitigate impacts on riparian or littoral vegetation;</p> <p>Impacts cannot be avoided entirely with the development of the lot in the east. Impacts come largely from the small area within the buffer cleared for the development and bushfire hazard management. It is recommended that trees are retained within the waterway buffer and understorey thinning restricted to that necessary to comply with bushfire management procedures combined with erosion and sedimentation</p>
--	---

21b Enterprise Road, Sandy Bay
Natural Values Assessment

	<p><i>planning to ensure impacts are minimised downstream.</i></p> <p>(d) maintain natural streambank and streambed condition, (where it exists);</p> <p><i>There will be some minor impacts in the surrounding area of the waterway for bushfire hazard management however retaining trees in this section combined with erosion and sediment planning will ensure natural streambank/bed processes continue to function.</i></p> <p>(e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;</p> <p><i>In stream habitat is largely a 1m lower lying area within the bushfire hazard area and contains water only at high rainfall times where it quickly disperses downstream. The level of vegetation removal is not anticipated to affect in-stream natural habitat as long as minimal clearing in this area is implemented as discussed.</i></p> <p>(f) avoid significantly impeding natural flow and drainage;</p> <p><i>Minor vegetation works in relation to bushfire hazard management will not significantly impede the natural flows and drainage as discussed earlier. No contour changes are anticipated.</i></p> <p>(g) maintain fish passage (where applicable); not applicable</p> <p>(h) avoid landfilling of wetlands; This will not occur from this development.</p> <p>(i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.</p> <p><i>It is understood the proponent will undertake works in accordance with the manual.</i></p>
<p>A2</p> <p>Building and works within a Future Coastal Refugia Area must be within a building area on a plan of subdivision approved under this planning scheme.</p> <p>The area is not a Future Coastal Refugia Area.</p>	

21b Enterprise Road, Sandy Bay
Natural Values Assessment

A3 Buildings and works within a Potable Water Supply Area must be within a building area on a plan of subdivision approved under this planning scheme. Does not apply	
A4 Development must involve no new stormwater point discharge into a watercourse, wetland or lake. This will not occur	

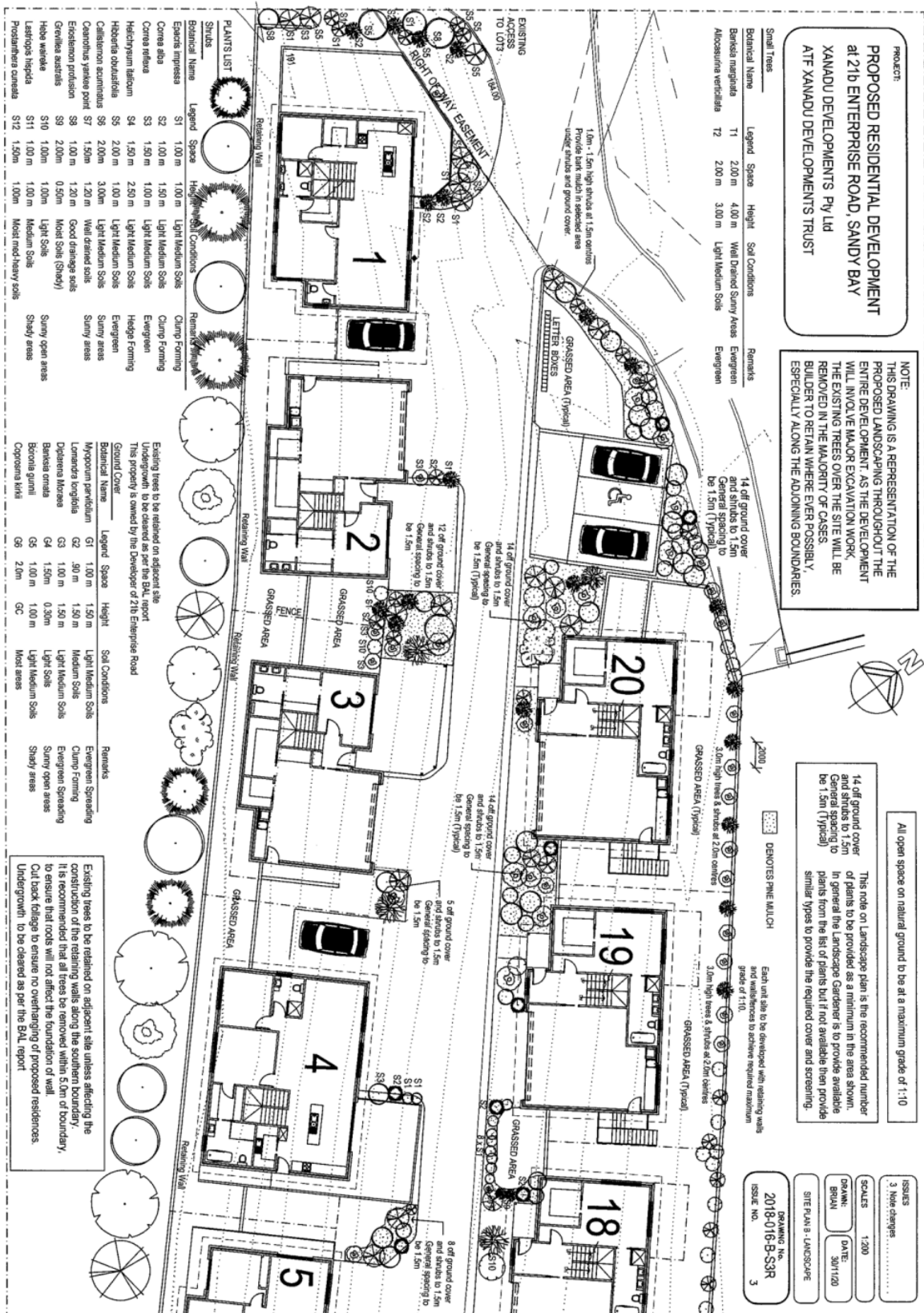
21b Enterprise Road, Sandy Bay
Natural Values Assessment**Appendix A: Vascular Plant Species list****Status codes:**

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Sites:

1	DPU (white peppermint forest) – E527528, N5248343	26-10-2019 Dave Sayers
---	---	------------------------

Site	Name	Common name	Status
	DICOTYLEDONAE		
	ASTERACEAE		
1	<i>Olearia ramulosa</i>	twiggy daisybush	
	CASUARINACEAE		
1	<i>Allocasuarina littoralis</i>	black sheoak	
	CLUSIACEAE		
	EPACRIDACEAE		
1	<i>Astroloma humifusum</i>	native cranberry	
1	<i>Lissanthe strigosa subsp. subulata</i>	peachberry heath	
	EUPHORBIACEAE		
1	<i>Amperea xiphoclada var. xiphoclada</i>	broom spurge	
	MIMOSACEAE		
1	<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
1	<i>Acacia mearnsii</i>	black wattle	
1	<i>Acacia melanoxylon</i>	blackwood	
1	<i>Acacia verticillata subsp. verticillata</i>	prickly moses	
	MYRTACEAE		
1	<i>Eucalyptus pulchella</i>	white peppermint	en
1	<i>Eucalyptus viminalis subsp. viminalis</i>	white gum	
	PITTOSPORACEAE		
1	<i>Bursaria spinosa</i>	prickly box	
	PROTEACEAE		
1	<i>Banksia marginata</i>	silver banksia	
	SANTALACEAE		
1	<i>Exocarpos cupressiformis</i>	common native-cherry	
	SAPINDACEAE		
1	<i>Dodonaea viscosa subsp. spatulata</i>	broadleaf hopbush	
	MONOCOTYLEDONAE		
	CYPERACEAE		
1	<i>Lepidosperma laterale</i>	variable swordspurge	
	POACEAE		
1	<i>Austrostipa sp.</i>	speargrass	
1	<i>Poa rodwayi</i>	velvet tussockgrass	
1	<i>Themeda triandra</i>	kangaroo grass	
	XANTHORRHOEACEAE		
1	<i>Lomandra longifolia</i>	sagg	



PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

Sign to be provided at front of site advising of visitor parking available.
 All visitor parks to be clearly nominated with painted lines indicating parks.

Private open space to be levelled and landscaped to achieve maximum 1:10 fall across allocated space in accordance with Council Planning scheme requirements

All pavement throughout to be 100mm thick concrete unless otherwise selected

All parts of site except for driveways, paths and building area are to be levelled and covered with 50mm of loam and sown with lawn seed. In selected areas, barked ground covers to be provided in conjunction with specified trees, shrubs and ground cover planting.
 (Refer plant list.)

All existing trees are to be retained if they do not affect the proposed building and pavement layout. Some trees may need to be trimmed.

--- DENOTES 1800 HIGH PALING FENCE
 OWNER TO MAINTAIN LANDSCAPING UNTIL
 SETTLEMENT OF DWELLINGS WHEN NEW
 OWNERS CAN TAKE RESPONSIBILITY.

14 off ground cover
 and shrubs to 1.5m
 General spacing to
 be 1.5m (typical)

This note on Landscape plan is the recommended number
 of plants to be provided as a minimum in the area shown.
 In general the Landscape Gardener is to provide suitable
 plants from the list of plants but if not available then provide
 similar types to provide the required cover and screening

Existing trees to be retained on adjacent site unless affecting the
 construction of the retaining walls along the southern boundary.
 It is recommended that all trees be removed within 5.0m of boundary,
 to ensure that roots will not affect the foundation of wall.
 Cut back foliage to ensure no overhanging of proposed residences.
 Undergrowth to be cleared as per the BAL report

GENERAL NOTE:
 WHERE WINDOWS FACE EACH OTHER FROM ADJOINING
 UNITS, SHRUBSCREEN FENCING IS TO BE PROVIDED
 TO AFFORD PRIVACY TO OCCUPANTS.

Owners require privacy to the front area of the property.
 Planting will be provided in front of fence to soften the
 timber of the proposed fence.

PLANTS LIST

Botanical Name	Legend	Space	Height	Soil Conditions	Remarks
Small Trees					
Banksia integrata	T1	2.00 m	4.00 m	Well Drained Sunny Areas	Evergreen
Allocasuarina verticillata	T2	2.00 m	3.00 m	Light Medium Soils	Evergreen
Shrubs					
Epacris impressa	S1	1.00 m	1.00 m	Light Medium Soils	Clump Forming
Cornus alba	S2	1.00 m	1.50 m	Light Medium Soils	Clump Forming
Cornus reflexa	S3	1.50 m	1.00 m	Light Medium Soils	Evergreen
Hedyscymum laetum	S4	1.50 m	2.50 m	Light Medium Soils	Hedge Forming
Hibiscus obtusifolia	S5	2.00 m	1.00 m	Light Medium Soils	Evergreen
Callistemon acuminatus	S6	2.00 m	3.00 m	Light Medium Soils	Sunny areas
Cantholus yankas pond	S7	1.50 m	1.20 m	Well drained soils	Sunny areas
Ecotricum pulchrum	S8	1.00 m	1.20 m	Good drainage soils	
Grevillea australis	S9	2.00 m	0.50m	Moist Soils (Shady)	
Helle wattle	S10	1.00 m	1.00 m	Light Soils	
Leptosiphon hirsuta	S11	1.00 m	1.00 m	Medium Soils	Sunny open areas
Prostanthera curvata	S12	1.50m	1.00m	Moist mac-heavy soils	Shady areas
Ground Cover					
Myoporum parvifolium	G1	1.00 m	1.50 m	Light Medium Soils	Evergreen Spreading
Lomandra longifolia	G2	.90 m	1.50 m	Medium Soils	Clump Forming
Diplazium Moerai	G3	1.00 m	1.50 m	Light Medium Soils	Evergreen Spreading
Banksia ornata	G4	1.50m	0.30m	Light Soils	Sunny open areas
Boronia grandifolia	G5	1.00 m	1.00 m	Light Medium Soils	Shady areas
Coprosma kilali	G6	2.0m	GC	Moist areas	

Builder to ensure the maximum difference
 between the concrete pavement and the
 finished ground level of the Open Space
 is not greater than 50mm.

ISSUES

6. Revised notes

SCALES 1:200

DRAWN: 30/11/20

LANDSCAPE NOTES

DRAWING NO.
 2016-016-B-S3a
 ISSUE NO. 6



7
RUTHWELL STREET
MONTROSE
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MEMBER
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 Association of Tasmania
 TCC Accredited No. 7184
 (Building Designer)



21B Enterprise Road
Slope Stability Risk Assessment

Prepared for
Max Wang

Client representative
Max Wang

Date
20 November 2020

Rev 01



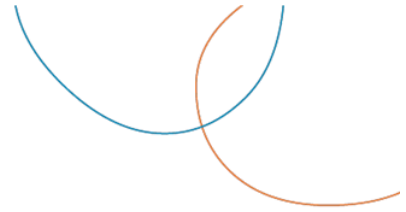






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Prepared by — Andrew Tyson		Date — 20 November 2020
Reviewed by — Nicky Pollington		Date — 20 November 2020
Authorised by — Nicky Pollington		Date — 20 November 2020

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
00	Report	A Tyson	N Pollington	N Pollington	23/10/2019
01	Bushfire Revision	J Coates	A Tyson	A Tyson	20/11/2020

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1. Background

pitt&sherry have been engaged by Max Wang to assess the potential for landslide hazard across the proposed subdivision at 21B, Enterprise Road. The assessment has been requested by the City of Hobart to support the subdivision application.

This report is based on AGS 2007 ("Practice Note Guidelines for Landslide Risk Management 2007", Australian Geomechanics Vol 42, No 1 March 2007) section 10.

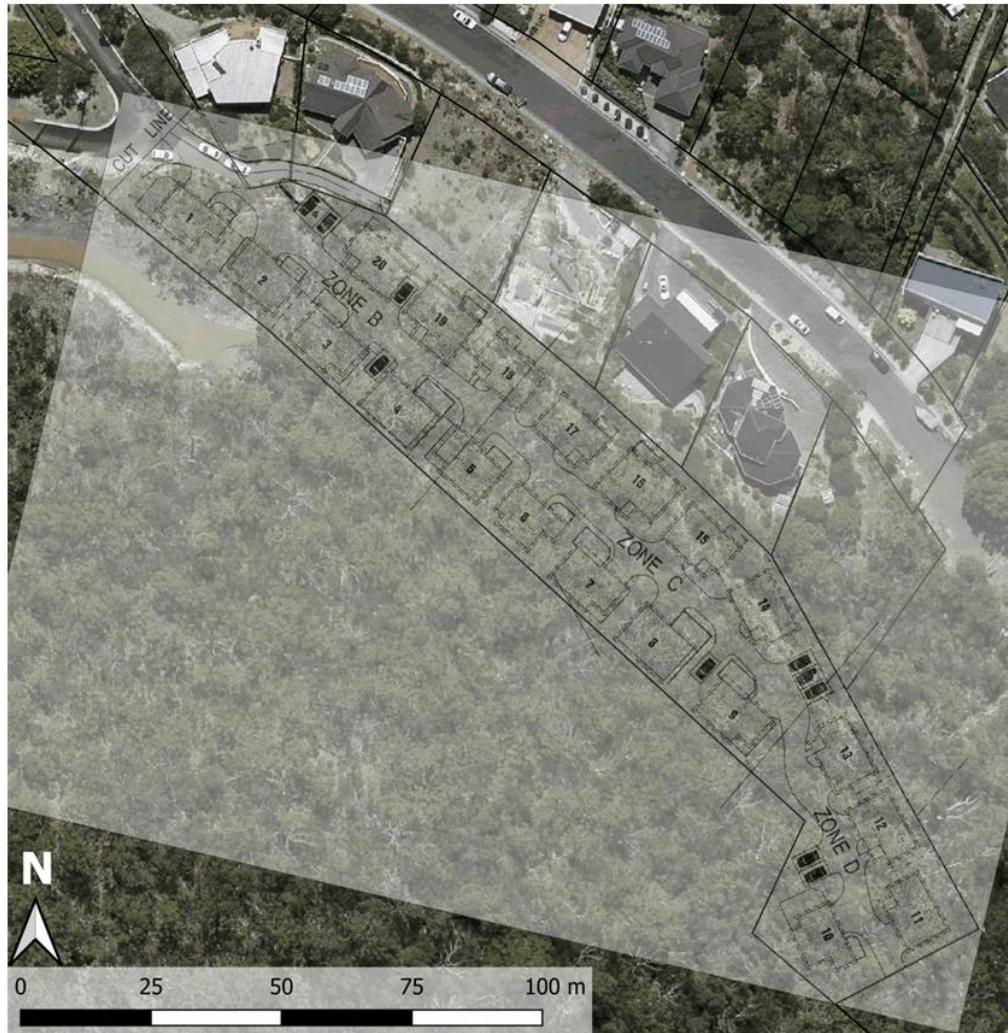


Figure 1: Site location and proposed unit locations

2. Introduction

The works at the site are proposed to consist of 20 units plus associated works.

2.1 Geology

The proposed subdivision lies entirely within an area mapped as being underlain by Jurassic dolerite.

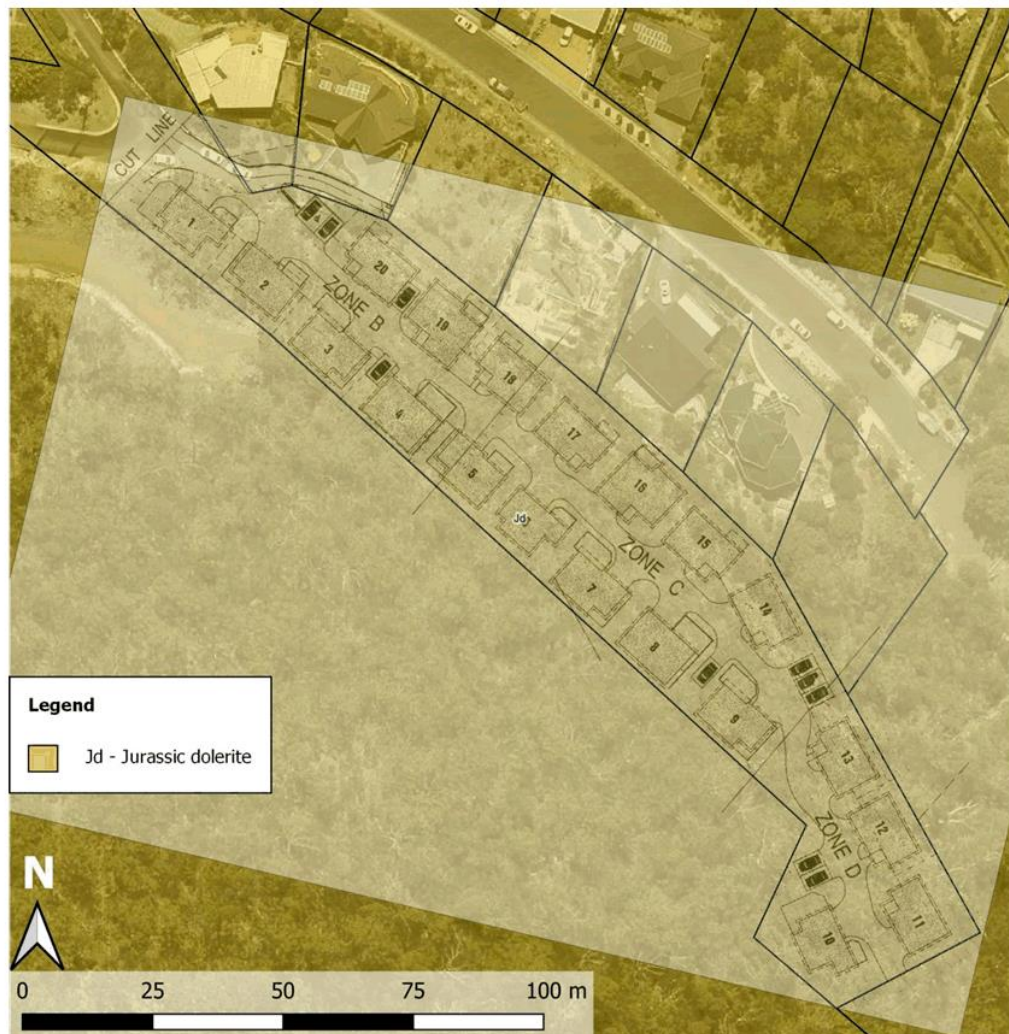


Figure 2: Scale 1:25,000 geology dataset (LISTmap, 2019)

2.2 Slope Instability

The Landslide Hazard Bands generated by Mineral Resource Tasmania classify the area on the far east of the site as medium hazard. This covers the locations of proposed units 10 and 11 and part of the unit 12. The particular hazard in this area is classified as "debris flow susceptibility; mountain source with runout >30m".

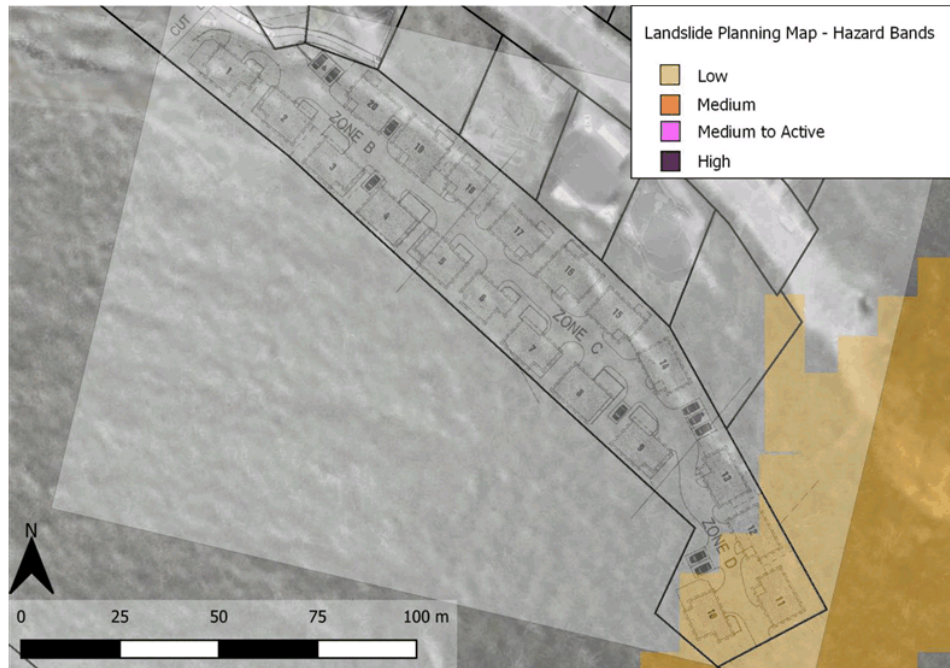


Figure 3: Site plan overlaid on hillshade and hazard band datasets

3. Data Sources

The following resources have been consulted:

- Practice Note Guidelines for Landslide Risk Management 2007. Australian Geomechanics Vol 42, No 1, March 2007
- http://www.mrt.tas.gov.au/mrt_maps/app/list/map: Geohazards
- <https://maps.thelist.tas.gov.au/listmap/app/list/map>: 1:25,000 Geology data
- <https://maps.thelist.tas.gov.au/listmap/app/list/map>: Landslide Hazard Bands
- Site walkover, measurements and photographs

4. Investigation Methods

A desk-based review was conducted. This was based on the datasets available on the LISTmap website, together with a search of documents held by Mineral Resources Tasmania.

Following the desk-based review a site walkover was conducted, with specific reference to potential instability features apparent on site, together with measurements of slope angles and photographs of features of interest.

5. Site Plan

The site plan is shown below in Figure 4.



Figure 4: Proposed development area including contours

6. Factual Observations

A site walkover was conducted by a senior engineering geologist on 23/10/2019.



Figure 5: Typical view of loose dolerite boulders on block

The block is characterised by dry scrubby vegetation growing in a thin layer of dolerite-derived soils overlying dolerite bedrock. Across the site there are many loose dolerite cobbles and boulders sitting on the slope, ranging up to two metres in maximum dimension.

Bedrock outcrops are common on the block (see Figure 6), being most prevalent in the steeper sections around units 7, 8, 9, 13, 14, 15 and 16.



Figure 6: Dolerite outcrop near proposed unit 7 site

Moving from northwest to southeast on the block the typical slope angle increases from around 21° to around 32° in the vicinity of planned units 7, 8 and 15. The slopes then tend to flatten slightly to around 30° further southeast on the block.

There is a deep cutoff drain that has been constructed along the base of the block. This typically shows bedrock less than one metre from the surface (Figure 7).



Figure 7: Bedrock exposed in cutoff drain at the base of the block

A stream line is indicated on the LISTmap data immediately to the east of the block; the slight gully associated with this feature forms much of the landslide hazard band that affects the proposed development. Inspection of the area around the stream line found that it was accurately marked on the data accessed from the LISTmap website. It also indicated that the majority of the loose rubble and debris that may prove hazardous in periods of high water flow was on the eastern side of the creek line (Figure 8, Figure 9). Close to the proposed development, little debris was evident.

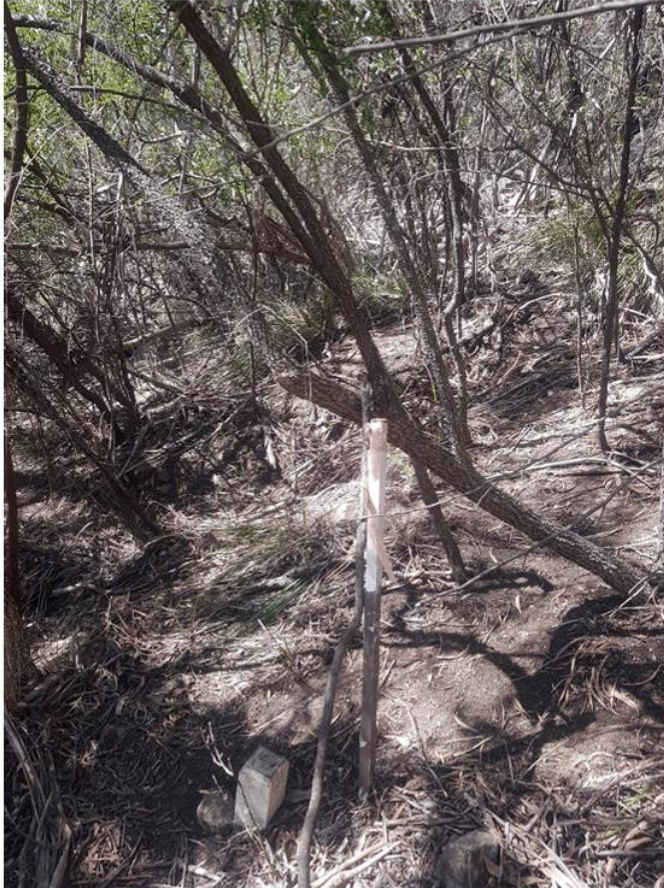


Figure 8: Corner peg of block; stream line 3m behind, debris visible in background



Figure 9: Areas of low debris to west of creek line, high debris to east; hazard band shown

7. Subsurface Investigations

No subsurface investigations have been carried out as these are not considered to be relevant to the debris flow hazard, which is a surface phenomenon. No evidence was observed of potential deeper seated, mass movement, and with the dolerite bedrock generally less than 1m from surface, mass movement is not considered to be a credible scenario.

8. Cross Sections

The cross section below presents the typical features observed on the slope and the inferred typical bedrock features based on the locations of outcrop with respect to localised steeper surfaces and previous experience.

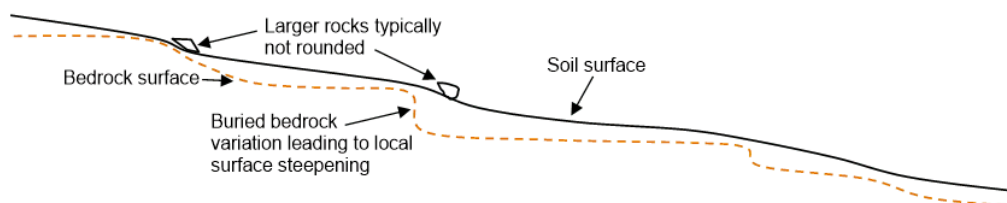


Figure 10: Idealised cross section



9. Cross Sections and Interpreted Subsurface Model with any Investigations

No additional subsurface work has been carried out at this site, and as the instability is a surface feature, these are not considered relevant.

10. Evidence of Past Performance

Evidence of water flow can be observed in the stream line and for approximately 10m to the west of the main stream line. On the eastern side of the stream line there is evidence of water flow for approximately 15m, also there are abundant loose dolerite cobbles that appear to have been moved by water action. Few loose rocks are apparent to the west of the stream line.

11. Identification of Debris Flows in Regional Context and Local History of Instability with Assessed Triggers

Steep slopes formed of dolerite colluvium are present in many areas of Hobart; the Hobart – Potential Debris Flow Hazard Map indicates that approximately 270 debris flows in the Hobart area were used in the generation of the hazard areas. Debris flow impact on properties are known, however these typically involve steeper slopes and larger catchments than those present at this site. In addition, it is noted that the colluvium thickness at this site is significantly less than the 1.5m thickness assumed in the generation of the hazard bands.

The most probable trigger for debris flows is heavy rainfall; the calculations used to produce the hazard band data for Hobart is 200mm/day. It is notable that the nearest weather station, Mount Nelson, has been in operation for twenty years and the highest recorded daily rainfall in that period was 127.8mm (14th January 2015).

12. Assessed Likelihood of Debris Flow

It is assessed that, given the thin colluvium observed in the area (both beside and above the property), and the high rainfall required to reach the conditions used in the Debris Flow Hazard Modelling, that the likelihood of a debris flow occurring in the stream line beside the site is Unlikely (1×10^{-4} annual chance of occurrence).

Given the observed distribution of rocky debris predominantly on the eastern side of the stream line, it is assessed that the likelihood of a debris flow occurring that affects the proposed development is Rare (10^{-5} annual chance of occurrence).

13. Assessed Consequence to Property and Risk to Life from Debris Flow

It is assessed that if a debris flow occurred that affected the proposed development, it is Barely Credible that any area outside of Unit 11 would be affected. Given the size of debris observed in the nearby area, and low catchment area above, together with the likely low impact angle of any debris affecting the unit (as planned, $<30^\circ$), damage to property would likely be Minor (limited damage to part of the structure, part of site requiring some reinstatement).

For life to be at risk a person would need to be outside to the side of the planned location of Unit 11, a situation that is not considered credible given the weather conditions required to trigger a debris flow.



14. Risk Mitigation Measures and Options

While debris flow is the type of slope instability that has been identified in the landslide hazard bands, it is considered to be a very low risk at this site, and as such risk mitigation is not assessed to be required.

During excavation and construction works it is possible that rocks could be dislodged and roll downslope. Currently there is a deep ditch at the base of the property that is likely to intercept such rocks, however it is clear that this will need to be filled to complete the development as planned. As such, due care should be taken during construction. Large rocks that are moved should be placed such that they are stable and sitting on the largest, flattest face available. Where possible rocks that are moved should be placed on the shallowest available slope. If a large (>500mm minimum dimension) rock is excavated and has no flat faces such that it can be placed in a stable position locally, it should be moved to an area where it can be placed in a stable position. With suitable care being taken the risk posed by boulder roll during construction is assessed to be low.

It is likely that during periods of heavy rainfall runoff will sheet down the slopes, potentially causing damage. Drainage should be designed to intercept and divert this water; however, care should be taken not to increase the volume of water in the stream line to the east of the property as this would then raise the level of hazard for people downstream of the development.

15. Conclusions

The medium landslide hazard band area at the eastern end of the proposed development is due to the modelled potential for debris flow.

It is assessed that debris flow causing damage to property on the development (as currently planned) is a very low risk scenario. It is further assessed that the scenario of debris flow causing risk to life is not credible. As such, the risk associated with debris flow is considered acceptable.

Rock roll is assessed to be a low risk during excavation and construction works. This is considered to be an acceptable level of risk.

Despite the acceptable assessment, due care should be taken as outlined in Section 14.

Should the landscape be significantly altered by development, or if the proposed development is significantly altered, this assessment should be revisited.

With regard to bushfire management, it will be important when removing trees that the root systems are not removed so that the extra disturbance associated with rapid removal of root systems does not occur. Keeping scattered groups of trees as recommended in the bushfire report will assist in retaining support for the slopes and reduce the risk of any large ground movement. These scattered clumps and any retained low vegetation will assist in reducing the risk of rocks rolling down slope and will also provide barriers that may slow or stop rolling rocks. The general intent and detail of the bushfire plan is not at odds with the landslide risk management measures for this area.



16. References

AGS (2007c). Practice Notes Guidelines for Landslide Risk Management. Australian Geomechanics Vol 42 No 1 March 2007

AGS(2007d). Commentary on Practice Notes Guidelines for Landslide Risk Management. Australian Geomechanics Vol 42 No 1 March 2007

Mineral Resources Tasmania 2005, Landslide Hazard Series – Digital Data Package of the Hobart Area, Mineral Resources Tasmania, Hobart

Mineral Resources Tasmania 2011, 1:25 000 & 1:250 000 Geology of Tasmania, Mineral Resources Tasmania, Hobart

Tasmanian Government 2010, Tasmanian Government, Hobart, viewed 20 February 2019, www.thelist.tas.gov.au



21B Enterprise Road Slope Stability Assessment

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Located nationally —

Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport
Wagga Wagga





Q UALITY HOME DESIGN

7 Ruthwell Street Montrose TAS 7010
Email bgr01@bigpond.com
Mob: 0418 121 481

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•
•
•



Note: the Development is below the skyline and will have a visual impact similar to the existing houses that presently front Enterprise Road.



Existing Development off Nicholas Drive
Many sites have multiple dwellings constructed on them



The existing development along the East End of Enterprise Road



The proposed Development will not be on the top of the hill as it is on Nelson Road

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

THESE PHOTOS ARE PROVIDED TO SHOW THAT THE DEVELOPMENT
WILL BE BELOW THE TOP OF THE HILL AND WILL HAVE TREES ABOVE
THE DEVELOPMENT.
THE HEIGHT OF THIS DEVELOPMENT IS BELOW ADJACENT RESIDENTIAL
DEVELOPMENTS



QUALITY
HOME
DESIGN

7
RUTHWELL STREET
MONTROSE
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MEMBER
Building Designers
Association of Tasmania
TCC Accredited No. 718R
(Building Designer)

ISSUES

SCALES

DRAWN:
BROAN

DATE:
03/09/20

LOCATION PHOTOS

DRAWING No.
2018-016-PHOTOS

ISSUE No.
1

pitt&sherry

21 Enterprise Road

Stormwater Assessment

Prepared for

Emmanuel Deltas Pty Ltd Consulting Engineers

Client representative

Emmanuel Deltas

Date

19 September 2019

Rev A

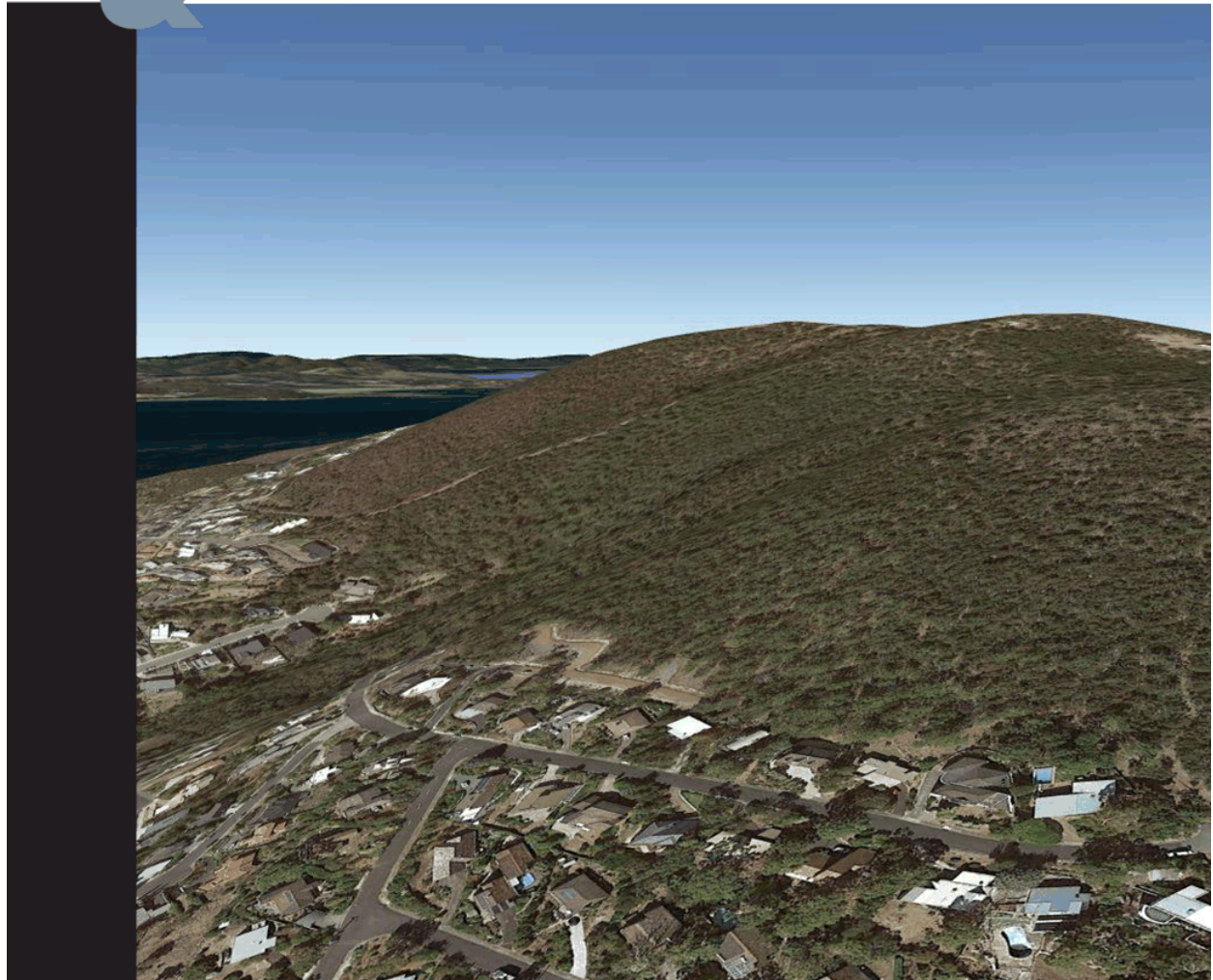


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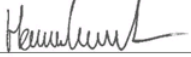

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Appendices

- Appendix A** — Water Quality Management Products
Appendix B — DRAINS Modelling outputs
Appendix C — Stormwater System Layout



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Authorised by — Joshua Coates		Date — 19 September 2019

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft issue to Client	JC	HP	JC	19/09/19

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1. Introduction

Pitt&sherry have been engaged to undertake a stormwater assessment to support a development application for a subdivision in Enterprise Road, Sandy Bay. The land is currently zoned as General Residential. Figure 1 presents the proposed development extent and associated points of interest.

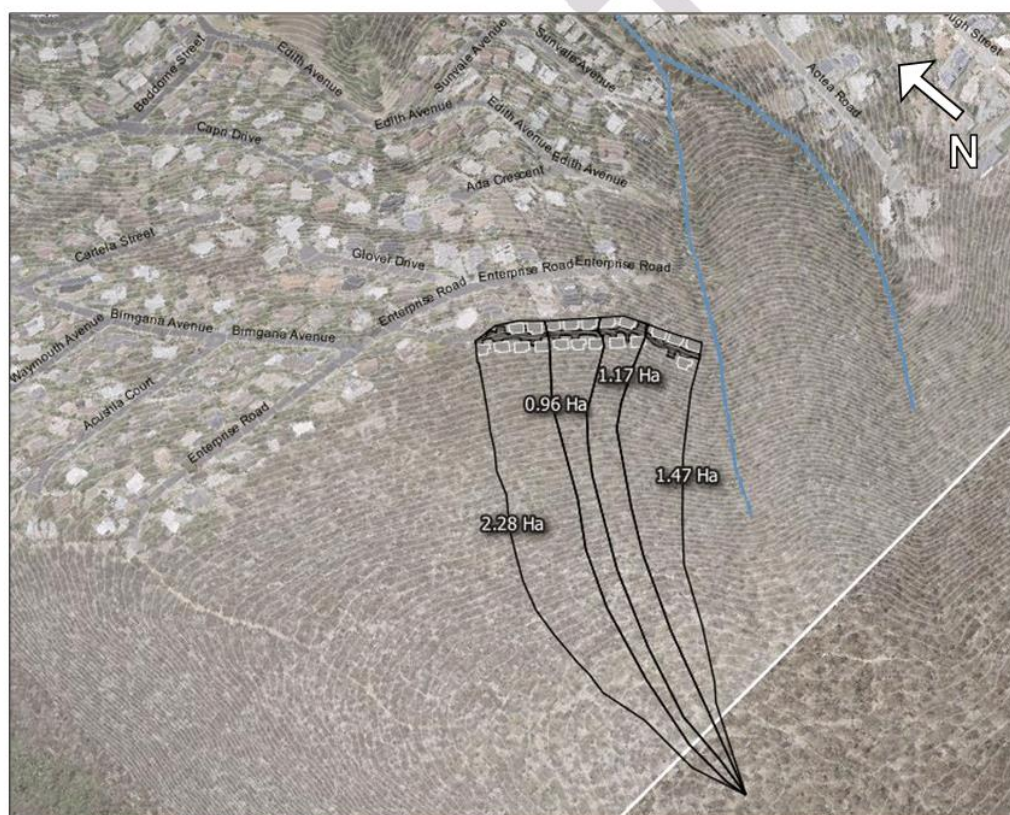


Figure 1: Subject Site and Points of Interest

This report details the stormwater assessment, including all assumptions and limitations, in response to the requirements provide in the planning letter for City of Hobart dated 8 July 2019.

2.1 SW1 – Stormwater Disposal

The site generally grades in a north-west direction with slopes of approximately 40%. The access road for the proposed development is generally aligned along the contour. This is presented below in Figure 2.



The proposed development layout provides longitudinal fall in a south-east direction. A piped drainage system within the roadway is proposed that enables the collection of stormwater from roof and road areas. Stormwater will be directed towards the natural depression at the south-eastern most corner of the proposed development. This discharge location is selected for the following reasons.

- It adequately services the proposed development site;
- It provides reasonable opportunity for any additional development upstream to have access to a part of the stormwater system
- It directs stormwater away from existing development and returns flow to the natural depression.
- It replicates the discharge location under existing conditions.

The proposed stormwater discharge location is mapped as a 'Minor Tributary' on 1:25,000 topographic maps (TheLIST)

2.2 SW5 – Stormwater Quality

SW5: A report prepared by a suitably qualified person, demonstrating:

- *That the stormwater system for the new development incorporates water sensitive urban principles for the treatment and disposal of stormwater.*
- *A concept stormwater treatment report, including associated plans and calculations, demonstrating that the proposed stormwater system will achieve the State Stormwater Strategy targets. If this treatment cannot be achieved, demonstrate why it is not feasible. Council notes carpark treatment should target fine sediments and hydrocarbons.*

The proposed stormwater system must incorporate water sensitive urban design principles for the treatment and disposal of stormwater. The *Hobart Interim Planning Scheme 2015* suggest the pollutant load reduction targets in accordance with the *State Stormwater Strategy 2010*. These are:

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.
45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.
45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.

Based on the proposed development layout, a MUSIC model has been developed to determine pollutant loads from the proposed development, and to provide a recommendation for a suitable water quality management system.

To achieve these pollutant load reduction targets, *Hudson Civil 'pit traps'* are proposed on all stormwater gully pits (five in total) and a *Rocla 'Upflow' Standard (DN1200)* is proposed at the end of line, immediately downstream of the proposed detention structure (refer to Section 2.3.3).

A schematic of the MUSIC model is presented below in Figure 3.

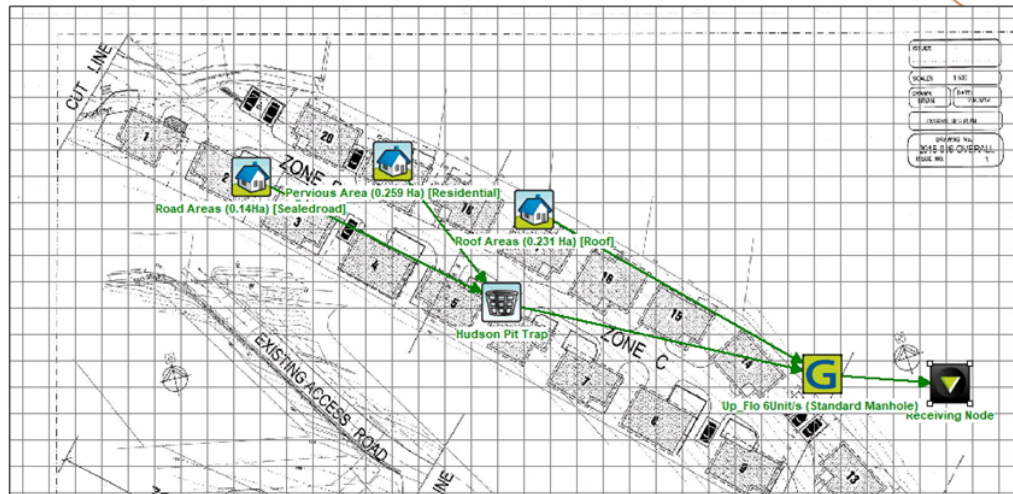


Figure 3: MUSIC Model Schematic

The proposed water quality management system achieves the required pollutant load reduction targets. The treatment train effectiveness is provided in Table 1.

Table 1: Treatment Train Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.19	1.19	0
Total Suspended Solids (kg/yr)	212	16.3	92.3
Total Phosphorus (kg/yr)	0.434	0.131	69.8
Total Nitrogen (kg/yr)	2.67	1.41	45.8
Gross Pollutants (kg/yr)	42.6	1.97	95.4

Details of the proposed water quality management measures are presented in Appendix A.

2.3 SW6 – Stormwater Quantity

SW6: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following:

- accommodate a storm with an ARI of 20 years (non industrial zoned land) or
- accommodate a storm with an ARI of 50 years (industrial zoned land) when the land serviced by the system is fully developed
- Stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure

A stormwater system is to be provided that is able to convey a storm with an ARI of 20 years and stormwater discharging from the subject site under post development conditions is to be no greater than the flow under pre-developed conditions.

The existing catchment contributing to the subject site is bush and scrub, assumed to be pervious. No defined channel directs stormwater to the site but rather distributed sheet flow.

There is existing development downstream of the subject site (properties 23 to 35 Enterprise Road) that would receive flow from the upstream catchment. A cut-off drain exists upstream of these properties which captures and directs from in a south-easterly direction towards a natural creek. This ultimately contributes to Maning Rivulet.

This flow behavior will be maintained as part of the proposed development, although formalised with the pit and pipe stormwater system. The access road will act as the cut off drain, directing stormwater to a piped stormwater system via gully pits.

The proposed stormwater system is sized based upon the direct area (development site) and the existing upstream catchment. The proposed stormwater system is shown below in Figure 4:

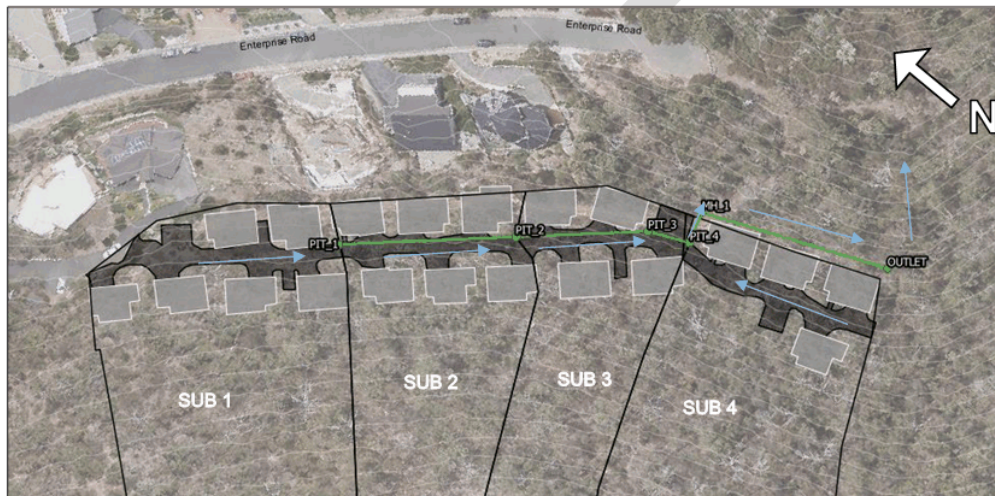


Figure 4: Proposed Stormwater System

The cut-off drain will serve as the point at which a peak flow rate is calculated for the base case (pre-development scenario). This allows for the impact of the proposed development to be appropriately quantified and managed accordingly.

2.3.1 Hydrologic / Hydraulic Analysis

A DRAINS hydrologic / hydrologic model has been prepared to appropriately size the stormwater system. The following input parameters are adopted:

Table 2: Hydrologic Model Parameters

Hydrologic Model:	ILSAX
Paved Depression Storage:	1 mm
Supplementary Depression Storage:	1 mm
Grassed Area Depression Storage:	5 mm
Soil Type:	Type 3 (slow infiltration rates, may have layers that impede downward movement of water)
Antecedent Moisture Condition (AMC):	3 (Rather wet, equates to approximately 12.5mm to 25mm in the

	preceding 5 days)
--	-------------------

The stormwater assessment has been undertaken in accordance with principles set out in *Australian Rainfall and Runoff 2019*. As such, the ensemble approach for temporal variation is adopted.

Rainfall data (depths and temporal patterns) is extracted for the site at the following co-ordinates:

Latitude:	42.9125 (S)	Longitude:	147.3375 (E)
-----------	-------------	------------	--------------

2.3.2 Total Catchment (Stormwater System Assessment)

The peak flow rates for the 5% and 1% AEP at the proposed development outlet are provided below in Table 3. These flow rates take account of the upstream catchment and are used to appropriately size stormwater infrastructure.

Table 3: Peak Flow Rates – Total Catchment

AEP	Peak Flow Rate (m ³ /s) Existing	Peak Flow Rate (m ³ /s) Developed
5% AEP	0.158	0.156
1% AEP + CC	0.578	0.567

The catchment areas and associated portion impervious associated with these flows are presented in Table 4.

Table 4: Total Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4
Total Area (Ha)	2.28	0.96	1.17	1.47
Road Area (Ha)	0.045	0.028	0.033	0.034
Roof Area (Ha)	0.069	0.068	0.047	0.047
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081
% Impervious	5%	10%	7%	6%

The results show that the peak flow rate is either maintained or reduced as a result of development. This is due to the change in catchment response time as a result of the change in land-use. The proposed development site is located at the bottom of the subject catchment. For the event being assessed, stormwater will leave the development site quickly and will not contribute to the main flood peak (i.e. the flow hydrograph is spread out rather than concentrated).

These results are used for sizing stormwater infrastructure to convey both flow generated from the proposed development and flow generated from the upstream catchment. These flows are not used to determine the size of any stormwater detention.

Based on the assessment undertaken, DN375 pipes and standard 1050mm single grated pits provide sufficient capacity to convey flow through the proposed development for the 5% AEP storm event. A maximum pit spacing of 50m proposed. A typical hydraulic grade line for the 5% AEP event system is provided below in Figure 5.

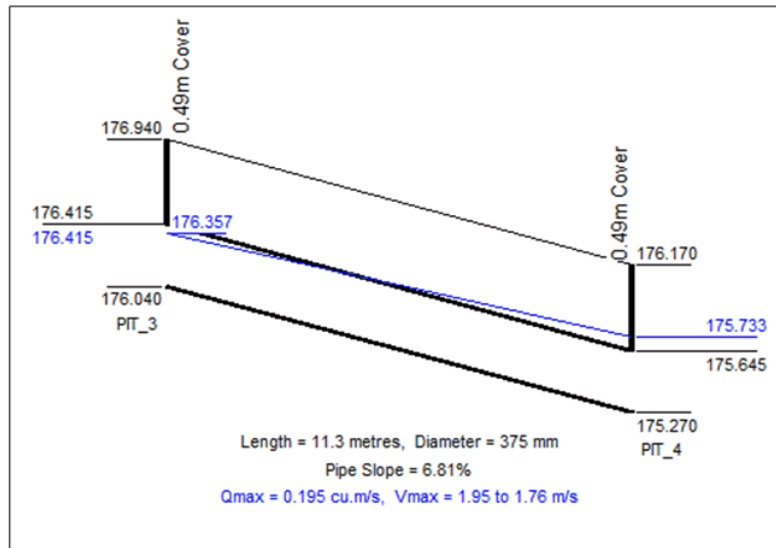


Figure 5: Hydraulic Grade Line – 5% AEP – Pit_3 to Pit_4

2.3.3 Local Catchment (Detention Assessment)

The position of the proposed development relative to downstream catchment suggests any change in land-use will likely have an impact in receiving waters further downstream. To determine what this impact is, flow rates generated from the site, in isolation of the upstream catchment are calculated.

Table 5: Peak Flow Rates – Local Catchment

AEP	Peak Flow Rate (m ³ /s) Existing	Peak Flow Rate (m ³ /s) Developed	Peak Flow Rate (m ³ /s) Developed with Basin
5% AEP	0.040	0.084	0.042
1% AEP + CC	0.172	0.221	0.231

The local catchment areas and percentage impervious associated with these flows are presented in Table 6

Table 6: Local Catchment Areas and Portion Impervious

	SUB_1	SUB_2	SUB_3	SUB_4
Total Area (Ha)	0.18	0.17	0.13	0.15
Road Area (Ha)	0.045	0.028	0.033	0.034
Roof Area (Ha)	0.069	0.068	0.047	0.047
Total Imperv Area (Ha)	0.114	0.096	0.08	0.081
% Impervious	63%	56%	62%	54%

A time of concentration of 5 minutes is adopted for impervious areas. For pervious area a time of concentration is derived from catchment parameter. These are:

Overland Flow Path Length:	10 m
Overland Flow Path Slope:	5%
Retardance Co-efficient n*:	0.05

A detention system is proposed as part of the development, although it is recommended that Council consider the development in the context of the catchment to ensure it is appropriate in this use case. In some instances, the incorporation of detention structures can in-fact increase flood levels.

Notwithstanding, a detention structure is sized that limits the peak discharge from the proposed development site to 0.04 m³/s.

A detention structure with volume of 23 m³, orifice outlet of 129mm and maximum depth of 1.5m is required to reduce post development flowrates to pre-developed conditions for the 5% AEP storm. A schematic of how the basin is modelled is presented below in Figure 6.

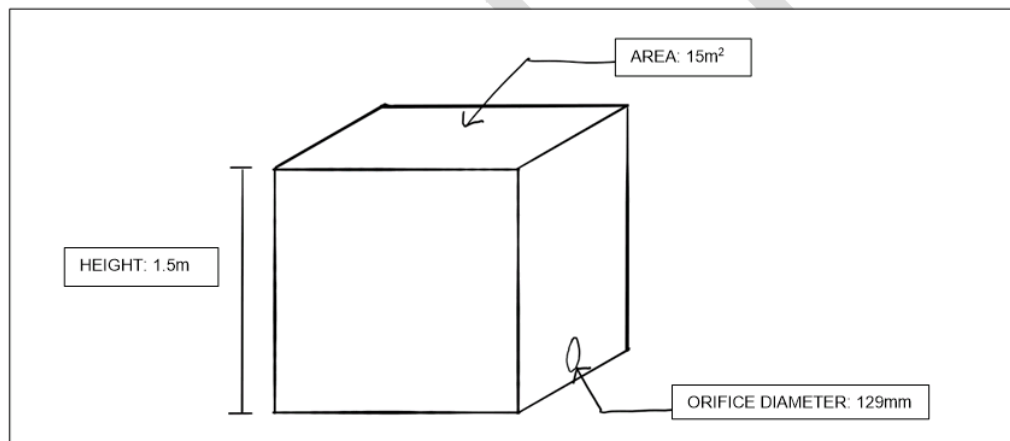


Figure 6: Detention Basin Schematic

Based on a review of the preliminary development layout, the most suitable location for a detention structure of this size is beneath the parking / turning bay between lots 13 and 14. It is likely the location where the road surface is proposed will require fill. This location would make a good candidate for a detention tank.

Either a constructed storage area or an off the shelf storage system is reasonable to service the required storage volume.



Figure 7: Possible Detention Tank Location
Full hydraulic modelling results are provided in Appendix B.

2.4 SW7 – Overland Flow Path

SW7: A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following: designed to accommodate a storm with an ARI of 100 years.

- *A piped stormwater system sized to handle at least the 20yr ARI event based on a possible future fully-developed catchment, with the overall drainage system (including suitable overland flow paths) catering for the 100yr ARI events (including 30% loading for climate change).*
- *Clearly show all overland flow paths for the developed site, that they avoid private property as far as practicable, and how they will be contained within appropriate easements.*
- *Council infrastructure has limited receiving capacity. Show any required measures (such as surcharge points, flow paths, detention) to ensure the 100yr ARI flows from the site can be safely managed*

The proposed development is to accommodate overland flow from an 1% AEP storm. An assessment has been undertaken to calculate the likely 1% AEP flow arriving at the site, inclusive of a 30% increase in rainfall to account for climate change.

Under existing conditions, existing properties on Enterprise Drive manage flow from the upstream catchment by use of a cut of drain. This does not appear to be a formal drainage asset and the drain is not located within the properties to which it provided benefit to.

The proposed development provides an opportunity for a formal drainage system to be designed, capable of directing flow away from existing properties on enterprise drive.

The proposed road surface will act as the cut off drain. Any flow intercepted from the upstream catchment will be captured within kerb and channel and either directed to the pipe and pipe drainage system, or if pit inlet capacity is exceeded, direct overland flow within the road surface to the parking bay positioned between lots 13 and 14.

This system will provide suitable flood conveyance to minimize flood impact of existing properties on enterprise drive and lots 11 to 20 of the proposed development (Northern side of road)

For lots 1 to 10, overland flow generated from the upstream catchment may impact lots. It is not considered appropriate to install cutoff drains on upstream properties not owned by the proponent to protect downstream properties. Existing property owners will have little control as to how the land will be managed and it would not be possible to guarantee the operation of the cutoff drain over the life of the proposed development.

A more robust method to manage overland flow is to allow for and to design for flow to naturally pass around each of lots 1 – 10. The following provides reasoning as to why this method is adopted.

- A cut off drain upstream of properties will concentrate flow. At the downstream end of the system a substantial inlet structure would be required to ensure flow is not directed towards property. Given the upstream catchment, there is a high debris load potential, meaning pit blockage is likely.
- Evenly distributed flow is easy to capture with distributed pits. This means each property owner is responsible to manage their own overland flow. This is fair and equitable and doesn't require a single property owner to take the burden of all stormwater.

The intended operation is for overland flow to be locally directed to small drainage pits at the rear of each lot (lots 1 – 10). In the event a pit becomes blocked, or a flow rate is produced in excess of the inlet capacity of the pit, overland flow is to be directed around lots to the road reserve.

Local shaping and grading around lots should be included ensure flow does not enter buildings.

For example. The 1% AEP + 30%CC produces a peak flow rate of 0.213m³/s being directed toward lots 1-4 (refer to Figure 8)



Figure 8: Sub-catchment 1 Peak Flow Rate – 1% AEP + CC

If this flow rate is evenly distributed over the four lots, it can be assumed that a peak flow rate of $0.053\text{m}^3/\text{s}$ will be directed towards each lot.

If this flow was to be directed to a 300 x 300 sag pit, it is estimated that $0.053\text{m}^3/\text{s}$ can be directed to the pit with a ponding depth of approximately 100mm.

If this flow was directed to an open channel (suggest standard 1.2m footpath), at 1% longitudinal grade, it is estimated for $0.053\text{m}^3/\text{s}$ to be conveyed within a channel, a peak depth of 50mm is estimated.

This magnitude of flow is deemed to be suitable to manage overland flow through the southernmost lots. The following measures are recommended as part of the proposed development.

- A 300x300 stormwater pit located in the rear of lots 1 to 10. Local shaping a grading to direct flow to the pit.
- Allowance for overland flow to be directed around lots towards the road reserve.
- Floor levels of all lots should be raised above ground. It is recommended that at least 300mm of freeboard is provided for every lot.

This recommended approach is based upon previous experience relating to management over overland from for existing development where no provision was allowed for. Council may have its preferred approach for which we would be happy to consider.



Water Quality Management Products



Appendix A

pitt&sherry



PIT TRAPS

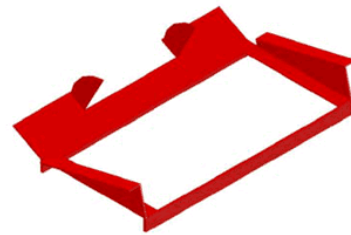
Hudson Environmental 'Pit Trap' - At source pollution control

Hudson Environmental has launched its '*Pit Trap*' into the Tasmanian market to expand our range of stormwater quality improvement devices to include '*at source*' to complement our range of '*end of line*' devices.

The '*Pit Trap*' is manufactured in Tasmania and is available off the shelf to suit Hudson Civil Products precast kerb and grate units. We can also manufacture one off traps to be retrofitted on site for existing pits.

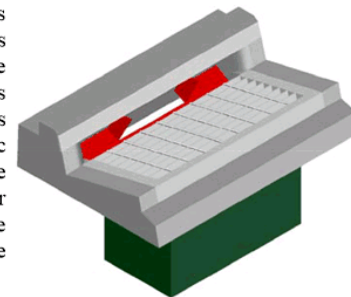
Benefits of a Hudson Environmental 'Pit Trap'

- Our basket is fabricated from corrosion resistant lightweight Aluminium allowing the capture of pollutants above 4mm
- Optional Polyester liner for the capture of finer particles down to 1mm and smaller.
- Captured materials remain in a dry state eliminating odours, mosquitos and reducing the weight of the basket for cleaning purposes.
- Baskets supplied in a 'mechanical empty only' design without handles to eliminate employees removing the trap by hand with the associated risks of strain injuries.
- Our Polyester liner comes with stainless steel fixings and penetrations are made with stainless steel eyelets. This liner is then attached to the aluminium basket to alleviate any strain on the liner when being emptied or manhandled.
- Built in bypass on top of the large surface area of the basket allows high flows to enter the drainage system without the remobilisation of pollutants.
- Large capacity basket holds 0.15 m³ when full.



A simple design for a simple problem

The '*Pit Trap*' design is based on a common sense approach to the problems of gross pollutants entering the stormwater system and therefore our creeks and estuaries. Our design simply consists of a robust aluminium sub frame which is positioned in the grate seat into which an aluminium basket is lowered into position. This basket in its basic form will collect all pollutants larger than 4mm. Items that fall into this category are cigarette butts, plastic drinking bottle caps and large type aggregates. For additional performance to collect pollutants above 1mm, we offer an additional welded polyester liner that is simply fitted inside the aluminium basket. These baskets can be cleaned by either hi-ab truck or pump trucks. We do not encourage the use of handles as the force and location of the lift is potentially very dangerous.



Launceston Office:
7 Donald's Avenue Prospect, Tasmania 7250
Phone: 03 6335 8200 / Fax: 03 6340 1881



HUDSON
CIVIL PRODUCTS

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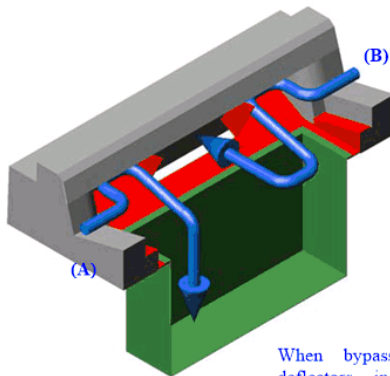


PIT TRAPS

Why use a rigid basket?

Hudson Environmental, as a division of Hudson Civil Pty Ltd, is a locally owned business specifically targeting the Tasmanian market. We do not have the problems that large mainland and multinational company's face when trying to cover a market the size of Australia.

Basically, a rigid frame makes sense unless you are freighting them large distances like across Bass Strait and the Nullarbor as the costs are prohibitive. As we are not affected by these cost restrictions, we have the ability to design products that are constructed from the most suitable designs and materials.



When bypass occurs (B), the deflectors induce a flow that prevents remobilisation of pollutants previously captured (A).

Maintenance

When the basket is full, excess water is diverted through the bypass at the back of the pit (a large amount of water will still pass through the basket even when full). ALL baskets when full will allow the remobilisation of pollutants so an adequate maintenance regime must be put in place to ensure the correct operation of the baskets.

Construction site filters

We also provide filter fabric liners for installation when site works produce an increased amount of fine particles. These liners are disposable one use items and are both more cost effective and reliable than traditional 'silt socks'.

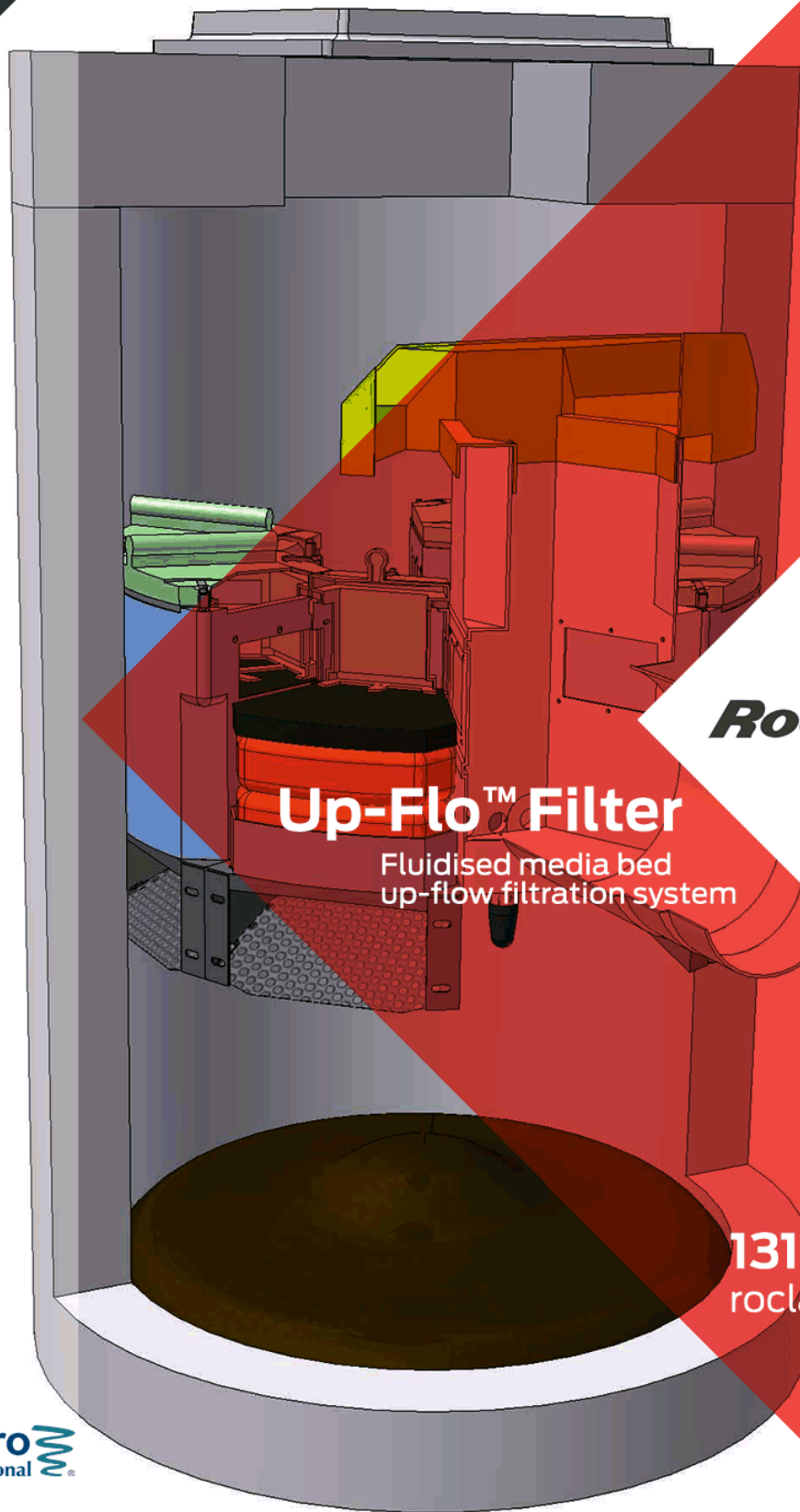


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PRODUCT
BROCHURE



Up-Flo™ Filter

Fluidised media bed
up-flow filtration system

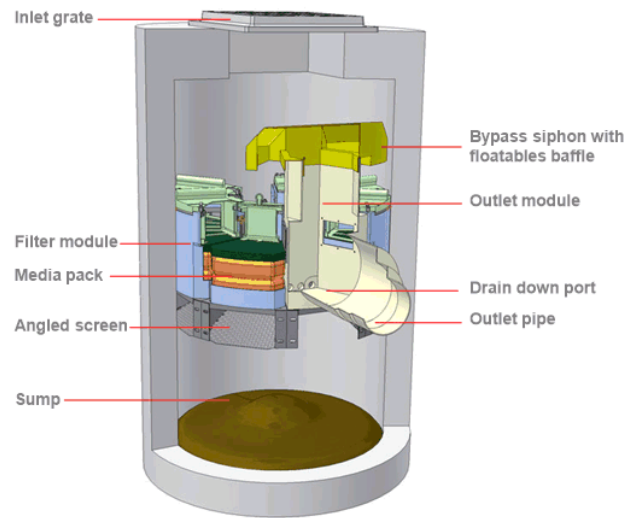
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Hydro
International 

FLUIDISED MEDIA BED UP-FLOW FILTRATION SYSTEM

The Rocla Up-Flo™ Filter is the most efficient high-rate stormwater filtration technology available for the removal of sediments, nutrients, metals and hydrocarbons from stormwater runoff.

As the industry's only fluidized bed upflow filtration technology, the Up-Flo™ Filter provides a higher level of treatment, a higher rate of filtration, longer life of filter media and a longer maintenance cycle than other filter systems.



APPLICATIONS

- New developments
- Industrial and commercial facilities
- Source control
- Sediment and hydrocarbon control
- Nutrient control
- Heavy metal control
- Wetlands protection
- Retrofit

ADVANTAGES

- Available in multiple configurations
- Small footprint
- Removes >70% total suspended solids (TSS) with a mean particle size of 20 microns
- Low head requirements
- Higher flow capacity resulting in smaller footprint
- Includes a 4mm pre-screening
- Uses a patented CPZ™ media
- Patented drain-down prevents media degradation
- Long media life and maintenance cycle
- Easy installation
- Low maintenance

HOW IT WORKS

During a storm event, stormwater enters the chamber via an inlet pipe or inlet grate and fills the chamber, as flow is directed up through the angled screen and filter modules. Flow is evenly distributed across the media for maximum treatment.

Gross debris and sediment settle out in the sump. Oil and floatables rise to the surface of the water.

Treated water flows out of the filter module to the outlet module and into the outlet pipe.

Excess flows are discharged to the outlet using a siphon bypass, which also acts as a floatables baffle, preventing the escape of oil and floatable trash.

To guard against pollutant leaching and filter media degradation between storm events, water drains out of the chamber through the filtered drain-down port as the storm subsides.

CPZ™ MIX

- Over 70% removal of metals, nutrients & TSS
- TSS removal down to 1 micron particle
- 1.6 l/s per module

The industry's only fluidised
bed upflow filtration
technology

PRODUCT SELECTION TABLE

UFF Model Type	Chamber Size	Number of Modules	Maximum Treatment Flow (L/s)	Peak Syphonic Bypass Flow (L/s)	Min Standard Headloss (mm)	Sump Storage Capacity (Litres)
Standard	DN1200	1 - 6	9.6	170	500	700
Small Vault	DN1800	7 - 8	12.8	225	500	1580
Medium Vault	DN2400	9 - 14	22.4	400	500	2800
Large Vault	DN2700	15 - 19	30.4	535	500	3550
Special	As required	>19	>30.4	>535	500	As designed

FILTER MODULES

Each filter module has a typical treatment flow rate of 1.6 L/sec.

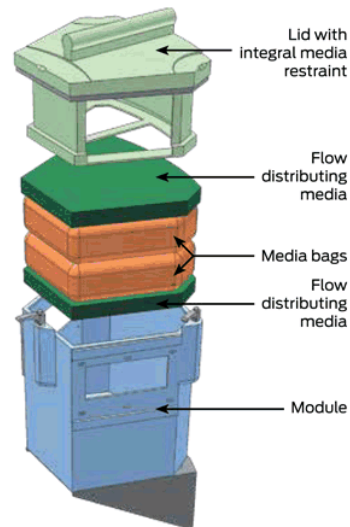
SIZING AND DESIGN

The Rocla Up-Flo™ Filter is sized to treat a specified runoff area or a design flow rate for a water quality design storm.

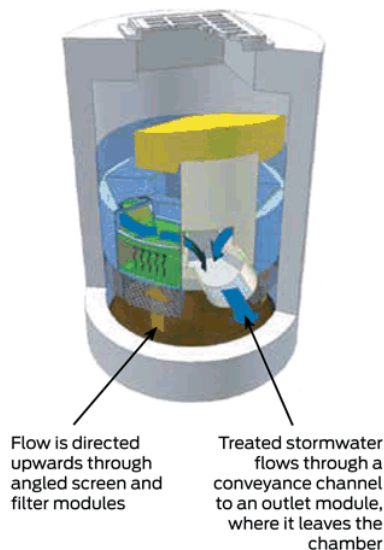
The number of modules is determined by the treatment objectives and the size of the runoff area. This is based on each individual filter module treatment flowrate.

The flexibility of the system allows effective design for sites with low hydraulic drops. Rocla Water Quality's expert PAD engineering team can assist in designing a system that is right for each situation.

To allow easier access to the individual modules the design includes removeable lids that can be temporarily stacked adjacent to the inlet.



Design developed at the University of Alabama. Data is collected through extensive field testing by the University of Alabama. No chemical exhaustion of media after 12 months of field testing.

**INSTALLATION**

Installing a Rocla Up-Flo™ Filter is as simple as installing a standard precast pit and connecting to the stormwater system.

MAINTENANCE

Maintenance is simple, with easy access to the sump and replaceable media packs. A vacuum truck is used to remove sediment and other pollutants from the sump and the media packs are replaced manually. Unlike other filtration systems, no specialised heavy lifting equipment is needed.



CONCRETE PRODUCTS | PIPE | ENGINEERING CAPABILITY



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Before application in a particular situation, Rocla recommends that you obtain appropriate independent qualified expert advice confirming the suitability of product(s) and information in question for the application proposed.

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Hydro
International



DRAINS Modelling outputs

Appendix B

pitt&sherry

(cu.m/s) (m/s)

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
OF1	0.014	0.014	0.824	0.045	0.27	1.2	40.7	5% AEP, 3 hour burst, Storm 6
OF3	0.002	0.002	0.568	0.007	0.04	0.11	6.07	5% AEP, 3 hour burst, Storm 6
OF5	0.001	0.001	0.878	0.005	0	0.07	0	5% AEP, 3 hour burst, Storm 6
OF8	0.002	0.002	0.391	0.199	0.06	6.7	12.4	5% AEP, 3 hour burst, Storm 6
OF12	0.12	0.12	0.471	0.182	0.17	1.45	0.93	5% AEP, 3 hour burst, Storm 6
LOC_OF1	0	0	0.824	0	0	0	0	
LOC_OF3	0	0	0.568	0	0	0	0	
LOC_OF5	0	0	0.878	0	0	0	0	
LOC_OF8	0	0	0.391	0	0	0	0	
LOC_OF12	0	0	0.077	0	0	0	0	

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
Basin2606	172.77	26.5	0.155	0.036	0.12
LOC_BASIN_Pit_5	172.48	22.2	0.042	0.042	0

Run Log for HB19365_DevelopedCase_Detention.drn run at 10:53:20 on 19/9/2019

The maximum water level in these storages exceeds the maximum elevation you specified: Basin2606.
DRAINS has extrapolated the Elevation vs Storage table to a higher Elevation. Please provide accurate values for higher elevations.
No water upwelling from any pit. Freeboard was adequate at all pits.
The maximum flow in these overflow routes is unsafe: OF8

IGNORE THESE WARNINGS AT YOUR OWN PERIL.\cf1

DRAINS results prepared from Version 2019.09

PIT / NODE DETAILS		Version 8					
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
PIT_1	183.76		0.316		0.52	0.108	Inlet Capacity
PIT_2	182.8		0.324		0	0.115	Outlet System
PIT_3	177.03		0.435		0	0.199	Outlet System
PIT_4	176.01		0.657		0.16	0.184	Inlet Capacity
OUTLET	169.73		0				
LOC_PIT_1	183.61		0.081		0.67	0.016	Inlet Capacity
LOC_PIT_2	182.2		0.1		0.56	0.015	Inlet Capacity
LOC_PIT_3	176.38		0.084		0.56	0.007	Inlet Capacity
LOC_PIT_4	175.47		0.085		0.7	0.009	Inlet Capacity
LOC_OUTLET	169.74		0				

SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Cat_1	0.213	0.03	0.206	5	30	10	1% AEP, 1 hour burst, Storm 4
Cat_2	0.096	0.029	0.085	5	30	0	1% AEP, 1 hour burst, Storm 9
Cat_3	0.115	0.021	0.109	5	30	10	1% AEP, 1 hour burst, Storm 4
Cat_4	0.145	0.023	0.139	5	30	10	1% AEP, 1 hour burst, Storm 4
Cat4	0.578	0.092	0.554	5	30	10	1% AEP, 1 hour burst, Storm 4
LOC_Cat_1	0.069	0.045	0.024	5	1.64	0	1% AEP, 5 min burst, Storm 1
LOC_Cat_2	0.065	0.038	0.027	5	1.64	0	1% AEP, 5 min burst, Storm 1
LOC_Cat_3	0.053	0.036	0.018	0	1.64	0	1% AEP, 5 min burst, Storm 1
LOC_Cat_4	0.057	0.032	0.025	5	1.64	0	1% AEP, 5 min burst, Storm 1
LOCAL_Existing	0.172	0	0.172	0	4.16	0	1% AEP, 10 min burst, Storm 3

PIPE DETAILS					
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
Pipe_1	0.108	1.45	183.62	182.804	1% AEP, 1 hour burst, Storm 4
Pipe_2	0.192	1.93	182.176	177.029	1% AEP, 1 hour burst, Storm 4
Pipe20	0.212	2.09	176.366	176.007	1% AEP, 30 min burst, Storm 5
Pipe_4	0.364	3.29	175.645	172.982	1% AEP, 1 hour burst, Storm 4
Pipe35	0.039	2.47	172.487	169.725	1% AEP, 1 hour burst, Storm 4
LOC_Pipe_1	0.048	1.08	183.539	182.199	1% AEP, 5 min burst, Storm 1
LOC_Pipe_2	0.115	1.48	182.108	176.381	1% AEP, 10 min burst, Storm 9
LOC_Pipe20	0.159	2.67	176.333	175.469	1% AEP, 10 min burst, Storm 3
LOC_Pipe_4	0.21	3.52	175.469	172.796	1% AEP, 10 min burst, Storm 3
LOC_Pipe35	0.046	2.24	172.326	169.74	1% AEP, 10 min burst, Storm 8

CHANNEL DETAILS

Name	Max Q	Max V	Due to Storm
------	-------	-------	--------------

(cu.m/s) (m/s)

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
OF1	0.108	0.108	1.092	0.079	0.16	2.43	2.71	1% AEP, 1 hour burst, Storm 4
OF3	0.115	0.115	0.568	0.087	0.17	2.74	2.89	1% AEP, 1 hour burst, Storm 4
OF5	0.199	0.199	0.878	0.087	0.29	2.74	5.11	1% AEP, 30 min burst, Storm 7
OF8	0.184	0.184	0.391	0.412	0.26	8.86	4.56	1% AEP, 1 hour burst, Storm 4
OF12	0.508	0.508	1.388	0.309	0.41	2.48	1.33	1% AEP, 1 hour burst, Storm 4
LOC_OF1	0.016	0.016	1.092	0.042	0.06	1.1	1.99	1% AEP, 10 min burst, Storm 5
LOC_OF3	0.015	0.015	0.568	0.033	0.05	0.78	1.78	1% AEP, 10 min burst, Storm 5
LOC_OF5	0.007	0.007	0.878	0.032	0.08	0.76	7.27	1% AEP, 5 min burst, Storm 1
LOC_OF8	0.009	0.009	0.391	0.226	0.1	7.39	8.99	1% AEP, 5 min burst, Storm 1
LOC_OF12	0.185	0.185	0.226	0.147	0.11	3.53	0.72	1% AEP, 10 min burst, Storm 8

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level
Basin2606	172.98	29.7	0.548	0.039	0.508
LOC_BASIN_Pit_5	172.8	26.9	0.231	0.046	0.185

Run Log for HB19365_DevelopedCase_Detention.drn run at 10:45:46 on 19/9/2019

The maximum water level in these storages exceeds the maximum elevation you specified: Basin2606, LOC_BASIN_Pit_5.
DRAINS has extrapolated the Elevation vs Storage table to a higher Elevation. Please provide accurate values for higher elevations.
No water upwelling from any pit.
Freeboard was less than 0.15m at PIT_3, PIT_2
The maximum flow in these overflow routes is unsafe: OF8

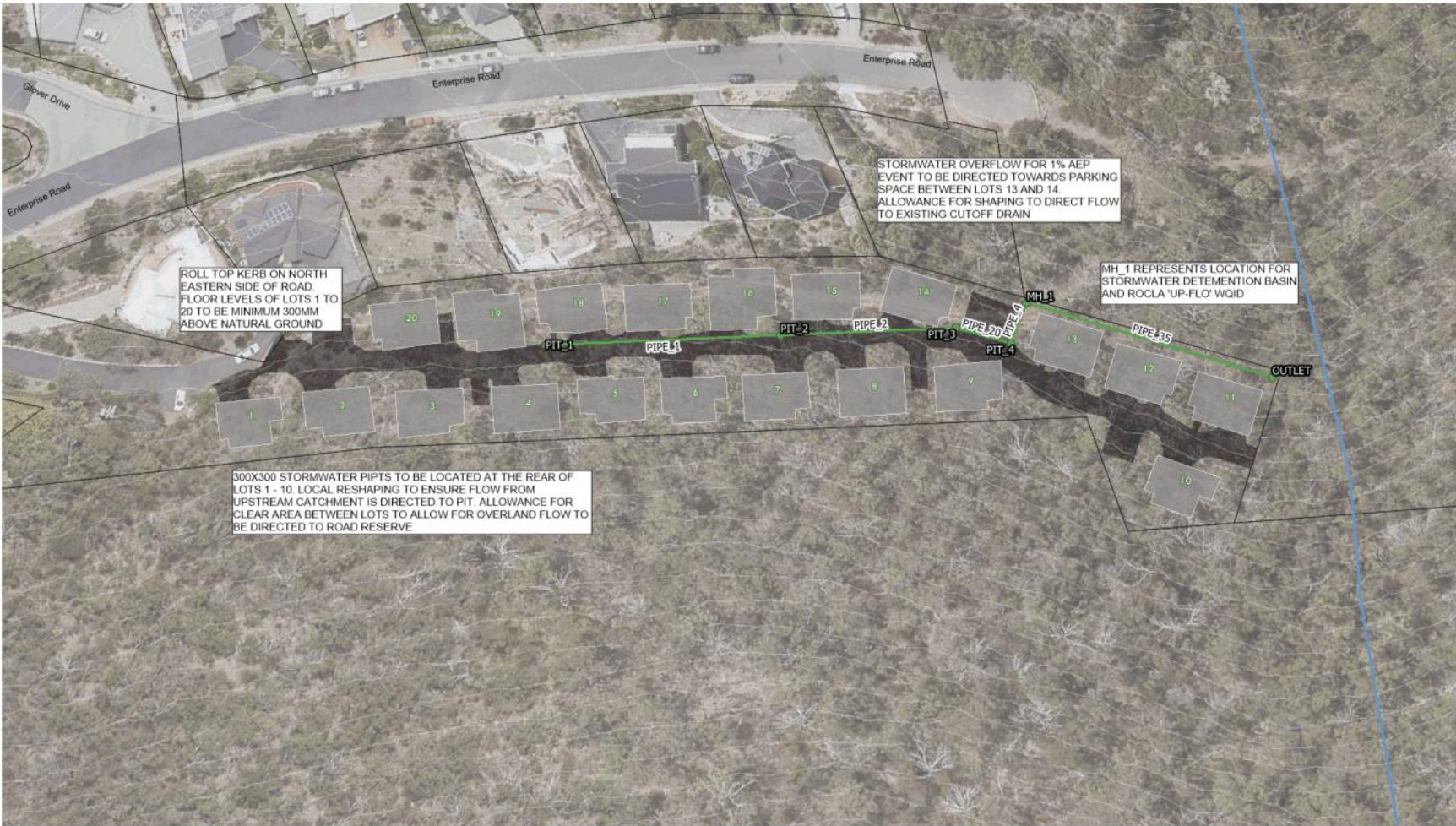
IGNORE THESE WARNINGS AT YOUR OWN PERIL.\cf1



Stormwater System Layout

Appendix C

pitt&sherry



Emmanuel Dallas Pty Ltd Consulting Engineers
21 Enterprise Drive Stormwater Assessment

Figure 1 - Pit and Pipe Layout

pitt&sherry

LEGEND ● Pits □ Cadastral Parcels — Streams
 — Pipes

MAP REF: HB19365_Workspace.qgz DATA SOURCES: TheLIST Orthophoto
AUTHOR: Joshua Coates
REVISION: A
DATE: 2019-09-19T12:59

N
0 10 20 30 40 m
COORDINATE SYSTEM: EPSG:28355
SCALE @ A3: 1:750

pitt&sherry

21 Enterprise Drive
Stormwater Assessment

Contact

Joshua Coates
02 6210 1407
jcoates@pittsh.com.au

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —

Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport
Wagga Wagga





RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 114566	FOLIO 251
EDITION 5	DATE OF ISSUE 21-Apr-2009

SEARCH DATE : 01-Jun-2020

SEARCH TIME : 11.06 AM

DESCRIPTION OF LAND

City of HOBART

Lot 251 on Sealed Plan 114566

Derivation : Part of 87 Acres Gtd. to Perpetual Trustees

Execturos & Agency Co. of Tasmania Limited

Prior CT 42792/1

SCHEDULE 1

C908485 TRANSFER to RICHARD THOMAS O'CONNOR and BECKY-LEE
SWEET O'CONNOR Registered 21-Apr-2009 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP 114566 COVENANTS in Schedule of Easements

SP 114566 FENCING COVENANT in Schedule of Easements

SP 114566 BURDENING EASEMENT: (as relates to the land marked
"Embankment Easement " thereon) a licence to embank
the adjoining highway to the extent defined thereon

SP 114566 EASEMENTS in Schedule of Easements

C61886 NOTICE: This Folio is affected as to amended
easements/covenants pursuant to Request to Amend No
C61886 made under Section 103 of the Local Government
(Building and Miscellaneous Provisions) Act 1993.
Search Sealed Plan No 114566

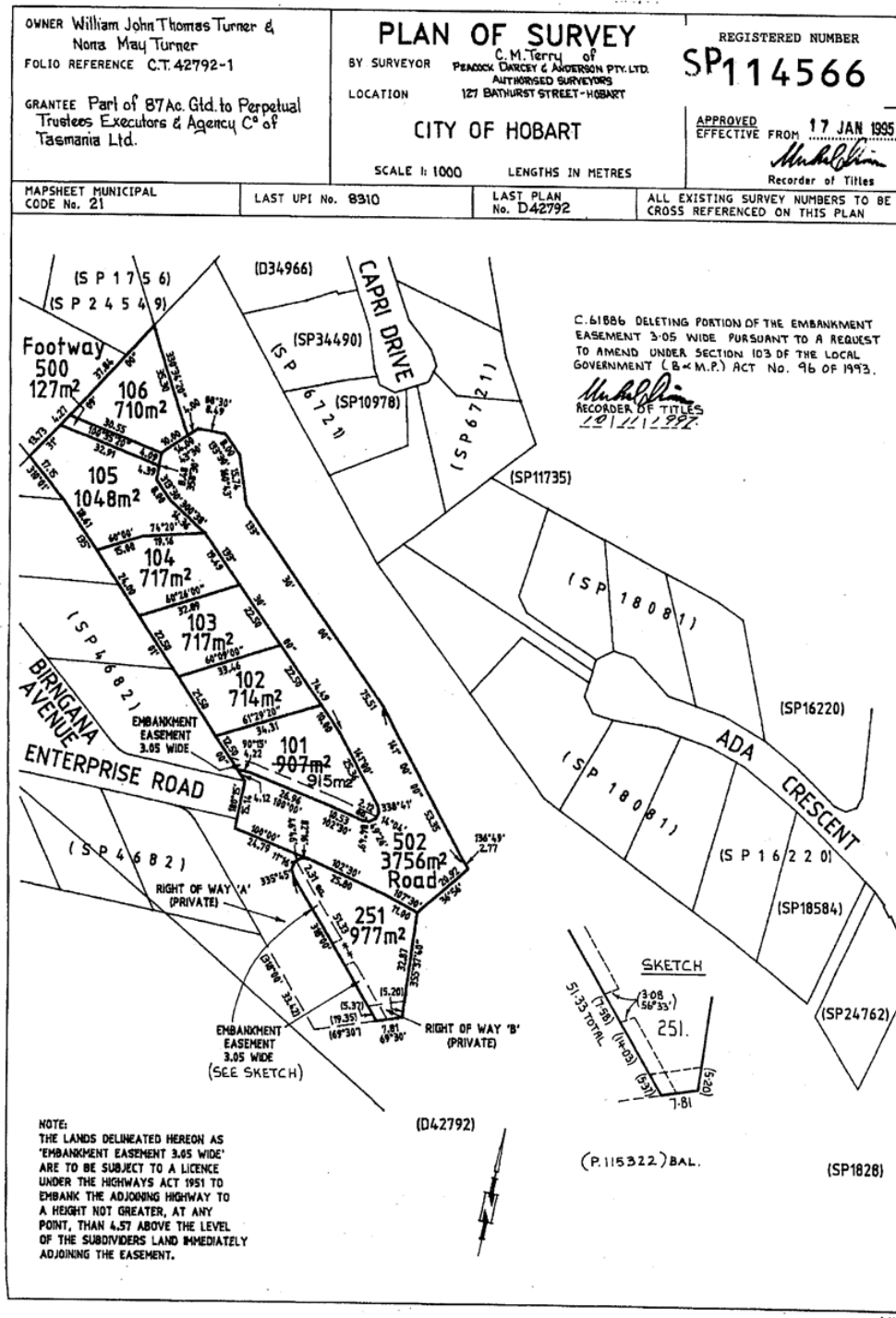
C908486 MORTGAGE to Westpac Banking Corporation Registered
21-Apr-2009 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

the **LIST****FOLIO PLAN**
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980





FOLIO PLAN

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



Tasmanian
Government

[illegible]



SCHEDULE OF EASEMENTS

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SCHEDULE OF EASEMENTS

REGISTERED NUMBER

NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS
& MORTGAGEES OF THE LAND AFFECTED.
SIGNATURES MUST BE ATTESTED.

SP114566

EASEMENTS AND PROFITS

PAGE 1 OF 2 PAGES

Each lot on the plan is together with:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
(2) any easements or profits a prendre described hereunder.

Each lot on the plan is subject to:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
(2) any easements or profits a prendre described hereunder.

The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

Carriage

Lot 251 is TOGETHER WITH a Right of Way over the Right of Way (Private) "A" shown on the plan.

Carriage

Lot 251 is SUBJECT TO a Right of Way over the Right of Way (Private) "B" for the benefit of the Balance.

FENCING COVENANT

The owner of each lot on the plan covenants with William John Thomas Turner and Nona May Turner (the Vendors) that the Vendors shall not be required to fence.

COVENANTS

The owner of each lot on the plan covenants with the said William John Thomas Turner and Nona May Turner and the owners for the time being of the balance and the owners for the time being of every other lot shown on the plan to the intent that the burden of this covenant may run with and bind the covenantor's lot and every part thereof and that the benefit thereof shall be annexed to and devolve with each and every part of every other lot shown on the said plan and with the balance and each and every part thereof to observe the following stipulations:-

- (a) Not to erect upon the lot or any part of the lot any building which has an unpainted metal roof.
(b) Not to erect upon the lot or any part of the lot more than two residences.
(c) Not to plant or allow to be planted upon the lot or any part of the lot any trees or shrubs which are capable of growing to a height of eight (8) metres or more.

SUBDIVIDER : W.J.T. & N.M. TURNER

FOLIO REF : CT 42792/1

SOLICITOR & REFERENCE : PIGGOTT WOOD & BAKER, JTT:HDM

PLAN
SEALED BY : HOBART CITY COUNCIL

DATE : 21 DECEMBER 1994

474.1

REF No.

GENERAL MANAGER
MANAGER SURVEYING SERVICES

NOTE: THE COUNCIL GENERAL MANAGER MUST SIGN THE CERTIFICATE FOR THE PURPOSE
OF IDENTIFICATION.

the **List**...**SCHEDULE OF EASEMENTS**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

**SCHEDULE OF EASEMENTS**

Registered Number

PAGE 2 OF 2 PAGES

SP114566

Notwithstanding anything contained or implied by this provision the Vendors reserve the right to :-

- (a) sell any lot on the plan freed and exempted from any one or more of the stipulations; and
- (b) modify, waive, alter, release or allow any departure from any of the stipulations in respect of any lot or portion of any lot on the plan.

DEFINITION

"Balance" means the land remaining in Certificate of Title volume 42792 folio 1 after the transfer thereof of the lots shown on the plan.

excepting
at the date of acceptance hereof
SIGNED BY WILLIAM JOHN THOMAS)
TURNER and NONA MAY TURNER)
the registered proprietors of the)
land contained in Certificate of Title)
volume 42792 folio 1 in the presence)
of:-)

WJ Thomas
N May Turner

WJ Thomas

SIGNED by the Caveators
under Caveat no. B78380
in the presence of:-

)MURDOCH CLARKE COSGROVE & DRAKE
)Per:
)
Solicitors for the Caveator

William John Thomas
Nona May Turner

[Signature]

**RESULT OF SEARCH**

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 169834	FOLIO 40
EDITION 3	DATE OF ISSUE 18-Oct-2018

SEARCH DATE : 15-May-2019

SEARCH TIME : 10.19 AM

DESCRIPTION OF LAND

City of HOBART
 Lot 40 on Sealed Plan 169834
 Derivation : Part of 87 Acres Gtd. to Perpetual Trustees
 Execturos & Agency Co. of Tasmania Limited
 Prior CTs 159828/1 and 161968/105

SCHEDULE 1

C949456 TRANSFER to JOHN THOMAS TURNER, PATRICIA ANNE
 TURNER-SMITH and MICHELLE KAYE OXENBOULD Registered
 04-Apr-2011 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 SP169834 EASEMENTS in Schedule of Easements
 SP169834 FENCING COVENANT in Schedule of Easements
 SP169834 WATER SUPPLY RESTRICTION
 E508 BURDENING EASEMENT: a right of carriageway and a
 service easement (appurtenant to Lot 1 on Plan
 175781) over the land marked Right of Way & Services
 Easement 'D' Variable Width on Sealed Plan 169834
 Registered 14-Sep-2018 at noon
 E511 BURDENING EASEMENT: a right of drainage (appurtenant
 to Lot 1 on Plan 175781) over the land marked
 Drainage Easement 'F' 3.00 wide on Sealed Plan 169834
 Registered 14-Sep-2018 at 12.03 PM
 E535 BURDENING EASEMENT: a right of drainage in favour of
 the Hobart City Council over the land marked Drainage
 Easement 'F' 3.00 wide on Sealed Plan 169834
 Registered 18-Oct-2018 at noon
 SP159761 FENCING COVENANT in Schedule of Easements
 SP159761 WATER SUPPLY RESTRICTION
 C704343 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 26-Apr-2006 at noon
 D21121 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered

**RESULT OF SEARCH**

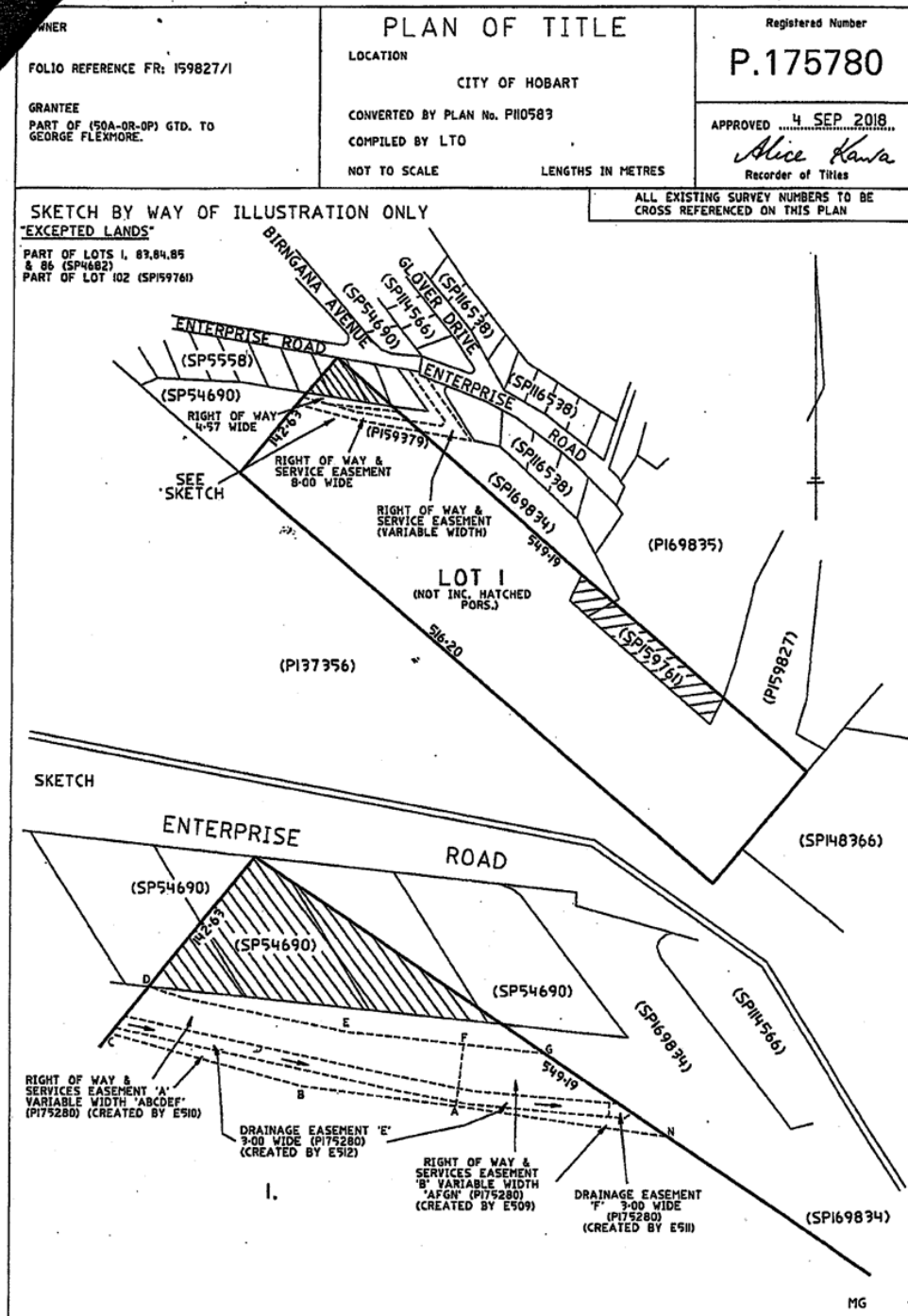
DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

06-Jul-2011 at noon
E11345 AGREEMENT pursuant to Section 71 of the Land Use
Planning and Approvals Act 1993 Registered
17-Jul-2015 at noon

UNREGISTERED DEALINGS AND NOTATIONS

M759427 PRIORITY NOTICE reserving priority for 60 days
TRANSFER JOHN THOMAS TURNER, PATRICIA ANNE
TURNER-SMITH and MICHELLE KAY OXENBOULD to XANADU
DEVELOPMENTS Lodged by GOODMAN CONVEYANCING on
10-May-2019 BP: M759427





FOLIO PLAN

DEPUTY RECORDER OF TITLES


Issued Pursuant to the Land Titles Act 1980



OWNER

Patricia Anne Turner-Smith
John Thomas Turner,
Michelle Kaye Oxenbould

BY SURVEYOR

AM.O.PEACOCK of  PDA Surveyors
127 BATHURST STREET, HOBART

LOCATION

CITY OF HOBART

SCALE:

1:1000

LENGTHS IN METRES

SURVEYORS REF:

S629M-1A

MAPSHEET MUNICIPAL

(5224-22)

LAST

UPI No

LAST PLAN

No. P161968, P159828

ALL EXISTING SURVEY NUMBERS TO BE

CROSS REFERENCED ON THIS PLAN


REGISTERED NUMBER

SP169834

APPROVED

EFFECTIVE FROM

27 JUL 2015



Recorder of Titles

FOLIO

REFERENCE

FR 161968/105 & FR159828/1

GRANTEE

Part of 87 Acres Gtd to Perpetual Trustees Executors & Agency Co. of Tasmania Ltd.

MAPSHEET MUNICIPAL

(5224-22)

LAST

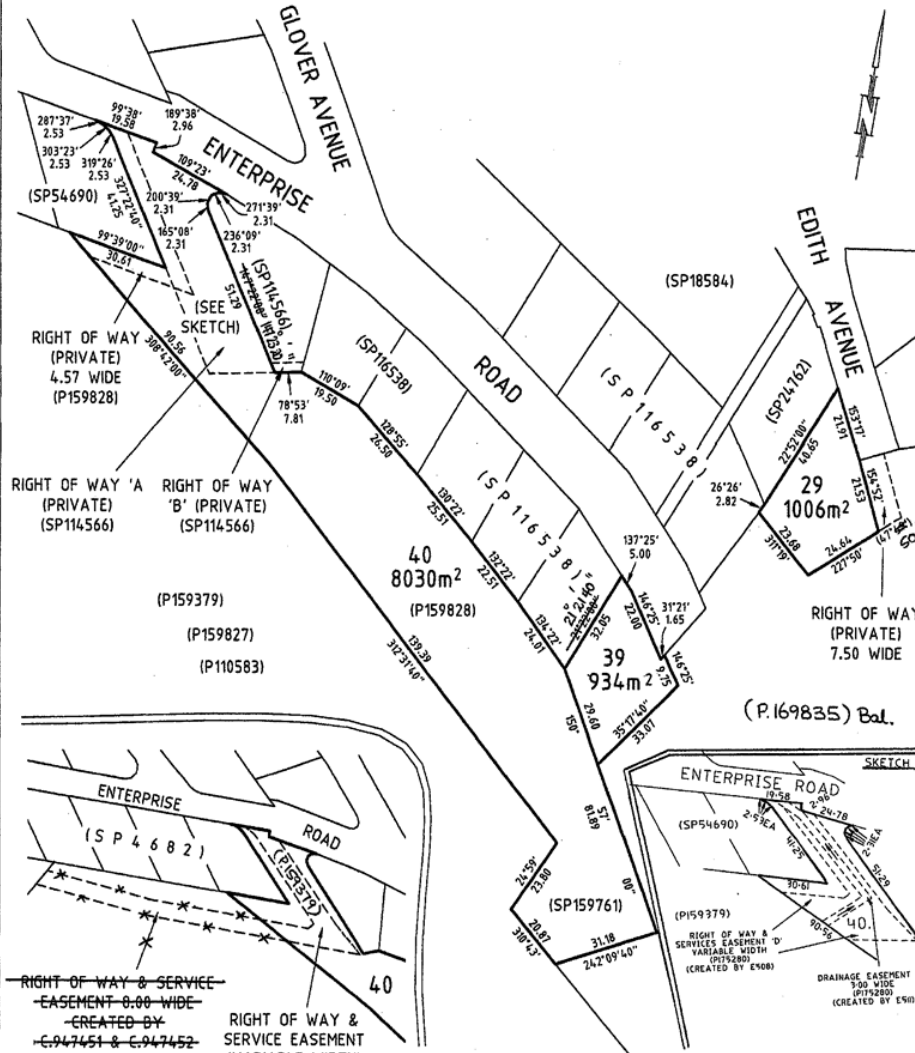
UPI No

LAST PLAN

No. P161968, P159828

ALL EXISTING SURVEY NUMBERS TO BE

CROSS REFERENCED ON THIS PLAN

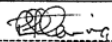


The map shows a section of land in Hobart, Tasmania, bounded by Glover Avenue to the north, Edith Avenue to the east, and Enterprise Road to the south. The land is divided into several parcels, some of which are marked with survey numbers (SP) and areas (e.g., 8030m², 934m², 1006m²). The map includes detailed survey data such as bearings and distances for the boundaries of the parcels. A 'RIGHT OF WAY (PRIVATE)' is shown along Enterprise Road, and a 'RIGHT OF WAY 'A' (PRIVATE)' is shown along Glover Avenue. A 'RIGHT OF WAY 'B' (PRIVATE)' is also shown. The map is a sketch, as indicated by the 'SKETCH' label at the bottom left.

RIGHT OF WAY & SERVICE EASEMENT 0.00 WIDE - CREATED BY C.947451 & C.947452 (P159379)

RIGHT OF WAY & SERVICE EASEMENT (VARIABLE WIDTH) (CREATED BY C.947449, C.947450, C.947451 & C.947452 & C.947452

SKETCH



COUNCIL DELEGATE

DATE

7-7-2015

**SCHEDULE OF EASEMENTS**

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 169834

PAGE 1 OF 3 PAGE/S

EASEMENTS AND PROFITS

Each lot on the plan is together with:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
- (2) any easements or profits a prendre described hereunder.

Each lot on the plan is subject to:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
- (2) any easements or profits a prendre described hereunder.

The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

FENCING COVENANTS


The owner of each Lot on the Plan covenants with PATRICIA ANNE TURNER-SMITH, MICHELLE KAYE OXENBOULD and JOHN THOMAS TURNER (the Vendors) that the Vendors will not be required to fence.

RIGHT OF WAY EASEMENTS

Lot 29 is **TOGETHER WITH** a Right of Carriageway marked "RIGHT OF WAY (PRIVATE) 7.50 WIDE" over the balance of Certificate of Title Volume 161968 Folio 105 after registration of this Plan as shown on the Plan.

Lot 40 is **SUBJECT TO** a Right of Carriageway marked "RIGHT OF WAY (PRIVATE) 4.57 WIDE" appurtenant to lot 3 on SP 4682 as shown on the Plan.

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: PATRICIA ANNE TURNER-SMITH, MICHELLE KAYE OXENBOULD and JOHN THOMAS TURNER FOLIO REF: 159828/1 & 161968/105 SOLICITOR & REFERENCE: BUTLER MCINTYRE & BUTLER (Jason Samec)	PLAN SEALED BY: HOBART CITY COUNCIL DATE: 7-7-2015 REF NO. 474-02 COUNCIL DELEGATE 
NOTE: The Council Delegate must sign the Certificate for the purposes of identification.	

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SCHEDULE OF EASEMENTS

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 2 OF 3 PAGES	Registered Number SP 169834
SUBDIVIDER: PATRICIA ANNE TURNER-SMITH, MICHELLE KAYE OXENBOULD and JOHN THOMAS TURNER FOLIO REFERENCE: 159828/1 & 161968/105	

That part of Lot 40 on the Plan formerly comprised in Lot 1 on Plan 159828
~~Lot 40~~ is TOGETHER WITH a Right of Carriageway marked "RIGHT OF WAY 'B' (PRIVATE)"
 over Lot 251 on Plan 114566 as shown on the Plan.

Lot 40 is SUBJECT TO a Right of Carriageway marked "RIGHT OF WAY 'A' (PRIVATE)"
 appurtenant to Lot 251 on Plan 114566 and Lots 252 and 253 on Sealed Plan 116538 as shown
 on the Plan. Sealed

Lot 40 is SUBJECT TO a Right of Carriageway marked "RIGHT OF WAY & AND SERVICE
 EASEMENT (VARIABLE WIDTH)" appurtenant to Lot 1 on Plan 110583 as shown on the Plan.

Lot 40 is SUBJECT TO a Right of Way and Service Easement marked "RIGHT OF WAY & AND
 SERVICE EASEMENT (VARIABLE WIDTH)" appurtenant to Lot 1 on Plan 110583 as shown on
 the Plan.

Lot 40 is SUBJECT TO a Right of Way and Service Easement marked "RIGHT OF WAY & AND
 SERVICE EASEMENT (VARIABLE WIDTH)" appurtenant to Lot 3 on Plan 54690 as shown on the
 Plan.

Lot 40 is SUBJECT TO a Right of Carriageway marked "RIGHT OF WAY & AND SERVICE
 EASEMENT (VARIABLE WIDTH)" appurtenant to Lot 3 on Plan 54690 as shown on the Plan.

INTERPRETATION

"Right of Way and Service Easement" means the full right and liberty for the owners of dominant (benefitting) title at all times with workmen and others and machinery to enter upon the said land and to open, break up and excavate the said land and to lay and maintain therein or thereon water pipes, valves and fittings for any purposes required by the owners of the dominant (benefitting) title may deem necessary and to run and pass water through and along the same and from time to time to inspect, cleanse, repair and maintain the same and when and where necessary to lay new pipes in substitution for and in addition thereto and to do all necessary works in connection therewith or as may be authorised by any relevant legislation.

P Turner Smith
 PATRICIA ANNE TURNER-SMITH

Michelle Kaye Oxenbould
 MICHELLE KAYE OXENBOULD

John Thomas Turner
 JOHN THOMAS TURNER

NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.

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SCHEDULE OF EASEMENTS

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 3 OF 3 PAGES	Registered Number SP 169834
SUBDIVIDER: PATRICIA ANNE TURNER-SMITH, MICHELLE KAYE OXENBOULD and JOHN THOMAS TURNER FOLIO REFERENCE: 159828/1 & 161968/105	

SIGNED by PATRICIA ANNE TURNER-SMITH in the presence of:

Signature: P. Turner-Smith

Signature: [Signature]

Name:

Witness

Jacque Dillon
Personal Assistant
Butler McIntyre & Butler
20 Murray Street, Hobart
Ph: (03) 6222 9444

SIGNED by MICHELLE KAYE OXENBOULD in the presence of:

Signature: M. Oxenbould

Signature: [Signature]

Name:

Witness

CHRIS OXENBOULD
PLEASE PRINT
19 GLOVER STREET
MOSMAN, N.S.W. 2088

SIGNED by JOHN THOMAS TURNER in the presence of:

Signature: [Signature]

Signature: [Signature]

Name:

Witness

Jacque Dillon
Personal Assistant
Butler McIntyre & Butler
20 Murray Street, Hobart
Ph: (03) 6222 9444

NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.

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SURVEY NOTES

DEPUTY RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



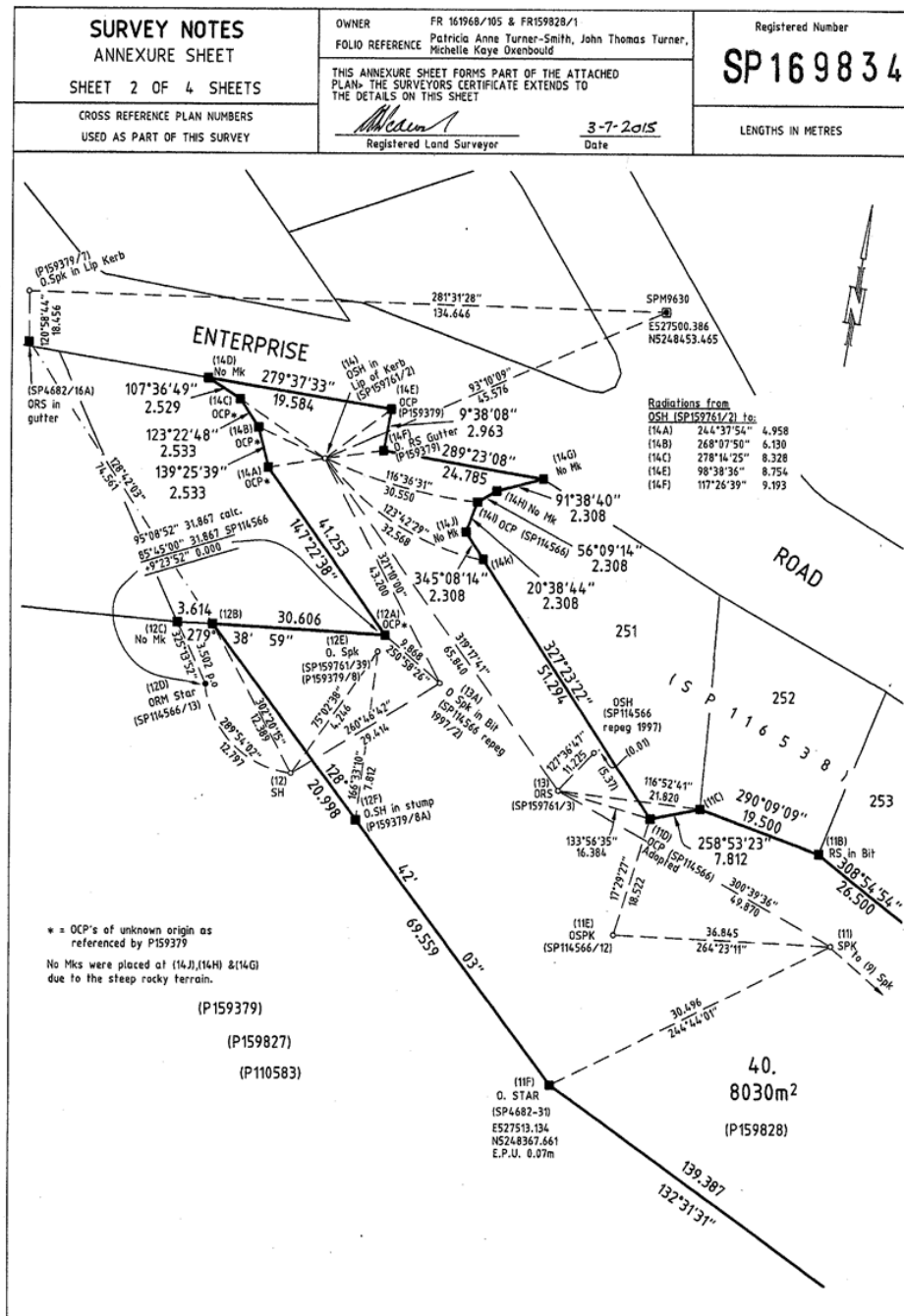
SURVEY NOTES		Registered Number	SURVEY CERTIFICATE	
SHEET 1 OF 4 SHEETS		SP169834	Anthony Mark Peacock of Hobart in Tasmania a Registered Land Surveyor HEREBY CERTIFY that: (a) this survey is based upon the best evidence that the nature of the case admits (b) the survey notes have been truly compiled from surveys made by me or made under my supervision; and (c) this survey and accompanying survey notes comply with relevant legislation affecting surveys and are correct for the purpose required. Signature: <i>[Signature]</i> Date: 3, 7, 2015 Surveyors Reference: 5629M	
CROSS REFERENCE PLAN NUMBERS USED AS PART OF THIS SURVEY	DESCRIBE BY REPORT THE EVIDENCE USED TO DETERMINE BOUNDARIES			
SURVEY NOTES by Surveyor A.M. Peacock CITY OF HOBART John Thomas Turner, Patricia Anne Turner-Smith and Michelle Kay Oxenbould owners - FR 161968/105 & FR 159828/1 Part of 87 Acres Gtd to Perpetual Trustees Executors & Agency Co. of Tasmania Limited. Survey commenced: 4/12/2014 Survey completed: 1/6/2015 Error of close: See calcs All boundaries are open and all corners are marked with CP's unless otherwise stated, PCP denotes plastic corner peg. EPU denotes Estimated Positional Uncertainty. Bearing datum is MGA94 - per SP159761 by observation between O.R/S (1A) and O.R/S (1) in Edith Avenue and O.R/S (5) and SPM 9630 in Enterprise Road. MGA coordinates calculated from SPM9630 (E527500.386 N5248453.465) Point scale factor = 0.999610, Sea Level correction = 0.999973 Combined scale factor = 0.999583. 				



SURVEY NOTES

DEPUTY RECORDER OF TITLES

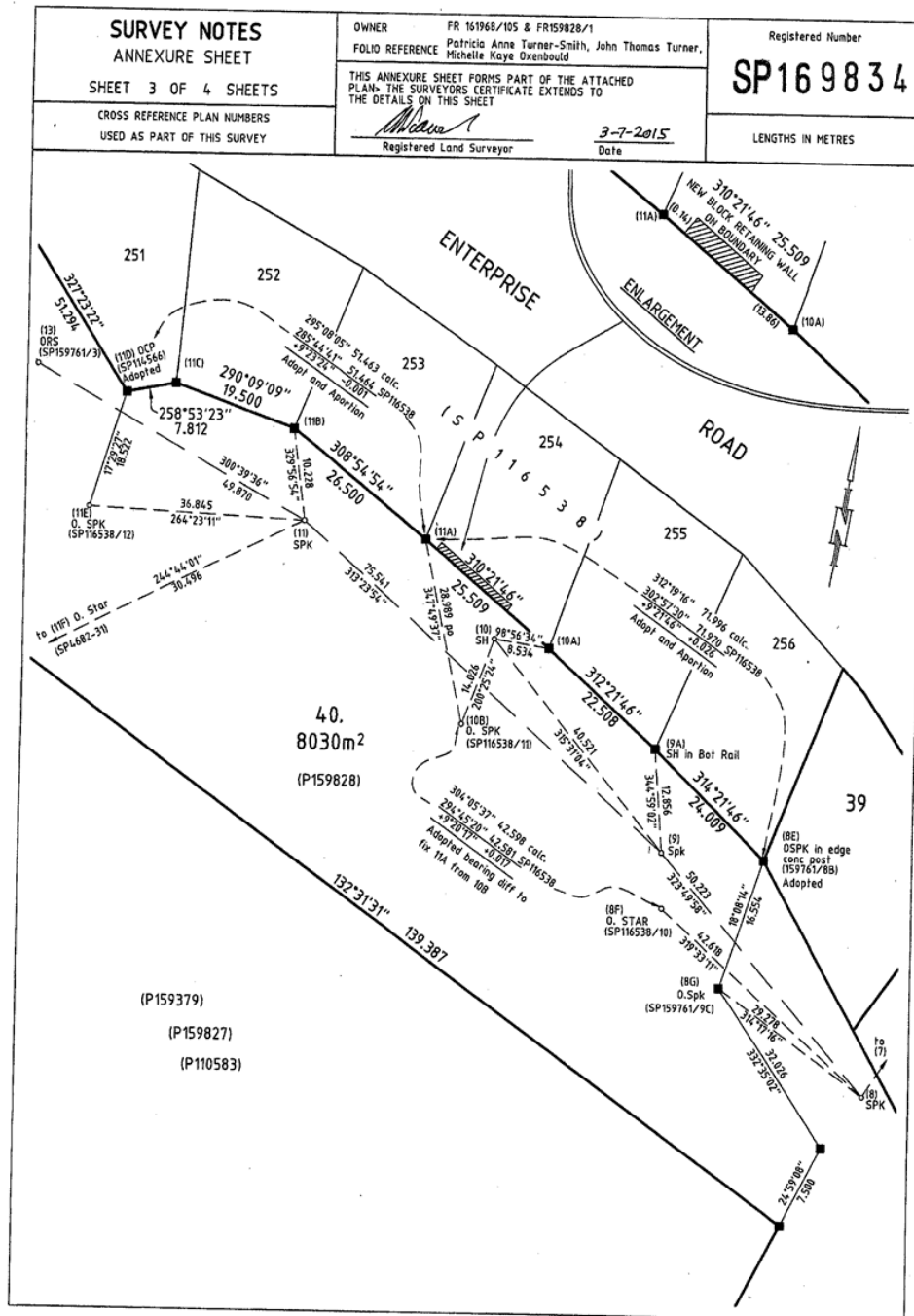
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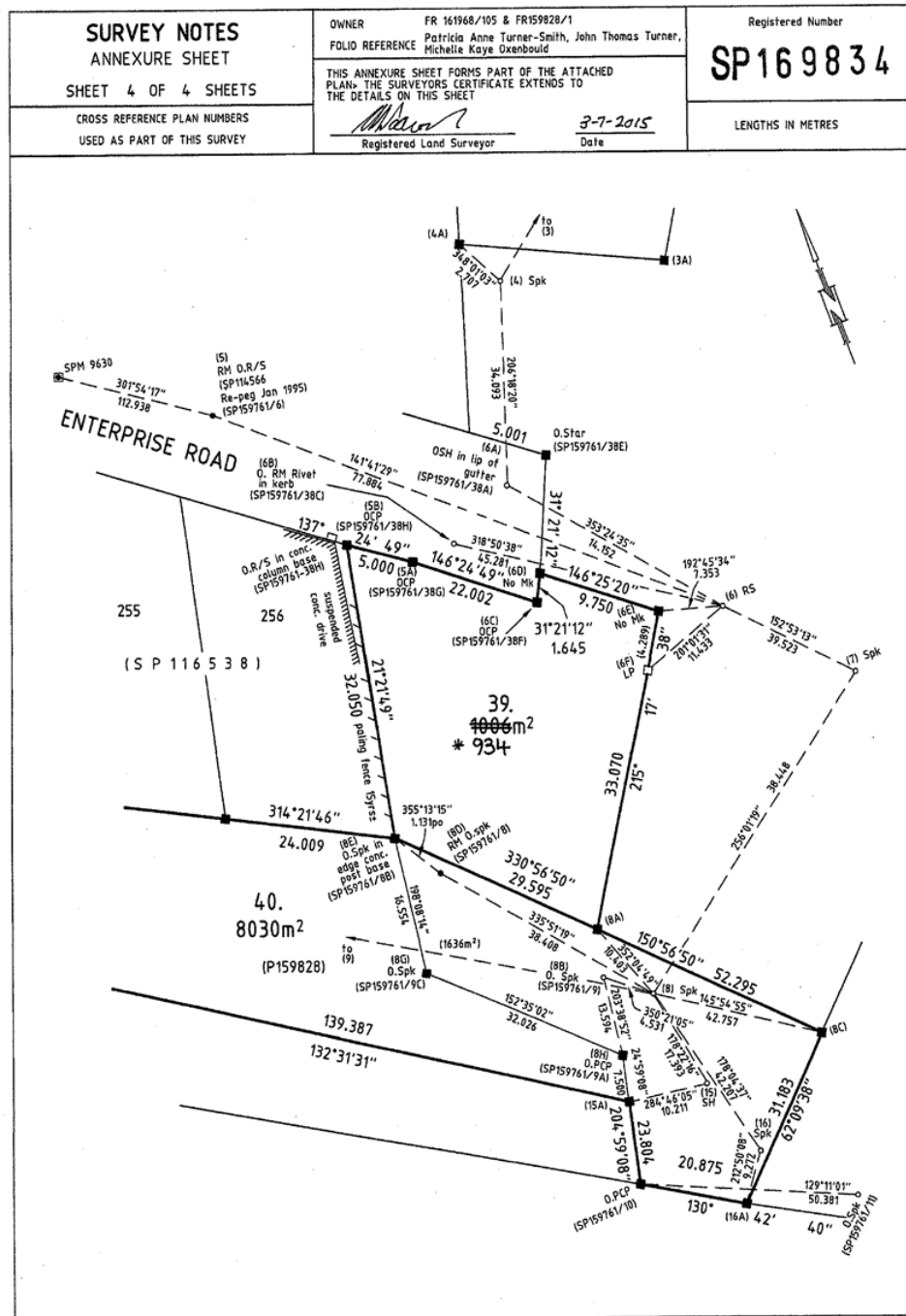


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DEPUTY RECORDER OF TITLES

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21B Enterprise Road 20
Multiple Dwellings

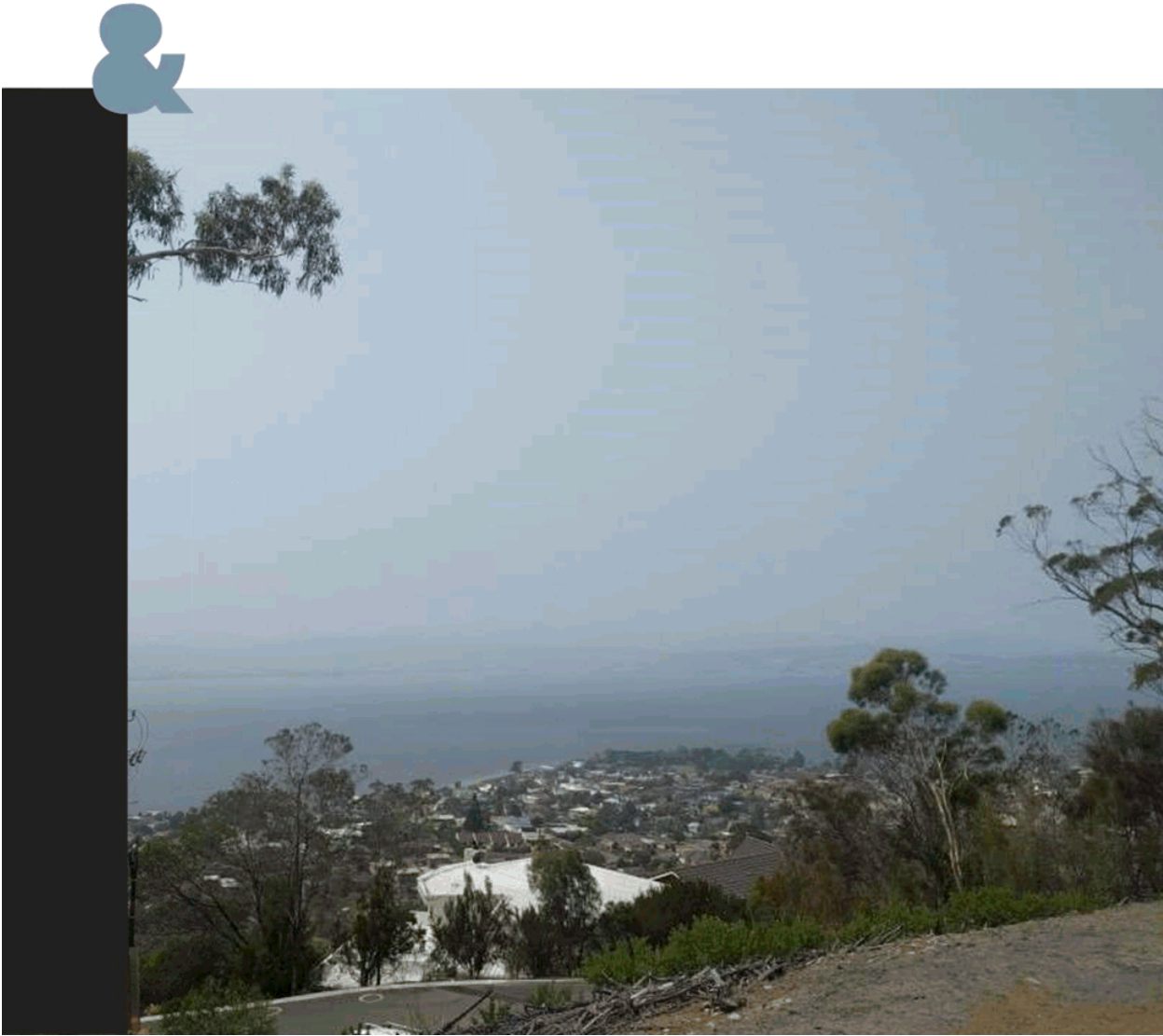
Traffic Impact Assessment

Prepared for
Max Wang

Client representative
Max Wang

Date
20 November 2020

Rev01



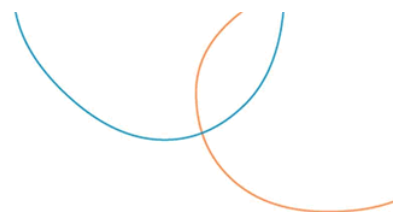
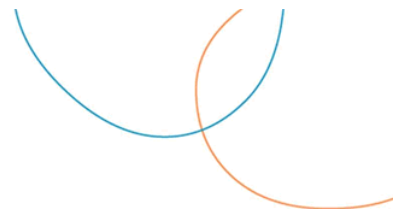


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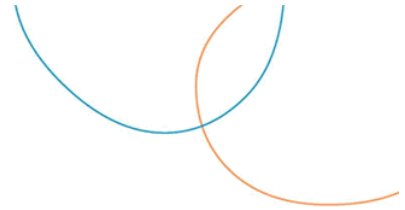


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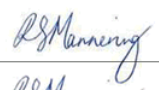

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Appendices

Appendix A	Site Plans
Appendix B	Circulation Road Grades and Crossfall
Appendix C	Modelling Results – Existing
Appendix D	Modelling Results – Post Development
Appendix E	Swept Paths – Garages & Rubbish Truck

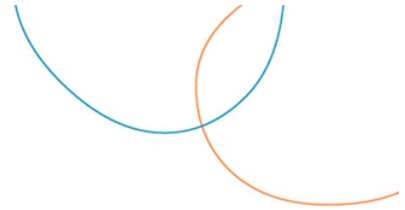
Prepared by	Leenah Ali-Lavroff		Date	18/03/2020
Reviewed by	Ross Mannering		Date	18/03/2020
Authorised by	Ross Mannering		Date	18/03/2020

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
00	Traffic Impact Assessment	L. Ali-Lavroff	R. Mannering	R. Mannering	18/03/2020
01	Update Traffic Plans (Appendix A & B)	M. Moore	J. Coates	J. Coates	20/11/2020

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1. Introduction

A Development Application (DA) has been lodged with Hobart City Council (Council) for the proposed development of a vacant lot located at 21B Enterprise Road in Sandy Bay. The proposed development includes 20 multiple dwellings.

Following the lodgment of the DA, Council have responded with a Further Information Request (RFI) and have requested a Traffic Impact Assessment (TIA) to demonstrate compliance with E5.0 Road and Railway Assets Code and E6.0 Parking and Access Code of the Planning Scheme.

Max Wang engaged pitt&sherry to undertake a TIA for this development.

This report has been prepared with reference to the **r r** (the Planning Scheme) and in accordance with the Department of State Growth's Publication **r r r d r r** and details the findings of the traffic assessment undertaken for the proposed development.

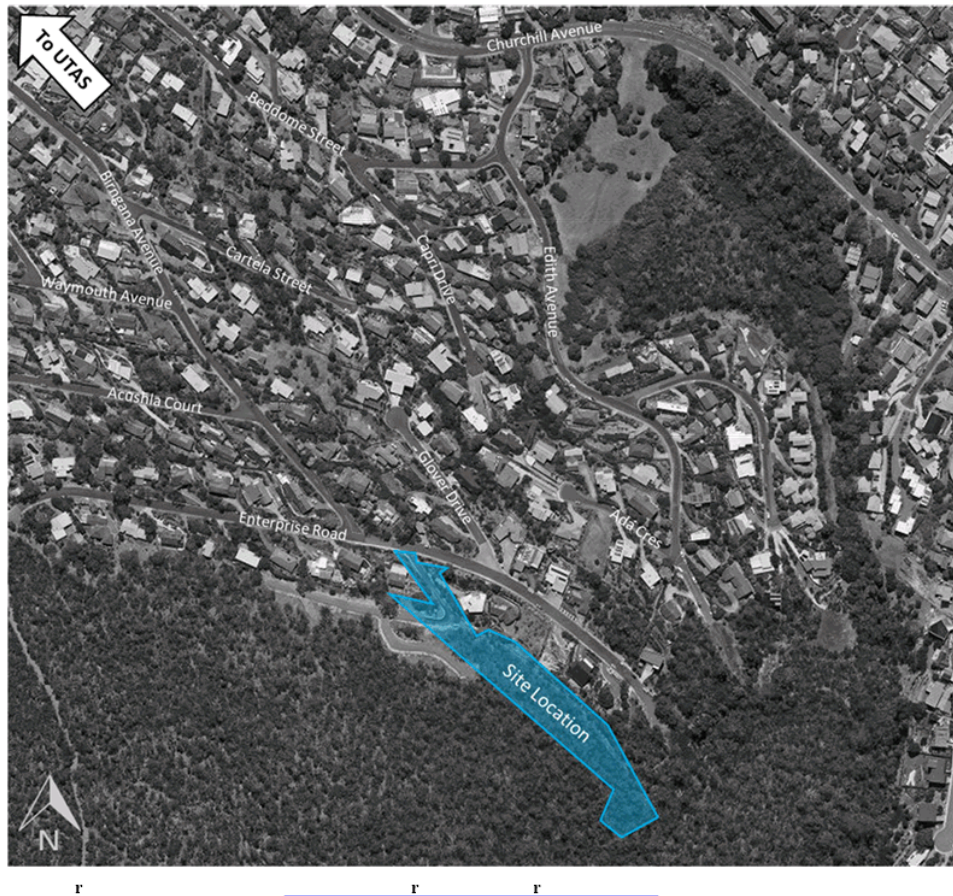
2. Existing Conditions

2.1 Site Location

The site is located at 21B Enterprise Road in Sandy Bay with a frontage to Enterprise Road. The site is currently vacant has a land use classification as 10.0 General Residential.

Surrounding land uses generally include 14.0 Environmental Living to the south and 10.0 General Residential to the north, east and west. Churchill Avenue operates in a south-east north-west direction, approximately 380m to the north of the site. The University of Tasmania Sandy Bay Campus is located approximately 1.5 km to the north-west of the site.

Figure 1 shows the location of the site in the local context.



2.2 Site Access

The site has a single point of access from Enterprise Road via an access road (shown in Figure 2 and Figure 3). The access road is subject to a right of way and service easement with 23 Enterprise Road, 25 Enterprise Road and 27 Enterprise Road.

The access road has a sealed carriageway width of approximately 5.5 metres between the face of kerbs.



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2.3 Surrounding Road Network

2.3.1 Enterprise Road

Enterprise Road (shown in Figure 4 and Figure 5) is a Council owned two-way local residential road configured with a single carriageway in each direction. The road is a no through road that operates in an east west direction. Enterprise Road has a sealed carriageway width of approximately 8.5 metres between the face of kerbs. Free, un-restricted parking is permitted along both sides of the road.

Enterprise Road is subject to the Tasmanian general urban speed limit of 50km/h and is calculated to carry approximately 696¹ vehicles a day.



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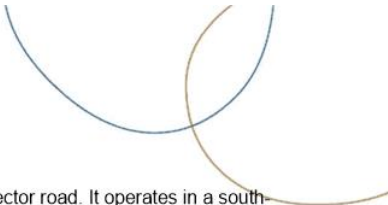


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2.3.2 Birngana Avenue/ Beddome Street/ Cheverton Parade/ Edith Avenue/ Churchill Avenue

Birngana Avenue (shown in Figure 6), Beddome Street (shown in Figure 7), Cheverton Parade (shown in Figure 8) and Edith Avenue (shown in Figure 9) are all Council owned two-way local roads with a single carriageway in each direction. These roads provide access to the properties along their length but also provide a connection between Enterprise Road and Churchill Avenue.





Churchill Avenue (shown in Figure 10 and Figure 11) is a Council owned two-way collector road. It operates in a south-east north-west direction and is configured with a single carriageway in each direction. Churchill Avenue operates between Sandy Bay Road and the Churchill Avenue/ Regent Street/ Alexander Street roundabout.

All five roads discussed above are subject to the Tasmanian general urban speed limit of 50km/h.



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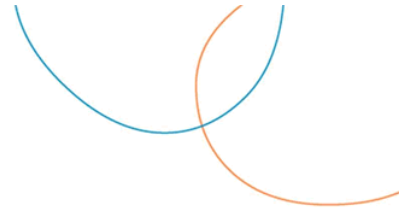
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2.4 Surrounding Intersections

The site access road/ Enterprise Road sign-controlled give-way T-intersection is located along the northern boundary of the site.

The intersection of Enterprise Road/ Birngana Avenue is located approximately 40m to the west of the site. This intersection operates as a sign-controlled give-way T-intersection.

2.5 Existing Traffic Volumes

2.5.1 Calculated Volumes

There is currently no traffic data available for the site access road or Enterprise Road.

For the purpose of this TIA, due to the catchment accessing the site access road and Enterprise Road being residential dwellings, the anticipated traffic volume on these roads have been calculated using traffic generation rates sourced from the **d d M r r M d r r** (RMS Technical Direction).

There are currently approximately 2 residential dwellings accessed from the site access road and 45 residential dwellings accessed from Enterprise Road. In addition, there is a residential dwelling currently being constructed at 27 Enterprise Road which will be accessed from the site access road. There is also currently an approved DA for 20 multiple dwellings at 26 Edith Avenue which will be accessed from Enterprise Road.

Based on the above, it has been assumed, for the purpose of completing a conservative assessment, that the site access road could potentially service up to 3 residential dwellings and Enterprise Road could potentially service up to 65 residential dwellings.

The RMS Technical Direction specifies the following traffic generation rates for low density residential dwellings:

Weekday AM Peak Hour	0.99 trips per dwelling
Weekday PM Peak Hour	0.95 trips per dwelling
Daily	10.7 trips per dwelling

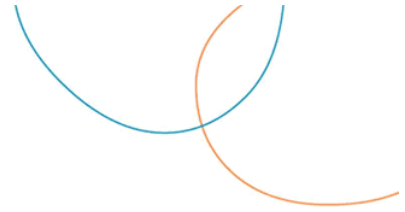
Based on the generation rates above, the existing traffic volumes expected are as follows:

Site Access Road

Weekday AM Peak Hour	3 vehicle movements
Weekday PM Peak Hour	3 vehicle movements
Daily	33 vehicle movements

Enterprise Road

Weekday AM Peak Hour	65 vehicle movements
Weekday PM Peak Hour	62 vehicle movements
Daily	696 vehicle movements



Directional Split of Traffic

The directional split of traffic (i.e. the ratio between inbound and outbound traffic movements) that has been adopted for the site access road and Enterprise Road are as follows:

AM Peak Hour	20% in/ 80% out
PM Peak Hour	70% in/ 30% out.

Traffic Distribution

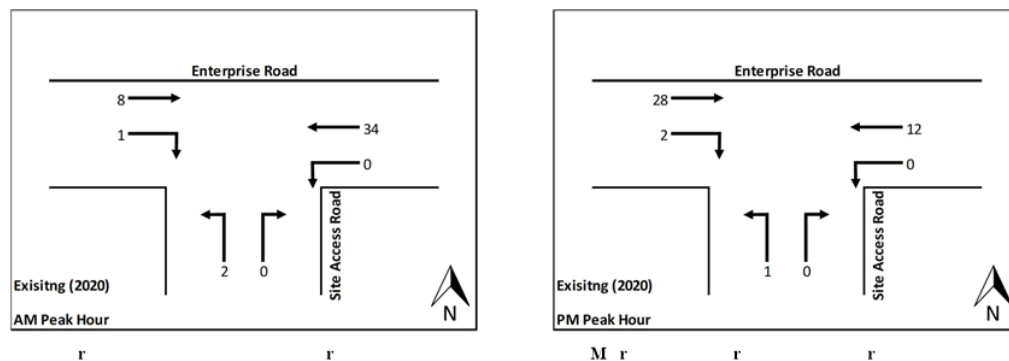
The distribution of traffic along Enterprise Road is based on a number of factors including:

- The location of major traffic distribution roads around the site
- The location of traffic generating developments; and
- Existing traffic patterns

Based on the above, it is expected that 70% of the traffic along Enterprise Road will travel past the site access road/ Enterprise Road intersection. It is noted that the remaining 30% of traffic along Enterprise Road will travel to the west of Birngana Avenue.

2.5.2 Summary of Traffic Volumes

Based on the calculated traffic volumes, directional split of traffic and traffic distribution presented above, a summary of the expected traffic volumes at the site access road/ Enterprise Road intersection during the AM and PM peak hour is shown in Figure 12 and Figure 13.



2.6 Existing Intersection Performance

2.6.1 Traffic Modelling Software

The traffic operation of the site access road/ Enterprise Road intersection has been assessed using SIDRA Intersection 8.0 modeling software. SIDRA Intersection rates the performance of the intersections based on the vehicle delay and the corresponding LOS. It is generally accepted that an intersection operates well if it is at LOS D or higher. Table 1 shows the criteria that SIDRA adopts in assessing the LOS.



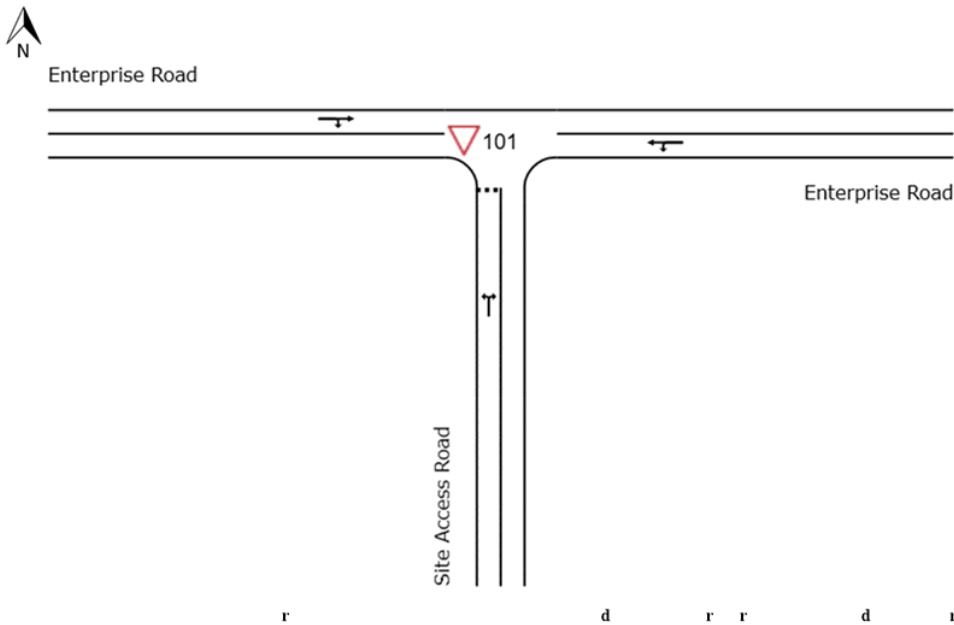
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LOS	Delay per Vehicle (secs)		
	Signals	Roundabout	Sign Control
A	10 or less	10 or less	10 or less
B	10 to 20	10 to 20	10 to 15
C	20 to 35	20 to 35	15 to 25
D	35 to 55	35 to 50	25 to 35
E	55 to 80	50 to 70	35 to 50
F	Greater than 80	Greater than 70	Greater than 50

2.6.2 Traffic Modelling Layout

The geometry of the site access road/ Enterprise Road intersection used for the SIDRA traffic model was developed with reference to aerial photography obtained from the LISTmap and measurements gathered during the site visit undertaken on Wednesday 16 January 2020. The aerial photography and site visit informed the number, width and length of trafficable lanes and speed limits.

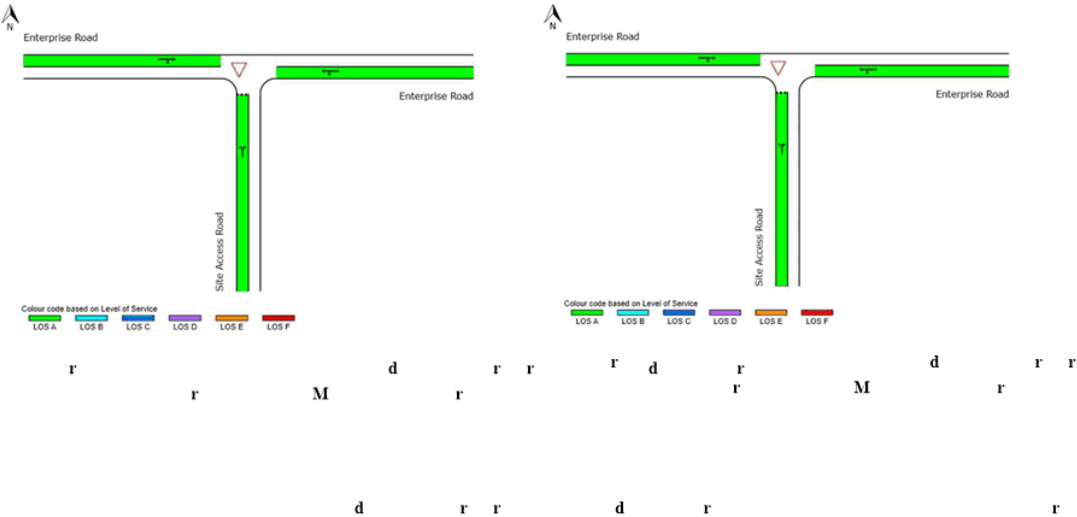
The general layout used for the intersection is shown in Figure 14.



2.6.3 Traffic Modelling Results

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Table 2. Full results are presented in Appendix C.



Approach	Peak	Degree of Saturation	Average Delay (secs)	95 th Percentile Queue (m)
South: Site Access Road	AM	0.02	5	0
East: Enterprise Road		0.02	0	0
West: Enterprise Road		0.01	1	0
All Vehicles		0.02	1	0
South: Site Access Road	PM	0.00	5	0
East: Enterprise Road		0.01	0	0
West: Enterprise Road		0.02	0	0
All Vehicles		0.02	1	0

Based on the modelling results presented above, the site access road/ Enterprise Road intersection operates well with minimal queues and delays experienced on all approaches.

2.7 Road Safety

The Department of State Growth (DSG) have provided crash history along Enterprise Road for the most recent 5-year period.

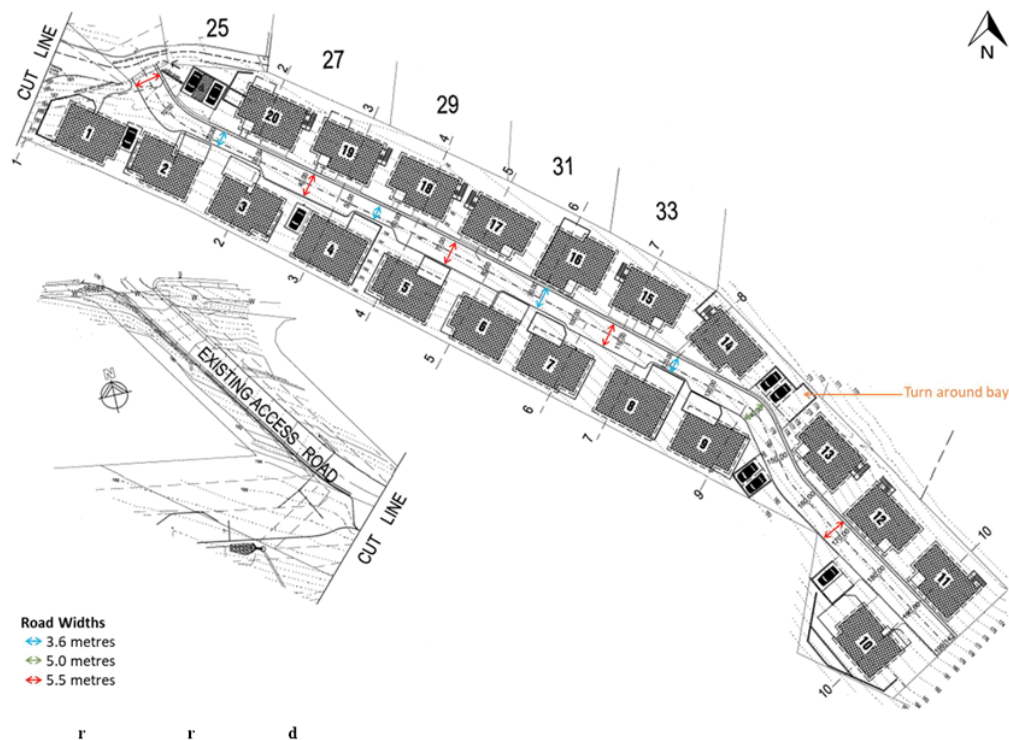
The crash history shows that no crashes have been recorded along Enterprise Road in the most recent 5-year period.

3. Development Proposal

3.1 Overview

It is proposed to develop 20 multiple dwellings on the site. The dwellings will be connected by a privately-owned circulation road that will be accessed from Enterprise Drive via the site access road. Each dwelling will have two garaged car parking spaces. An additional 10 visitor car parking spaces will also be provided.

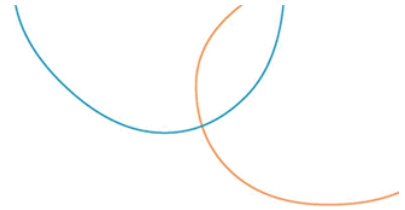
A snapshot of the set out of the proposed 20 multiple dwellings is shown in Figure 17. Full plans are included in Appendix A.



3.2 Vehicle Access and Circulation Road

Vehicles will access the 20 multiple dwellings from Enterprise Road via the site access road which will connect to the circulation road. At its intersection point, the circulation road has a width of 5.5m.

Due to physical constraints within the site, the circulation road has varying widths as summarised in Table 3.



Road Section	Road Width	Traffic Flow
Between site access road and Unit 2	5.5m	Two-way
Unit 2 and Unit 8	3.6m with passing bays	One-way
Unit 8 and Unit 13	5.0m	One-way
Unit 13 and south-eastern site boundary	5.5m	Two-way

The circulation road has a crossfall of 5% and a maximum grade of 10%.

Due to the topography of the site, a grade of 12.5% is present between the circulation road and a number of dwellings located along the northern side of the property. Turning areas in front of the garages have a maximum grade of 5%.

Details of the crossfall and grades along the circulation road are included in Appendix B.

3.3 Parking

As discussed, there is a garage provided for each dwelling which accommodates two cars. In addition, ten 90-degree angle parking spaces have been provided throughout the site for visitor parking.

The visitor parking spaces have a maximum gradient of 5% measured parallel to the angle of parking and 4% measured perpendicular to the angle of parking.

The DDA accessible parking spaces have a gradient of 1% measured parallel to the angle of parking and are flat in all other directions.

All visitor parking spaces including DDA accessible spaces have wheel stops. Parking spaces adjacent to Unit 20 and Unit 13 will have crash barriers installed as per the requirements of Australian Standard AS1170.1. Parking spaces adjacent to Unit 2, Unit 4, Unit 9 and Unit 10 will have retaining walls.

3.4 Rubbish Collection and Turning Bay

Rubbish collection for all units with the exception of Unit 10 to Unit 13 will be kerbside, directly outside of the properties. A bin storage area will be provided for Unit 10 to Unit 13 along the southern boundary of the turning bay adjacent to Unit 13. As Council rubbish collection trucks don't enter private property, rubbish collection will be performed by a private contractor.

4. Transport Assessment

4.1 Traffic Impact Assessment

4.1.1 Traffic Generation

The traffic generation rate for each of the 20 multiple dwellings has been sourced from the RMS Technical Direction.

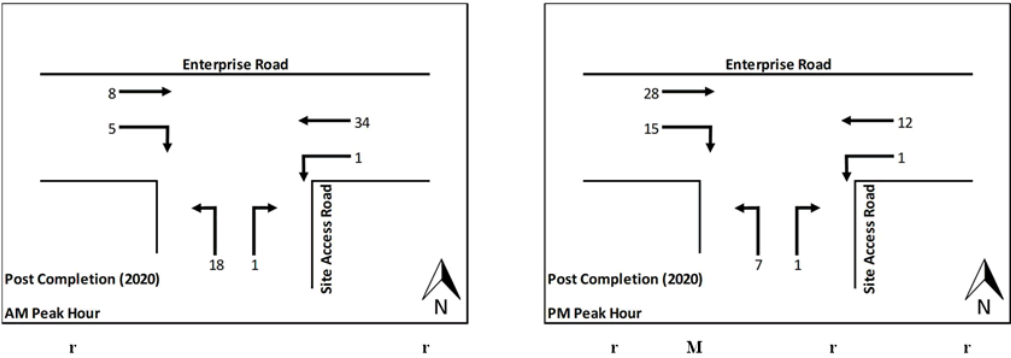
Based on the generation rates presented within the RMS Technical Direction and discussed in Section 2.5.1 of this report, the expected traffic generation of the development on a typical weekday is as follows:

Weekday AM Peak Hour	20 vehicle movements
Weekday PM Peak Hour	19 vehicle movements
Daily	214 vehicle movements

The directional split of traffic and traffic distribution discussed in Section 2.5.1 of this report has been adopted for the expected traffic generation of the development.

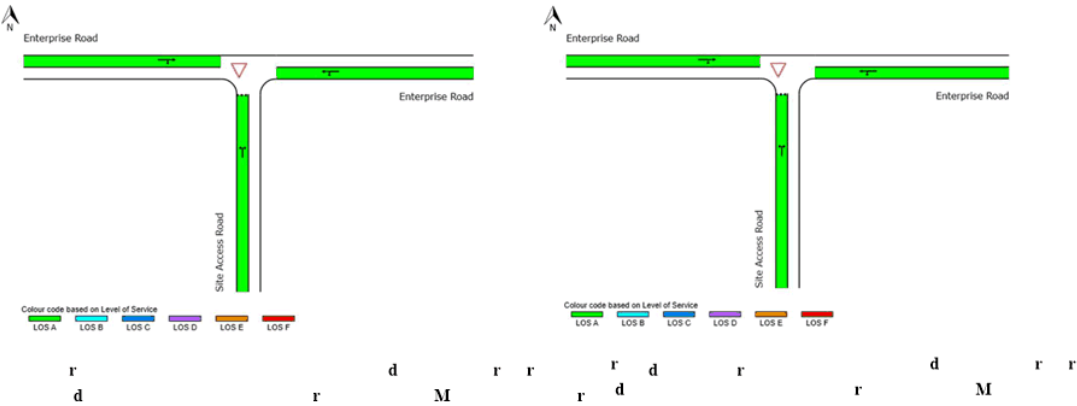
4.1.2 Traffic Volumes

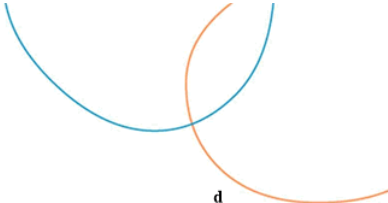
Based on the above, Figure 18 and Figure 19 show the expected post completion traffic at the site access road/ Enterprise Road intersection during the AM and PM peak hour.



4.1.3 Traffic Impact

The impact of the development on the LOS for each approach of the site access road/ Enterprise Road intersection is shown in Figure 20 and Figure 21. A summary of the SIDRA Intersection results for degree of saturation, average delay and 95th percentile queue is provided in Table 4. Full results are presented in Appendix D.





Approach	Peak	Degree of Saturation	Average Delay (secs)	95 th Percentile Queue (m)
South: Site Access Road	AM	0.01	5	0
East: Enterprise Road		0.02	0	0
West: Enterprise Road		0.01	2	0
All Vehicles		0.02	2	0
South: Site Access Road	PM	0.00	5	0
East: Enterprise Road		0.01	0	0
West: Enterprise Road		0.02	2	1
All Vehicles		0.02	2	1

Based on the modelling results presented above, the site access road/ Enterprise Road intersection is expected to continue to operate well post development. All approaches are expected to operate with minimal queues and delays.

4.1.4 Enterprise Road Amenity

As discussed, Enterprise Road is a local residential road. As such, any increase in traffic volumes along Enterprise Road may impact on the amenity of the street.

The design Manual (RMS Guide) sets out environmental capacity performance standards for different roads as shown in Table 5. The RMS Guide states that when these environmental capacity performance standards are exceeded, the amenity of the road begins to be affected.

Road Class	Road Type	Maximum Peak Hour Volume (veh/hr)
Local	Access Way	100
	Street	200 environmental goal
		300 maximum
Collector	Street	300 environmental goal
		500 maximum

Based on the above, a local street like Enterprise Road can carry an environmental goal of 200 vehicles per hour and a maximum of 300 vehicles per hour before the amenity of the road is affected.

As the post development traffic volumes along Enterprise Road in the vicinity of the site is expected to be 67 vehicles during the AM peak hour and 65 vehicles during the PM peak hour, the development does not reach the environmental goal or maximum capacity.



4.2 Sight Distance Assessment

The Safe Intersection Sight Distance (SISD) from the site access road to vehicles travelling along Enterprise Road was measured from a point 5 metres back from the edge of the kerb in accordance with Figure E5.1 of the Planning Scheme. The observed available sight distance is summarised in Table 6 and shown in Figure 22 and Figure 23.

Direction of Vehicle on Enterprise Road	Available Sight Distance
Eastbound	120m
Westbound	40m

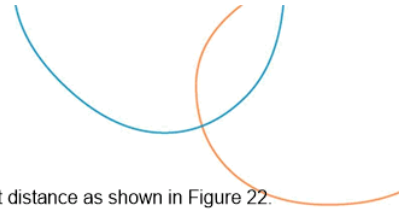


The observed available sight distance has been assessed against the Planning Scheme and the (Australian Standard) requirements for a 50km/hr vehicle speed.

The SISD requirements presented within the Planning Scheme and Australian Standard are shown in Table 7.

Source	Sight Distance Requirement
The Planning Scheme	80m
Australian Standard AS2890.1 Desirable 5s gap (Non-Domestic Property Access)	69m
Australian Standard AS2890.1 Minimum SSD (Non-Domestic Property Access)	46m
Australian Standard AS2890.1 Domestic Property Access	40m

Based on the above, sight distance from the site access road to eastbound vehicles on Enterprise Road meets the Planning Scheme and Australian Standard requirements. Sight distance to westbound vehicles on Enterprise Road meets the Australian Standard Domestic Property Access sight distance requirements but is unable to meet the Planning Scheme and Australian Standard Non-Domestic Property Access requirements.



The lack of sight distance to westbound vehicles was due to vegetation blocking sight distance as shown in Figure 22. Should the vegetation be trimmed, a sight distance of 65m is estimated. This exceeds the Australian Standard Minimum SSD for non-domestic property access but is still unable to meet the Planning Scheme and Australian Standard Non-Domestic Property Access Desirable 5s sight distance.

It is noted that although the Planning Scheme and Australian Standard Non-Domestic Property Access Desirable 5s sight distance requirements are not met, the sight distance with vegetation trimming is expected to be sufficient for a number of reasons as follows:

The proposed development is a residential development resulting in the site access road being used predominantly by residents who will be familiar with the area

Enterprise Road provides access to residential developments resulting in the road being used predominantly by residents who will be familiar with the area

Enterprise road is a no-through road that terminates approximately 230 metres east of the site access road. Parking is also permitted along both sides of the road resulting in squeeze points through which only one vehicle can travel at a time. The nature of the road will result in vehicles travelling at a speed less than the posted speed limit of 50km/h

The only access to Enterprise Road is via the Enterprise Road/ Birngana Avenue intersection. As this intersection is located approximately 40m to the west of the site access road, westbound vehicles past the site access road will be decelerating on preparation to approaching the intersection.

4.3 Parking Assessment

4.3.1 Parking Provision

Table E6.1 of the Planning Scheme specifies car parking rates for multiple dwelling developments as shown in Table 8.

Car Parking Rate	Car Parking Requirement
2 parking spaces for each dwelling and 1 dedicated visitor parking space per 4 dwellings (rounded up to the nearest whole number) or if on an internal lot or located at the head of a cul-de-sac, 1 dedicated space per 3 dwellings (rounded up to the nearest whole number)	47 parking spaces

Based on the above, the proposed development is required to provide 47 parking spaces.

As the proposed development is providing 2 parking spaces per dwelling and 10 visitor parking spaces, there is a total provision of 50 parking spaces which meets the Planning Scheme requirements.

4.4 Site Layout Assessment

4.4.1 Access Layout

The vehicle access widths have been reviewed against the Australian Standard.

In order to determine the class of parking, Table 1.1 of the Australian Standard has been reviewed. In order to determine the access facility category and for access driveway widths, Table 3.1 and Table 3.2 of the Australian Standard has been reviewed. Excerpts of Table 1.1, Table 3.1 and Table 3.2 from the Australian Standard are shown in Figure 24 to Figure 26.

TABLE 1.1
CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

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TABLE 3.1
SELECTION OF ACCESS FACILITY CATEGORY

Class of parking facility (see Table 1.1)	Frontage road type	Access facility category				
		Number of parking spaces (Note 1)				
		<25	25 to 100	101 to 300	301 to 600	>600
1,1A	Arterial	1	2	3	4	5
	Local	1	1	2	3	4
2	Arterial	2	2	3	4	5
	Local	1	2	3	4	4
3,3A	Arterial	2	3	4	4	5
	Local	1	2	3	4	4

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TABLE 3.2
ACCESS DRIVEWAY WIDTHS

metres			
Category	Entry width	Exit width	Separation of driveways
1	3.0 to 5.5	(Combined) (see Note)	N/A
2	6.0 to 9.0	(Combined) (see Note)	N/A
3	6.0	4.0 to 6.0	1 to 3
4	6.0 to 8.0	6.0 to 8.0	1 to 3
5	To be provided as an intersection, not an access driveway, see Clause 3.1.1.		

NOTE: Driveways are normally combined, but if separate, both entry and exit widths should be 3.0 m min.

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Based on the above, a User Class 1A parking facility with a Category 1 access driveway is required to provide a minimum combined entry and exit width of 3.0m.

As the proposed development has an access width of 5.5m, it meets the Australian Standard requirements.

4.4.2 Circulation Road

The suitability of the circulation road has been assessed against Australian Standard, the Planning Scheme and the (Austroads Guide)

Australian Standard Requirements

The Australian Standard specifies a maximum gradient of 20% for circulation roadways and a minimum road width of 3.0m for one-way traffic flow and 5.5m for two-way traffic flow. The Australian Standard does not specify crossfall requirements for circulation roads.

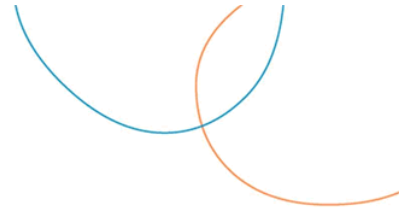
As the proposed circulation road has a maximum grade of 10% and has a minimum width of 3.6m for one-way traffic flow and 5.5m for two-way traffic flow, it meets the Australian Standard requirements.

Planning Scheme Requirements

Clause E6.7.3 of the Planning Scheme requires passing bays to be provided along the circulation road where only one-way traffic flow is supported. The passing bays are required to be 6m long, 5.5m wide and at intervals of no more than 30m.

As the circulation road provides passing bays that are 8m long, 5.5m wide and at intervals of approximately 15m, they meet the Planning Scheme requirements.

It is noted that the parking bays should be linemarked with yellow No Stopping linemarking or signposted as such to prevent vehicles from parking in the designated passing bays.



Austrroads Requirements

As the Australian Standard does not specify crossfall requirements, the circulation road has been assessed against Austrroads Guide requirements.

The Austrroads Guide specifies a maximum crossfall of 5% for urban roads at all speed ranges.

As the proposed development provides a 5% crossfall, it meets the Austrroads requirements.

4.4.3 Grade Transitions

The Australian Standard states that grade transitions of at least 2.0m in length is required where summit grade changes exceed 12.5% and sag grades exceed 15% to prevent vehicles from scrapping or bottoming.

As grade changes within the proposed development do not exceed 12.5%, grade transitions are not required for the development.

4.4.4 Access Gradients

The Australian Standard states that the maximum gradient of an access across a property boundary or building alignment shall be 5%.

As the maximum grade across the property boundary including the turning areas in front of the garages is 5%, requirements of the Australian Standard have been met.

4.4.5 Garage Layout

The Australian Standard states that a two-car garage with a shared door must a minimum internal width of 5.4 metres, depth of 5.4 metres, height of 2.2 metres and door width of 4.8m. The Australian Standard also states than the access (aisle) width must be a minimum of 5.8 metres.

The residential garages are a minimum of 5.7 metres wide, 6.0 metres deep and 3.2 metres high. The garage door widths are a minimum 4.8 metres wide. With the exception of Unit 14 and Unit 16, all other garages have a minimum access aisle width of 6.0 metres. As such, with the exception of Unit 14 and Unit 16, all other garages meet Australian Standard requirements.

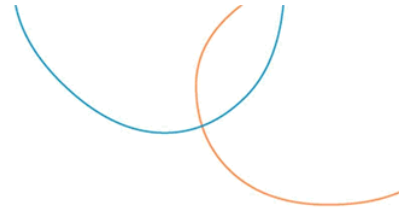
In order to ensure vehicles are able to access and exit Unit 14 and Unit 16 garages, swept path assessment has been completed. The swept path assessment shows that a B85 vehicle can enter the garages in one movement in the forward direction and two movements in the reverse direction (one forward movement to drive past the garage and one singular reverse movement into the garage). The B85 vehicle can also exit the garages in one movement in the forward direction, and two movements in the reverse direction (reverse out of the garage in one movement and then drive forwards). The swept path assessment considered that there are two cars parked in the garage. Based on the turning path assessment, the garage arrangements for Unit 14 and Unit 16 are considered acceptable.

Swept paths undertaken for the select garages are included in Appendix E.

4.4.6 Visitor Parking Layout

The visitor car parking layout has been reviewed against the Australian Standard User Class 1 requirements while DDA accessible spaces have been assessed against the requirements.

The dimensional requirements for a User Class 1 and DDA car parking spaces are specified in Table 9.



Feature	Minimum Requirement	Proposed
Parking Space Width (90 degree)	2.4m	2.6m – 3.1m
Parking Space Length (90 degree with wheel stops/ retaining wall/ crash barrier)	5.4m	5.5m
Parking Space Gradient (parallel to parking)	5%	5%
Parking Space Gradient (perpendicular to parking)	6.25% max	4%
DDA Space Width	2.4m with a shared 2.4m space	2.4m with a shared 2.4m space
DDA Space Gradient	2.5% max	1%
Parking Aisle Width	5.8m	6.0m – 7.5m

Based on the dimensions above, the proposed car park dimensions meet the Australian Standard requirements.

4.4.7 Rubbish Collection and Turning Bay

The two-way sections and passing bays along the circulation road are wide enough for an 8.8 MRV (rubbish truck) to pass a light vehicle. The one-way sections along the circulation road are considered to be acceptable for this location considering that rubbish collection is only for a short duration, once a week.

In order to ensure rubbish trucks are able to enter and exit the site in a forward direction, swept path assessment has been completed for a typical 8.8m service vehicle. The swept path assessment shows that although tight, should the adjacent parking spaces be aligned with the rear of the turnaround bay and the turnaround bay be widened by 300mm, rubbish trucks can enter the bay in a reverse direction and exit in a forward direction.

Based on the swept paths, it is recommended to move the adjacent parking so that they are aligned with the rear of the turnaround bay and widen the turnaround bay by 300mm. In addition, it is also recommended to widen the crossover and provide linemarking and signs to prevent vehicles from parking in the turnaround bay.

Swept paths for the rubbish truck are included in Appendix E.

5. Planning Scheme Assessment

5.1 E5.0 Road and Railway Assets Code

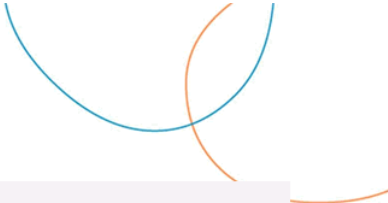
The proposed multiple dwellings development has been assessed against the E5.0 Road and Railway Assets Code of the Planning Scheme. The use standards of the code have been assessed in Table 10 while the development standards have been assessed in Table 11.

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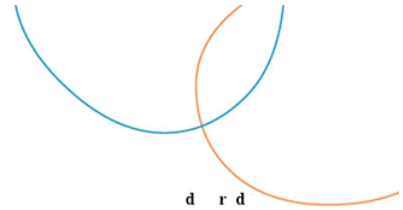
E5.5.1 Existing road accesses and junctions

Objective:

To ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.



Acceptable Solution	Performance Criteria	Comments
A3	<p>The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is greater.</p> <p>P2</p> <p>Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of more than 60km/h must be safe and not unreasonably impact on the efficiency of the road, having regard to:</p> <ul style="list-style-type: none"> a. The increase in traffic caused by the use b. The nature of the traffic generated by the use c. The nature and efficiency of the access or the junction d. The nature and category of the road e. The speed limit and traffic flow of the road f. Any alternative access to a road g. The need for the use h. Any traffic impact assessment; and i. Any written advice received from the road authority. 	<p>Satisfies P2</p> <p>As the proposed development is expected to generate 214 vehicle movements a day, it is unable to comply with Acceptable Solutions A1.</p> <p>It is however expected to satisfy Performance Criteria P1 as follows:</p> <ul style="list-style-type: none"> a. The proposed development is expected to generate 20 vehicle movements during the AM peak hour, 19 vehicle movements during the PM peak hour. This is equivalent to 1 additional vehicle movement every 3 minutes during the peak hour, which is considered to be low and is not expected to negatively impact the safety or efficiency of the surrounding road network. b. The proposed development will predominantly generate light vehicles. This is consistent with the types of vehicles that are currently present in the road network in the vicinity of the site. c. Traffic modelling results show that the site access road/ Enterprise Road intersection is expected to continue to operate well post development d. Enterprise Road is currently a local road that services residential properties. As the proposed development is for residential dwellings, it is consistent with the current nature and category of the road. e. Enterprise road is subject to the Tasmanian Urban Speed Limit of 50km/h. However, given the dead-end nature of the road, speeds were observed to be lower. f. The proposed development has no alternate access to the road g. There is currently a shortage of housing in Hobart. The proposed development will provide 20 additional residential dwellings h. This Traffic Impact Assessment has been prepared for the proposed development and identifies that it is not expected to have any major impacts on the safety and operation of the surrounding road network i. City of Hobart currently own and maintain the local road network in the vicinity of the site. Written advice has been received from Council stating a traffic impact statement prepared by a suitably qualified engineer demonstrating that the intersection of the driveway and Enterprise Road can operate safely with the additional traffic be submitted. This Traffic Impact Assessment has been prepared by a suitably qualified engineer for the proposed development and identifies that the development is not expected to have any major impacts on the safety and operation of the surrounding road network.



E5.6.1 Development adjacent to roads and railways

Objective:

To ensure that development adjacent to category 1 or category 2 roads or the rail network:

- a. Ensures the safe and efficient operation of roads and the rail network
- b. Allows for the future road and rail widening, realignment and upgrading; and
- c. Is located to minimise adverse effects of noise, vibration, light and air emissions from roads and the rail network.

Acceptable Solution	Performance Criteria	Comments
A1.1 Except as provided in A1.2, the following development must be located at least 50m from the rail network or a category 1 or category 2 road, in an area subject to a speed limit of more than 60km/h	<ul style="list-style-type: none"> a. New buildings b. Other road or earth works; and c. Building envelopes on new lots. 	<p>Not Applicable</p> <p>The proposed development is not adjacent to a Category 1 or Category 2 road or the rail network.</p>
A1.2 Buildings, may be:	<ul style="list-style-type: none"> a. Located within a row of existing buildings and setback no closer than the immediately adjacent building, or b. An extension which extends no closer than: <ul style="list-style-type: none"> i The existing building; or ii An immediately adjacent building. 	

E5.6.2 Road access and junctions

Objective:

To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions.

Acceptable Solution	Performance Criteria	Comments
A2 No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less		<p>Complies with A2</p> <p>As the proposed development only has a single access point off Enterprise Road, it complies with Acceptable Solutions A2.</p>

E5.6.4 Sight distance at accesses, junctions and level crossings

Objective:

To ensure that accesses, junctions and level crossings provide sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.

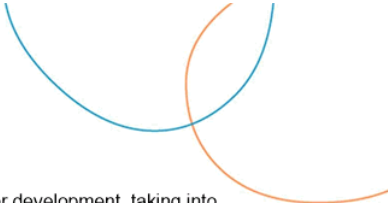
Acceptable Solution	Performance Criteria	Comments
A1		Satisfies P1
Sight distances at:		As the proposed development was measured to have a sight distance of 120m to eastbound vehicles and 65m to westbound vehicles (with vegetation trimming), it is unable to comply with Acceptable Solution A1.
<ul style="list-style-type: none"> a. An access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and b. Rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices – Railway crossings, Standards Association of Australia. 		It does however satisfy Performance Criteria P1 as follows:
P1		
The design, layout and location of an access, junction or rail level crossing must provide adequate sight distance to ensure the safe movement of vehicles, having regard to:		
<ul style="list-style-type: none"> a. The nature and frequency of the traffic generated by the use; b. The frequency of use of the road or rail network; c. Any alternative access; d. The need for the access, junction or level crossing; e. Any traffic impact assessment; f. Any measures to improve or maintain sight distances; and g. Any written advice received from the road or rail authority. 		<ul style="list-style-type: none"> a. The proposed development is a residential development, resulting in the site access road being used predominantly by residents who will be familiar with the area b. The proposed development is expected to generate 20 vehicle movements during the AM peak hour, 19 vehicle movements during the PM peak hour which is equivalent to approximately 1 additional vehicle movement every 3 minutes during the peak hours c. There is no alternative access to the proposed development d. There is only a single access to the proposed development from Enterprise Road. No other access is available e. This Traffic Impact Assessment has been prepared for the proposed development and identifies that the available site distance is expected to be sufficient f. City of Hobart currently own and maintain the local road network in the vicinity of the site. Written advice has been received from Council stating a traffic impact statement prepared by a suitably qualified engineer assessing the sight distance at the intersection of the driveway and Enterprise Road be submitted. This Traffic Impact Assessment has been prepared by a suitably qualified engineer for the proposed development and identifies that the available site distance is expected to be sufficient.

5.2 E6.0 Parking and Access Code

The proposed WTP upgrades have been assessed against the E6.0 Road and Railway Assets Code of the Planning Scheme. The use standards of the code have been assessed in Table 12 while the development standards have been assessed in

Table 13.

r	d	d	d	r	d
E6.6.1 Number of Car Parking Spaces					
Objective:					
To ensure that:					

- 
- a. There is enough parking to meet the reasonable needs of all users of a use or development, taking into account the level of parking available on or outside of the land and the access afforded by other modes of transport
 - b. A use or development does not detract from the amenity of users or the locality by:
 - i Preventing regular parking overspill; and
 - ii Minimising the impact of car parking on heritage and local character.

Acceptable Solution	Performance Criteria	Comments
A1		Complies with A1
	The number of on-site car parking spaces must be: <ul style="list-style-type: none"> a. No less than the number specified in Table E6.1 b. No less than and no greater than the number specified in Table E6.1; and Except if: <ul style="list-style-type: none"> i The site is subject to a parking plan for the area adopted by Council, in which case parking provision (spaces or cash in lieu) must be in accordance with that plan 	As the proposed development is providing 50 car parking spaces, it complies with Acceptable Solutions A1.

E6.6.2 Number of Accessible Car Parking Spaces

Objective:

To ensure that a use or development provides sufficient accessible car parking for people with disability.

Acceptable Solution	Performance Criteria	Comments
A1		Complies with Acceptable Solution A1
	Car parking spaces provided for people with disability must: <ul style="list-style-type: none"> a. Satisfy the relevant provisions of the Building Code of Australia b. Be incorporated into the overall car park design; and c. Be located as close as practicable to the building entrance. 	The Building Code of Australia does not specify any requirements for provision of car parking spaces for people with disabilities at residential dwellings. The proposed development does provide 1 parking space for people with disabilities.

E6.6.3 Number of Motorcycle Parking Spaces

Objective:

To ensure enough motorcycle parking is provided to meet the needs of likely users of a use or development.

Acceptable Solution	Performance Criteria	Comments
A1		Satisfies P1
	The number of on-site parking spaces provided must be at a rate of 1 space to each 20 car	

parking spaces after the first 19 car parking spaces except if bulky goods sale (rounded to the nearest number). Where an existing use or development is extended or intensified, the additional number of motorcycle parking spaces provided must be calculated on the amount of extension or intensification, provided the existing number of motorcycle parking spaces is not reduced.

P1

The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate:

- a. Motorcycle parking demand
- b. The availability of on-street and public motorcycle parking in the locality
- c. The availability and likely use of other modes of transport; and
- d. The availability and suitability of alternative arrangements for motorcycle parking provision.

As the proposed development does not provide any motorcycle parking spaces, it is unable to comply with Acceptable Solution A1.

It does however satisfy Performance Criteria P1 as follows:

- a. Motorcycle demand is expected to be low as the proposed development is for residential dwellings
- b. There are no on-street or public motorcycle parking available in the locality
- c. All proposed residential dwellings have a two-car garage. There are also 10 visitor parking spaces proposed within the proposed development. These spaces can be used should motorcycle parking demand arise
- d. Any demand for motorcycle parking can be easily accommodated within the proposed car parking spaces.

E6.6.3 Number of Bicycle Parking Spaces

Objective:

To ensure enough bicycle parking spaces is provided to meet the needs of likely users and by so doing to encourage cycling as a healthy environmentally friendly mode of transport for commuter, shopping and recreational trips.

Acceptable Solution	Performance Criteria	Comments
A1 The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.		Not applicable There are no bicycle parking requirements for the proposed development in Table E6.2.

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E6.7.1 Number of Vehicle Accesses

Objective:

To ensure that:

- a. Safe and efficient access is provided to all road network users, including, but not limited to: drivers, passengers, pedestrians and cyclists by minimising:
 - i The number of vehicle access points
 - ii Loss of on-street car parking spaces
- b. Vehicle access points do not unreasonably detract from the amenity of adjoining land uses; and
- c. Vehicle access points do not have a dominating impact on local streetscape and character.

Acceptable Solution	Performance Criteria	Comments
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**A1**

The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater.

Complies with A1

There is only 1 vehicle access to the proposed development allowing it to comply with Acceptable Solution A1.

E6.7.2 Design of Vehicular Accesses

Objective:

To ensure safe and efficient access for all users including drivers, passengers, pedestrians and cyclists by locating, designing and constructing vehicle access points safely relative to the road network.

Acceptable Solution	Performance Criteria	Comments
A1	Design of vehicle access points must comply with all of the following: <ul style="list-style-type: none"> a. In the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with Section 3 – Access Facilities to Off-Street Parking Areas and Queuing Areas of AS/NZS 28901:2004 Parking Facilities Part 1: Off-street car parking; and b. In the case of commercial vehicle access; the location, sight distance, geometry and gradient of an access must be designed and constructed to comply with all access driveway provisions in Section 3 – Access Driveways and Circulation Roadways of AS2890.2 – 2002 Parking Facilities Part 2: Off-Street commercial vehicle facilities. 	Complies with A1 All aspects of the site access comply with the Australian Standard requirements for residential properties and as such, complies with Acceptable Solution A1.

E6.7.3 Vehicular Passing Areas Along an Access

Objective:

To ensure that:

- a. The design and location of access and parking areas create a safe environment for users by minimising the potential for conflicts involving vehicles, pedestrians and cyclists; and
- b. Use or development does not adversely impact on the safety or efficiency of the road network as a result of delayed turning movements into a site.

Acceptable Solution	Performance Criteria	Comments
A1	Vehicular passing areas must: <ul style="list-style-type: none"> a. Be provided if any of the following applies to an access: <ul style="list-style-type: none"> i It serves more than 5 car parking spaces ii Is more than 30m long 	Complies with A1 The proposed circulation road allows a mix of one-way and two-way flow. In sections with one-way flow, passing bays of minimum 8m length and 5.5m width are provided. Passing bays are provided at approximately 15m intervals. Based on the above, requirements of Acceptable Solution A1 are met.

- iii It meets a road serving more than 6000 vehicles a day
- b. Be 6m long, 5.5m wide, and taper to the width of the driveway
- c. It meets a road serving more than 6000 vehicles per day
- d. Have the first passing area constructed at the kerb; and
- e. Be at intervals of no more than 30m along the access.

E6.7.4 On-site turning

Objective:

To ensure safe, efficient and convenient access for all users, including drivers, passengers, pedestrians and cyclists, by generally requiring vehicles to enter and exit in a forward direction.

Acceptable Solution	Performance Criteria	Comments
A1	On-site turning must be provided to enable vehicle to exit a site in a forward direction, except where the access complies with any of the following: <ul style="list-style-type: none"> a. It serves no more than two dwelling units; and b. It meets a road carrying less than 6000 vehicles a day. 	Complies with A1 All vehicles are able to enter and exit the site in a forward direction. As such, the proposed development complies with Acceptable Solution A1.

E6.7.5 Layout of Parking Areas

Objective:

To ensure that parking areas for cars (including accessible parking spaces), motorcycle and bicycles are located, designed and constructed to ensure safe, easy and efficient use.

Acceptable Solution	Performance Criteria	Comments
A1	The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 Design of Parking Modules, Circulation Roadways and Ramps of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking must have sufficient headroom to comply with clause 5.3 Headroom of the same Standard.	Garages of Unit 14 and Unit 16 satisfy P1 all other aspects comply with A1 All parking spaces with the exclusion of the garages of Unit 14 and Unit 16 meet the Australian Standard requirements and as such comply with Acceptable Solution A1. The garages of Unit 14 and Unit 16 only have an aisle width of 5.5m and as such are unable to comply with Acceptable Solution A1. They do however satisfy Performance Criteria P1 as swept path assessment shows that B85 vehicles are able to enter in both the forward and reverse direction and exit in both the forward and reverse direction when there are two cars parked in the garage.
P1	The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.	

E6.7.6 Surface Treatment of Parking Areas**Objective:**

To ensure that parking spaces and vehicle circulation roadways do not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

Acceptable Solution	Performance Criteria	Comments
A1		Will Comply with A1
	Parking spaces and vehicle circulation roadways must be in accordance with all of the following: <ul style="list-style-type: none"> a. Paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; and b. Drained to an approved stormwater system, Unless the road from which access is provided to the property is unsealed. 	Should all parking spaces and the circulation road be made of a paved or treated all-weather pavement, it will comply with Acceptable Solution A1a. Stormwater and drainage have not been assessed as part of the Traffic Impact Assessment.

6. Conclusion

A Development Application (DA) has been lodged with Hobart City Council for the proposed development of a vacant lot located at 21B Enterprise Road in Sandy Bay. The proposed development includes 20 multiple dwellings.

Following the lodgment of the DA, Hobart City Council have requested a Traffic Impact Assessment (TIA) to demonstrate compliance with E5.0 Road and Railway Assets Code and E6.0 Parking and Access Code of the Planning Scheme.

This report has been prepared with reference to the **r** **r** **r** (the Planning Scheme) and in accordance with the Department of State Growth's Publication **r** **r** **r** **d** **r** **r**. The findings in this report can be summarised as follows:

The site access road/ Enterprise Road intersection is expected to continue to operate well post development

The traffic generated by the development does not reach the environmental goal or maximum capacity of Enterprise Road

Sight distance from the shared road to eastbound vehicles on Enterprise Road meets the Planning Scheme requirements

With vegetation trimming, sight distance from the shared road to westbound vehicles on Enterprise Road satisfies the Performance Criteria of the Planning Scheme as it meets Australian Standard requirements for domestic properties and minimum sight distance requirements for non-domestic properties

The site access and circulation road meet Planning Scheme requirements

The circulation road and passing bays should be signposted and/or linemarked with No Stopping/No Parking restrictions to prevent vehicles parking in the designated passing bays and along the access road

With the exception of Unit 14 and Unit 16 garages, all remaining garages and parking spaces meet Planning Scheme requirements

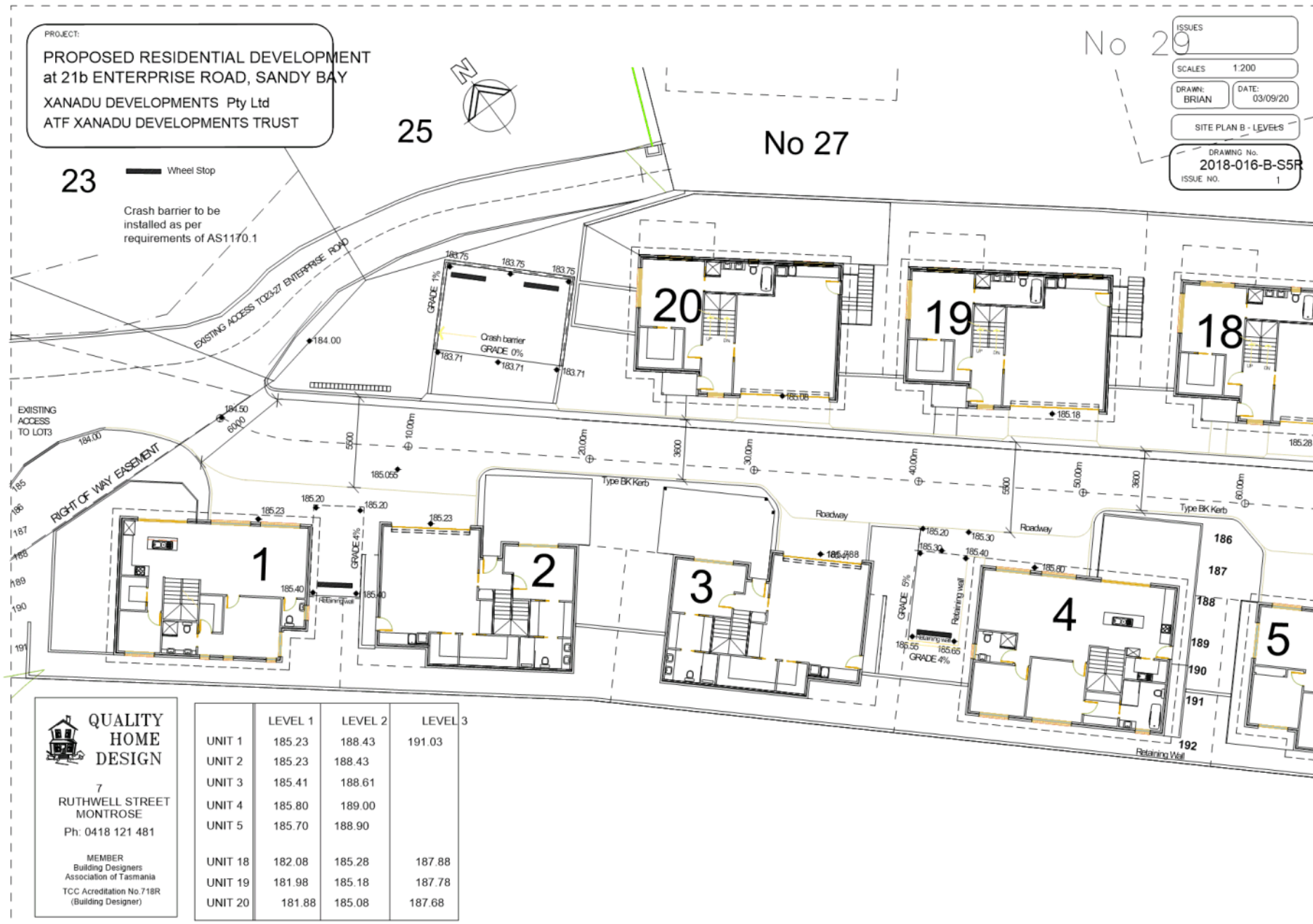
Swept path assessment shows that B85 vehicles are able to enter the garages of Unit 14 and Unit 16 in a forward/reverse direction and exit in a forward/reverse direction with two cars parked in the garage

A rubbish truck is able to enter and exit the site in a forward direction with small modifications to the location of the adjacent car parking spaces.

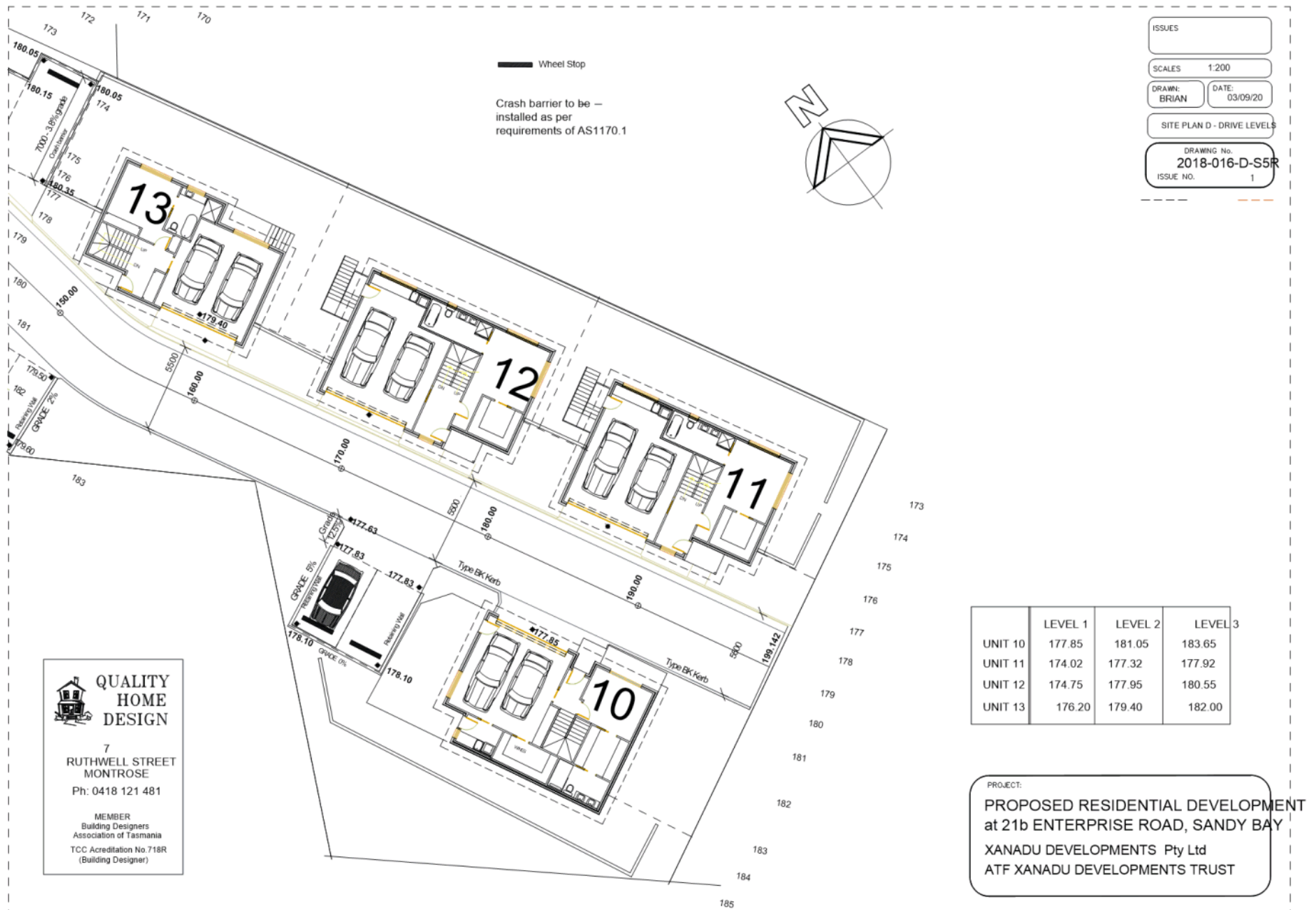


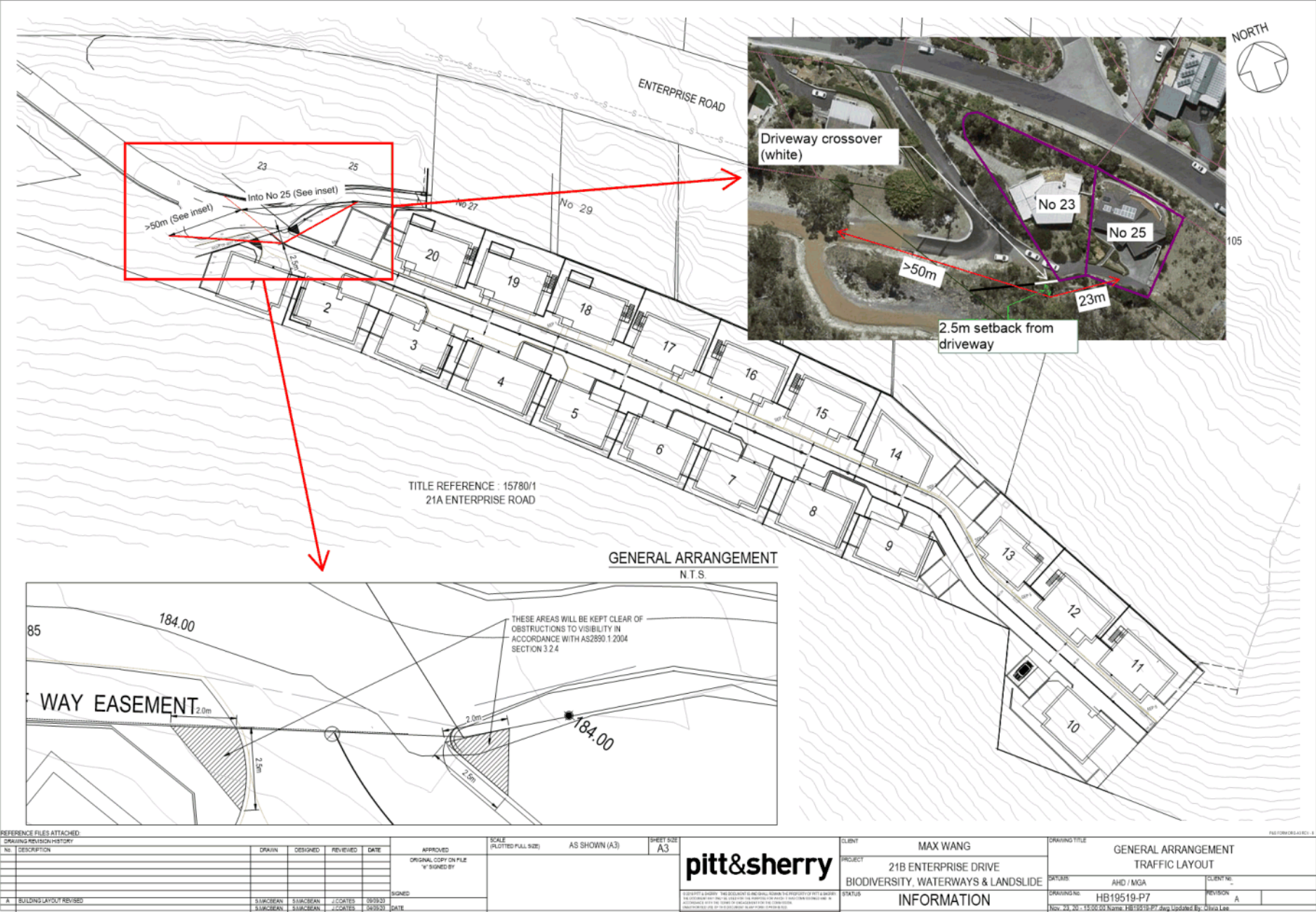
Site Plans

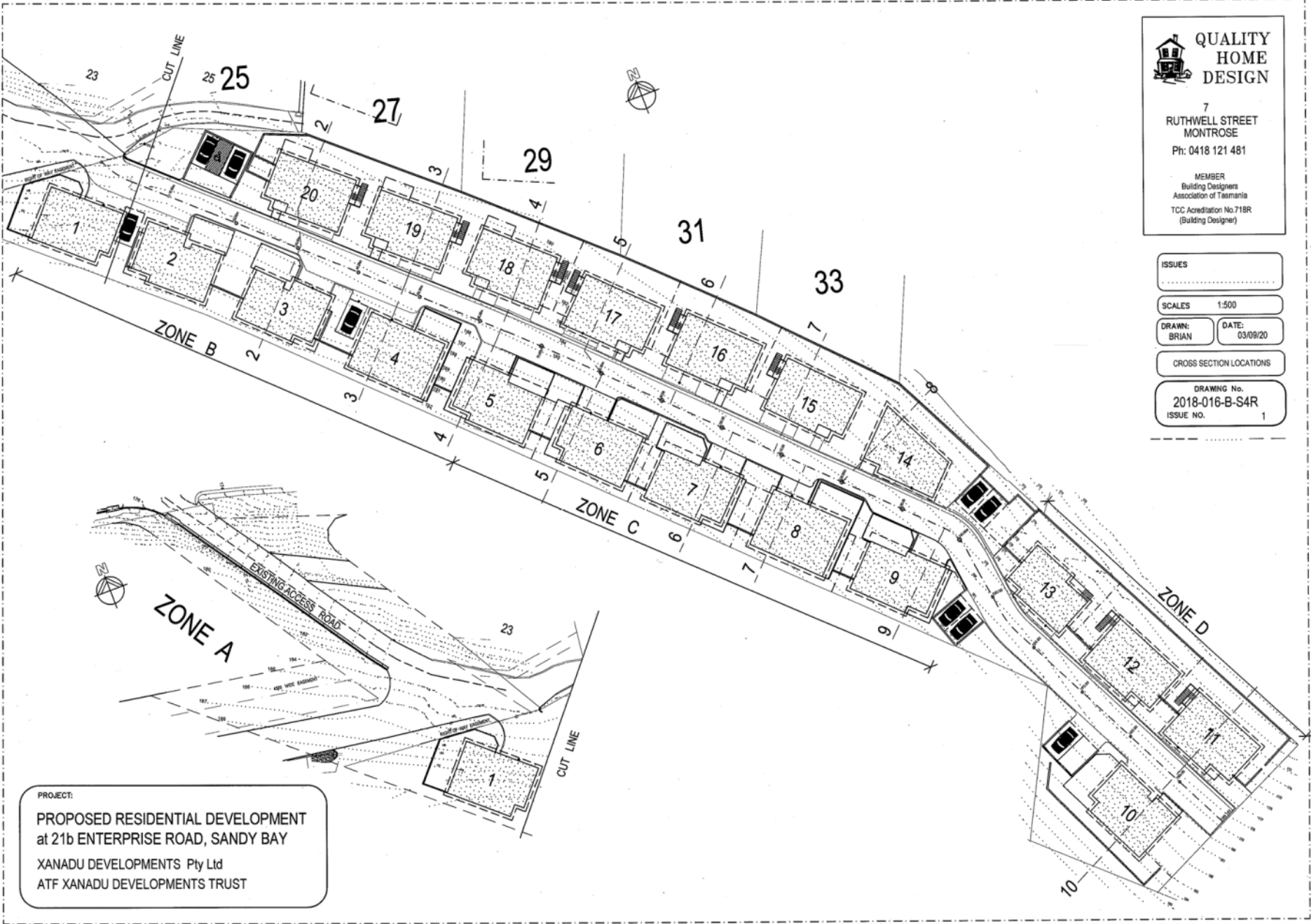
Appendix A

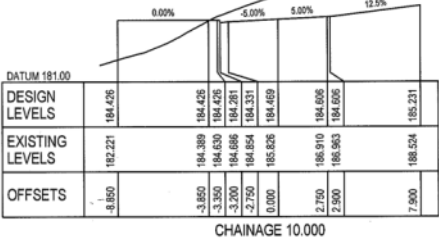
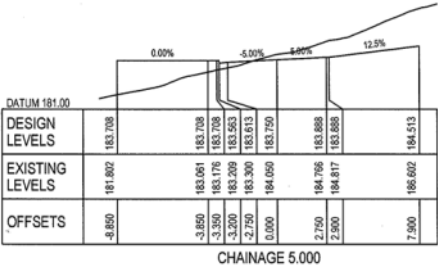












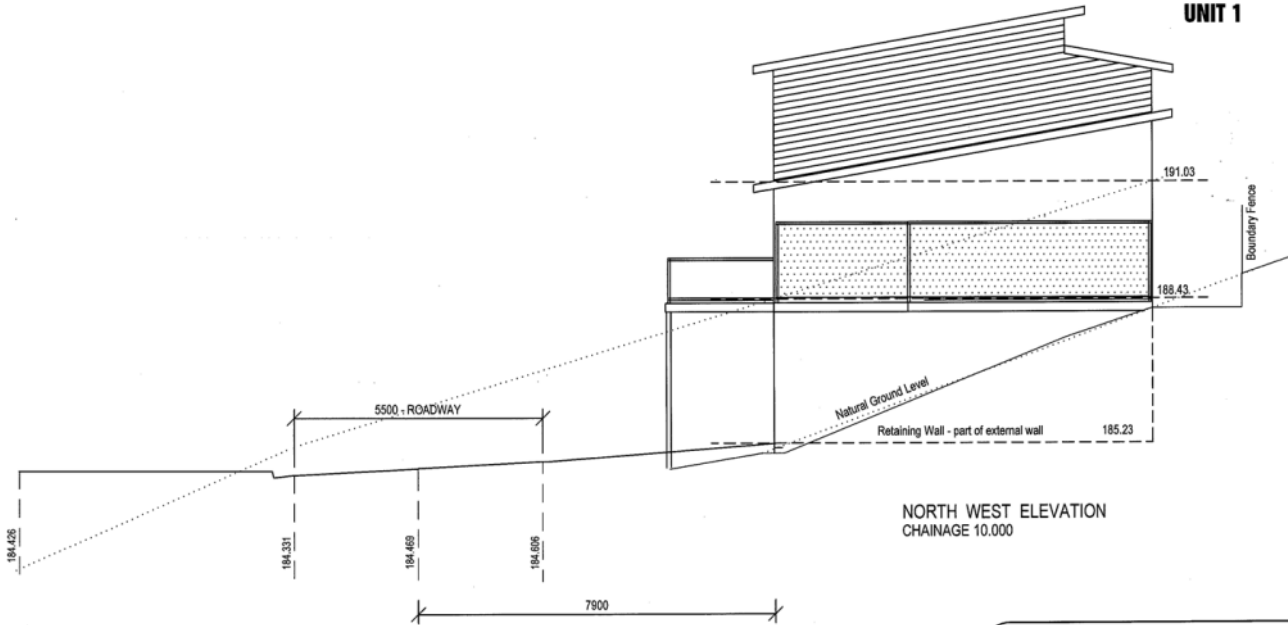
ISSUES

SCALES 1:100

DRAWN: BRIAN DATE: 03/09/20

TYPICAL CROSS SECTION

DRAWING No. 2018-016-B-S4-1R
ISSUE NO. 1



NORTH WEST ELEVATION
CHAINAGE 10.000

 **QUALITY HOME DESIGN**

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RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

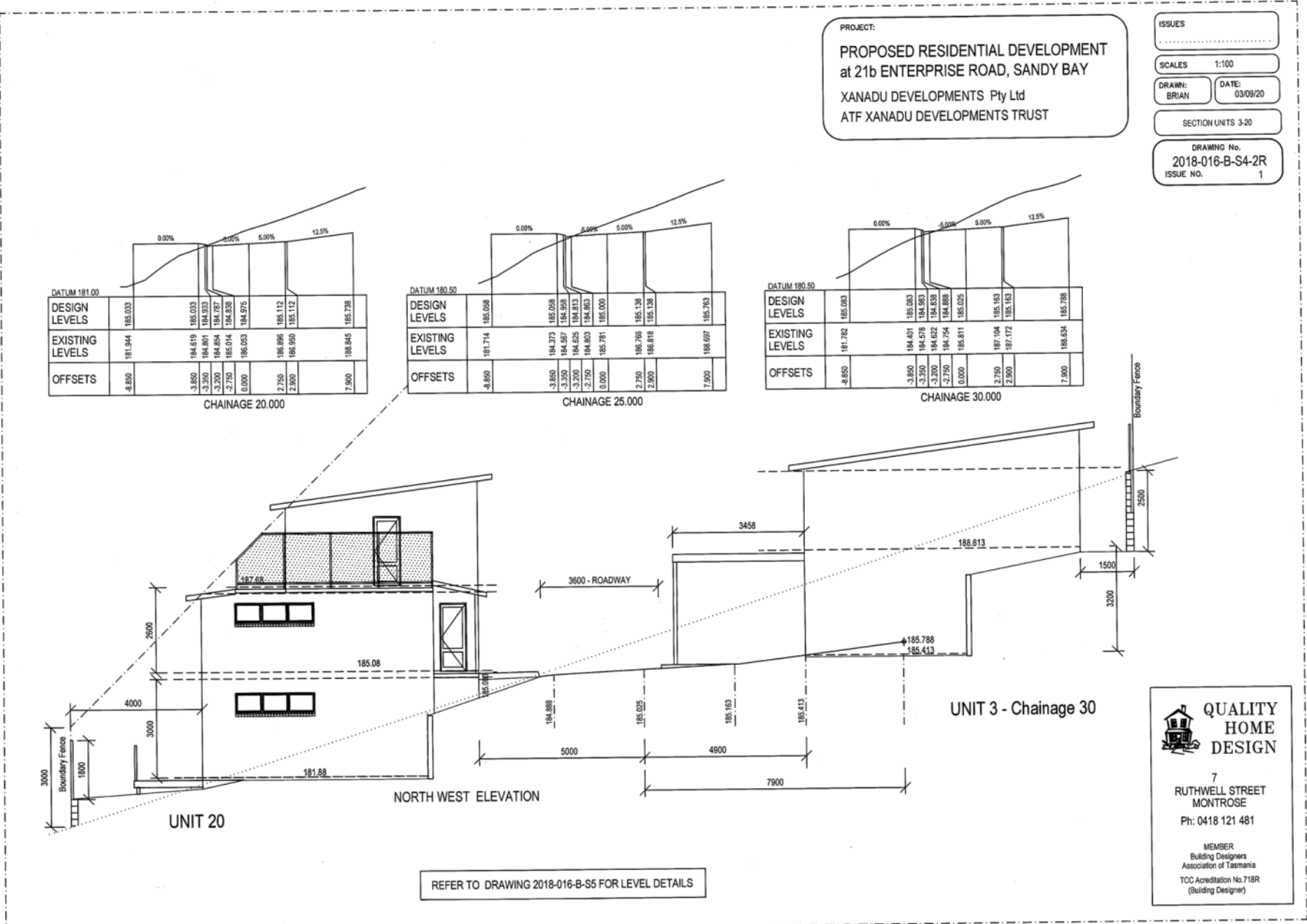
MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No. 718R
(Building Designer)

REFER TO DRAWING 2018-016-B-S5 FOR LEVEL DETAILS

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY

XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST



QUALITY HOME DESIGN

7 RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No.716R
(Building Designer)

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

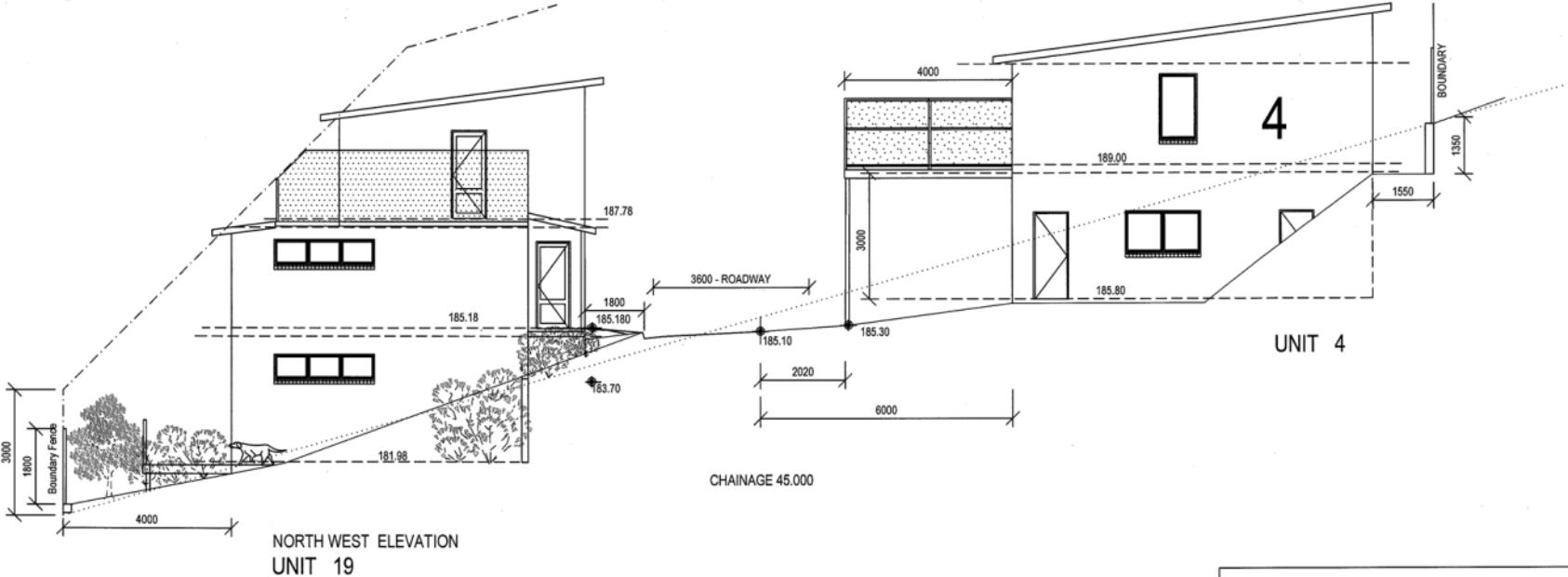
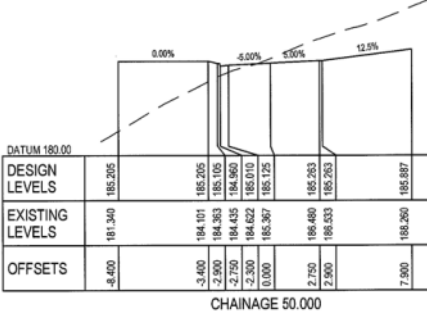
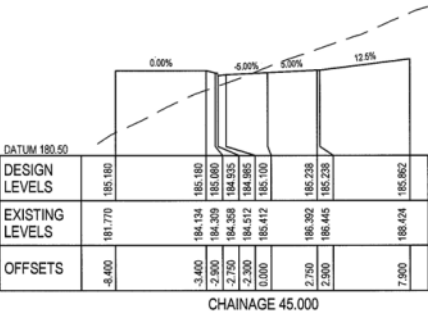
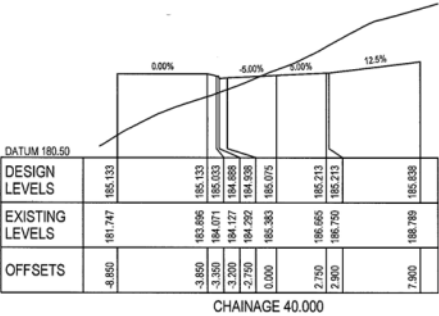
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DRAWN: BRIAN

DATE: 03/09/20

SECTION 4-19

DRAWING No.
2018-016-B-S4-3R
ISSUE NO. 1



REFER TO DRAWING 2018-016-B-S5 FOR LEVEL DETAILS

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:

BRIAN

DATE:

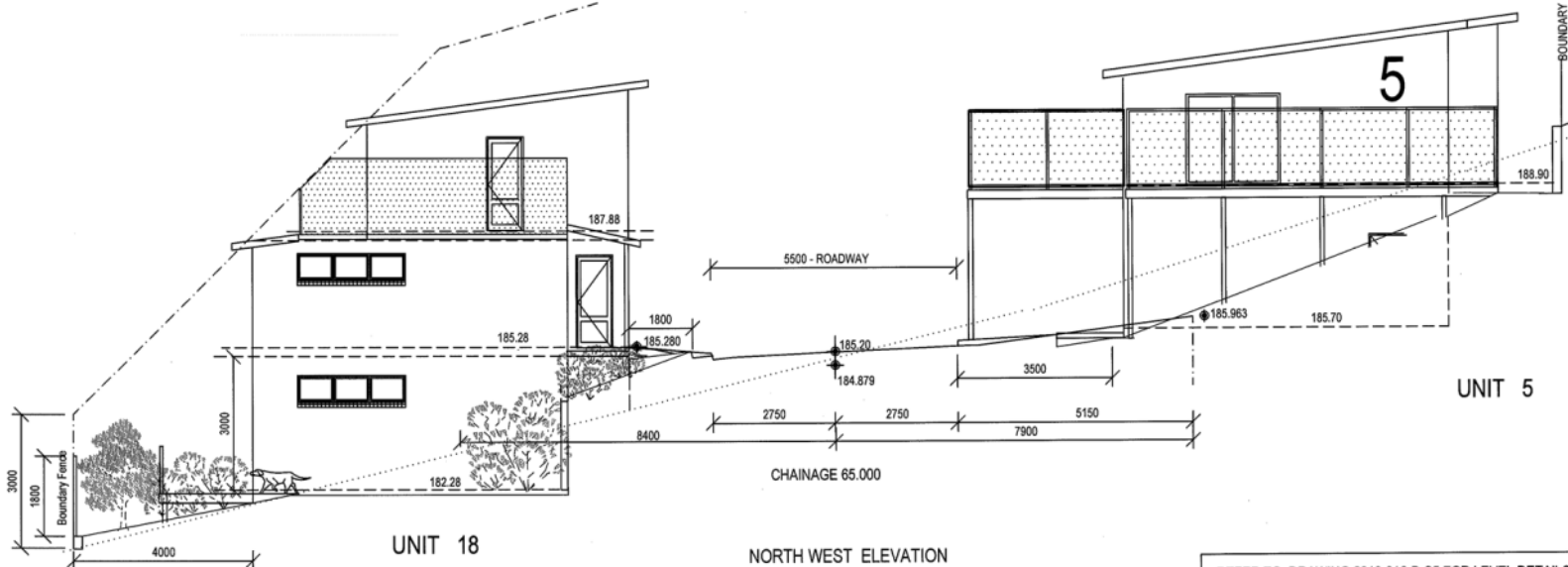
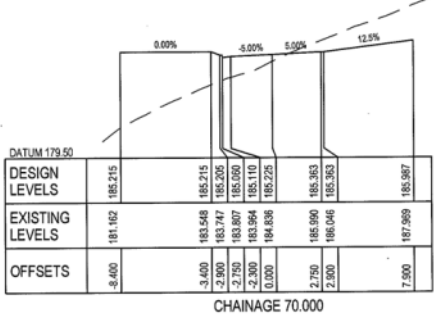
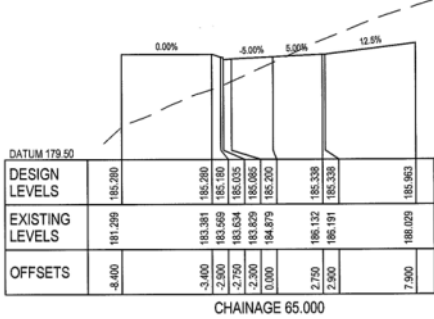
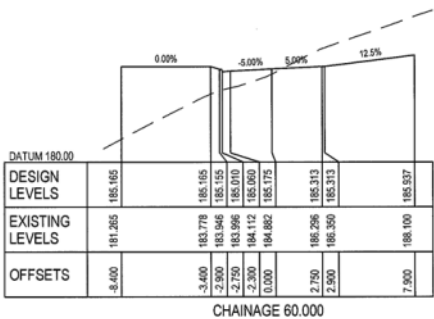
03/09/20

SECTION 5-18

DRAWING No.

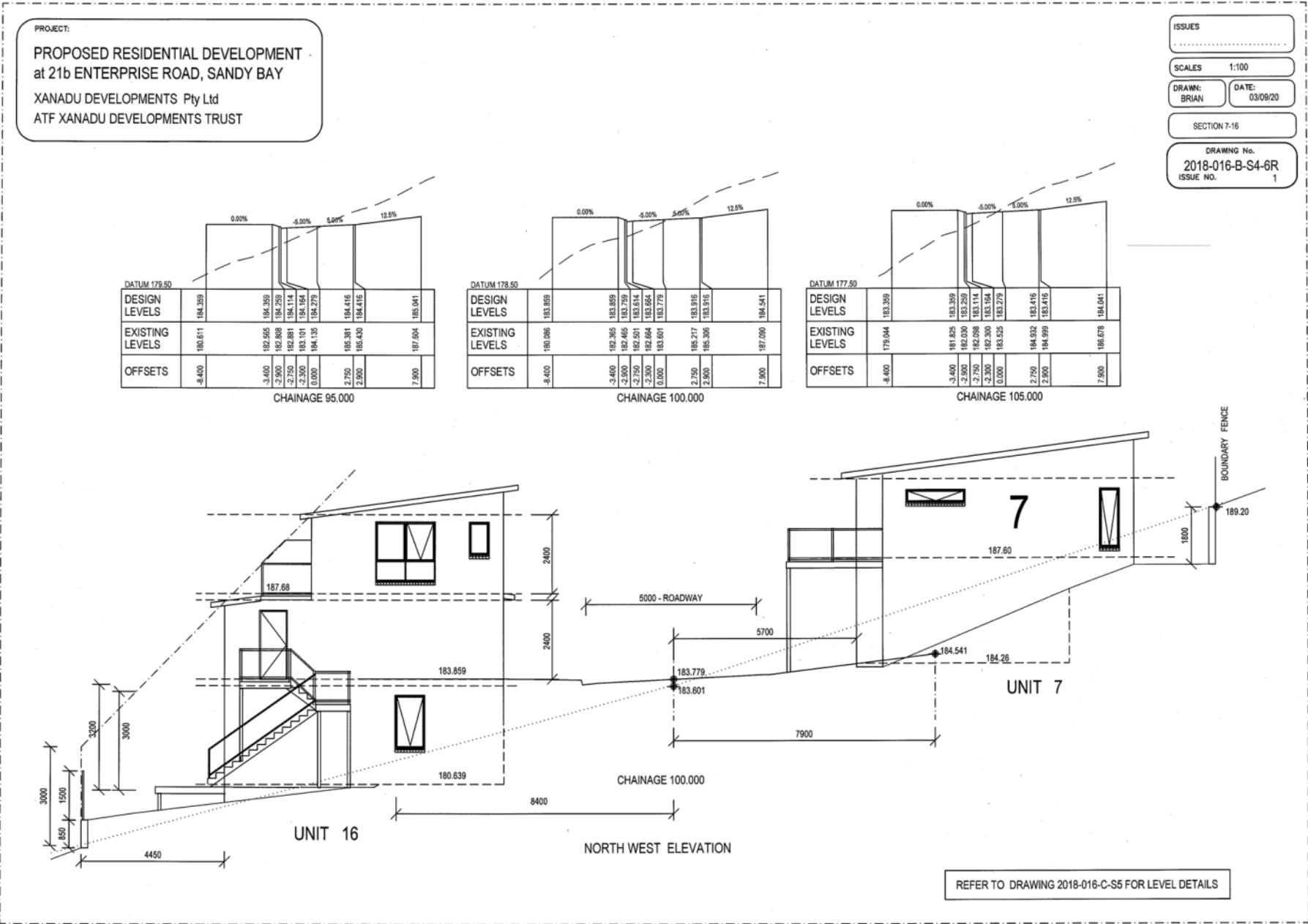
2018-016-B-S4-4R

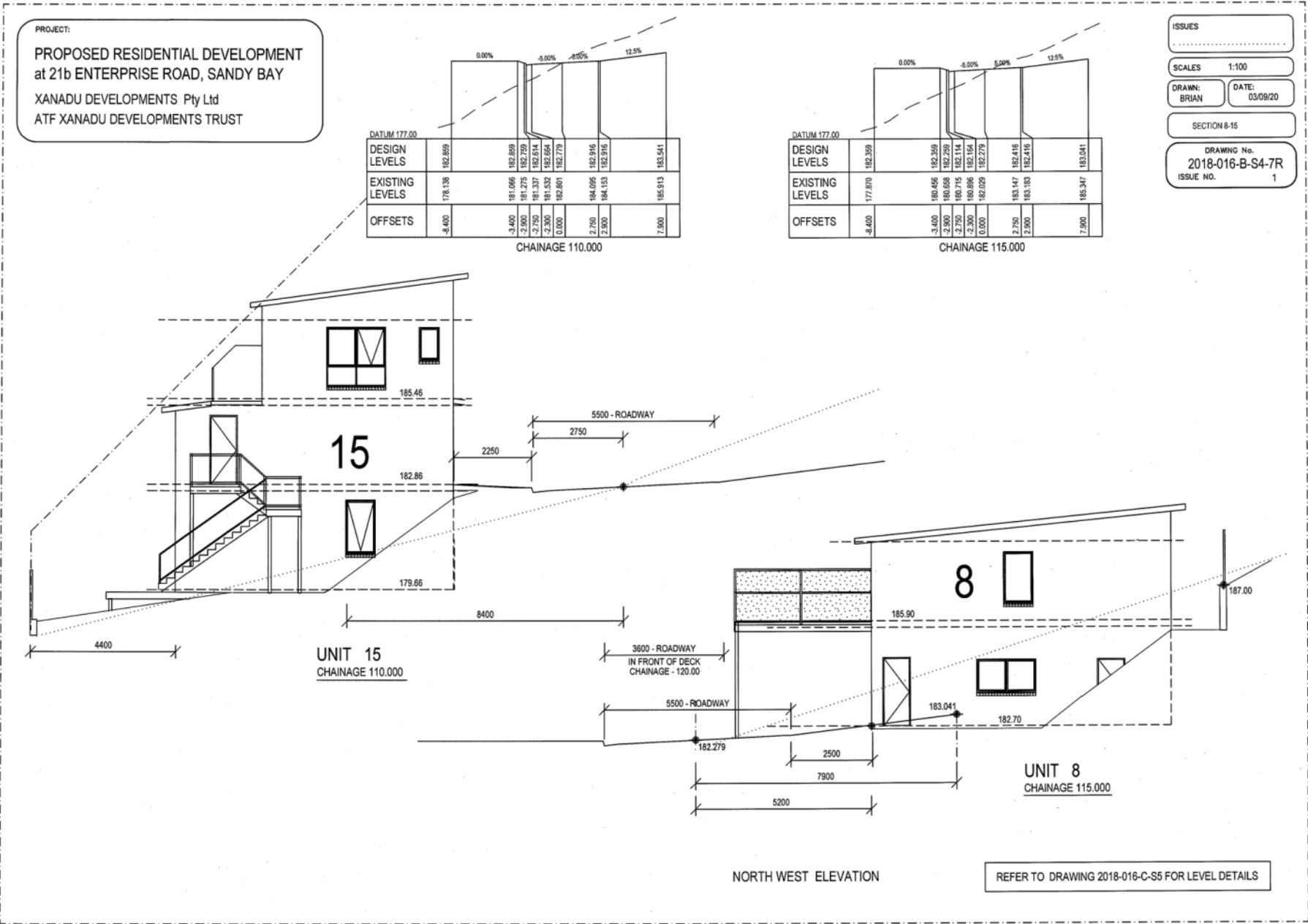
ISSUE NO.



REFER TO DRAWING 2018-016-B-S5 FOR LEVEL DETAILS

REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS





PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY

XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

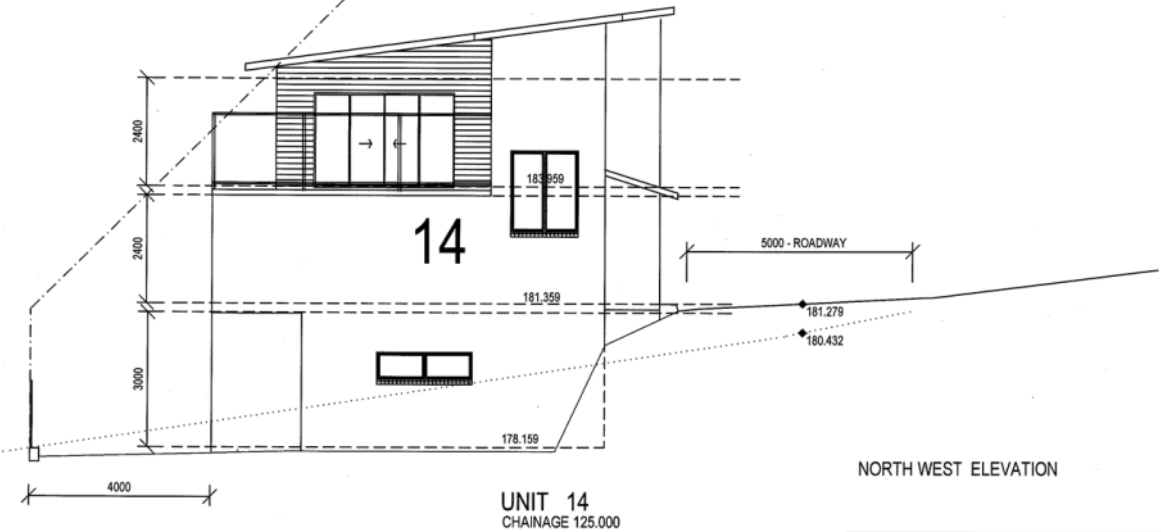
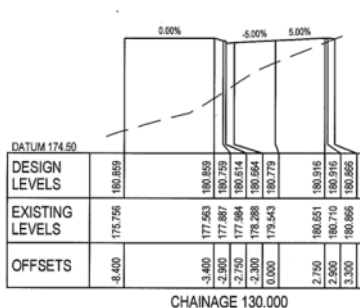
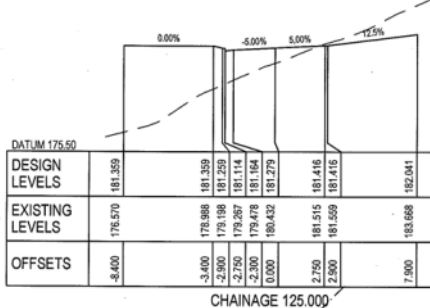
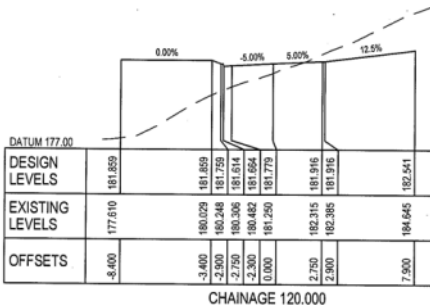
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DRAWN:
BRIAN

DATE:
03/09/20

SECTION 8

DRAWING No.
2018-016-B-S4-8R
ISSUE NO. 1



REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

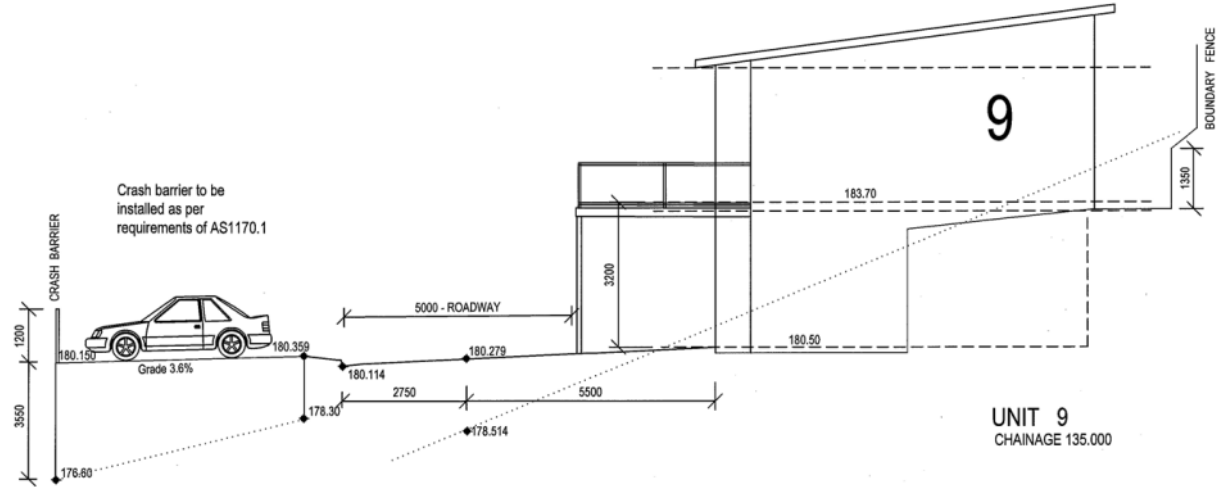
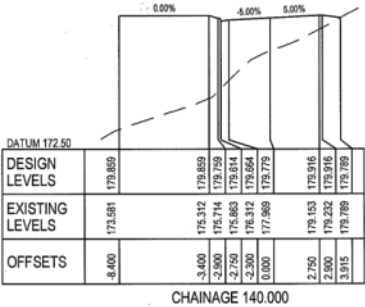
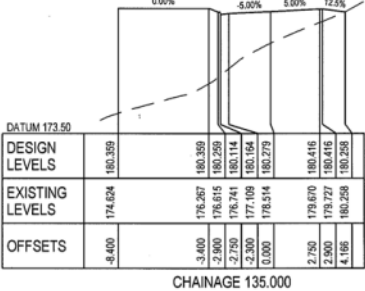
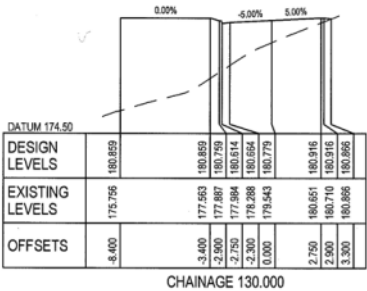
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DRAWN:
BRIAN

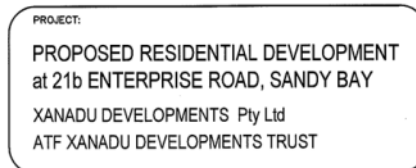
DATE:
03/09/20

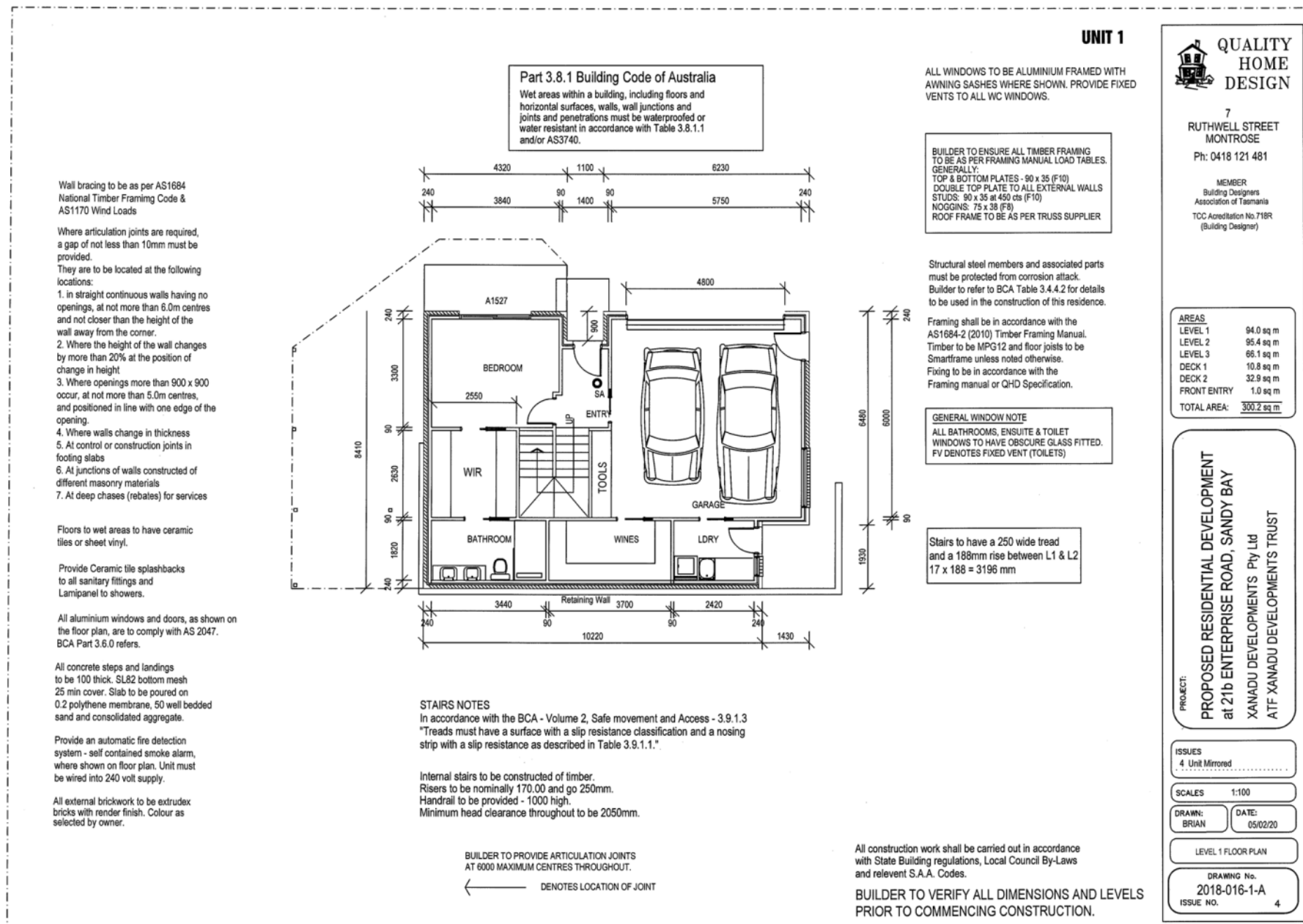
SECTION 9

DRAWING No.
2018-016-B-S4-9R
ISSUE NO. 1



REFER TO DRAWING 2018-016-C-S5 FOR LEVEL DETAILS





ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

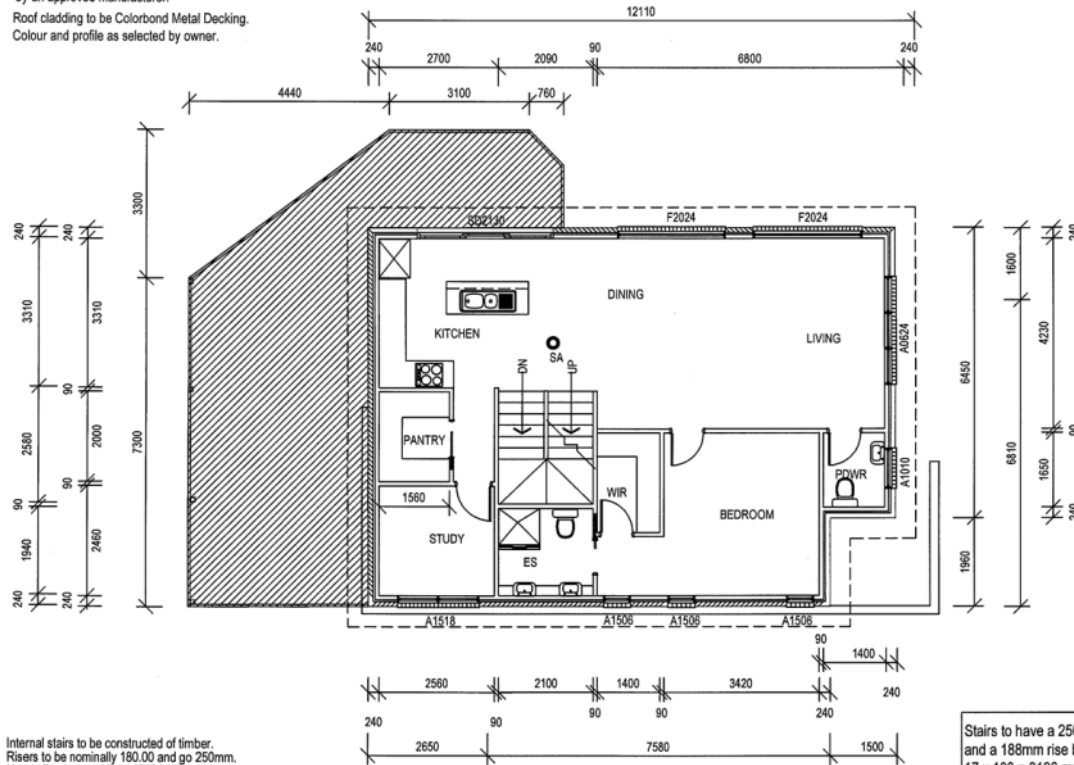
← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck



Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 *Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

UNIT 1



QUALITY HOME DESIGN

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

4. Unit Mirrored

SCALES

1:100

DRAWN:

BRIAN

DATE:

05/02/20

LEVEL 2 FLOOR PLAN

DRAWING No.

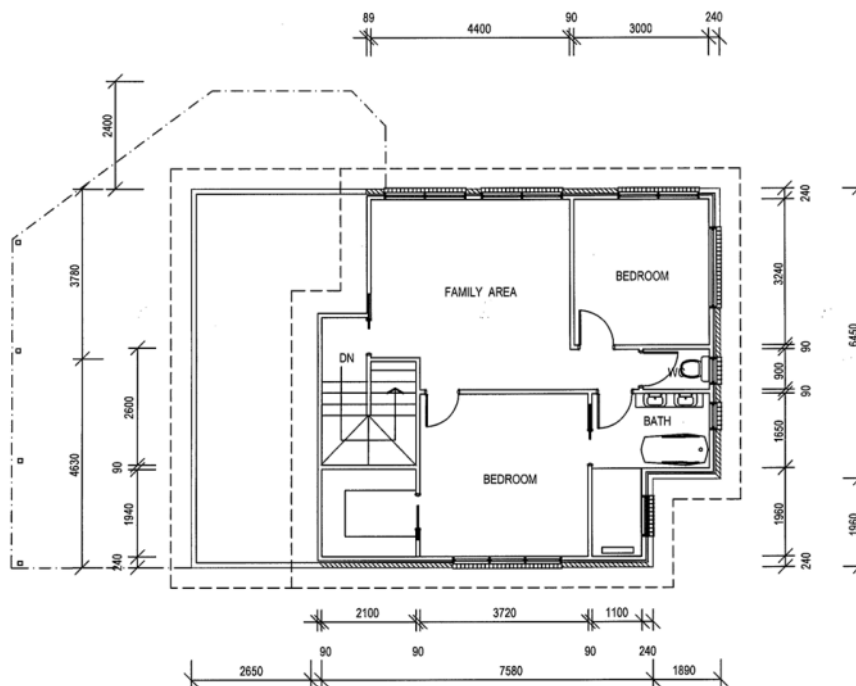
2018-016-1-B

ISSUE NO.

4

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

UNIT 1

7
RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

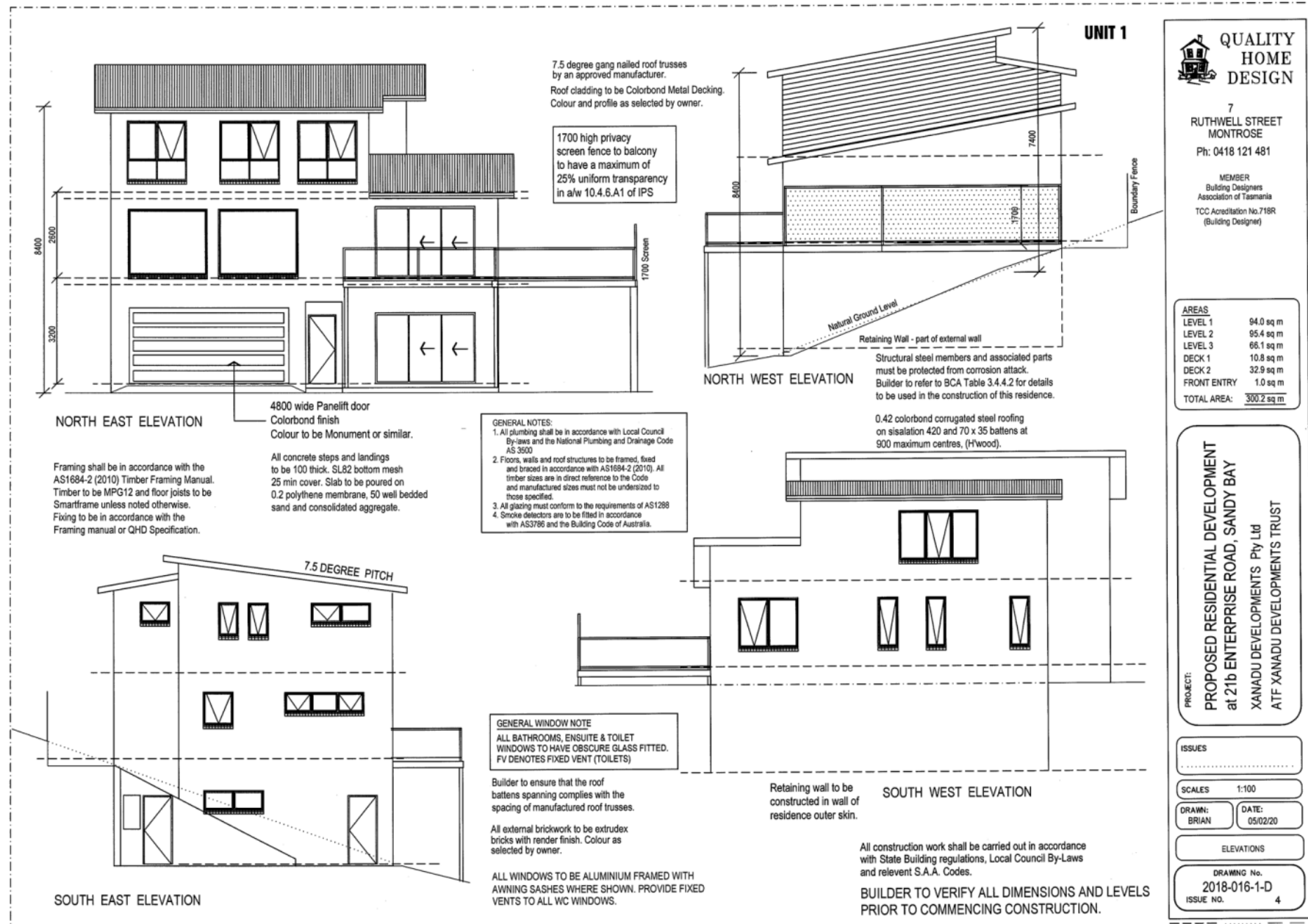
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DRAWN:
BRIAN

DATE:
05/02/20

LEVEL 3 FLOOR PLAN

DRAWING No.
2018-016-1-C
ISSUE NO. 4



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE

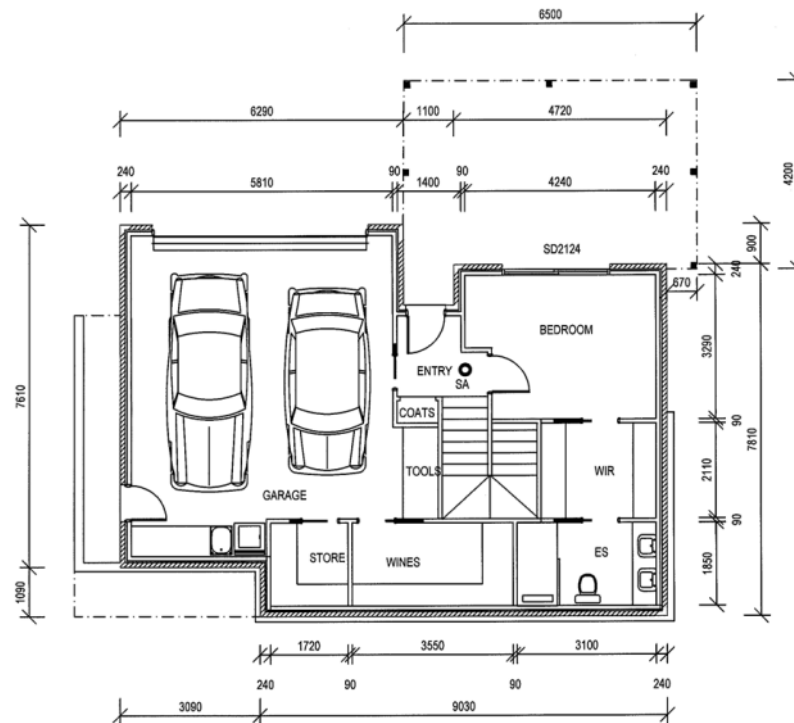
ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. In straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lampanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 2



**QUALITY
 HOME
 DESIGN**

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	12.6 sq m
DECK 2	29.2 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	235.8 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

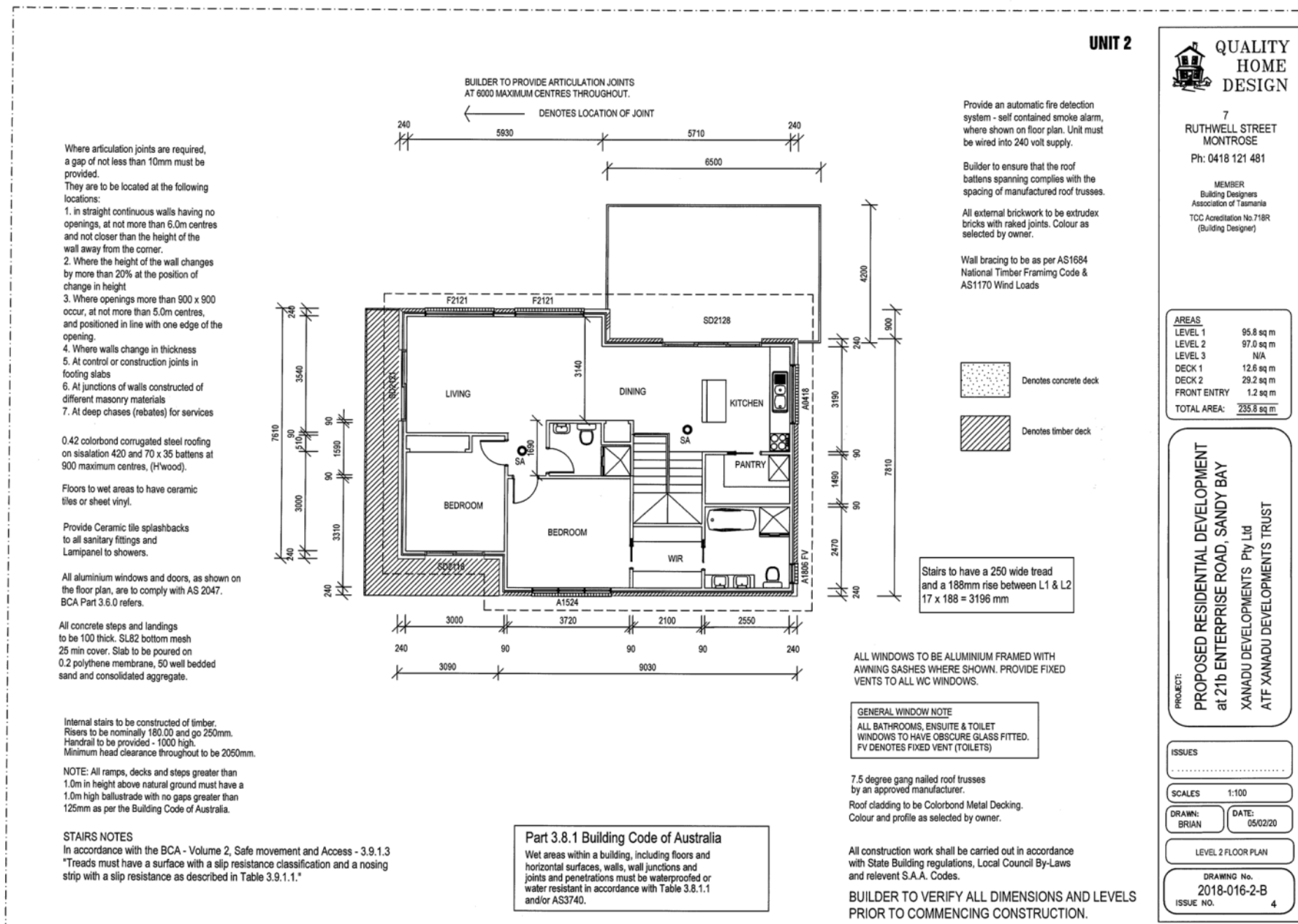
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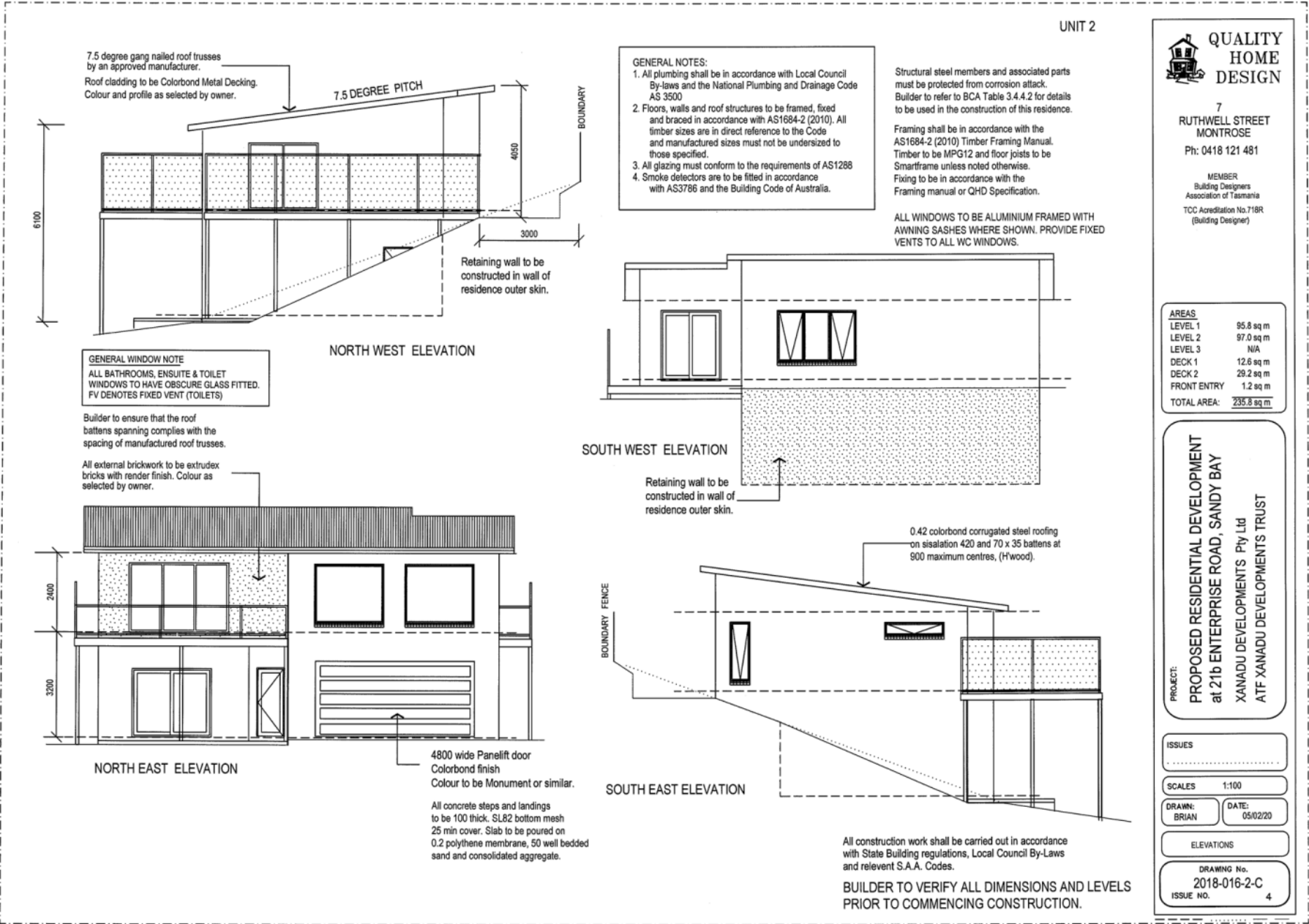
DRAWN:
 BRIAN

DATE:
 05/02/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-2-A
 ISSUE NO. 4





ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

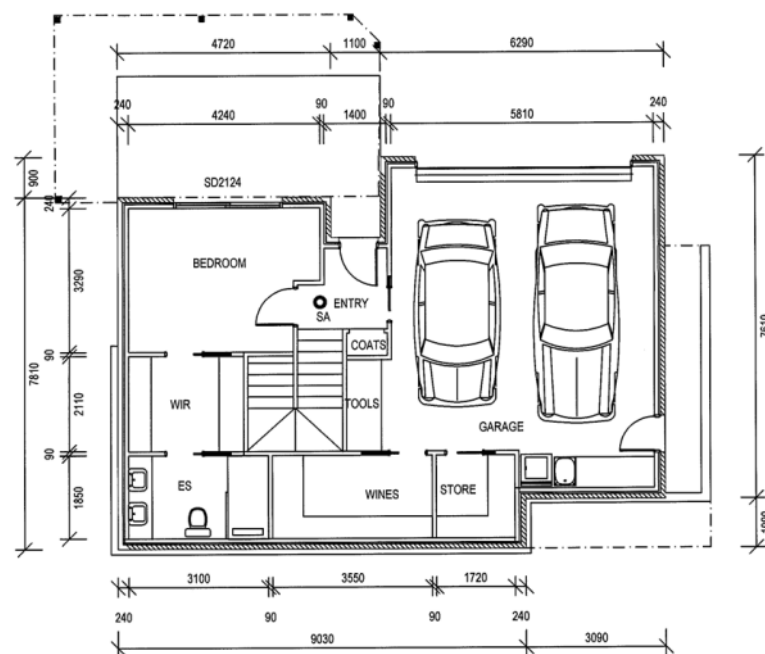
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 3



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.716R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	15.8 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	238.4 sq m

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

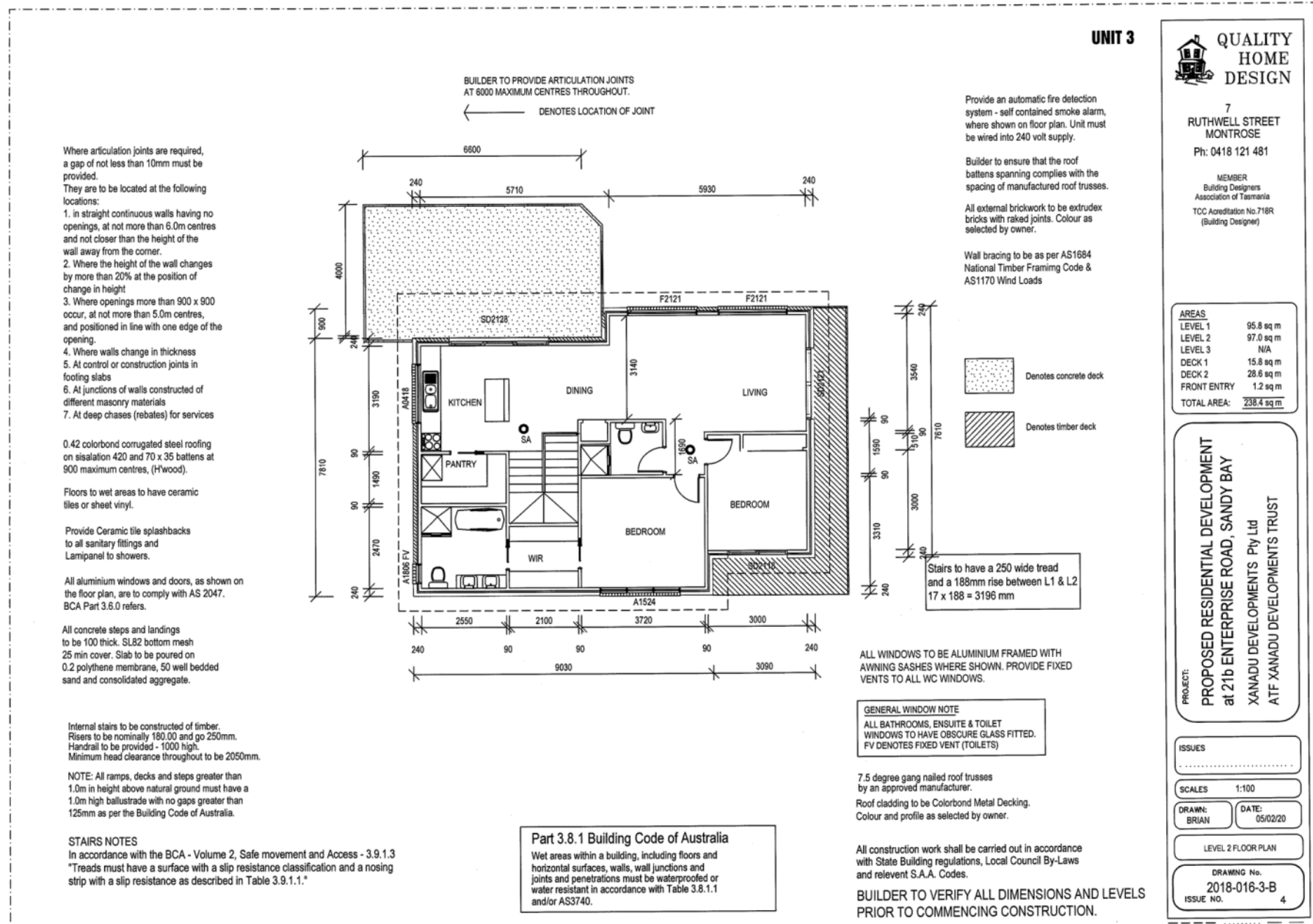
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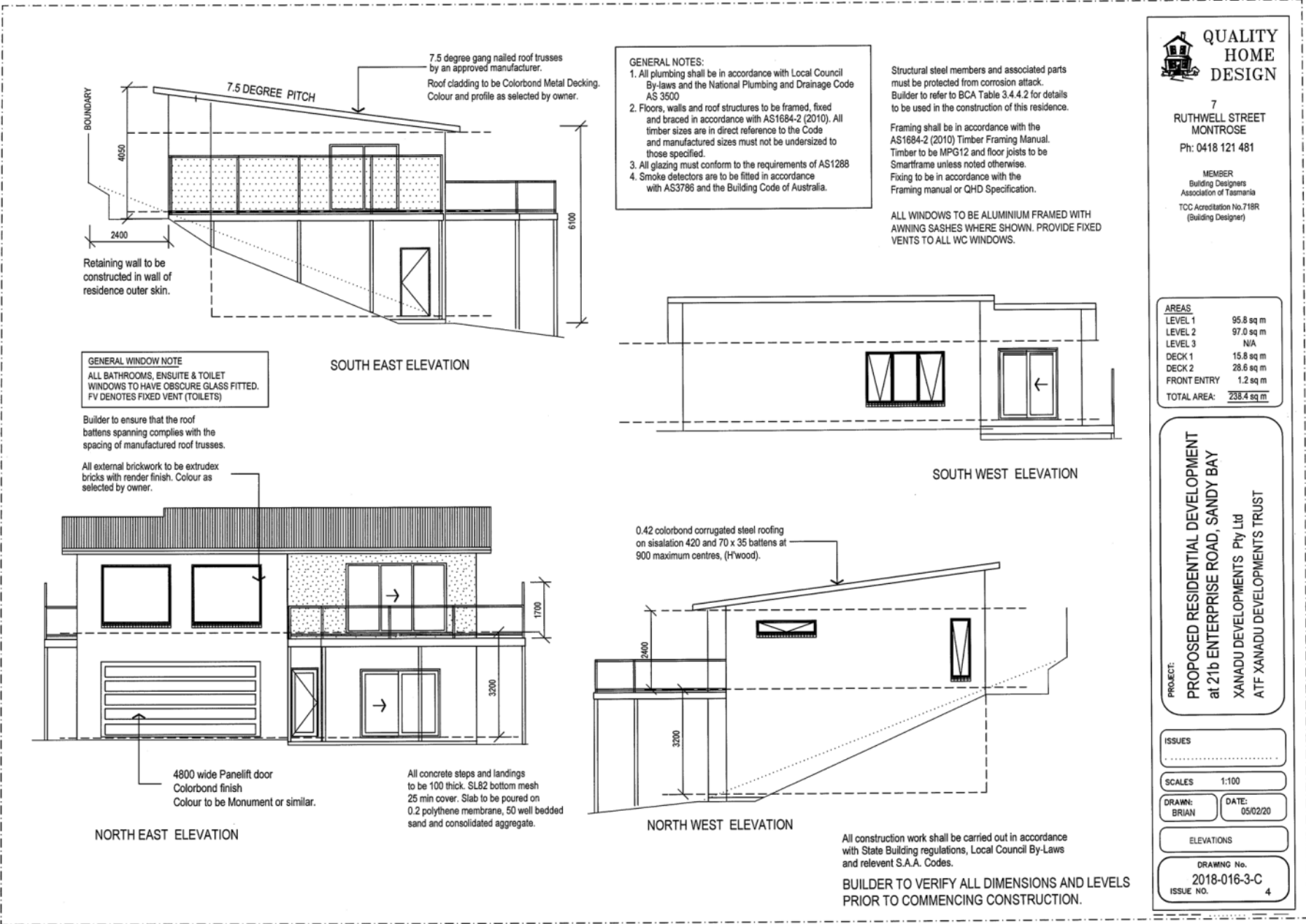
DRAWN:
 BRIAN

DATE:
 05/02/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-3-A
 ISSUE NO. 4





ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

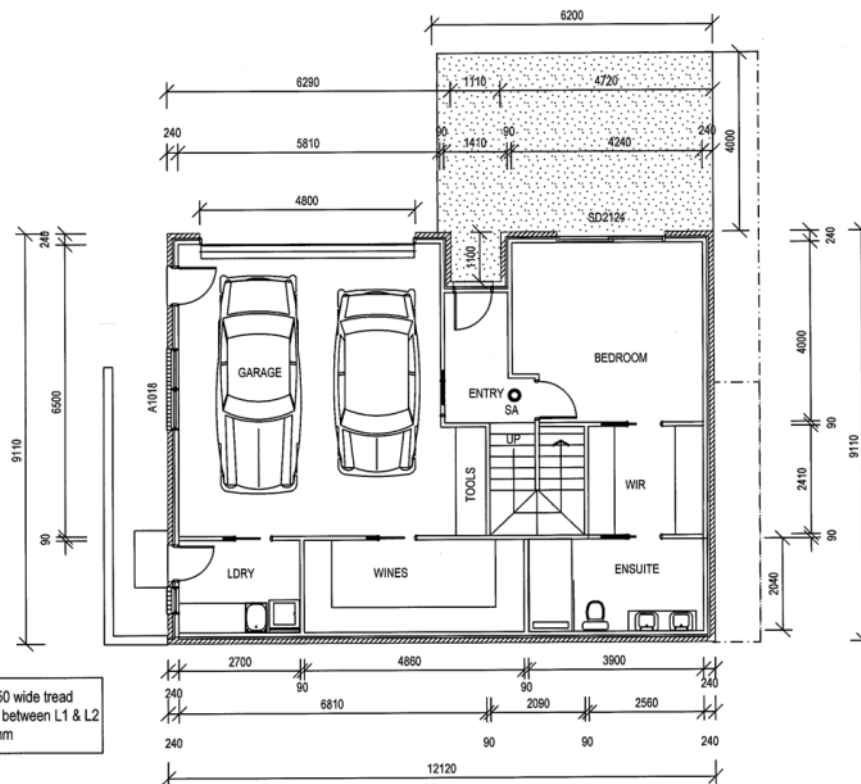
Stairs to have a 250 wide tread
 and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

- Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:
1. In straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
 2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
 3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
 4. Where walls change in thickness
 5. At control or construction joints in
 footing slabs
 6. At junctions of walls constructed of
 different masonry materials
 7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

UNIT 4



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	109.2 sq m
LEVEL 2	110.4 sq m
LEVEL 3	N/A
DECK 1	25.0 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	274.2 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

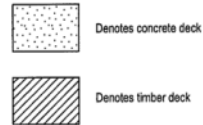
DATE:
 05/02/20

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-4-A
 ISSUE NO. 4

UNIT 4**Part 3.8.1 Building Code of Australia**

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL62 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

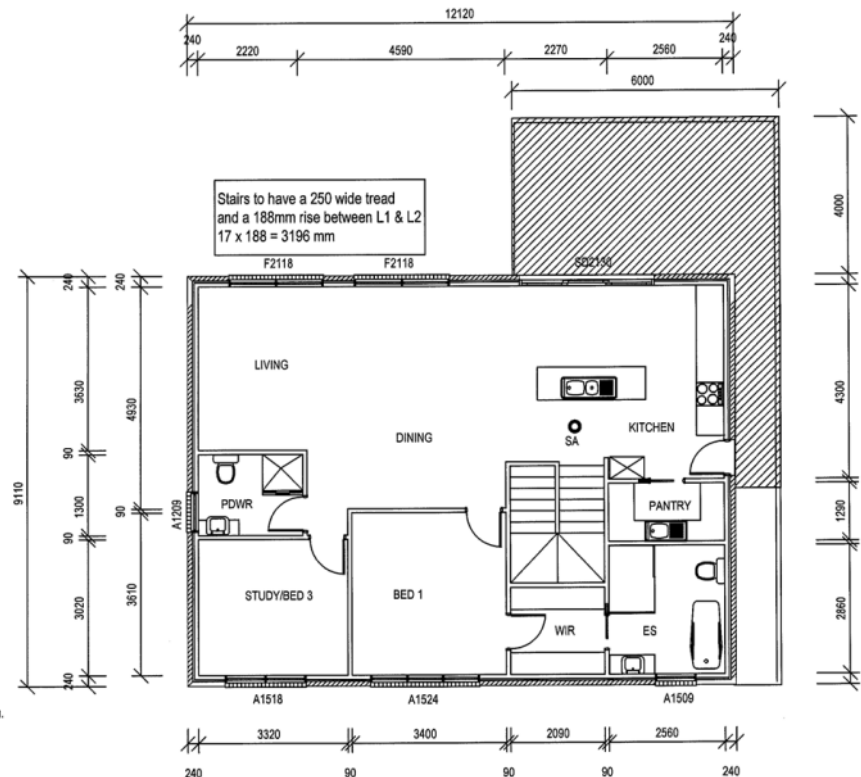
NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



QUALITY HOME DESIGN
 7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	109.2 sq m
LEVEL 2	110.4 sq m
LEVEL 3	N/A
DECK 1	25.0 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	274.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

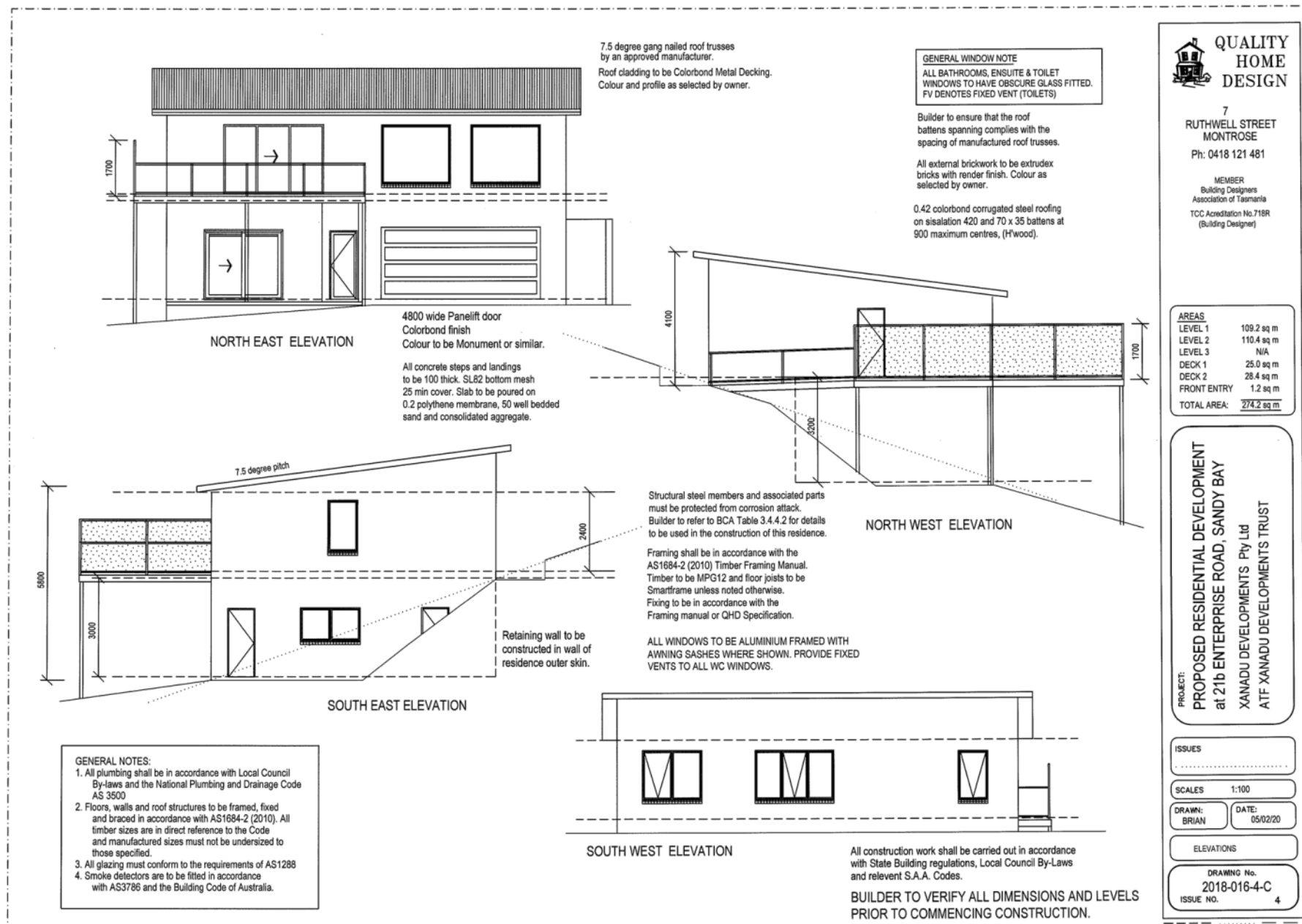
ISSUES

SCALES 1:100

DRAWN: BRIAN **DATE:** 05/02/20

LEVEL 2 FLOOR PLAN

DRAWING No.
2018-016-4-B
ISSUE NO. 4



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

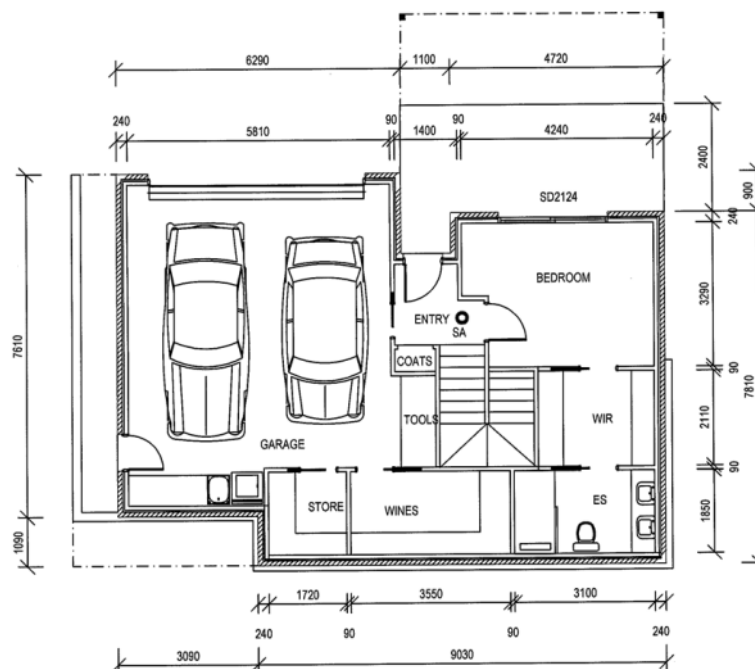
Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 5



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	13.8 sq m
DECK 2	25.3 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	233.1 sq m

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lampanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruder bricks with render finish. Colour as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

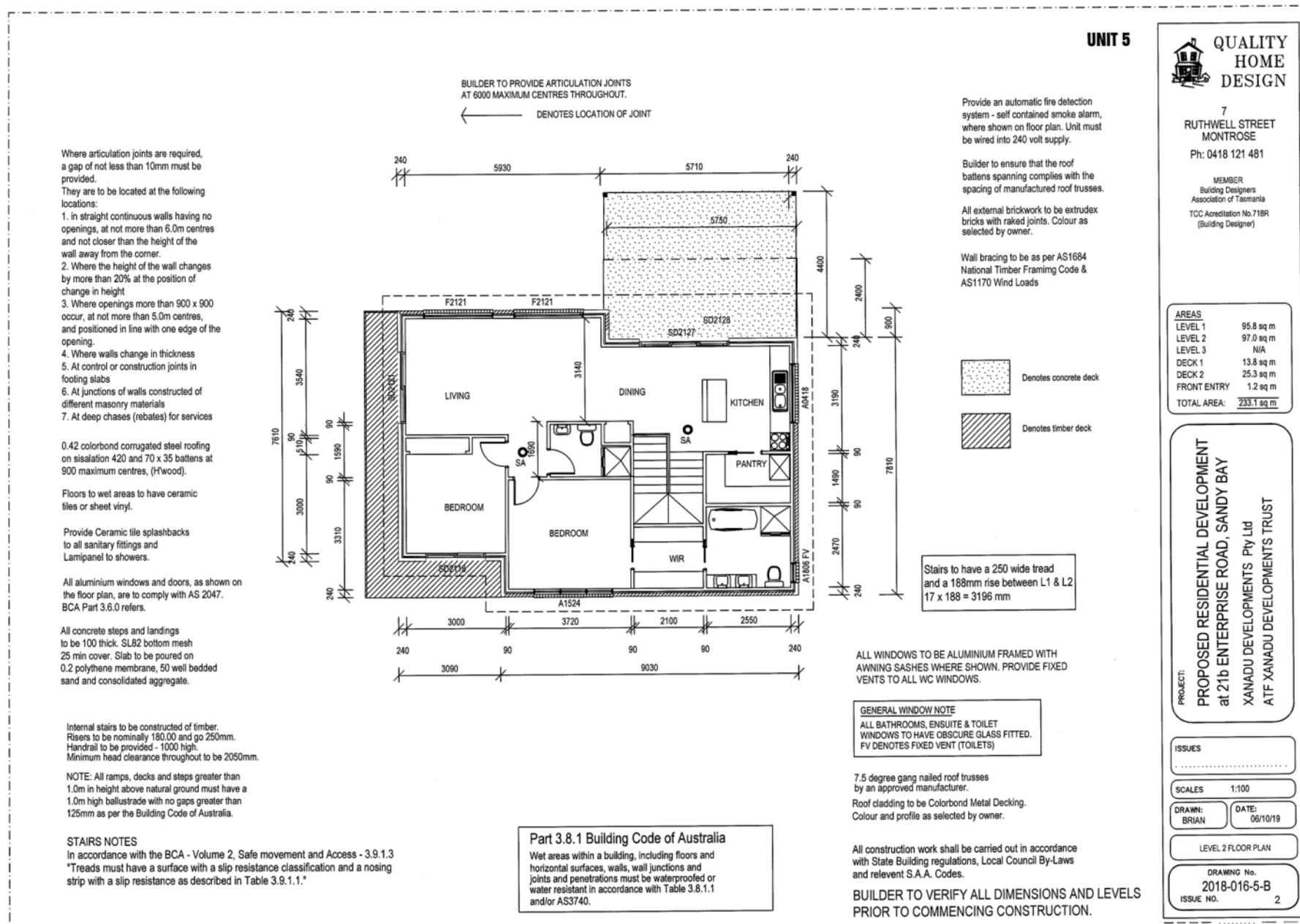
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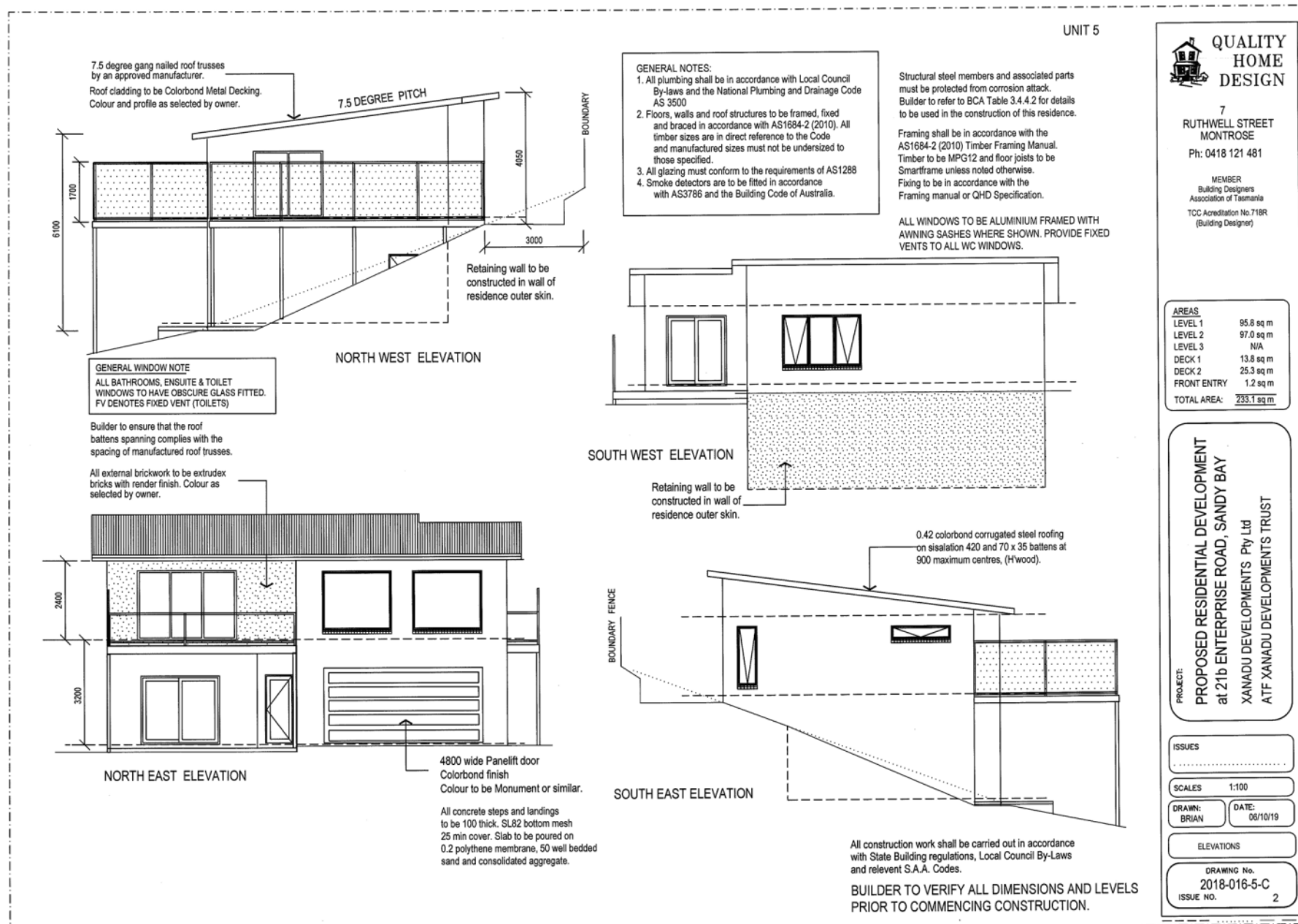
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 BRIAN

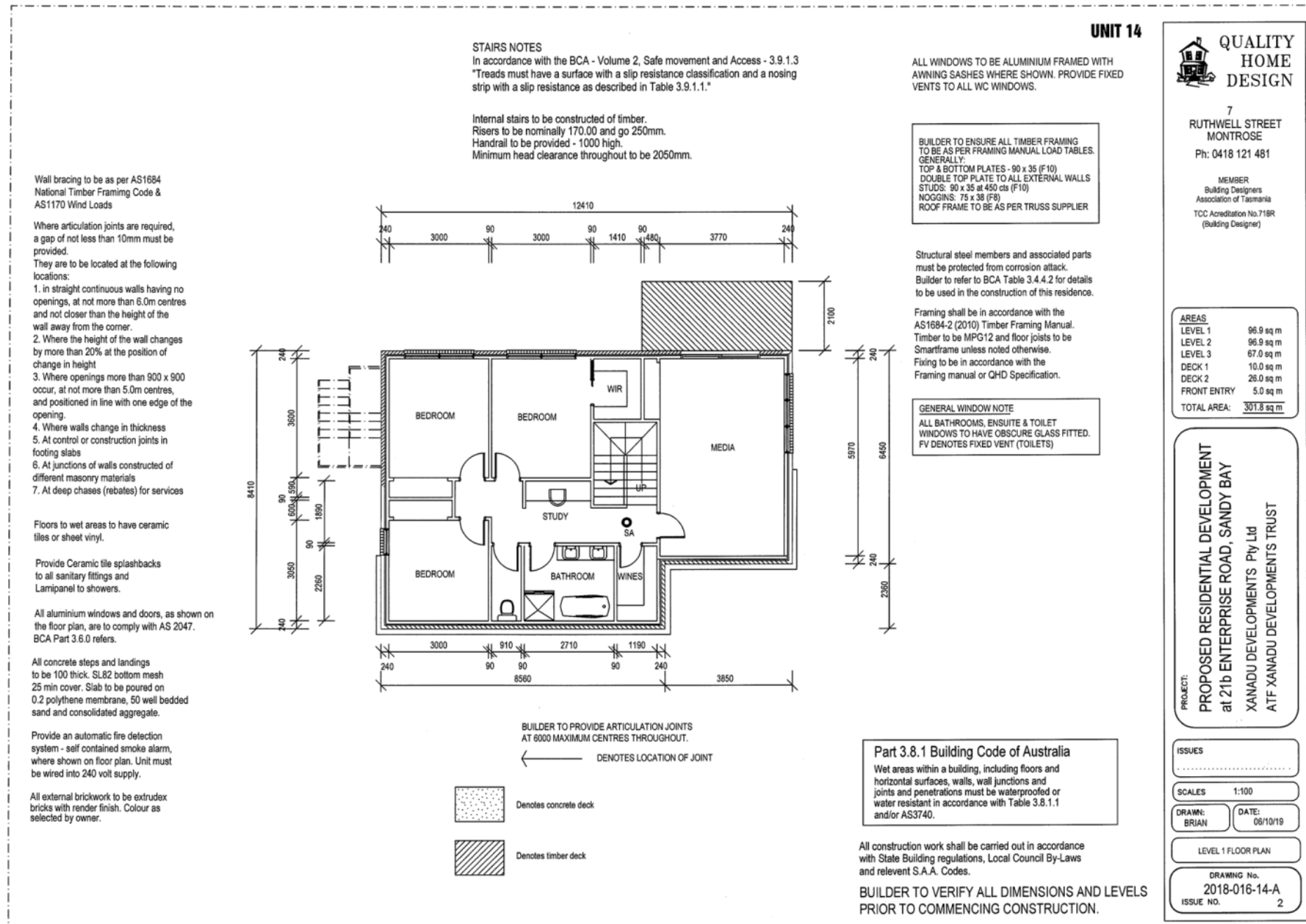
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 08/10/19

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-5-A
 ISSUE NO. 2







Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

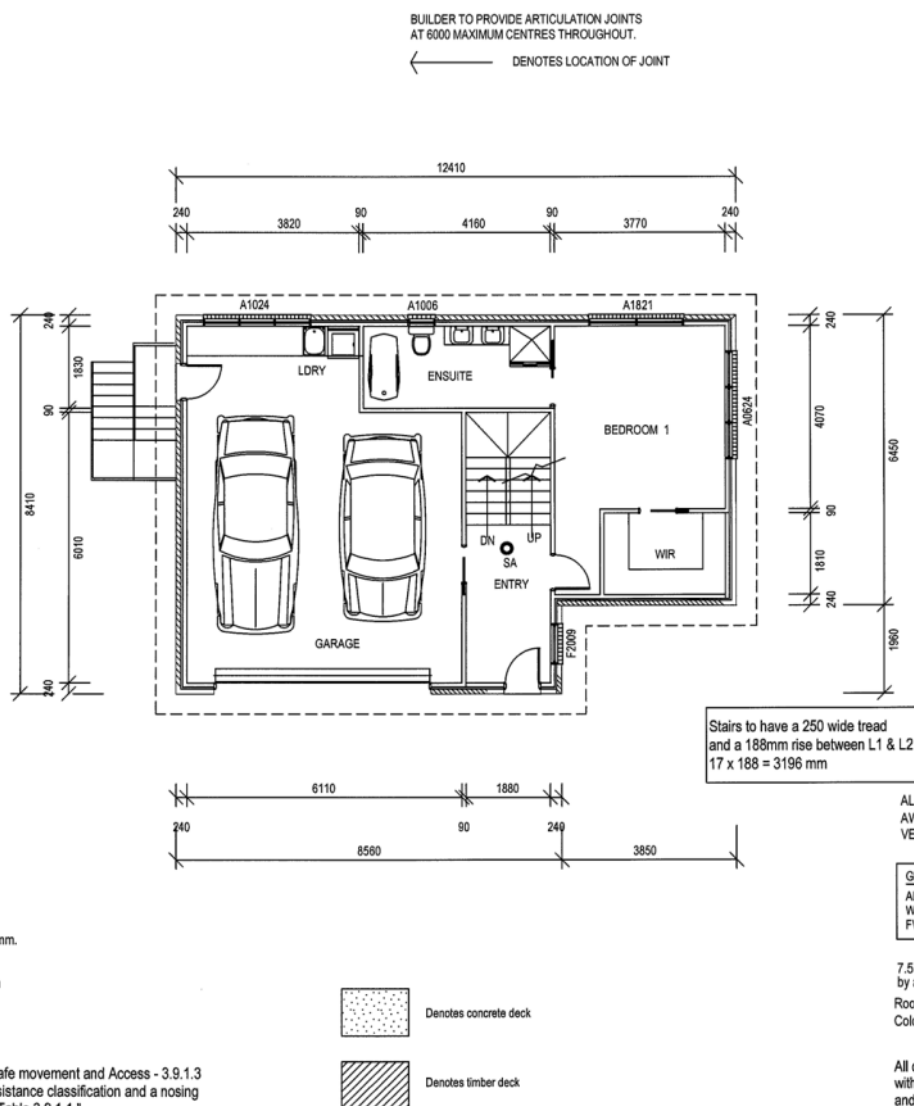
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 14



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No 716R
 (Building Designer)

AREAS	
LEVEL 1	96.9 sq m
LEVEL 2	96.9 sq m
LEVEL 3	67.0 sq m
DECK 1	10.0 sq m
DECK 2	26.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	301.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

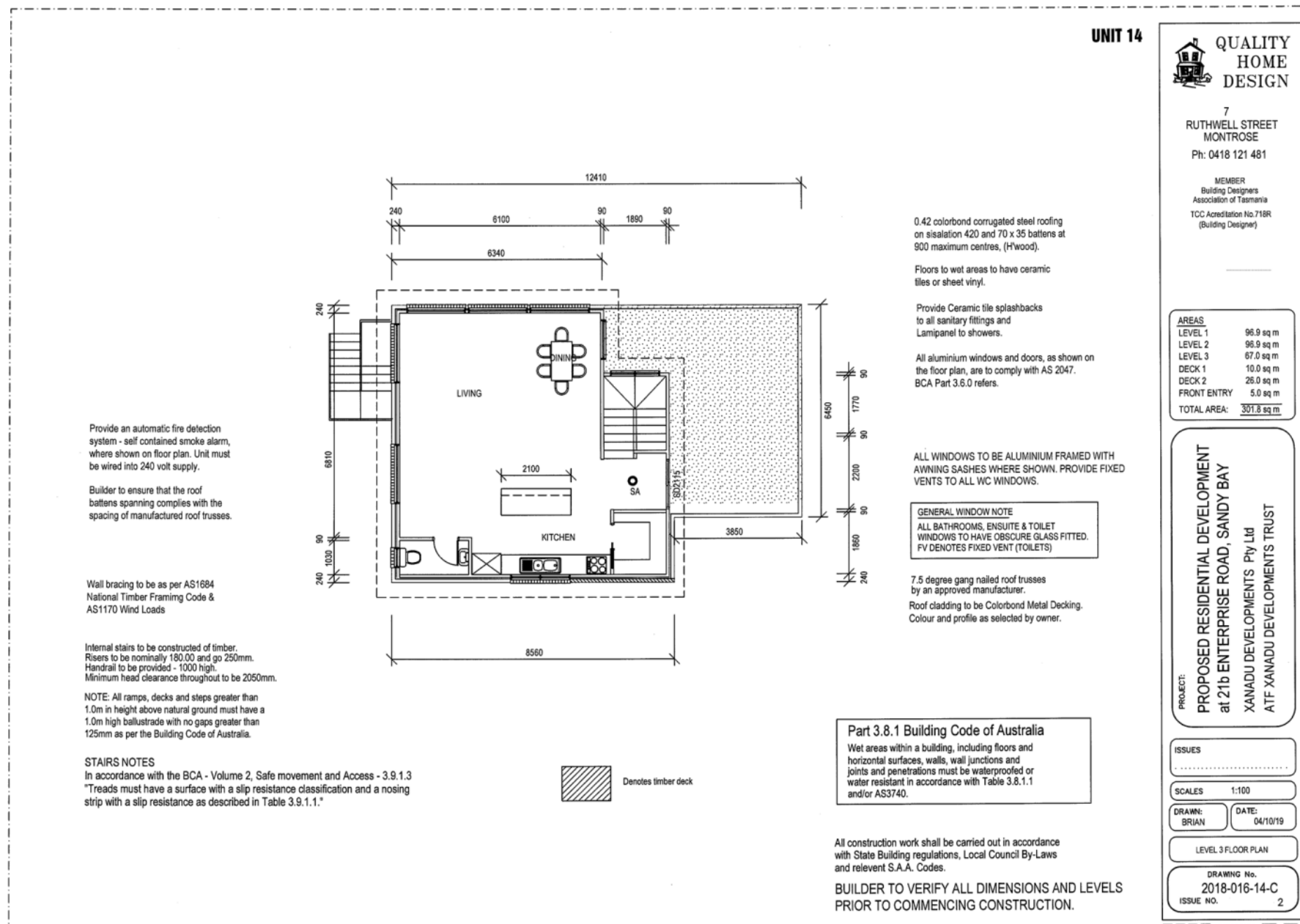
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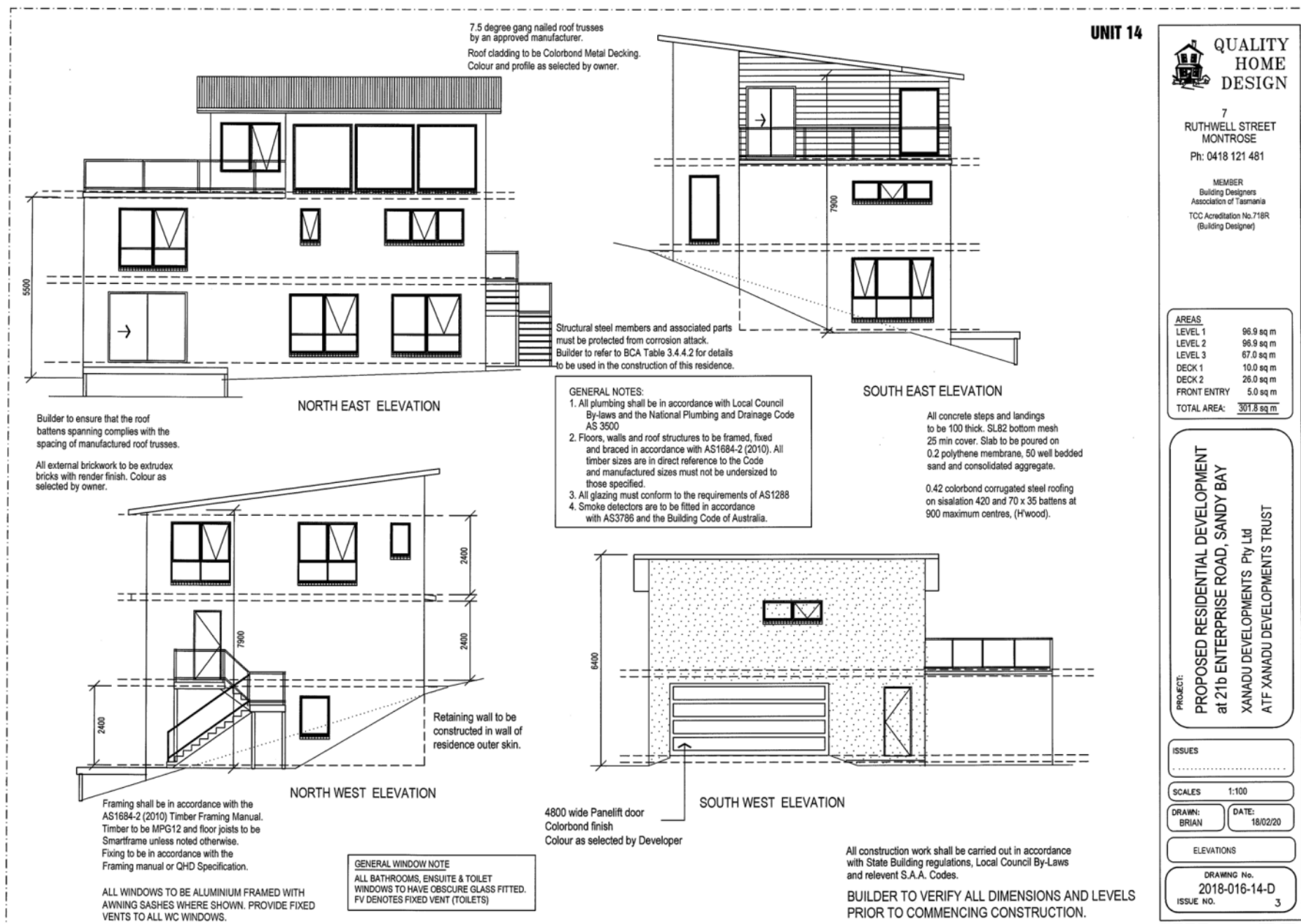
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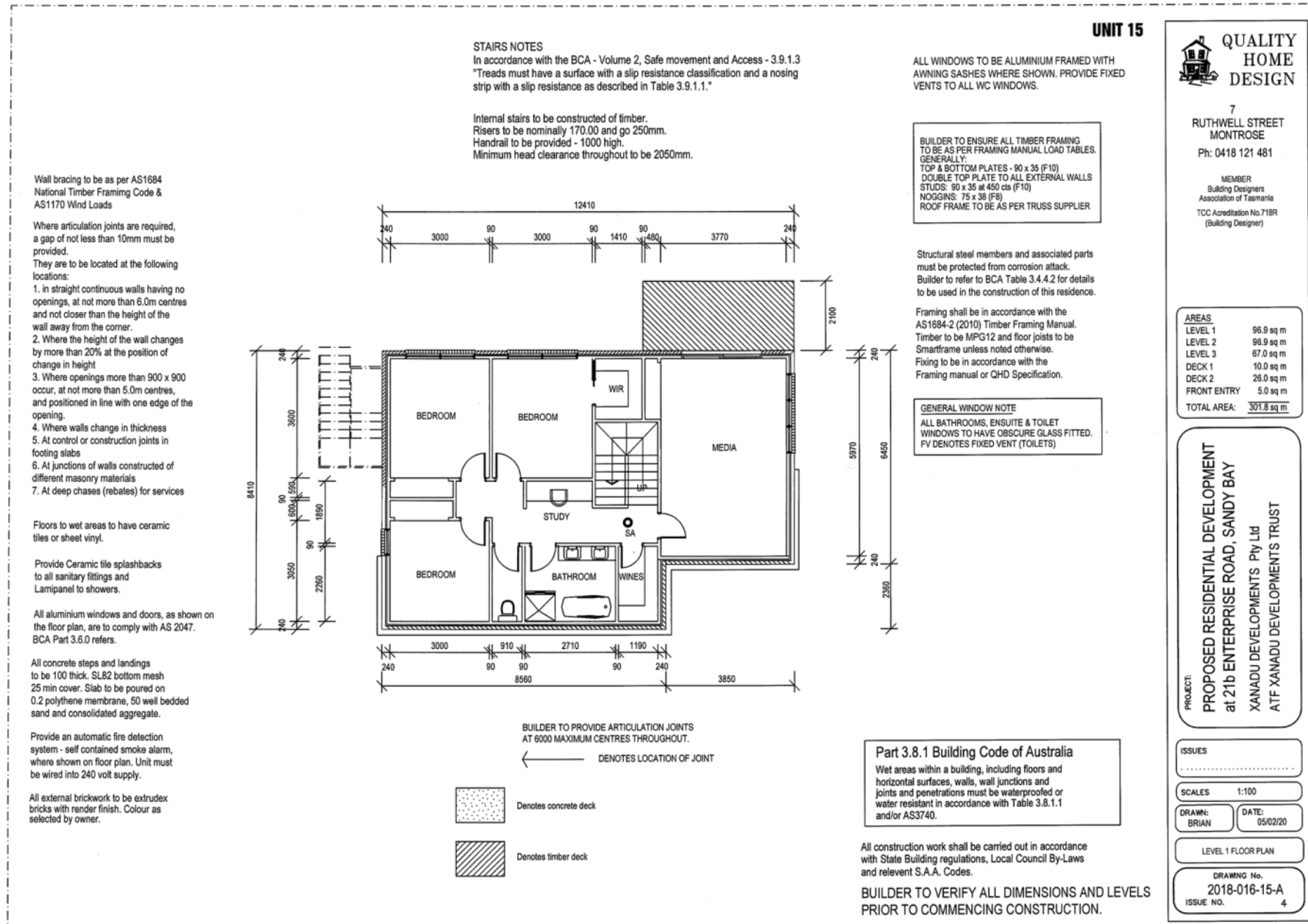
DATE:
 18/02/20

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-14-B
 ISSUE NO. 3







Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

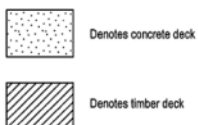
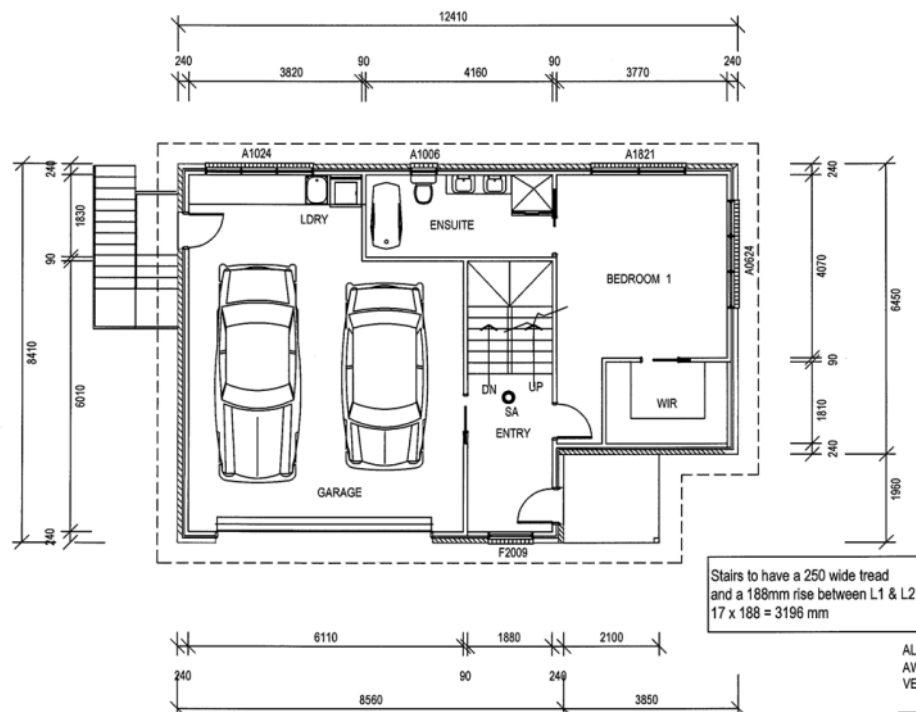
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruded bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 15



7
RUTHWELL STREET
MONTROSE
Ph: 0418 121 481

MEMBER
Building Designers
Association of Tasmania
TCC Accreditation No 718R
(Building Designer)

AREAS	
LEVEL 1	96.9 sq m
LEVEL 2	96.9 sq m
LEVEL 3	67.0 sq m
DECK 1	10.0 sq m
DECK 2	26.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	301.8 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST**

ISSUES

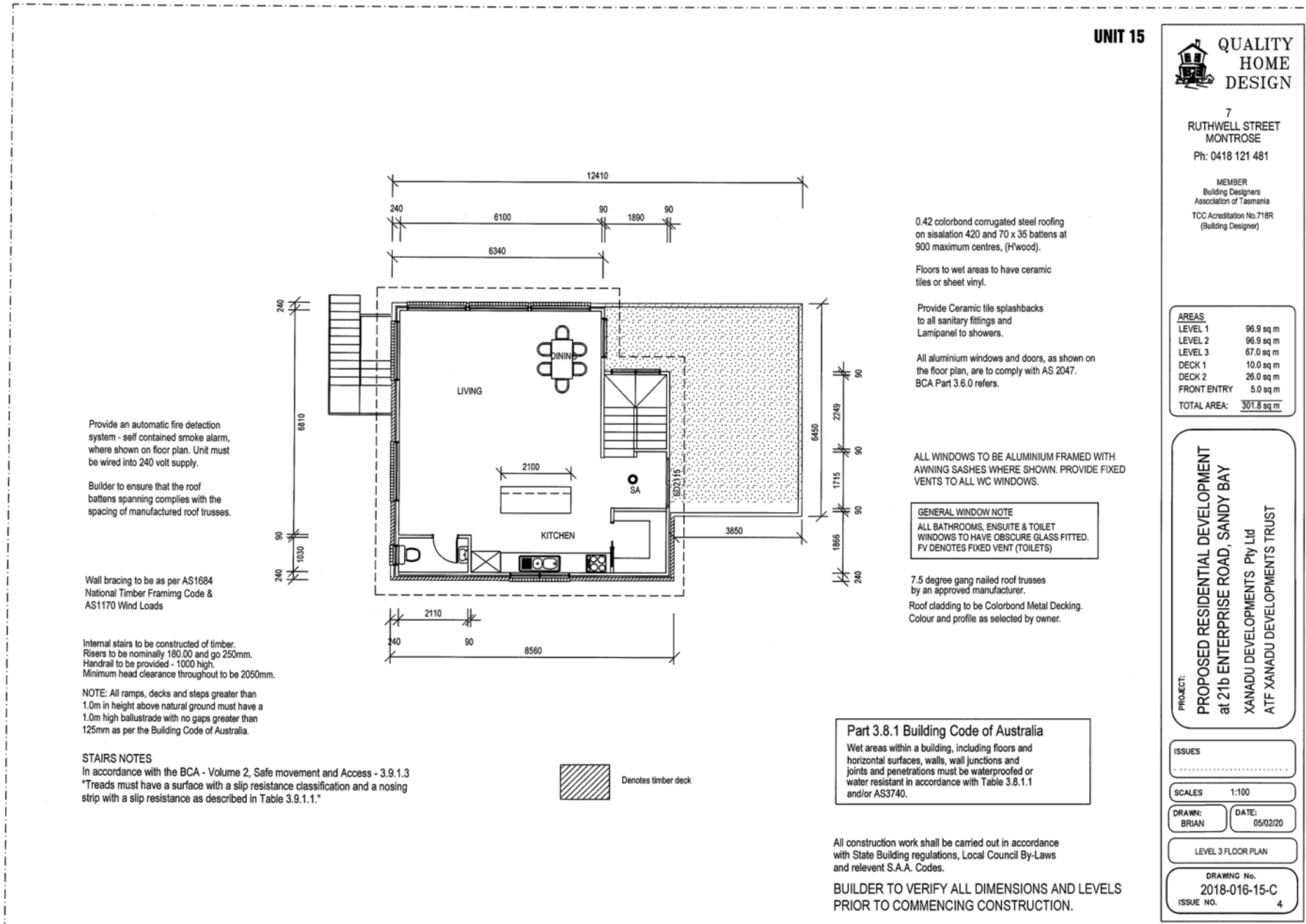
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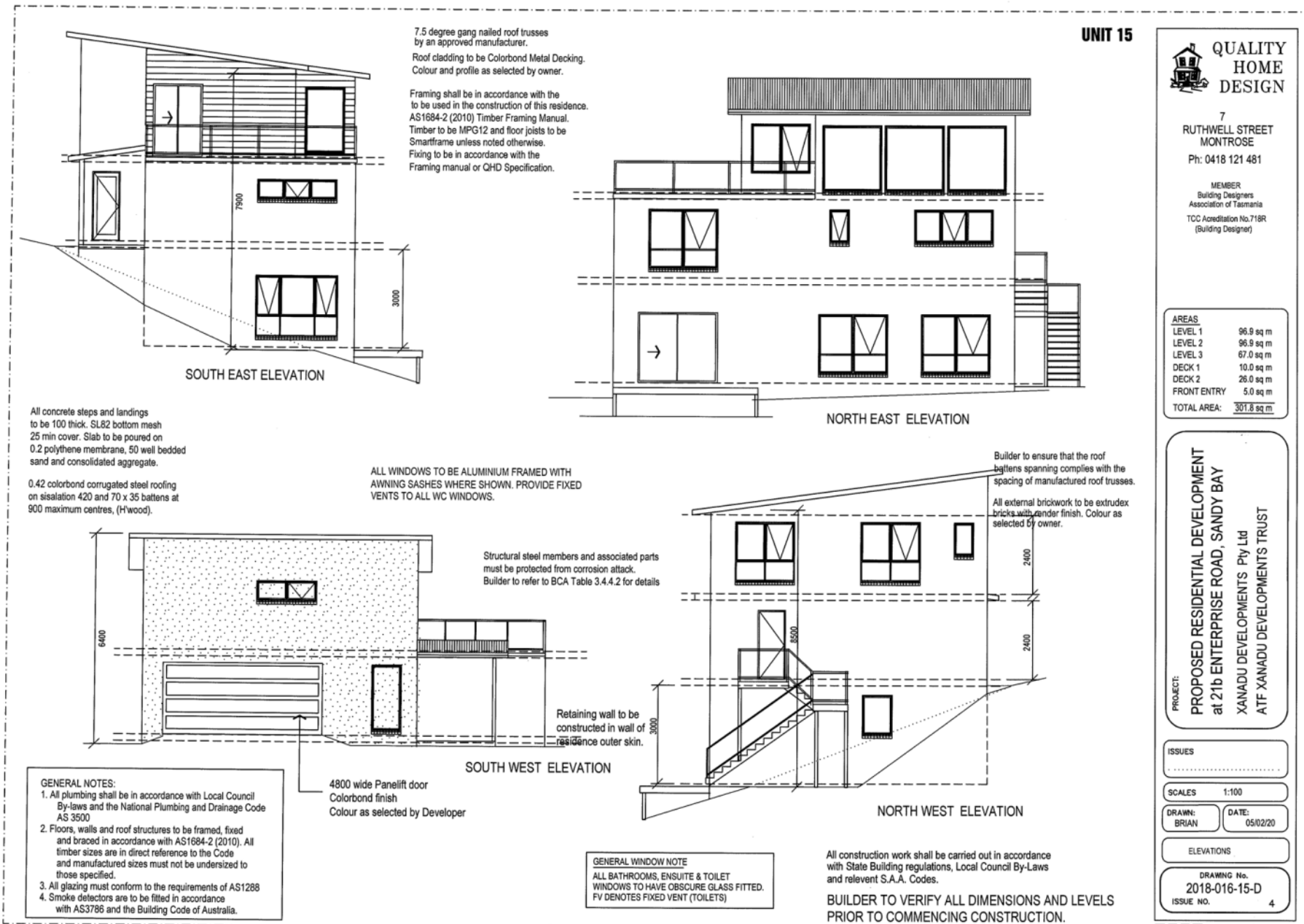
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BRIAN

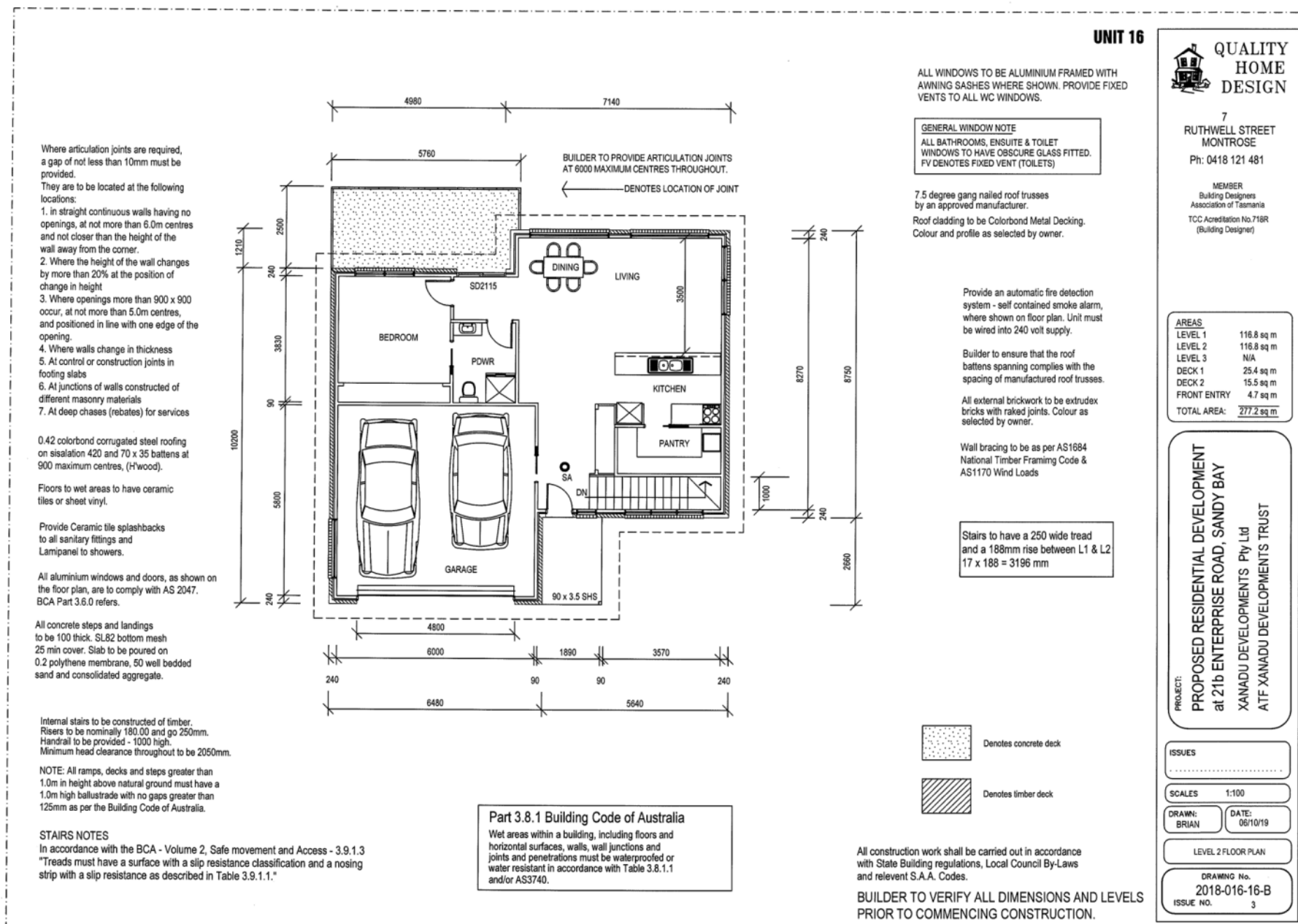
DATE:
05/02/20

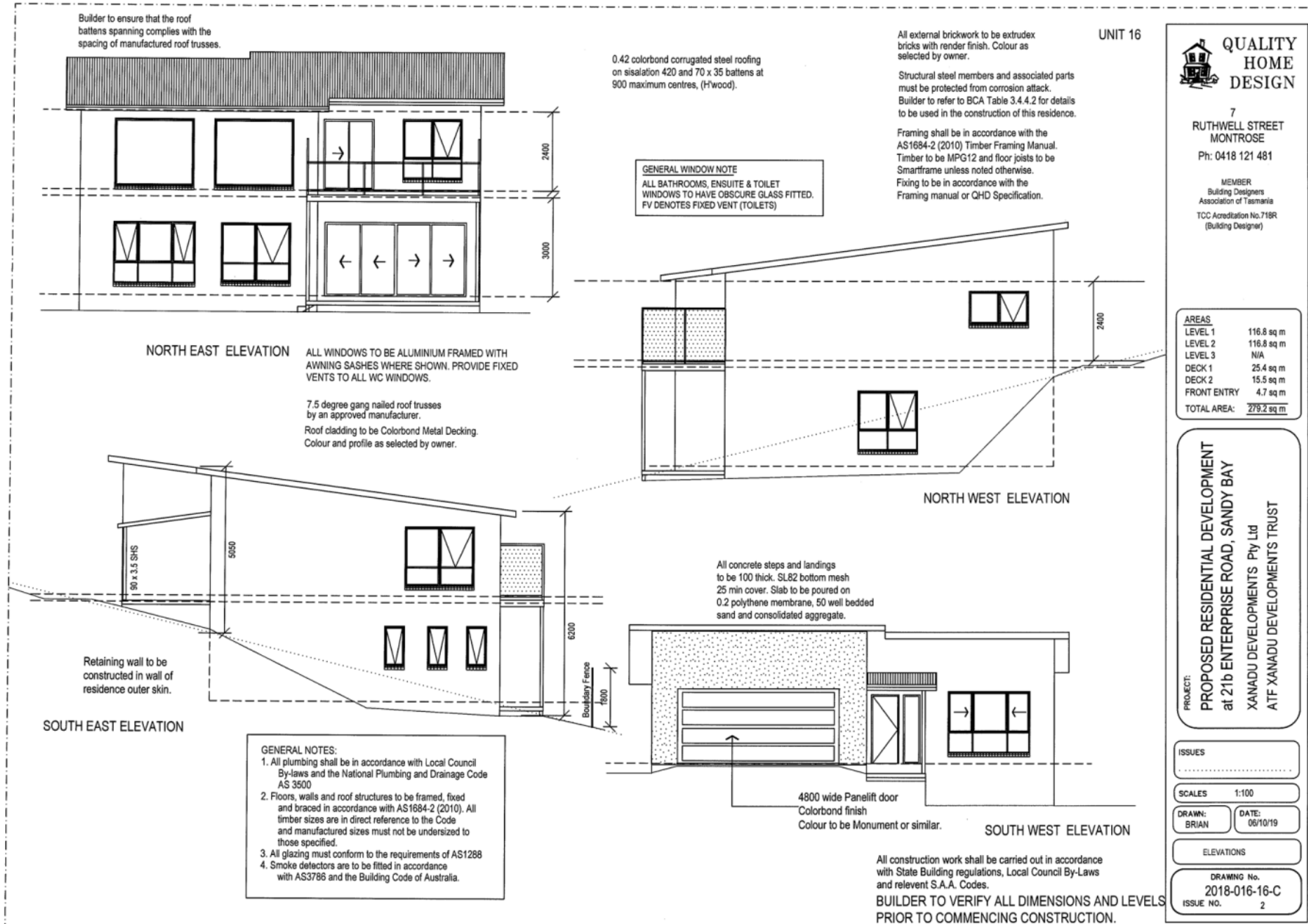
LEVEL 2 FLOOR PLAN

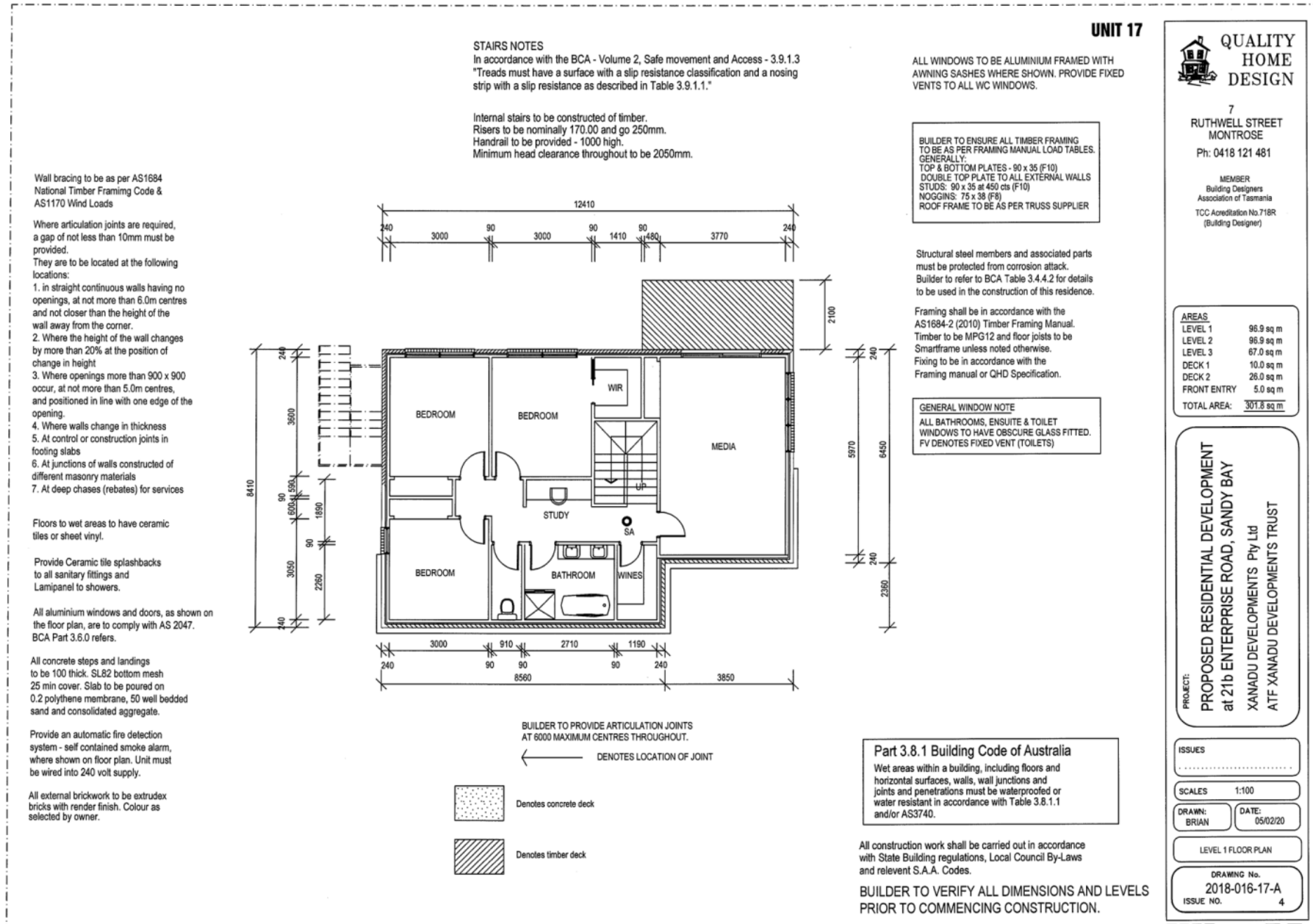
DRAWING No.
2018-016-15-B
ISSUE NO. 4











Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

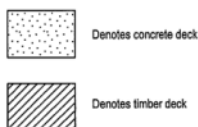
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

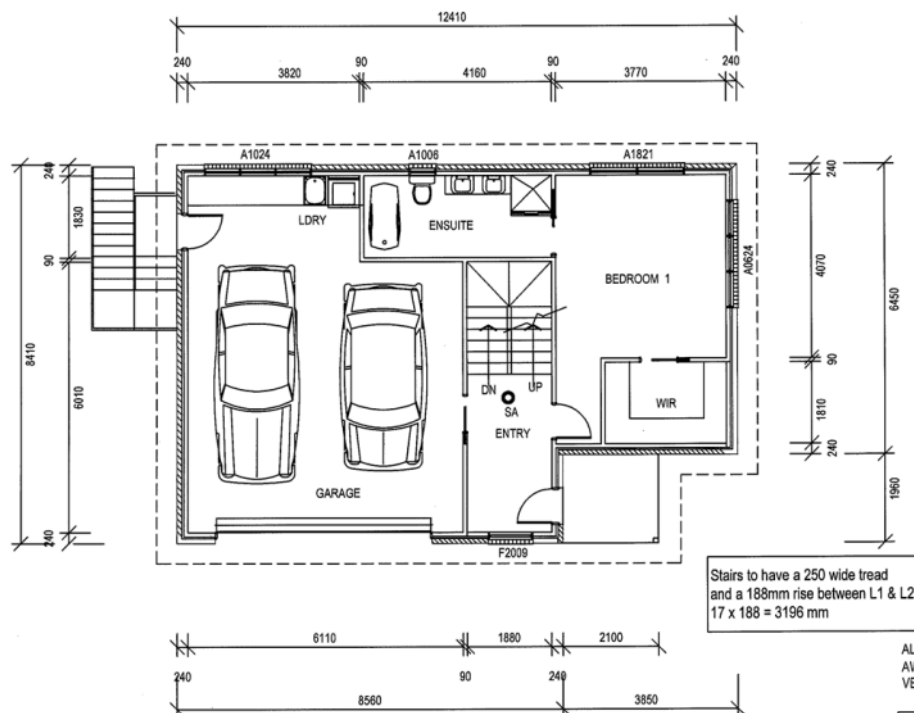
STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruded bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 17



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.716R
 (Building Designer)

AREAS	
LEVEL 1	96.9 sq m
LEVEL 2	96.9 sq m
LEVEL 3	67.0 sq m
DECK 1	10.0 sq m
DECK 2	26.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	301.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

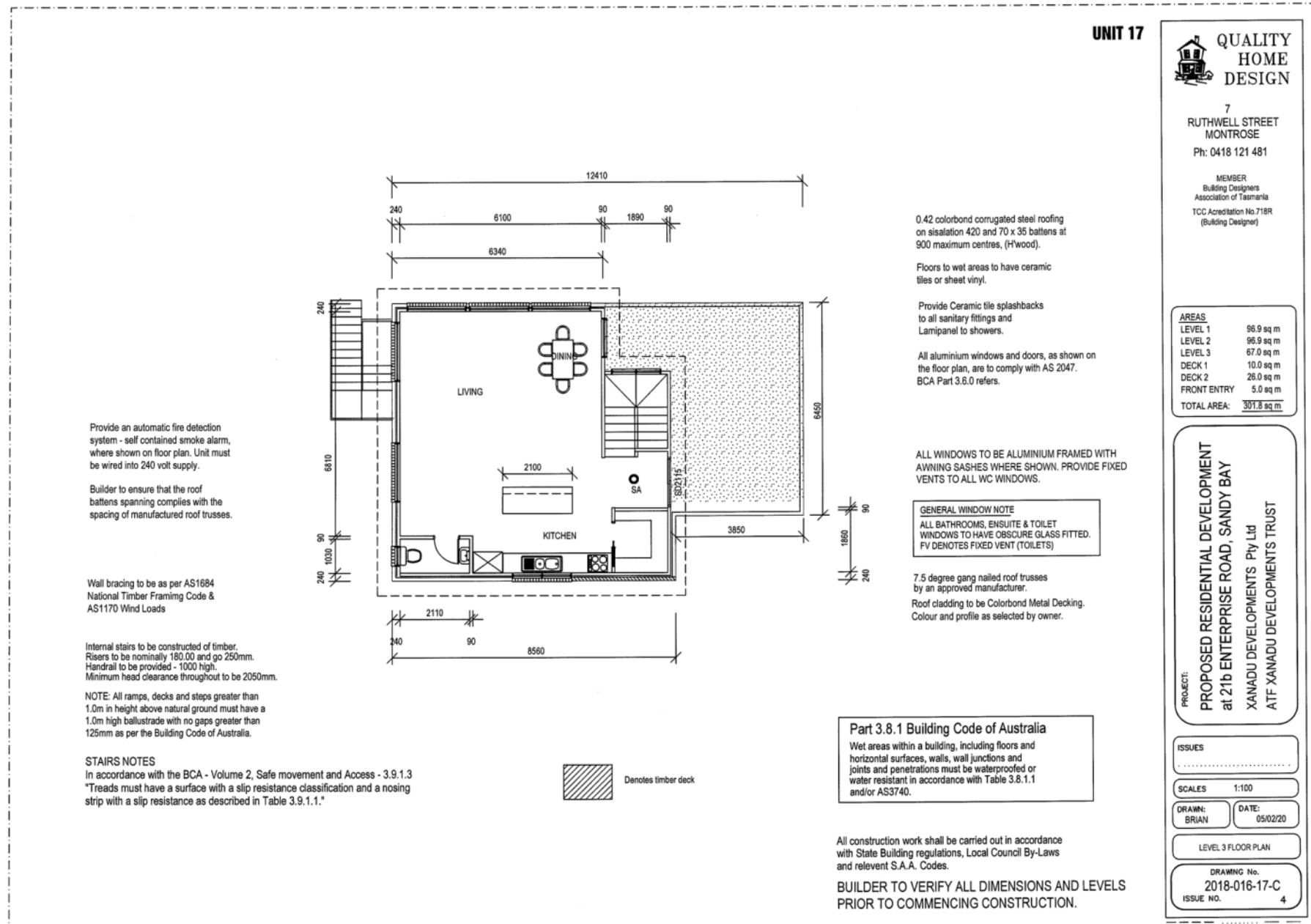
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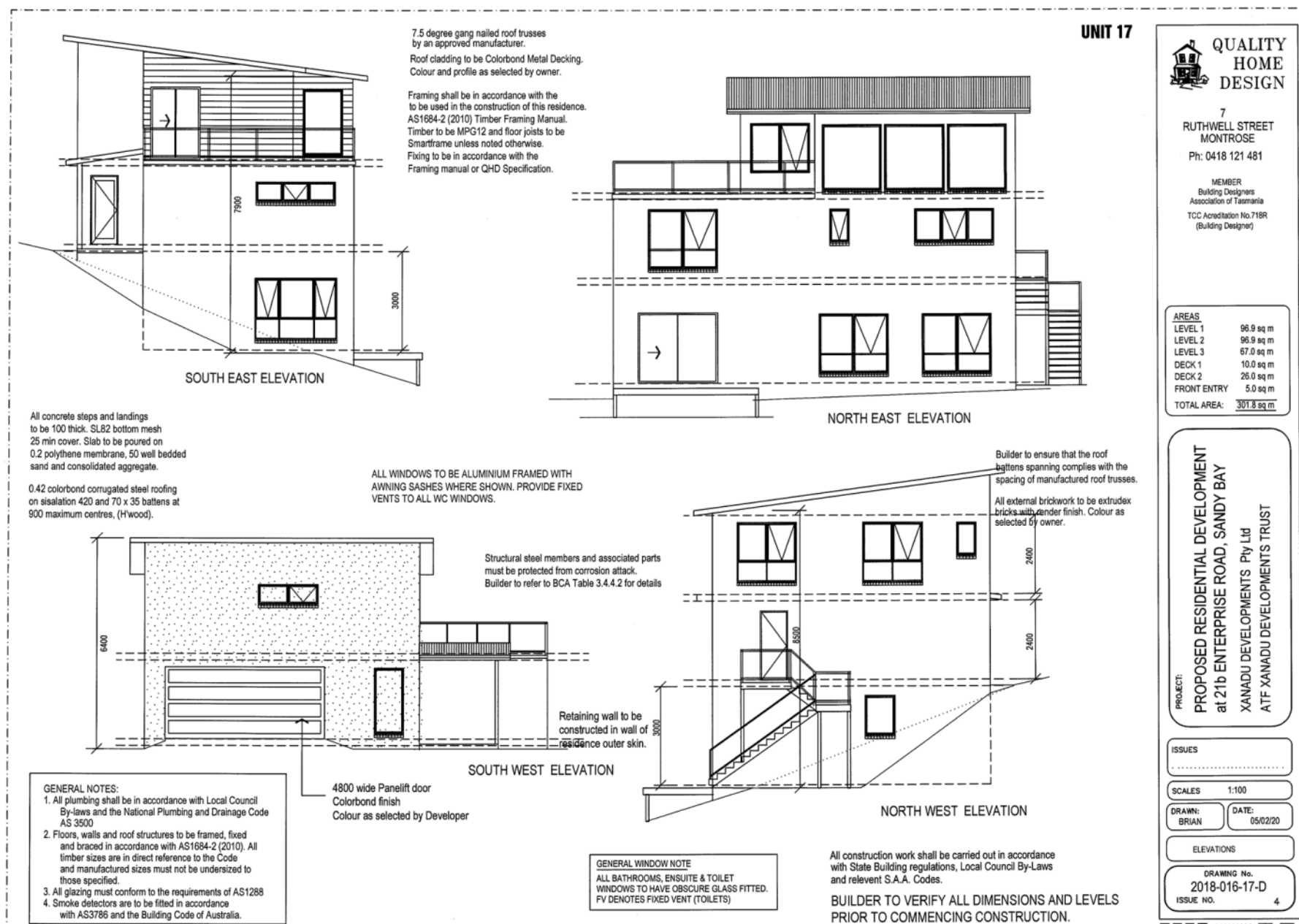
DRAWN:
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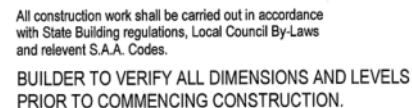
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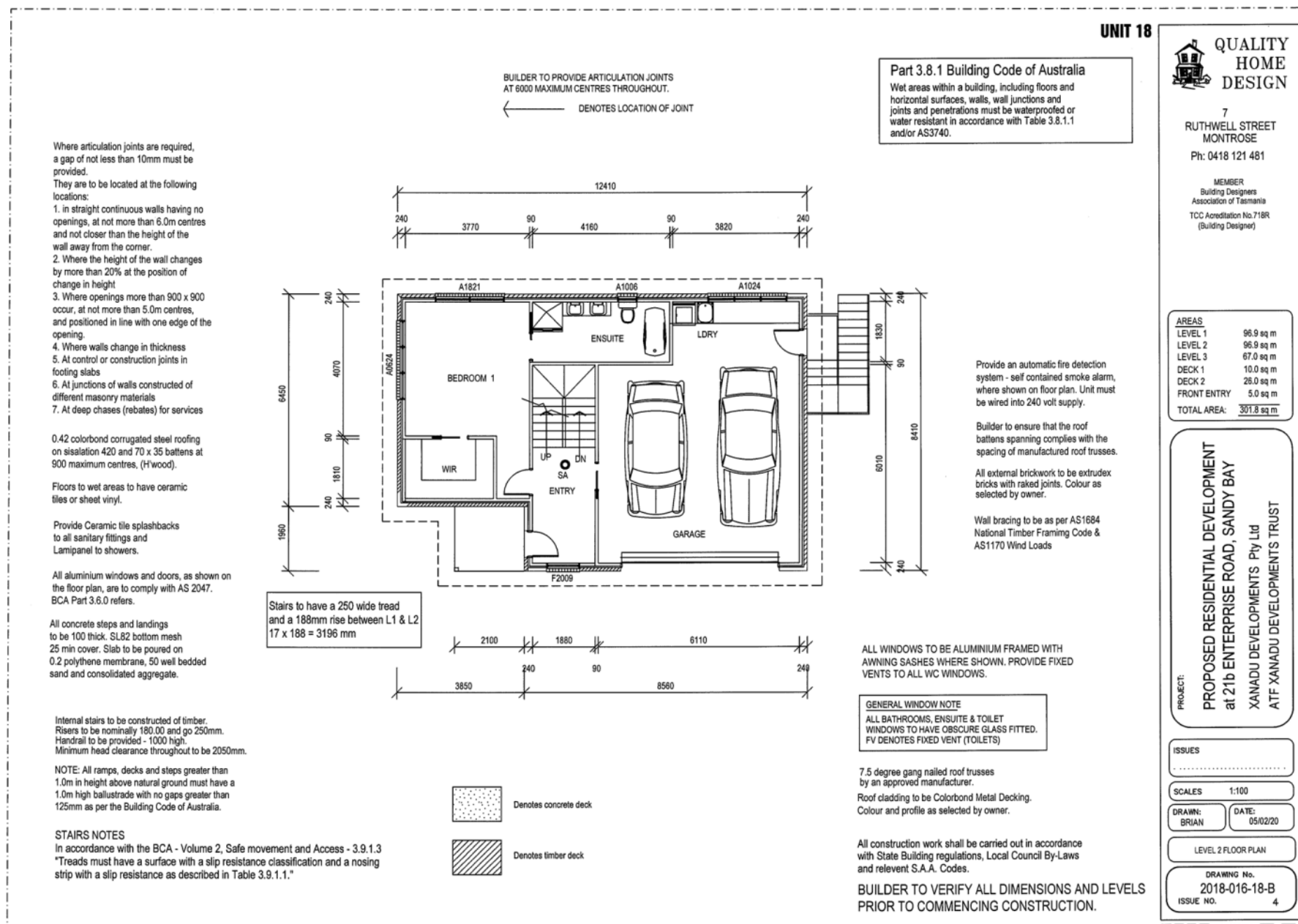
LEVEL 2 FLOOR PLAN

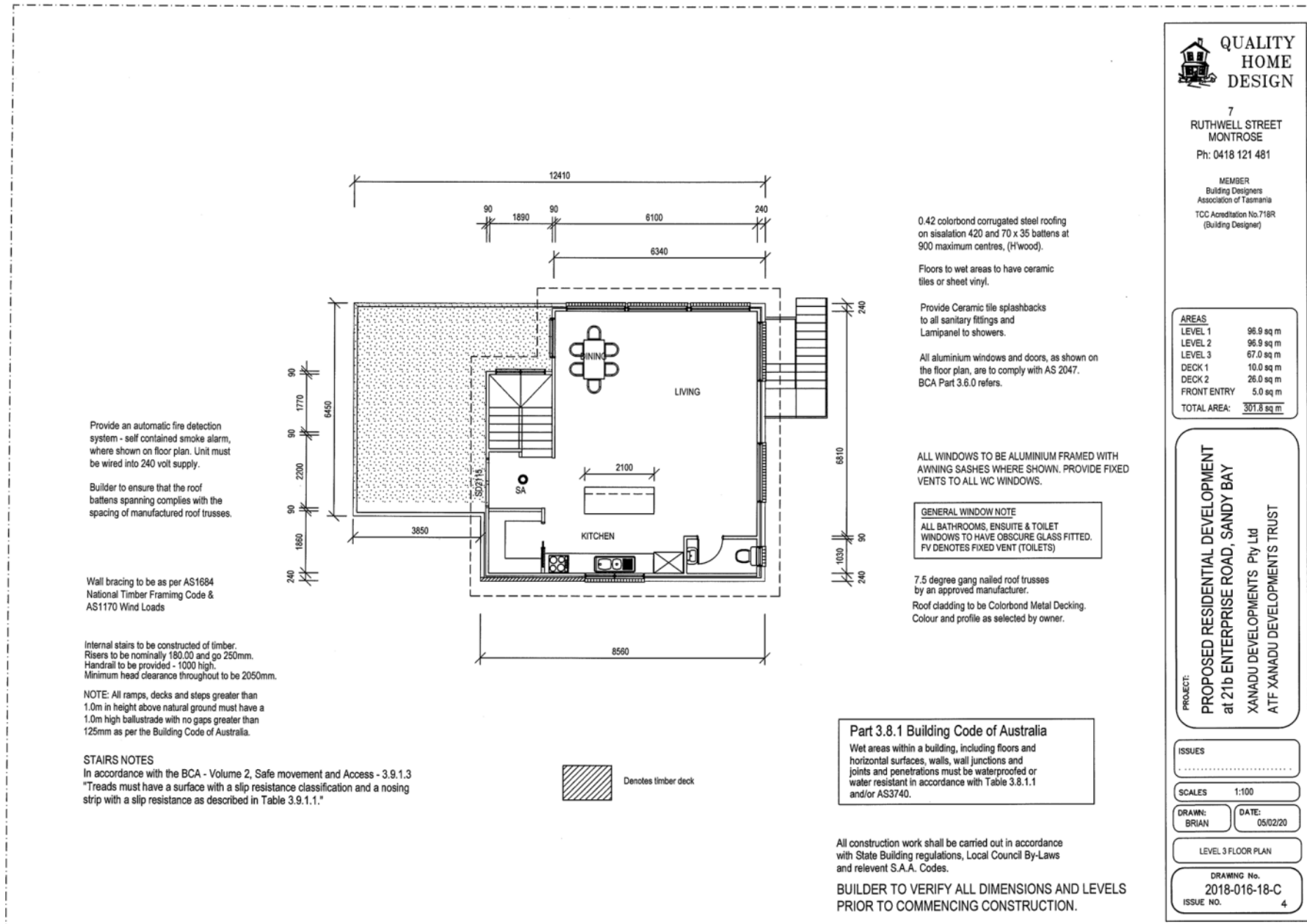
DRAWING No.
2018-016-17-B
 ISSUE NO. 4

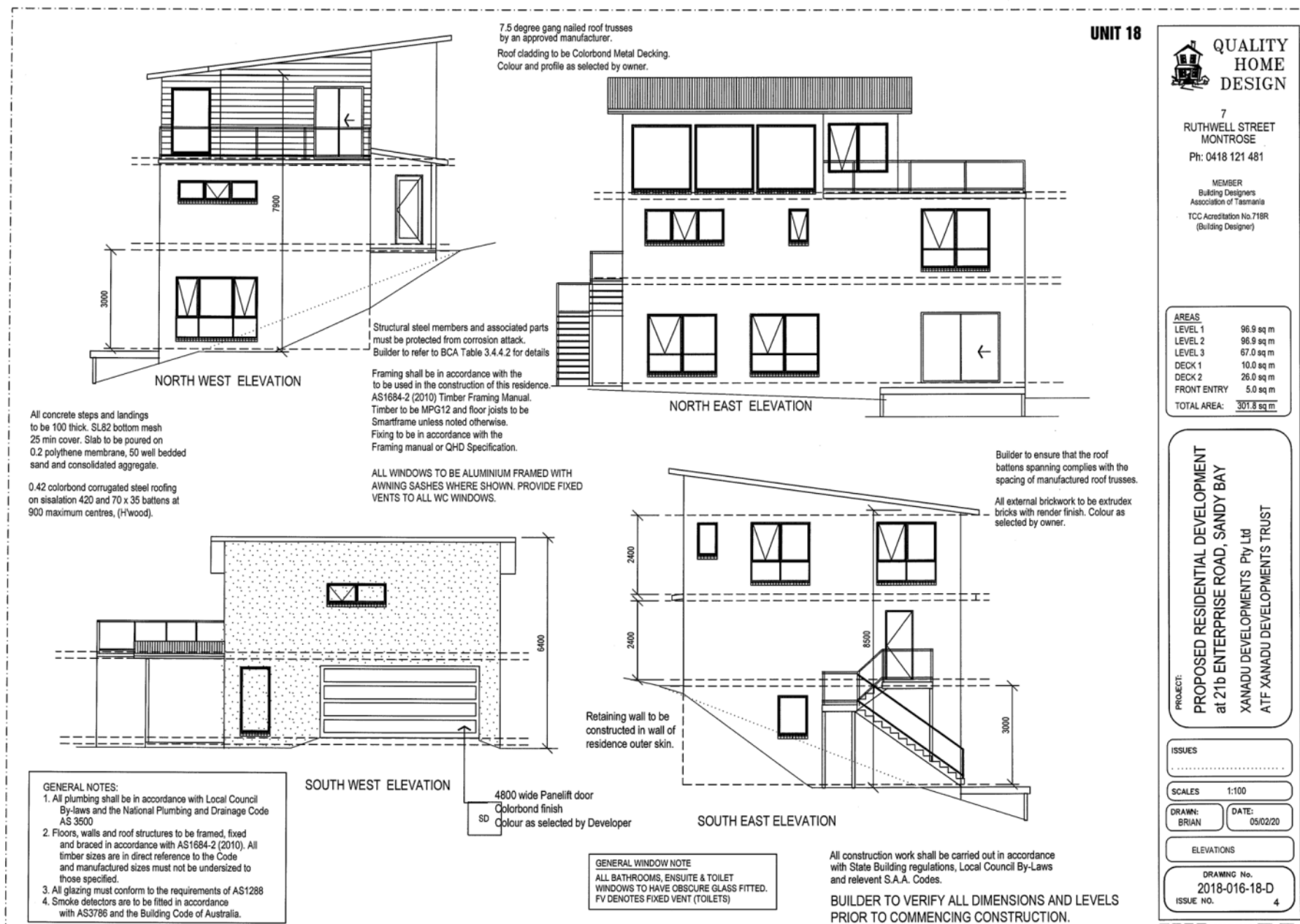


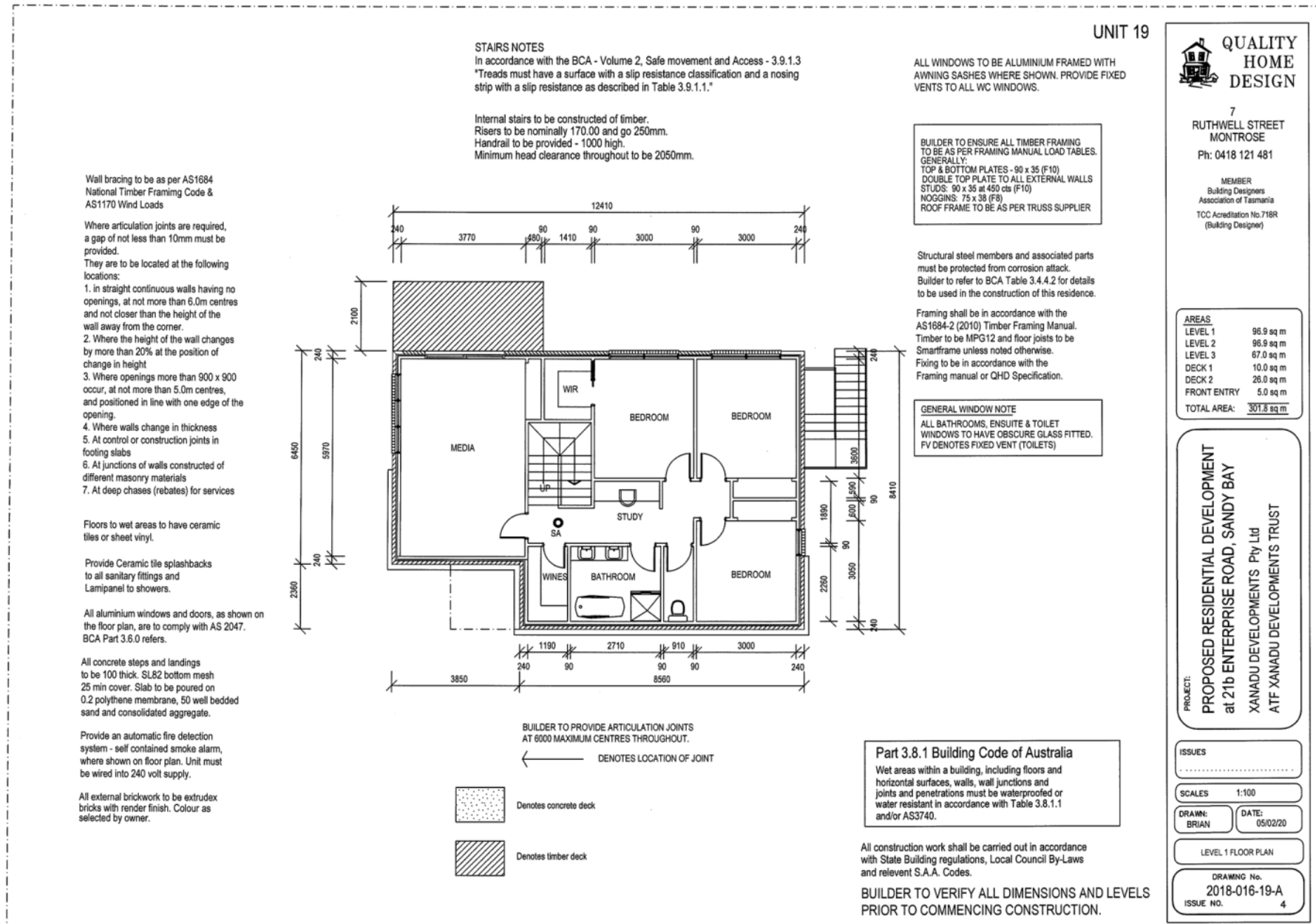


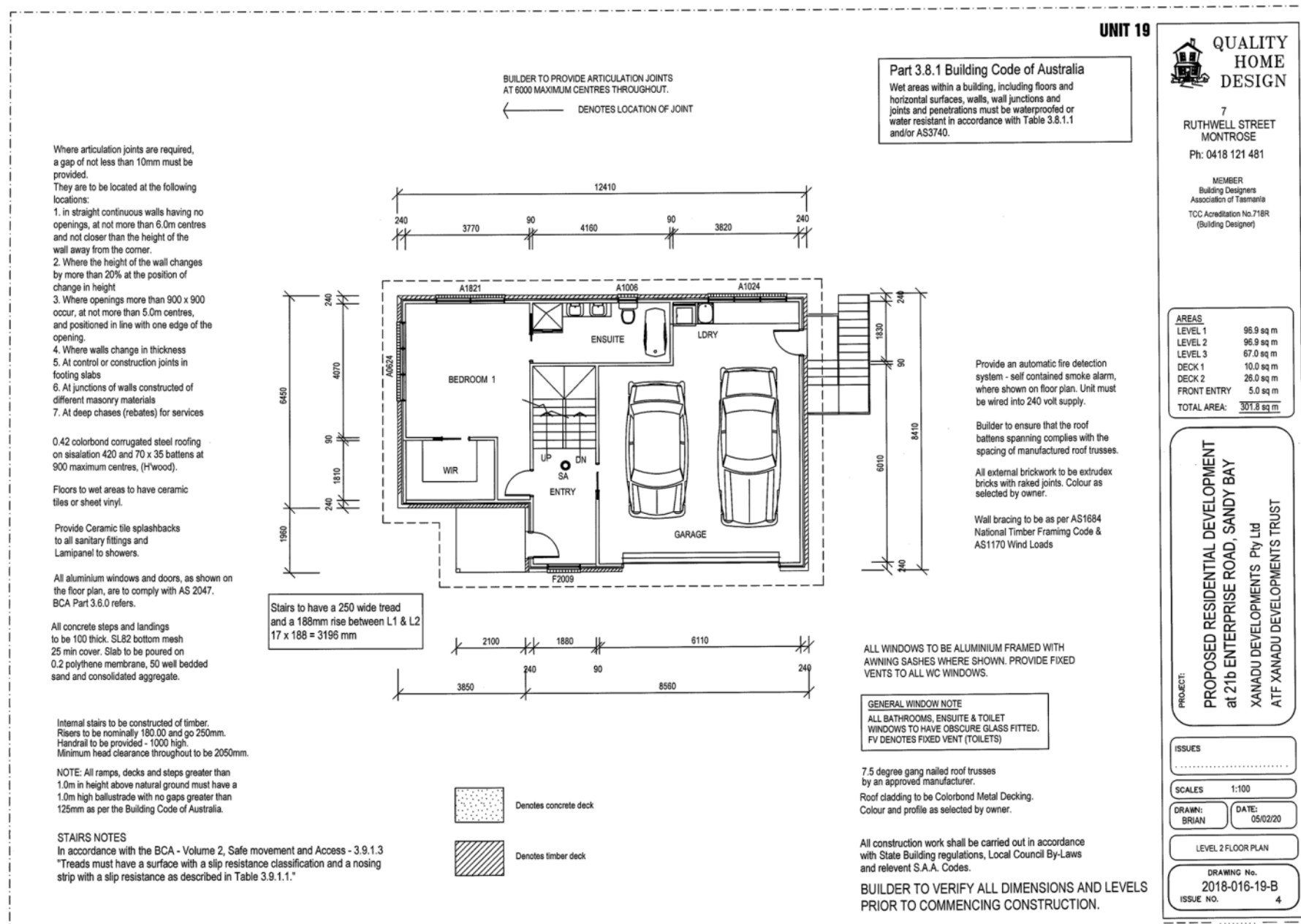


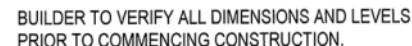


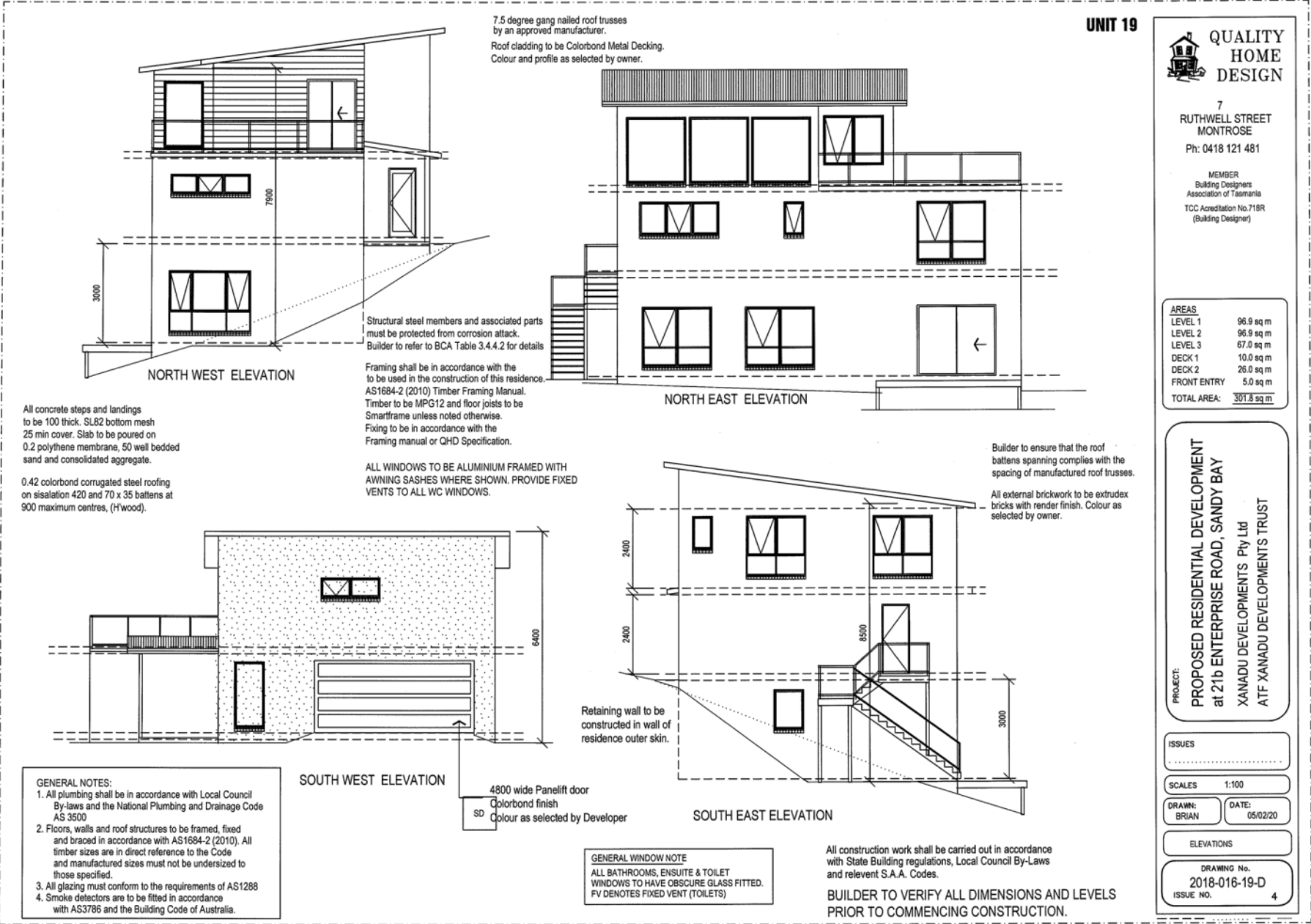


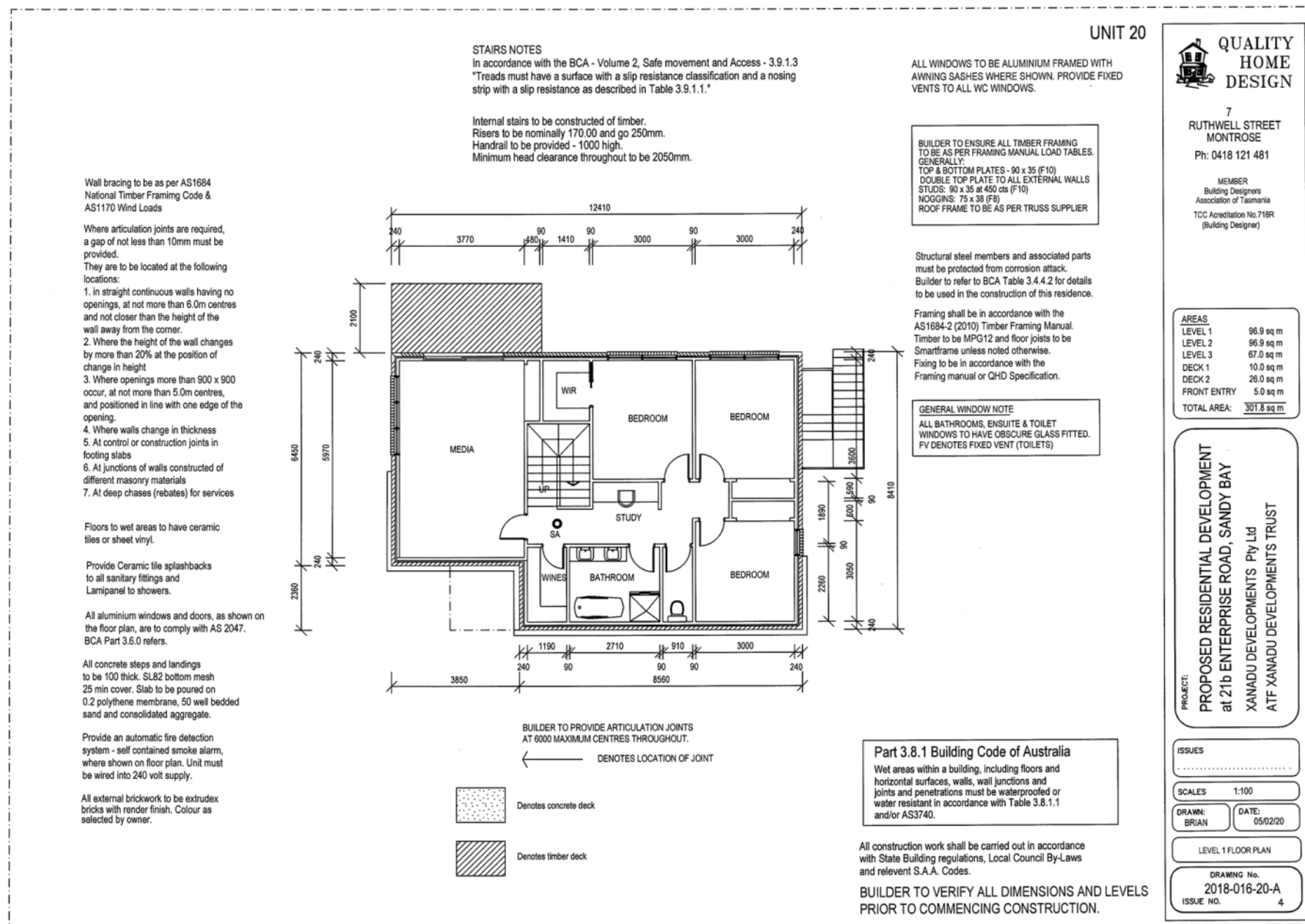


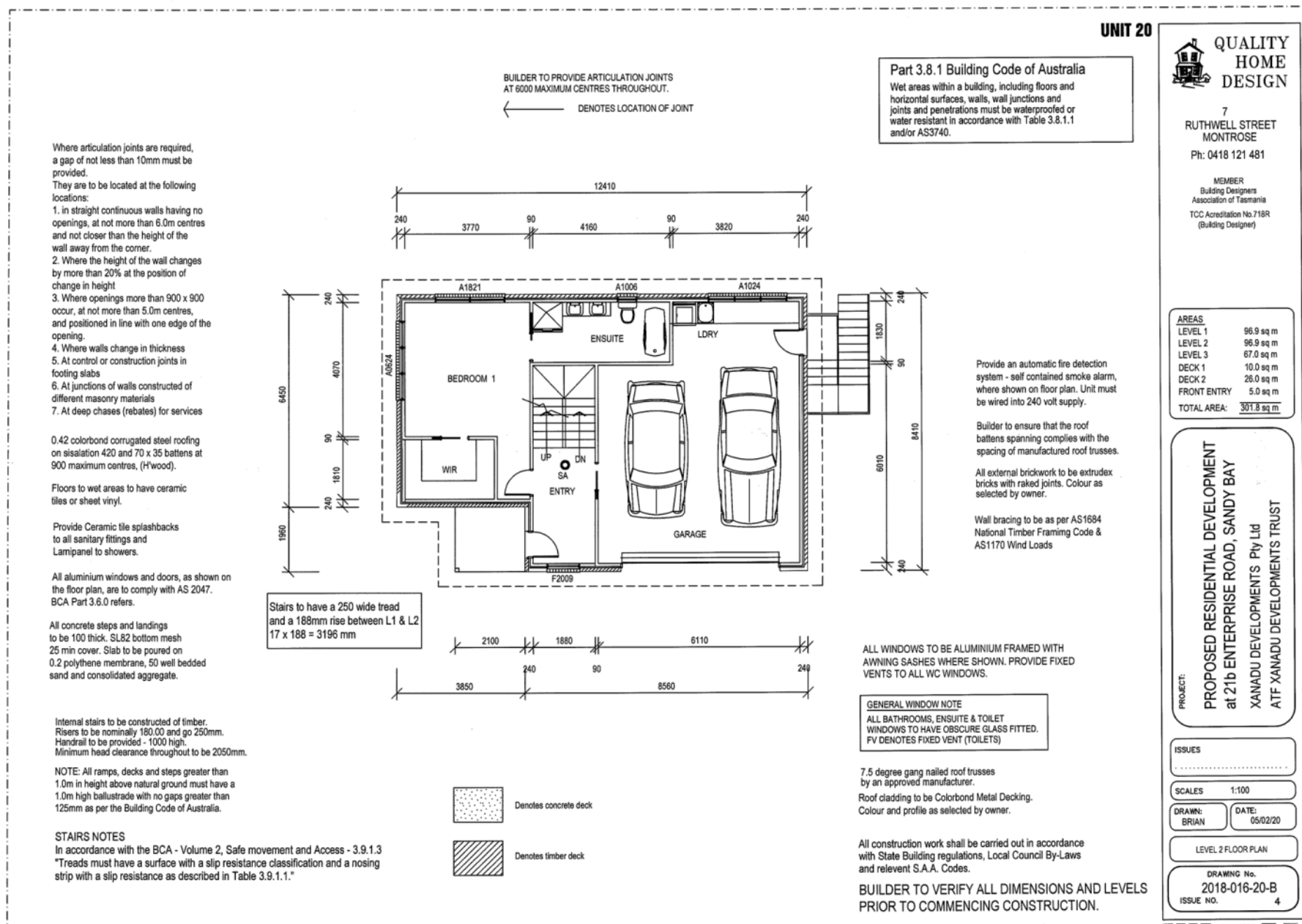


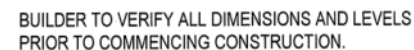


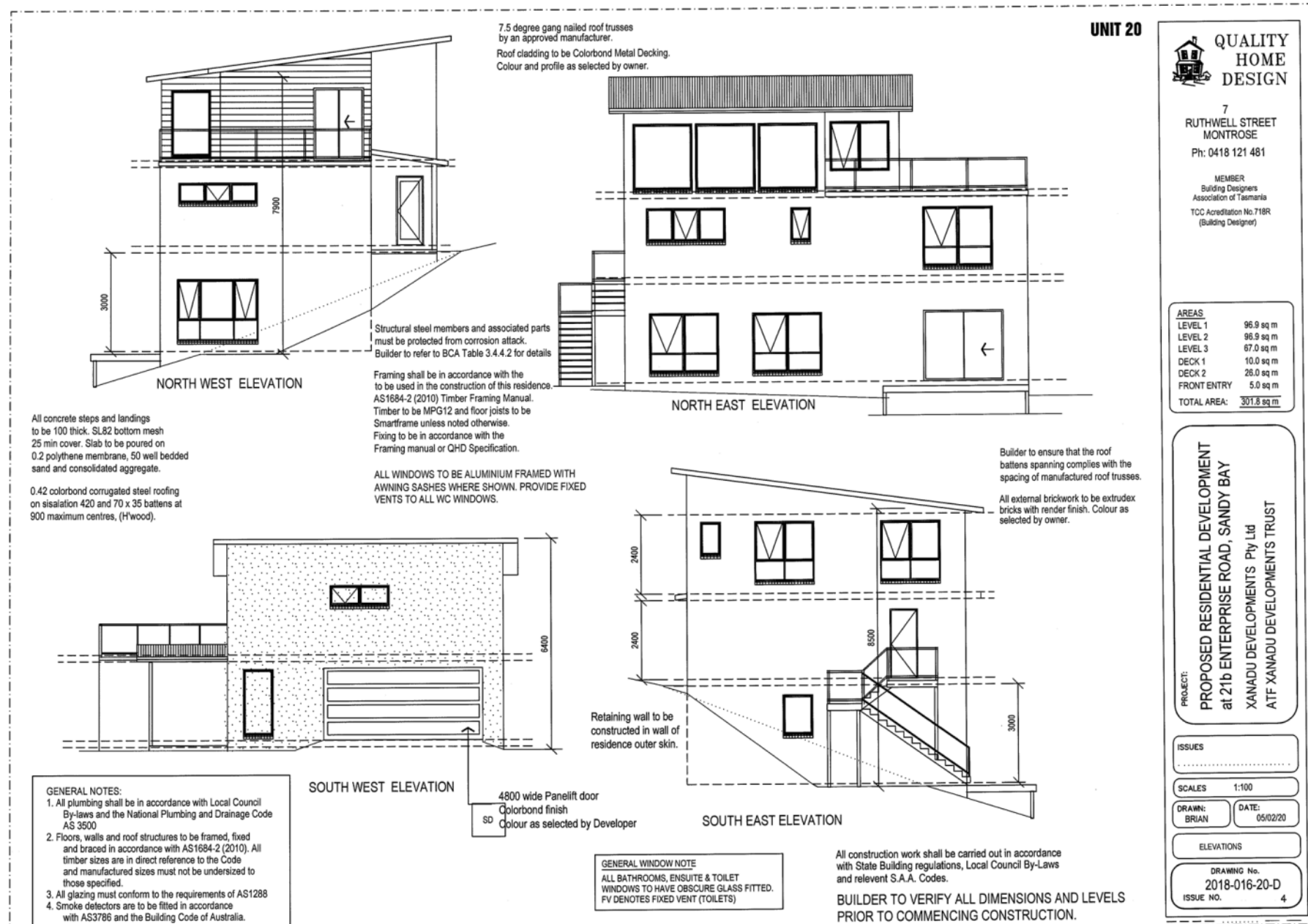












Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

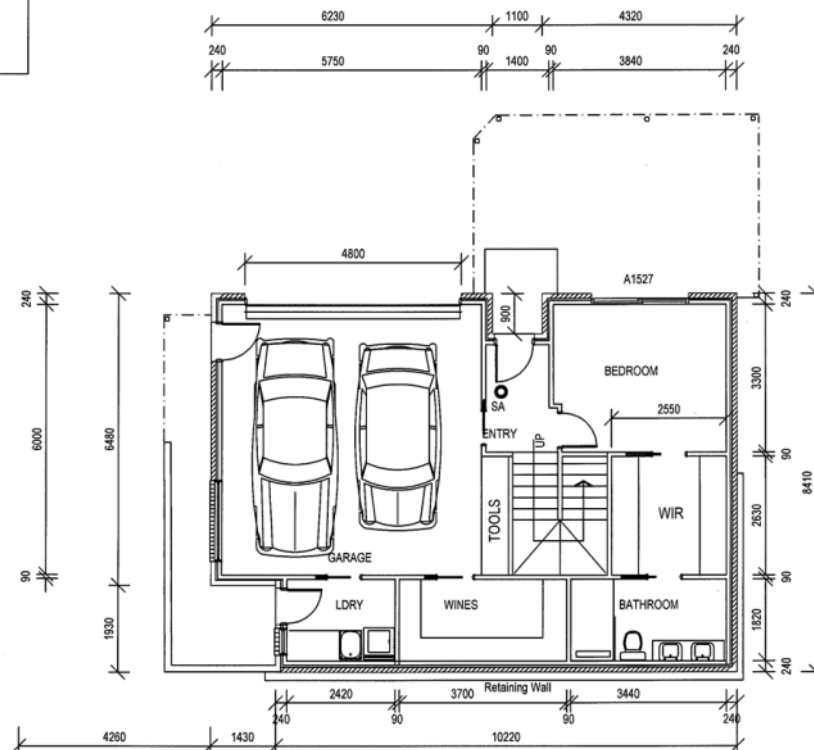
Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extruded bricks with render finish. Colour as selected by owner.

**STAIRS NOTES**

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

UNIT 6

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm



7
RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 05/02/20

LEVEL 1 FLOOR PLAN

DRAWING No.
2018-016-6-A
ISSUE NO. 4

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

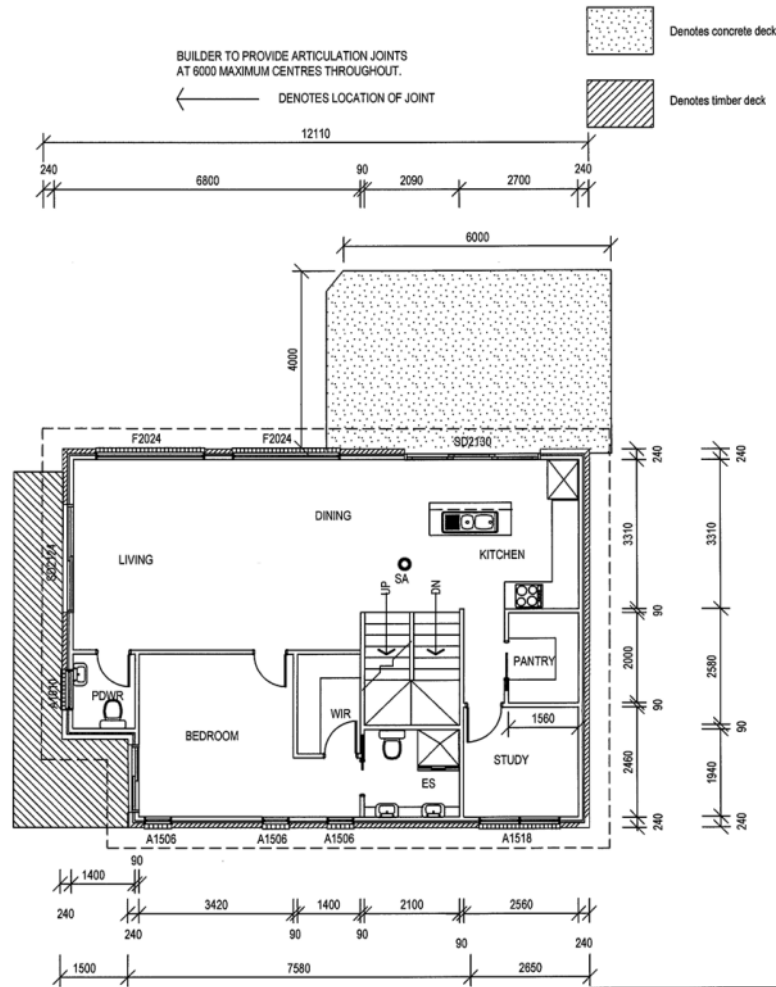
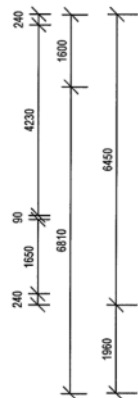
BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.



Internal stairs to be constructed of timber. Risers to be nominally 160.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

UNIT 6



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lampanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extruder bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

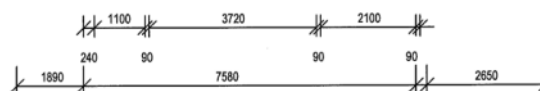
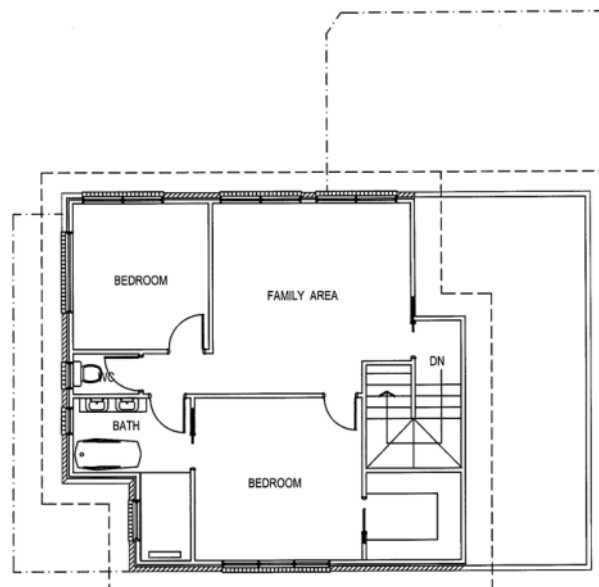
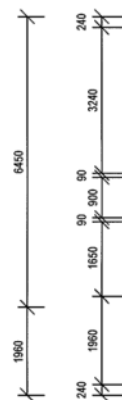
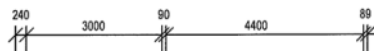
DATE:
 05/02/20

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-6-B
 ISSUE NO. 4

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Internal stairs to be constructed of timber.
 Risers to be nominally 180.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3

*Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

UNIT 6

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking.
 Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.



7
RUTHWELL STREET
MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

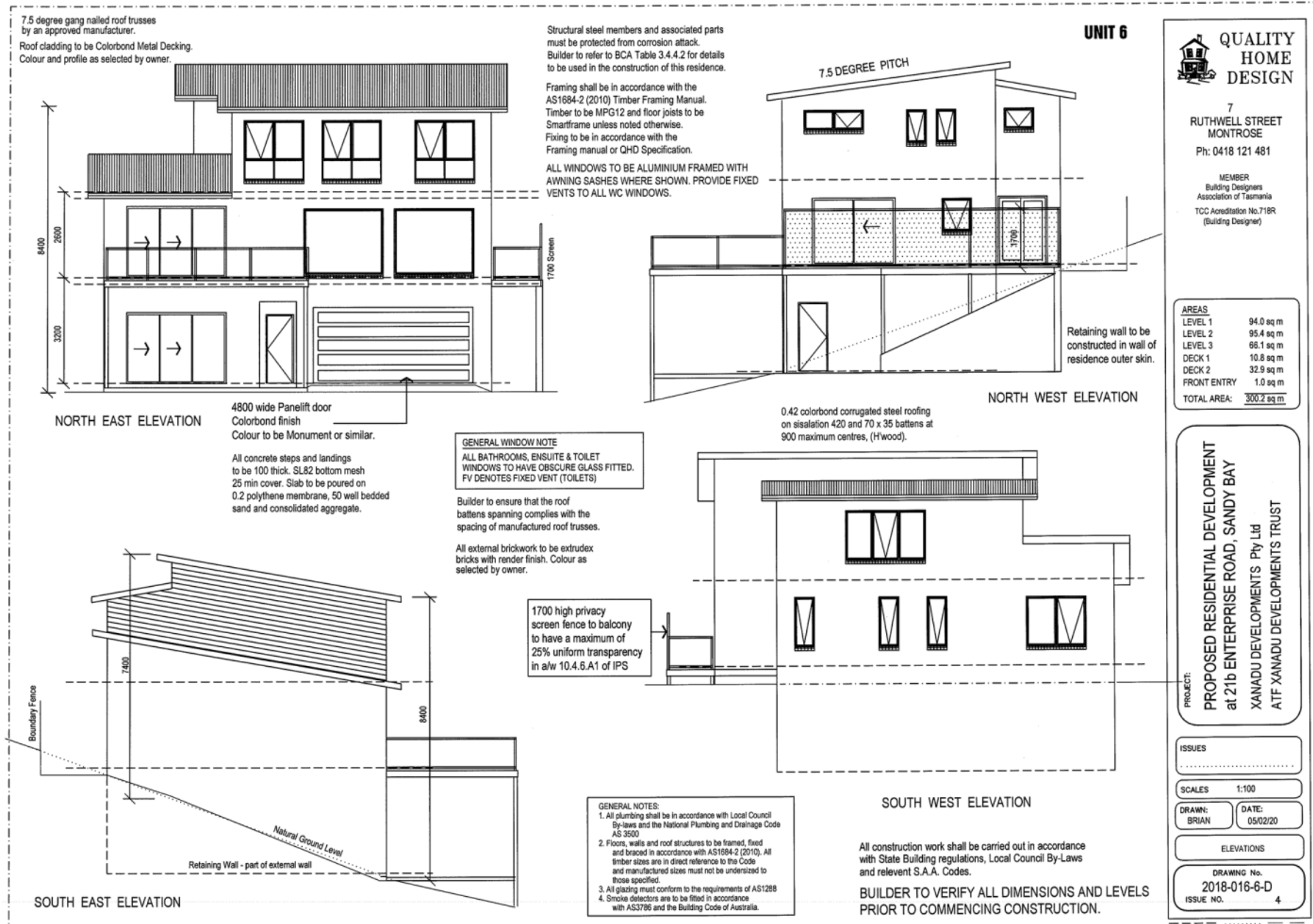
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DRAWN:
 BRIAN

DATE:
 05/02/20

LEVEL 3 FLOOR PLAN

DRAWING No.
2018-016-6-C
ISSUE NO. 4



ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING TO BE AS PER FRAMING MANUAL LOAD TABLES. GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 35 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts must be protected from corrosion attack. Builder to refer to BCA Table 3.4.4.2 for details to be used in the construction of this residence.

Framing shall be in accordance with the AS1684-2 (2010) Timber Framing Manual. Timber to be MPG12 and floor joists to be Smartframe unless noted otherwise. Fixing to be in accordance with the Framing manual or QHD Specification.

GENERAL WINDOW NOTE

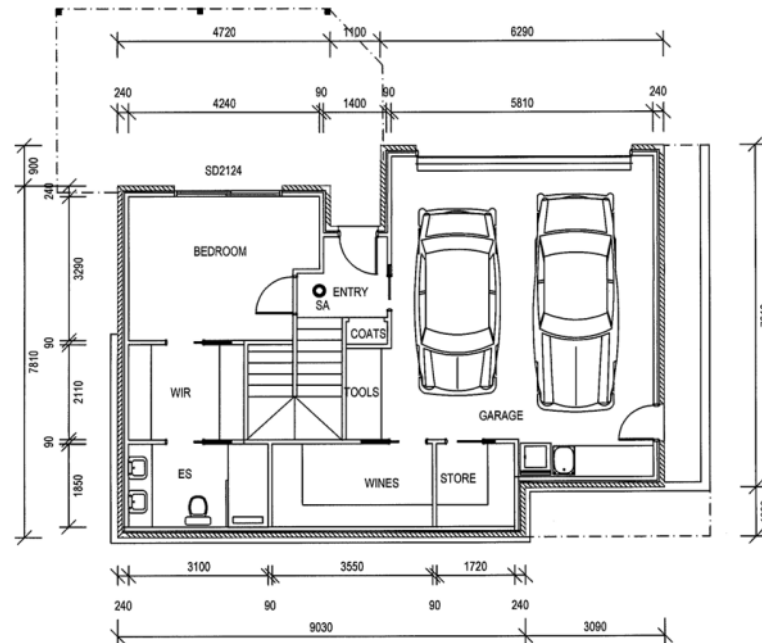
ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 7



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accredited No. 716R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.6 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	251.2 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 06/10/19

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-7-A
 ISSUE NO. 2

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lampanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

All external brickwork to be extrudex bricks with render finish. Colour as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

Where articulation joints are required, a gap of not less than 10mm must be provided.
 They are to be located at the following locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
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0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

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All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

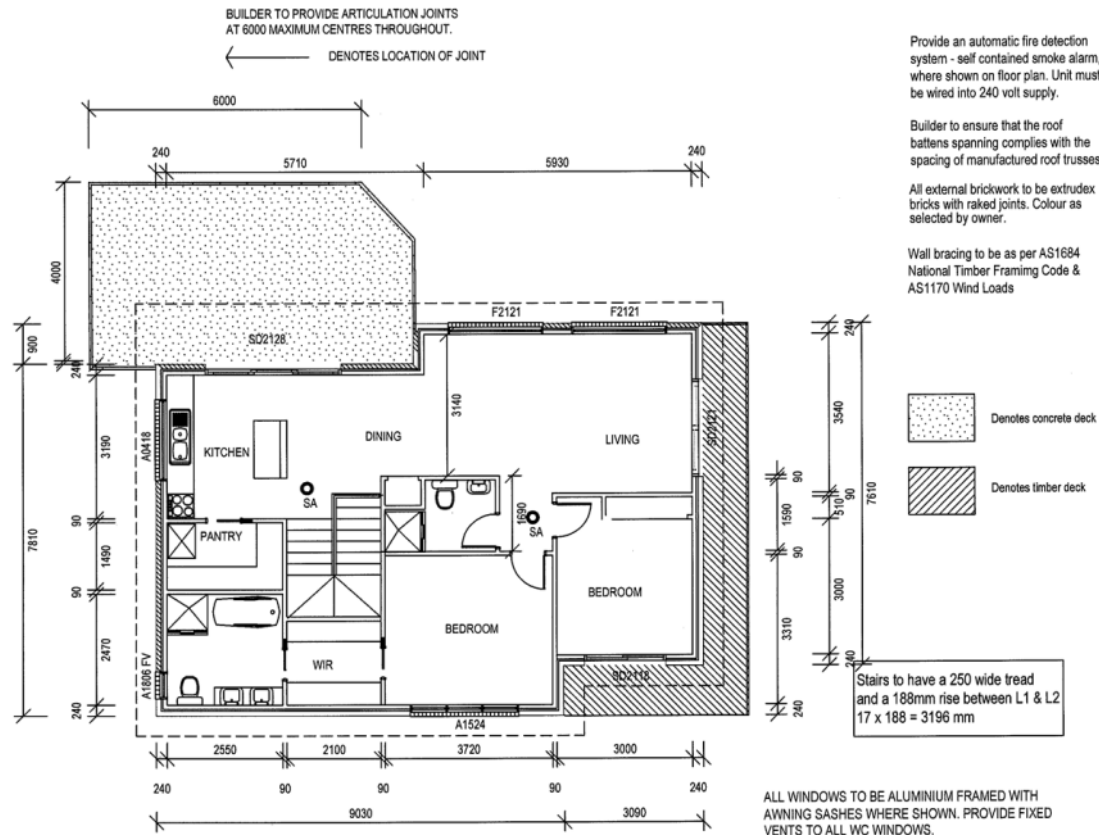
All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."



GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 7



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.6 sq m
DECK 2	28.6 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	251.2 sq m

PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

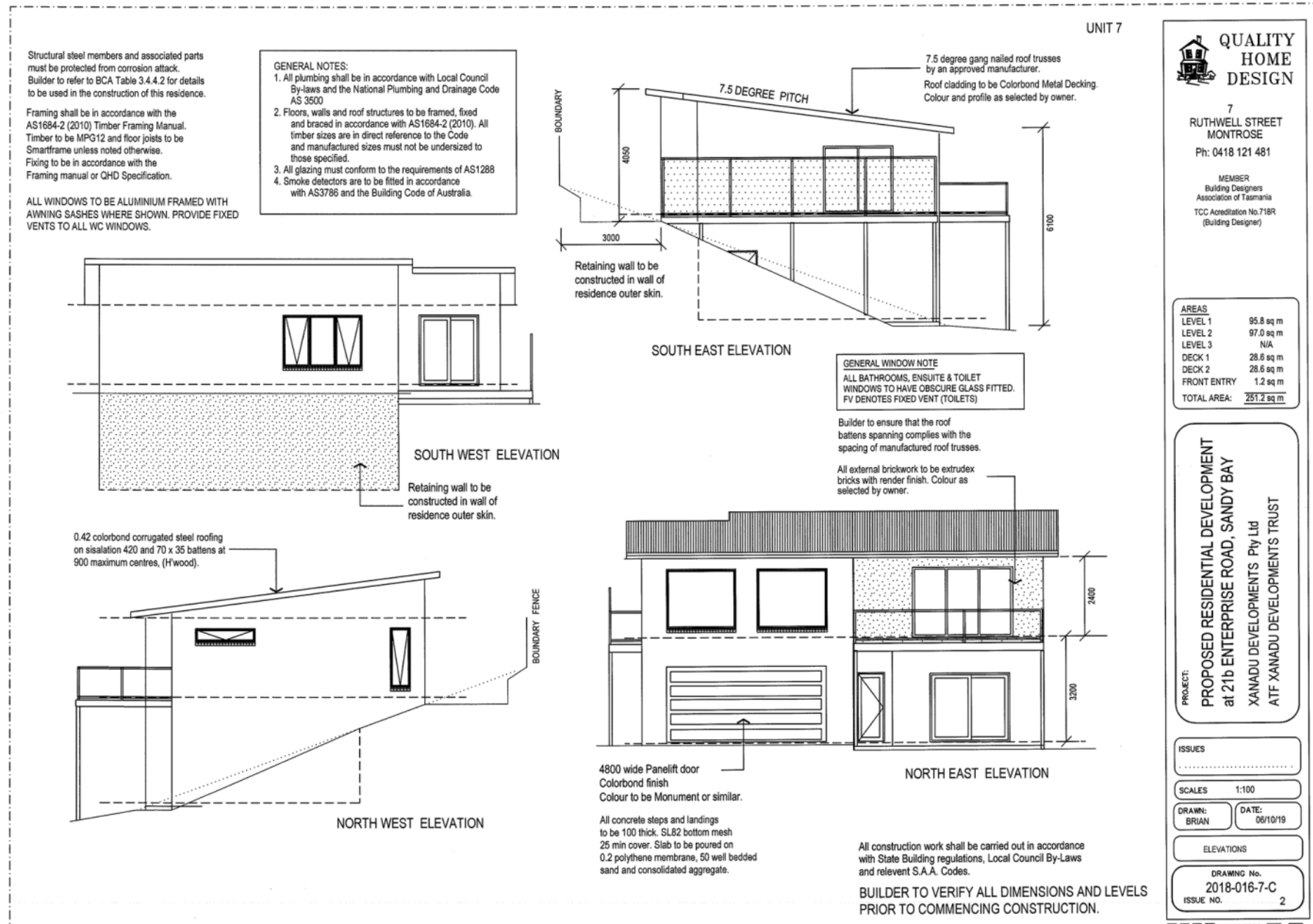
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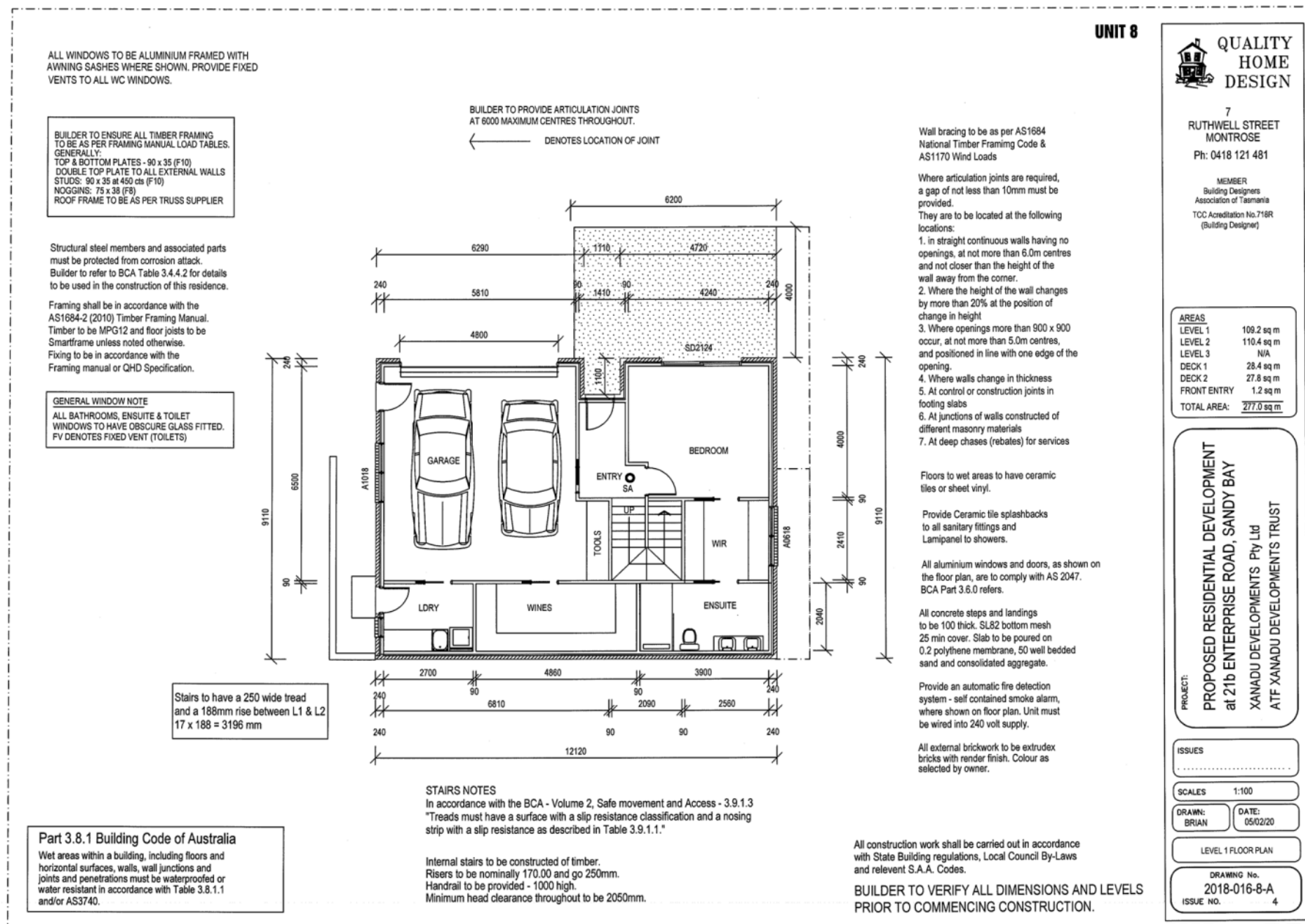
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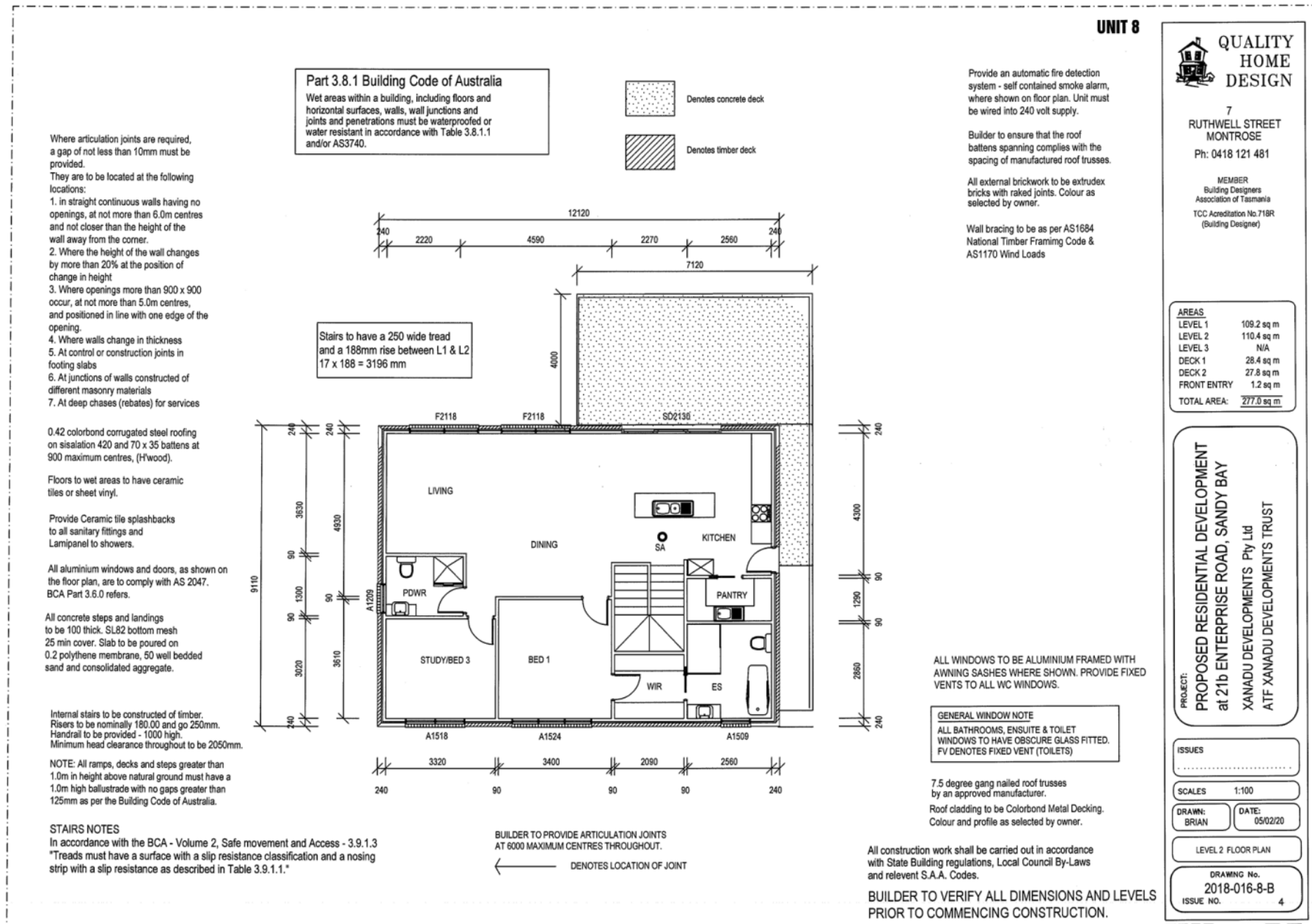
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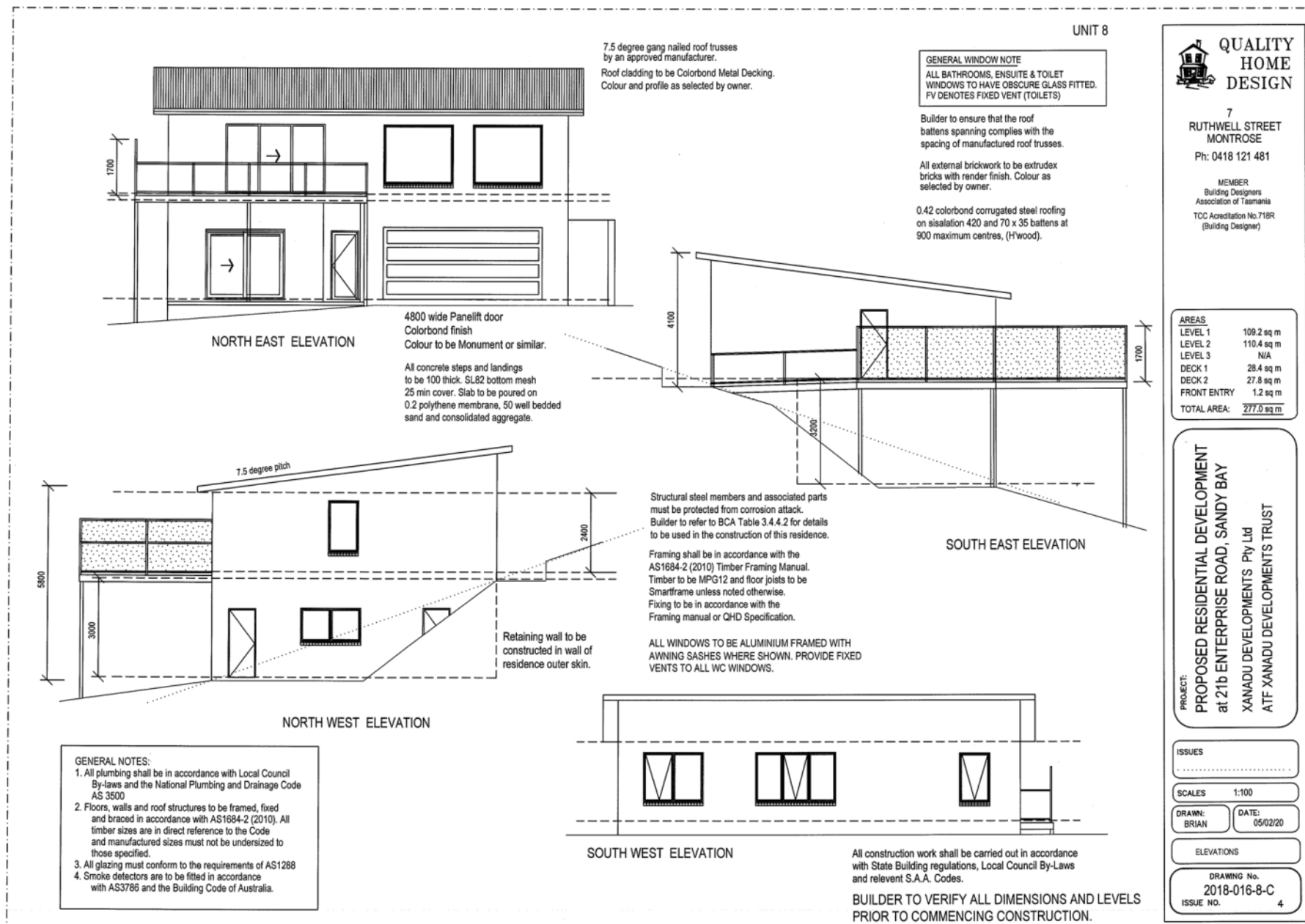
LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-7-B
 ISSUE NO. 2









ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

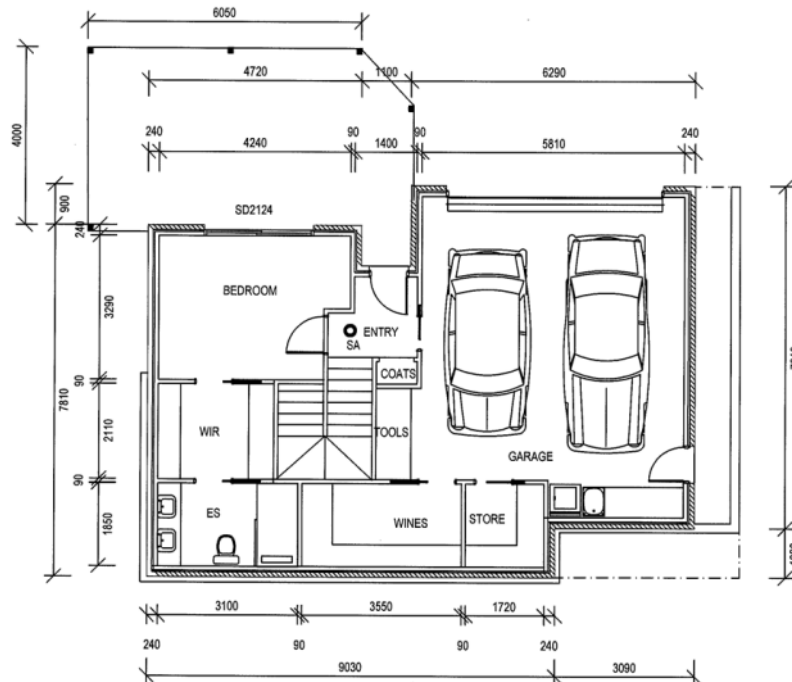
GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

UNIT 9



**QUALITY
 HOME
 DESIGN**

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	95.8 sq m
LEVEL 2	97.0 sq m
LEVEL 3	N/A
DECK 1	28.4 sq m
DECK 2	28.4 sq m
FRONT ENTRY	1.2 sq m
TOTAL AREA:	250.8 sq m

Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.
 They are to be located at the following
 locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruder
 bricks with render finish. Colour as
 selected by owner.

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

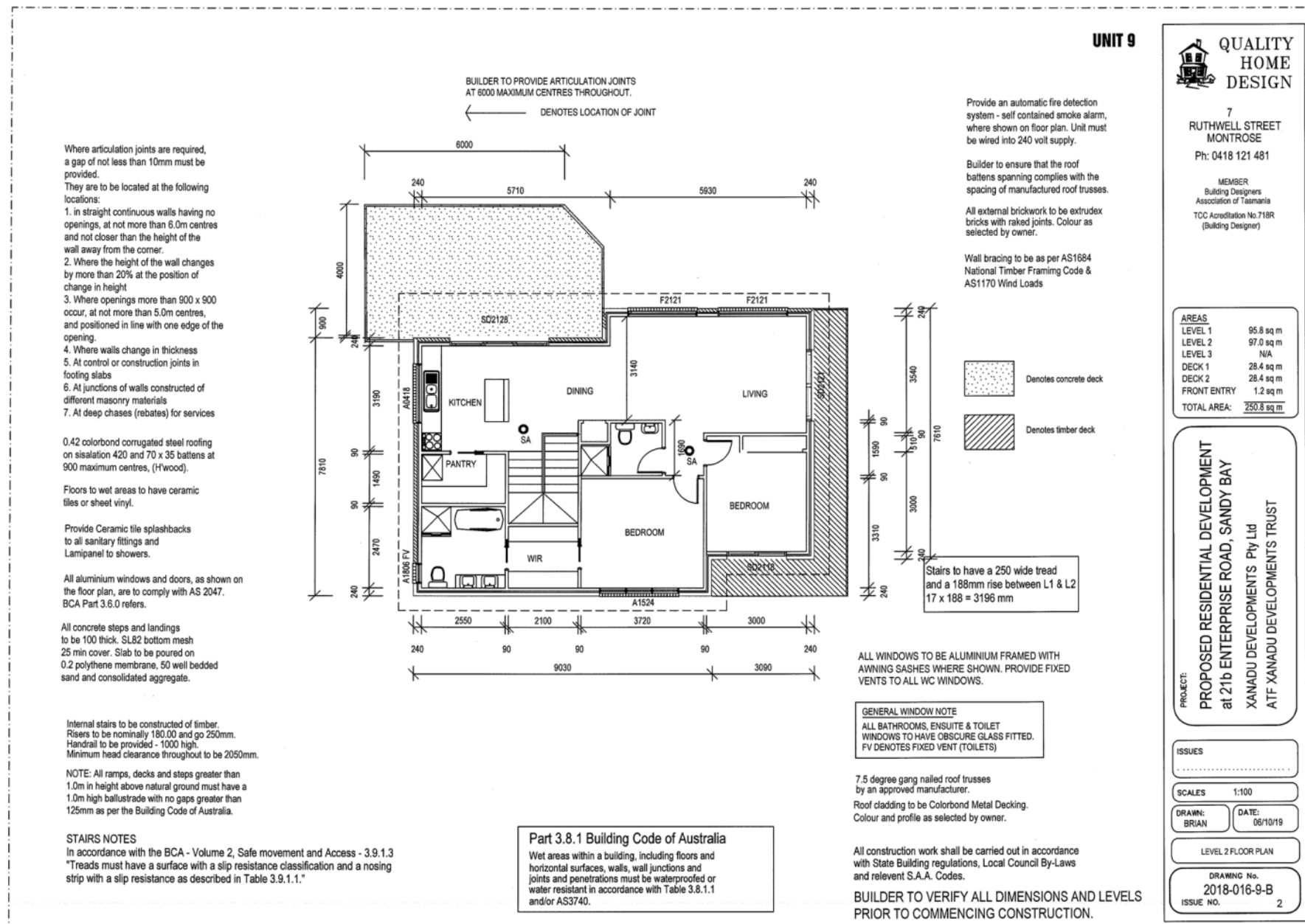
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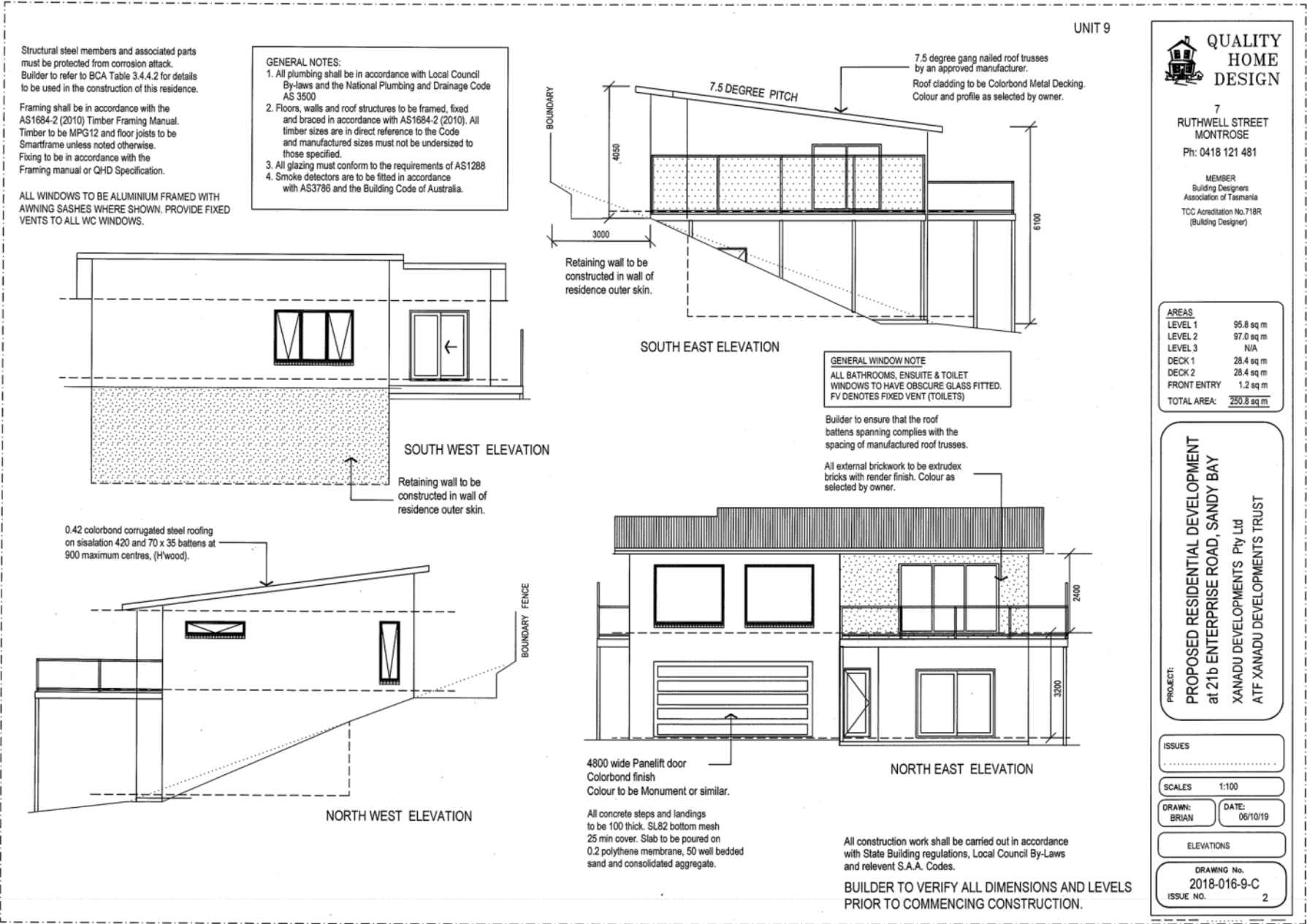
DRAWN:
 BRIAN

DATE:
 06/10/19

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-9-A
 ISSUE NO. 2





Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

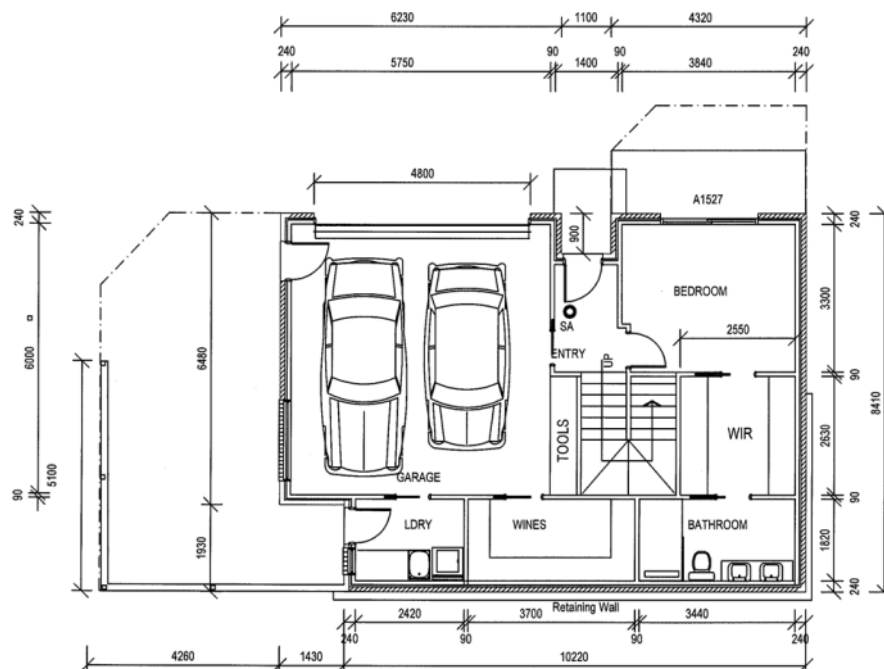
All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruded
 bricks with render finish. Colour as
 selected by owner.

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.



STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT

UNIT 10

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)

Stairs to have a 250 wide tread
 and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accredited No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
**PROPOSED RESIDENTIAL DEVELOPMENT
 at 21b ENTERPRISE ROAD, SANDY BAY**
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN: BRIAN

DATE:
 06/10/19

LEVEL 1 FLOOR PLAN

DRAWING No.
 2018-016-10-A
 ISSUE NO. 3

All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.

Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

BUILDER TO PROVIDE ARTICULATION JOINTS AT 6000 MAXIMUM CENTRES THROUGHOUT.

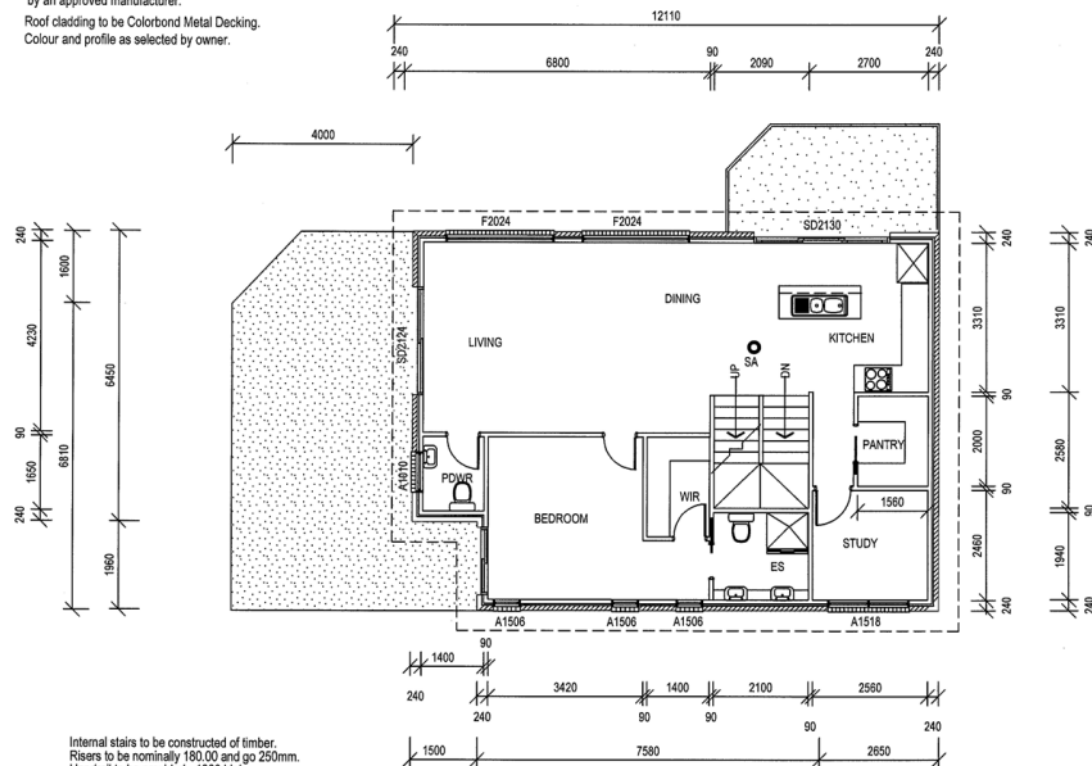
← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck



Internal stairs to be constructed of timber. Risers to be nominally 180.00 and go 250mm. Handrail to be provided - 1000 high. Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high balustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3 "Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.

Stairs to have a 250 wide tread and a 188mm rise between L1 & L2
 17 x 188 = 3196 mm

Where articulation joints are required, a gap of not less than 10mm must be provided.

They are to be located at the following locations:

1. In straight continuous walls having no openings, at not more than 6.0m centres and not closer than the height of the wall away from the corner.
2. Where the height of the wall changes by more than 20% at the position of change in height
3. Where openings more than 900 x 900 occur, at not more than 5.0m centres, and positioned in line with one edge of the opening.
4. Where walls change in thickness
5. At control or construction joints in footing slabs
6. At junctions of walls constructed of different masonry materials
7. At deep chases (rebates) for services

0.42 colorbond corrugated steel roofing on sialation 420 and 70 x 35 battens at 900 maximum centres, (Hwood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lamipanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

All concrete steps and landings to be 100 thick. SL82 bottom mesh 25 min cover. Slab to be poured on 0.2 polythene membrane, 50 well bedded sand and consolidated aggregate.

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

All external brickwork to be extrudex bricks with raked joints. Colour as selected by owner.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

UNIT 10



QUALITY HOME DESIGN

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	66.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
 XANADU DEVELOPMENTS Pty Ltd
 ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

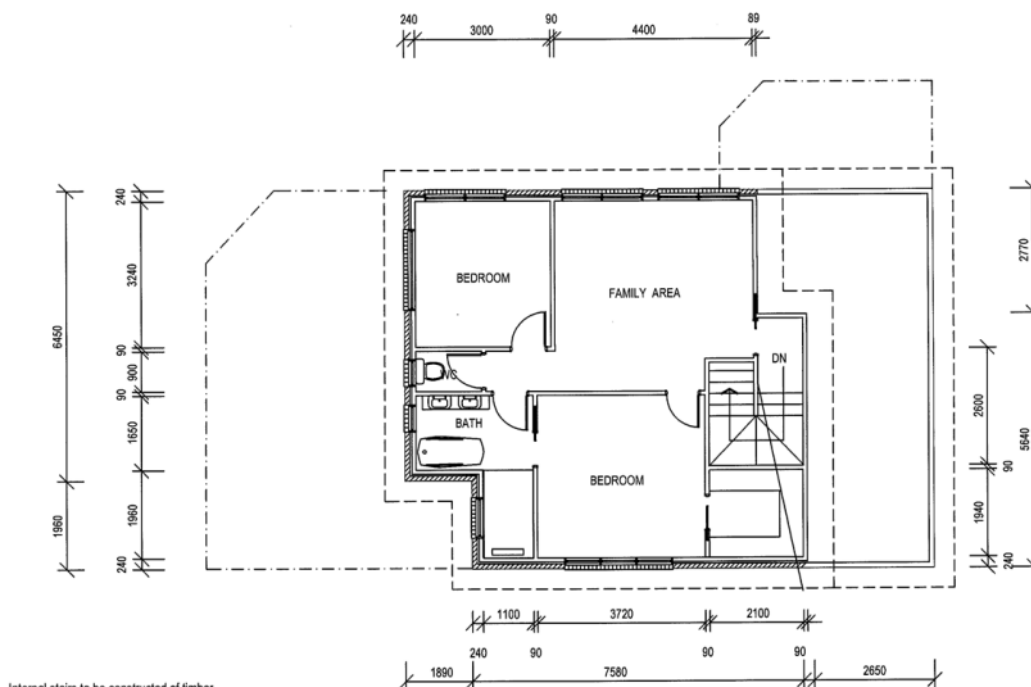
DATE:
 06/10/19

LEVEL 2 FLOOR PLAN

DRAWING No.
 2018-016-10-B
 ISSUE NO. 2

Part 3.8.1 Building Code of Australia

Wet areas within a building, including floors and horizontal surfaces, walls, wall junctions and joints and penetrations must be waterproofed or water resistant in accordance with Table 3.8.1.1 and/or AS3740.



Internal stairs to be constructed of timber.
 Risers to be nominally 160.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.

NOTE: All ramps, decks and steps greater than 1.0m in height above natural ground must have a 1.0m high ballustrade with no gaps greater than 125mm as per the Building Code of Australia.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 *Treads must have a surface with a slip resistance classification and a nosing strip with a slip resistance as described in Table 3.9.1.1."

UNIT 10

7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

Provide an automatic fire detection system - self contained smoke alarm, where shown on floor plan. Unit must be wired into 240 volt supply.

Builder to ensure that the roof battens spanning complies with the spacing of manufactured roof trusses.

Wall bracing to be as per AS1684 National Timber Framing Code & AS1170 Wind Loads

0.42 colorbond corrugated steel roofing on sisalation 420 and 70 x 35 battens at 900 maximum centres, (H'wood).

Floors to wet areas to have ceramic tiles or sheet vinyl.

Provide Ceramic tile splashbacks to all sanitary fittings and Lampanel to showers.

All aluminium windows and doors, as shown on the floor plan, are to comply with AS 2047. BCA Part 3.6.0 refers.

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH AWNING SASHES WHERE SHOWN. PROVIDE FIXED VENTS TO ALL WC WINDOWS.

GENERAL WINDOW NOTE
 ALL BATHROOMS, ENSUITE & TOILET WINDOWS TO HAVE OBSCURE GLASS FITTED. FV DENOTES FIXED VENT (TOILETS)

7.5 degree gang nailed roof trusses by an approved manufacturer.
 Roof cladding to be Colorbond Metal Decking. Colour and profile as selected by owner.

All construction work shall be carried out in accordance with State Building regulations, Local Council By-Laws and relevant S.A.A. Codes.

BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO COMMENCING CONSTRUCTION.

AREAS	
LEVEL 1	94.0 sq m
LEVEL 2	95.4 sq m
LEVEL 3	96.1 sq m
DECK 1	10.8 sq m
DECK 2	32.9 sq m
FRONT ENTRY	1.0 sq m
TOTAL AREA:	300.2 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

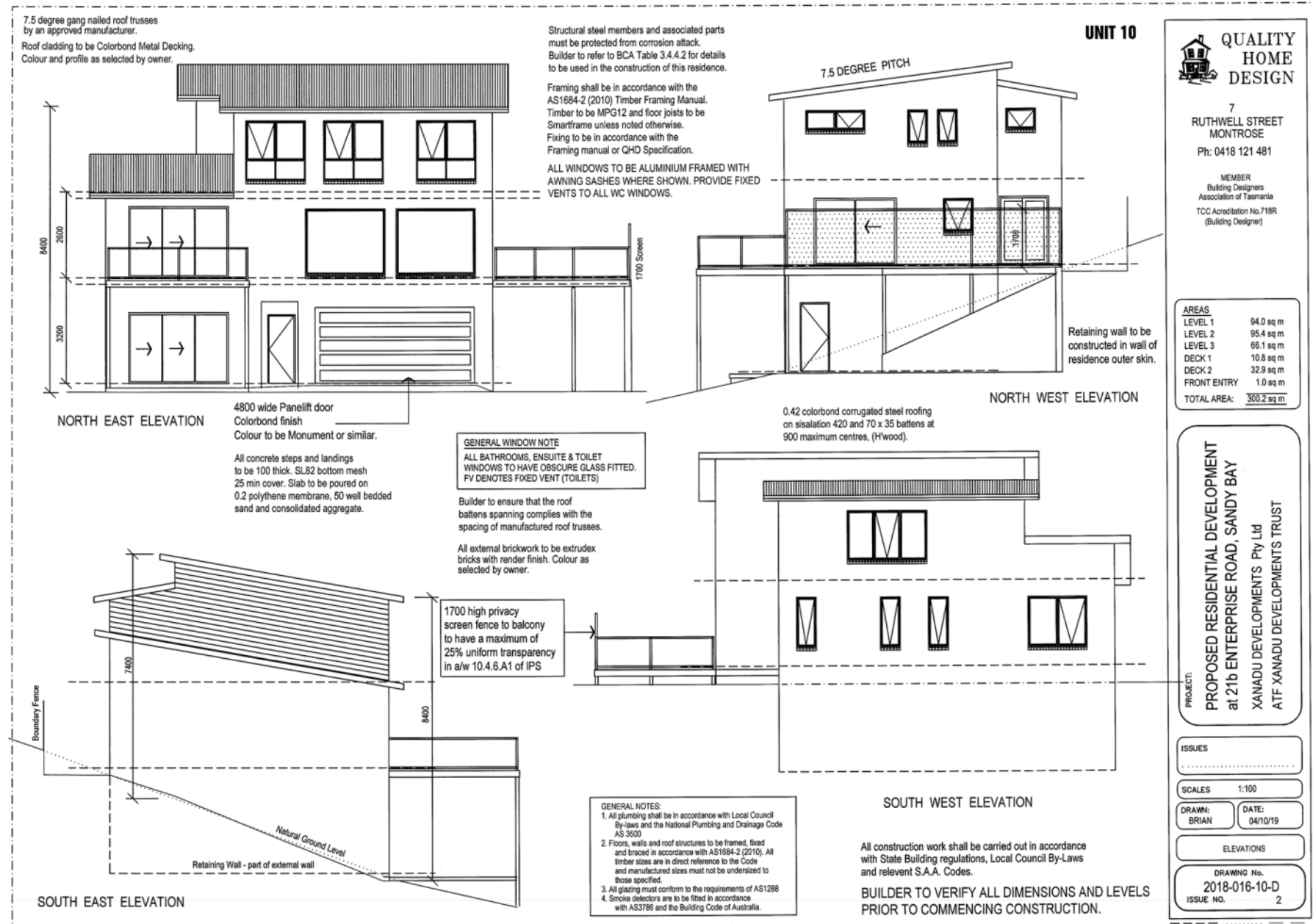
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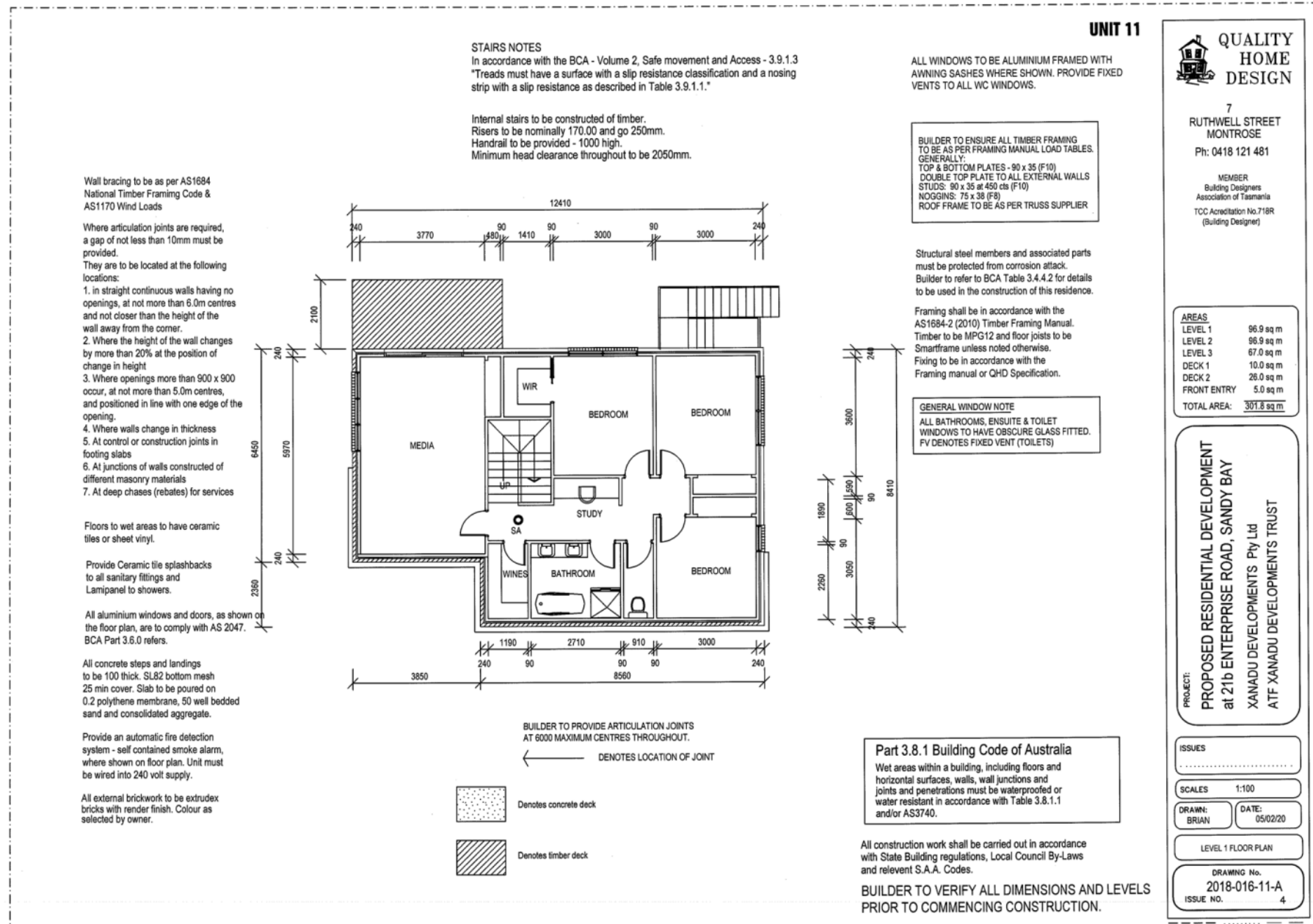
DRAWN:
 BRIAN

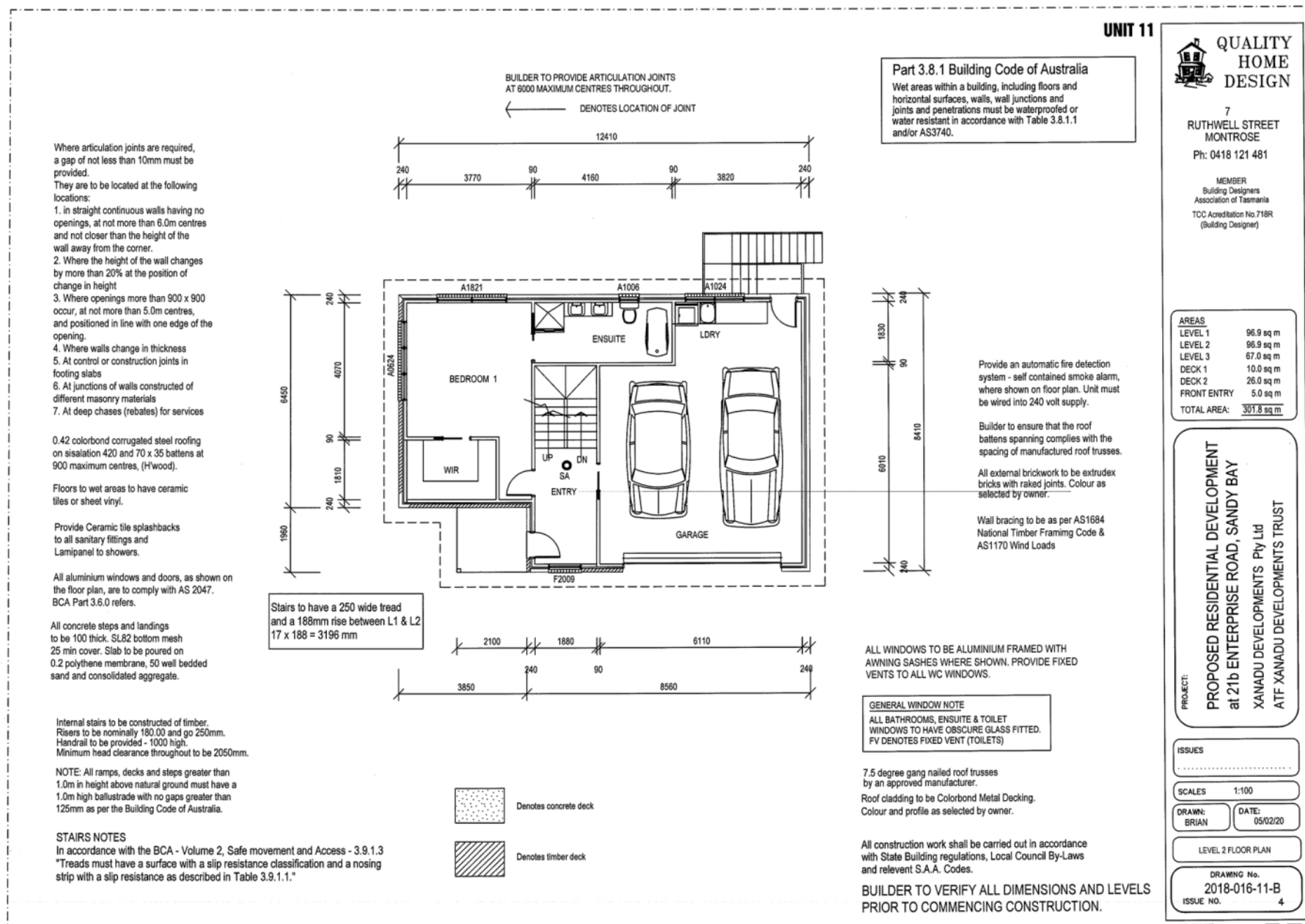
DATE:
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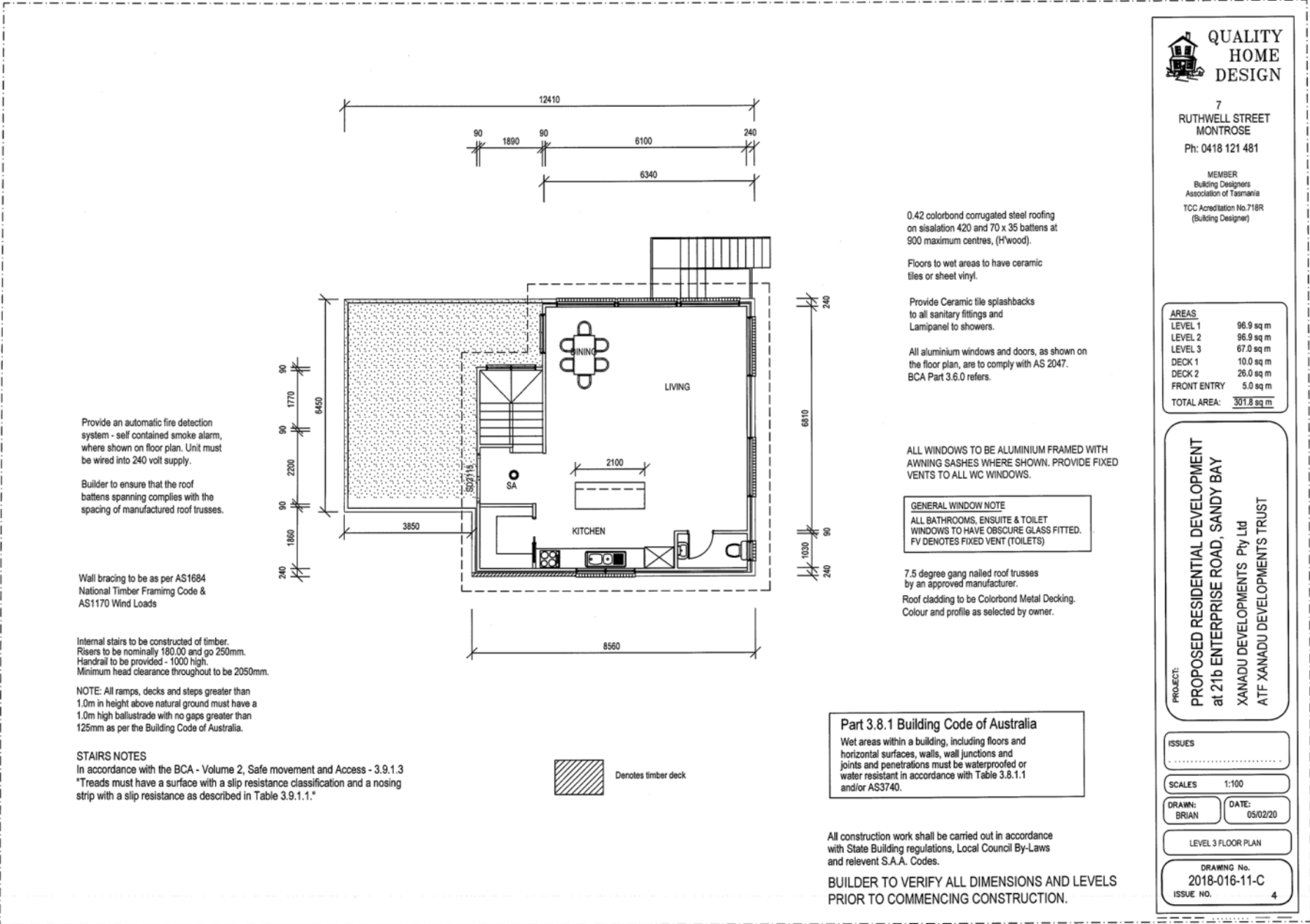
LEVEL 3 FLOOR PLAN

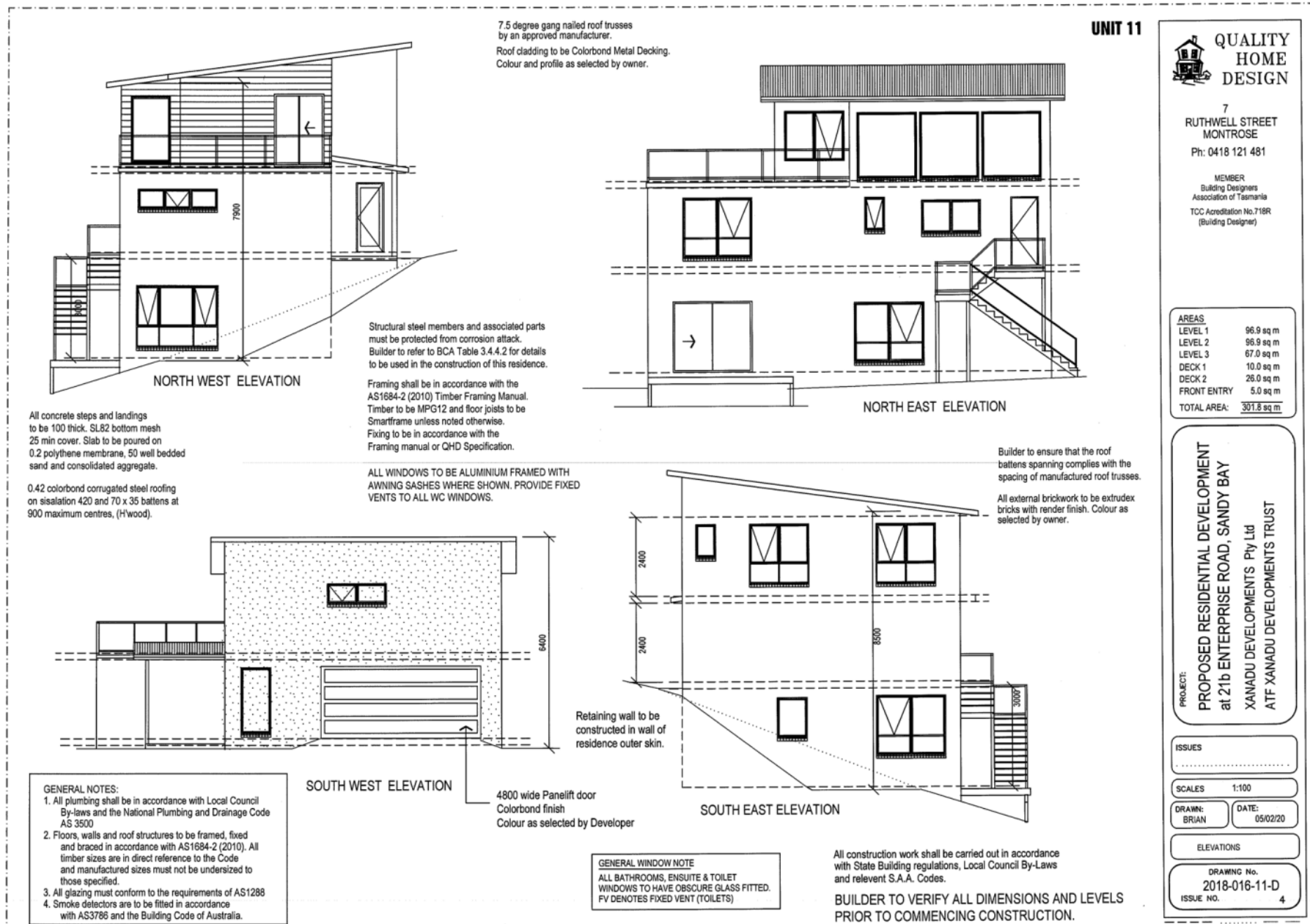
DRAWING No.
 2018-016-10-C
ISSUE NO. 2











Wall bracing to be as per AS1684
 National Timber Framing Code &
 AS1170 Wind Loads

Where articulation joints are required,
 a gap of not less than 10mm must be
 provided.

They are to be located at the following
 locations:

1. in straight continuous walls having no
 openings, at not more than 6.0m centres
 and not closer than the height of the
 wall away from the corner.
2. Where the height of the wall changes
 by more than 20% at the position of
 change in height
3. Where openings more than 900 x 900
 occur, at not more than 5.0m centres,
 and positioned in line with one edge of the
 opening.
4. Where walls change in thickness
5. At control or construction joints in
 footing slabs
6. At junctions of walls constructed of
 different masonry materials
7. At deep chases (rebates) for services

Floors to wet areas to have ceramic
 tiles or sheet vinyl.

Provide Ceramic tile splashbacks
 to all sanitary fittings and
 Lamipanel to showers.

All aluminium windows and doors, as shown on
 the floor plan, are to comply with AS 2047.
 BCA Part 3.6.0 refers.

All concrete steps and landings
 to be 100 thick. SL82 bottom mesh
 25 min cover. Slab to be poured on
 0.2 polythene membrane, 50 well bedded
 sand and consolidated aggregate.

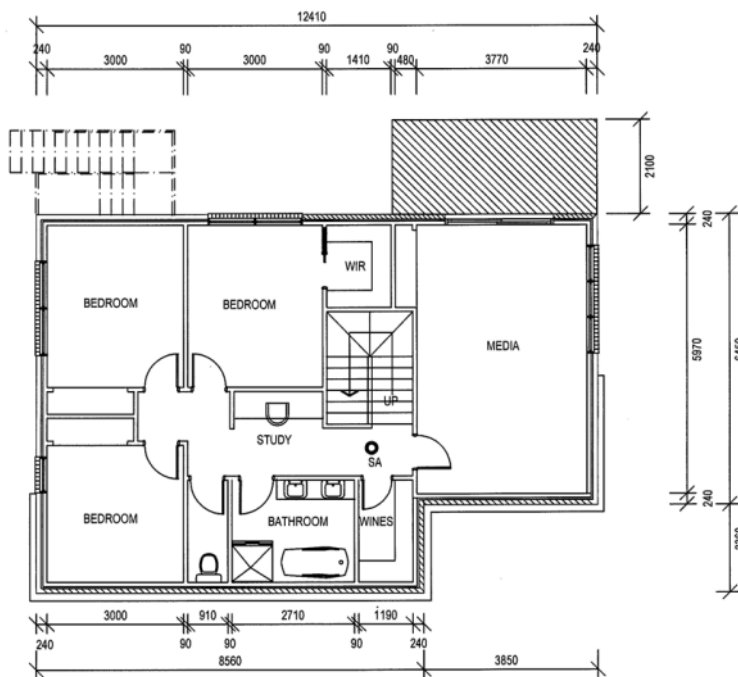
Provide an automatic fire detection
 system - self contained smoke alarm,
 where shown on floor plan. Unit must
 be wired into 240 volt supply.

All external brickwork to be extruded
 bricks with render finish. Colour as
 selected by owner.

STAIRS NOTES

In accordance with the BCA - Volume 2, Safe movement and Access - 3.9.1.3
 "Treads must have a surface with a slip resistance classification and a nosing
 strip with a slip resistance as described in Table 3.9.1.1."

Internal stairs to be constructed of timber.
 Risers to be nominally 170.00 and go 250mm.
 Handrail to be provided - 1000 high.
 Minimum head clearance throughout to be 2050mm.



BUILDER TO PROVIDE ARTICULATION JOINTS
 AT 6000 MAXIMUM CENTRES THROUGHOUT.

← DENOTES LOCATION OF JOINT



Denotes concrete deck



Denotes timber deck

UNIT 12

ALL WINDOWS TO BE ALUMINIUM FRAMED WITH
 AWNING SASHES WHERE SHOWN. PROVIDE FIXED
 VENTS TO ALL WC WINDOWS.

BUILDER TO ENSURE ALL TIMBER FRAMING
 TO BE AS PER FRAMING MANUAL LOAD TABLES.
 GENERALLY:
 TOP & BOTTOM PLATES - 90 x 35 (F10)
 DOUBLE TOP PLATE TO ALL EXTERNAL WALLS
 STUDS: 90 x 35 at 450 cts (F10)
 NOGGINS: 75 x 38 (F8)
 ROOF FRAME TO BE AS PER TRUSS SUPPLIER

Structural steel members and associated parts
 must be protected from corrosion attack.
 Builder to refer to BCA Table 3.4.4.2 for details
 to be used in the construction of this residence.

Framing shall be in accordance with the
 AS1684-2 (2010) Timber Framing Manual.
 Timber to be MPG12 and floor joists to be
 Smartframe unless noted otherwise.
 Fixing to be in accordance with the
 Framing manual or QHD Specification.

GENERAL WINDOW NOTE

ALL BATHROOMS, ENSUITE & TOILET
 WINDOWS TO HAVE OBSCURE GLASS FITTED.
 FV DENOTES FIXED VENT (TOILETS)



7
 RUTHWELL STREET
 MONTROSE
 Ph: 0418 121 481

MEMBER
 Building Designers
 Association of Tasmania
 TCC Accreditation No.718R
 (Building Designer)

AREAS	
LEVEL 1	96.9 sq m
LEVEL 2	96.9 sq m
LEVEL 3	67.0 sq m
DECK 1	10.0 sq m
DECK 2	28.0 sq m
FRONT ENTRY	5.0 sq m
TOTAL AREA:	301.8 sq m

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
at 21b ENTERPRISE ROAD, SANDY BAY
XANADU DEVELOPMENTS Pty Ltd
ATF XANADU DEVELOPMENTS TRUST

ISSUES

SCALES 1:100

DRAWN:
 BRIAN

DATE:
 05/02/20-

LEVEL 1 FLOOR PLAN

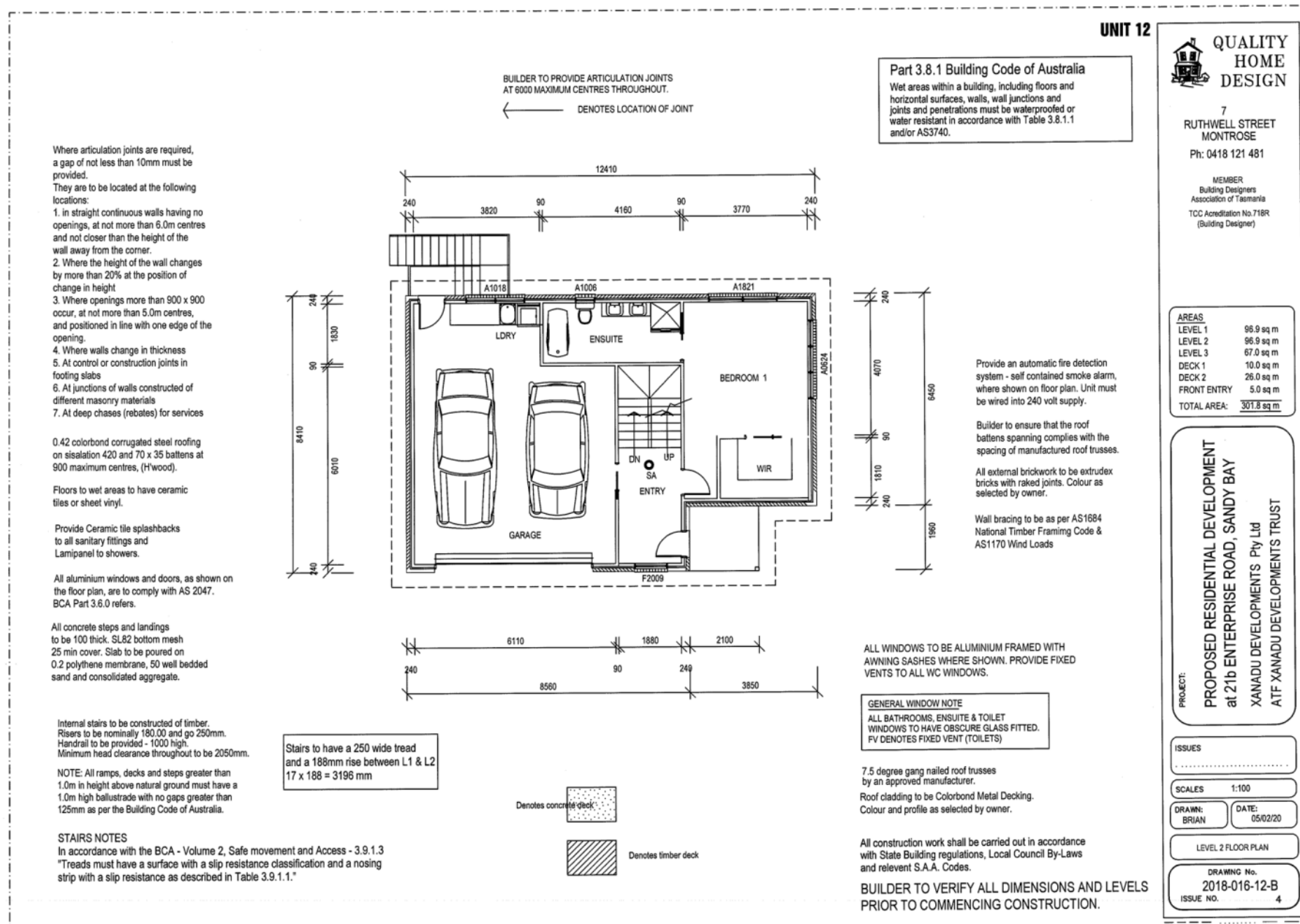
DRAWING No.
 2018-016-12-A
 ISSUE NO. 4

Part 3.8.1 Building Code of Australia

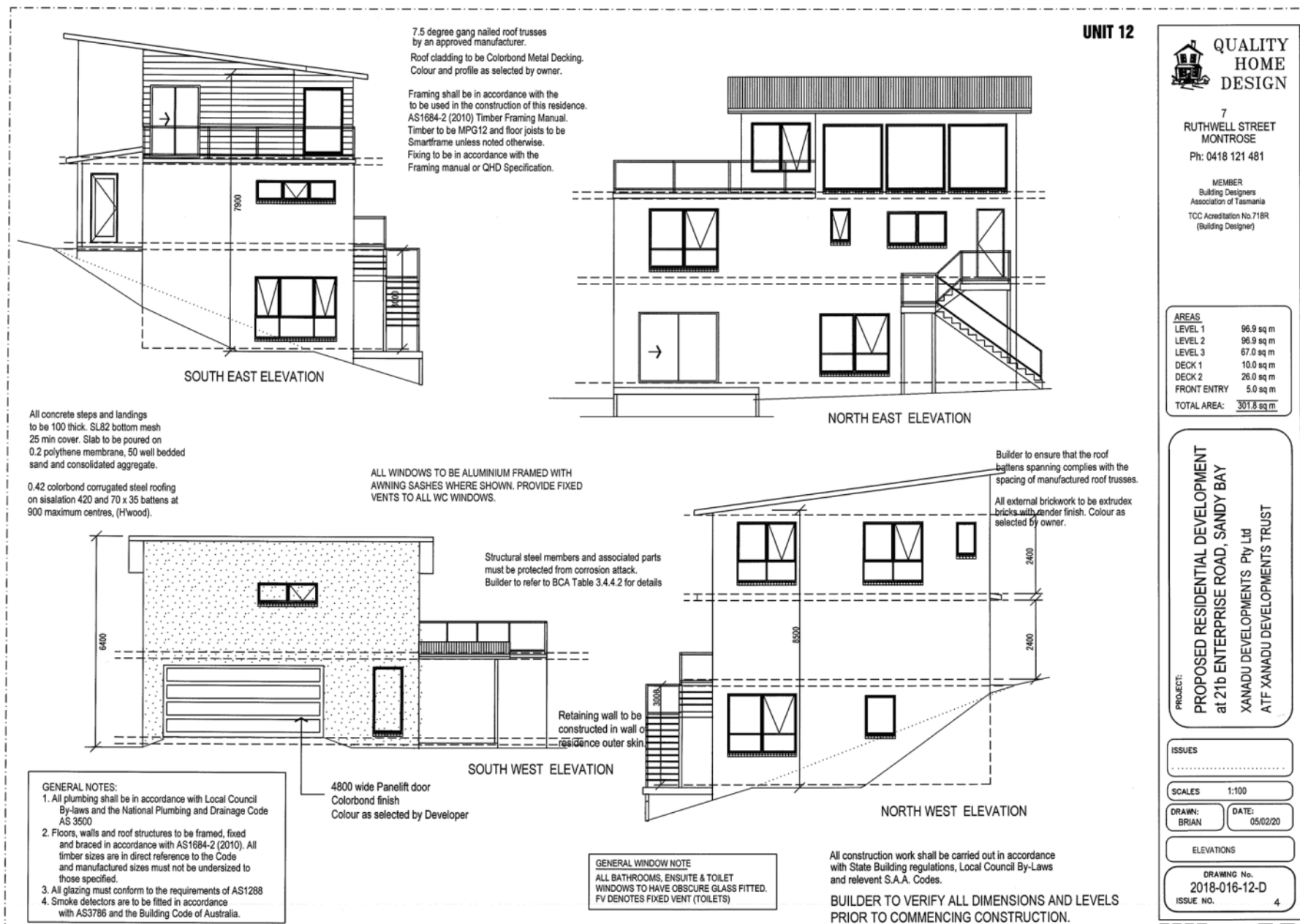
Wet areas within a building, including floors and
 horizontal surfaces, walls, wall junctions and
 joints and penetrations must be waterproofed or
 water resistant in accordance with Table 3.8.1.1
 and/or AS3740.

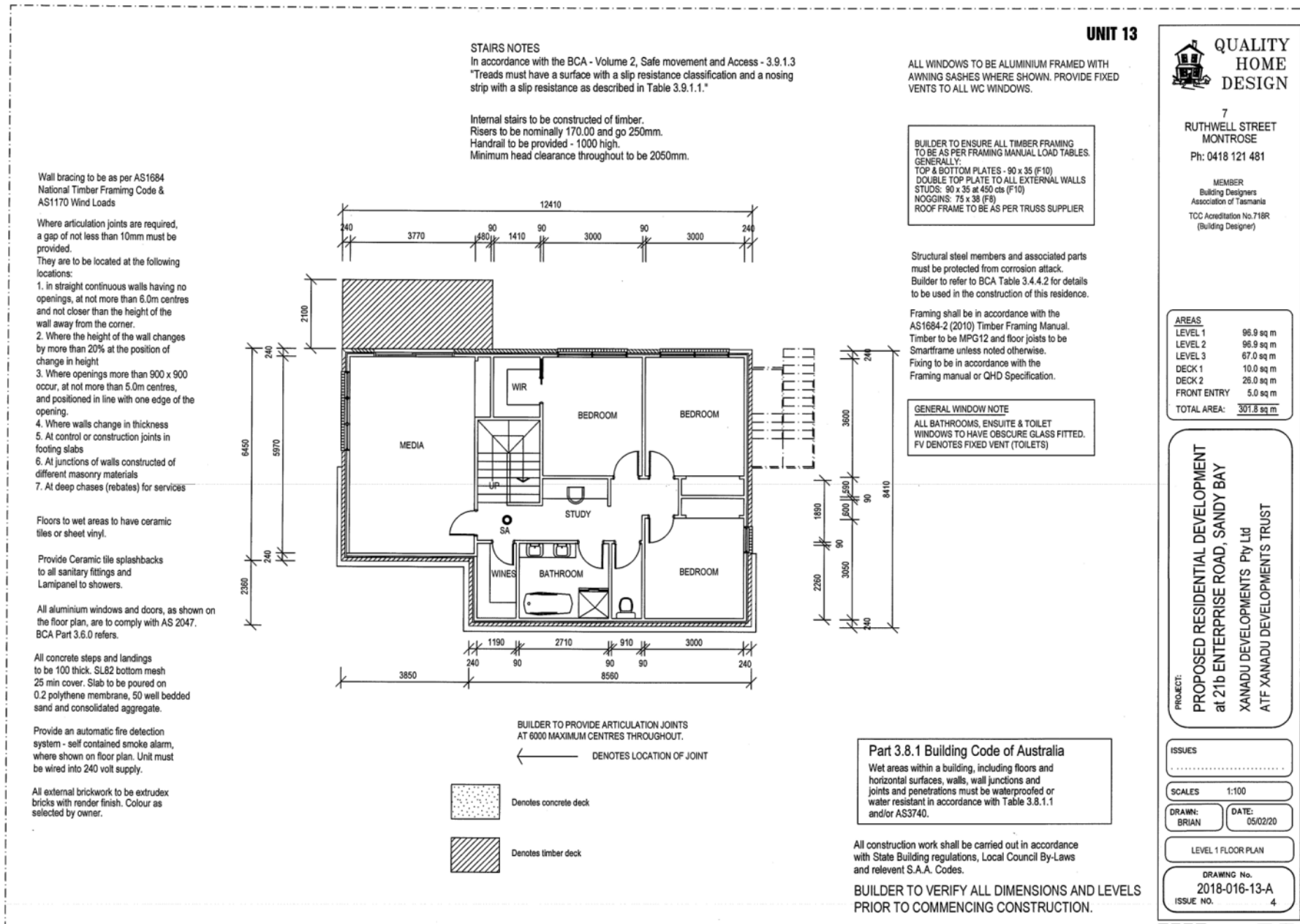
All construction work shall be carried out in accordance
 with State Building regulations, Local Council By-Laws
 and relevant S.A.A. Codes.

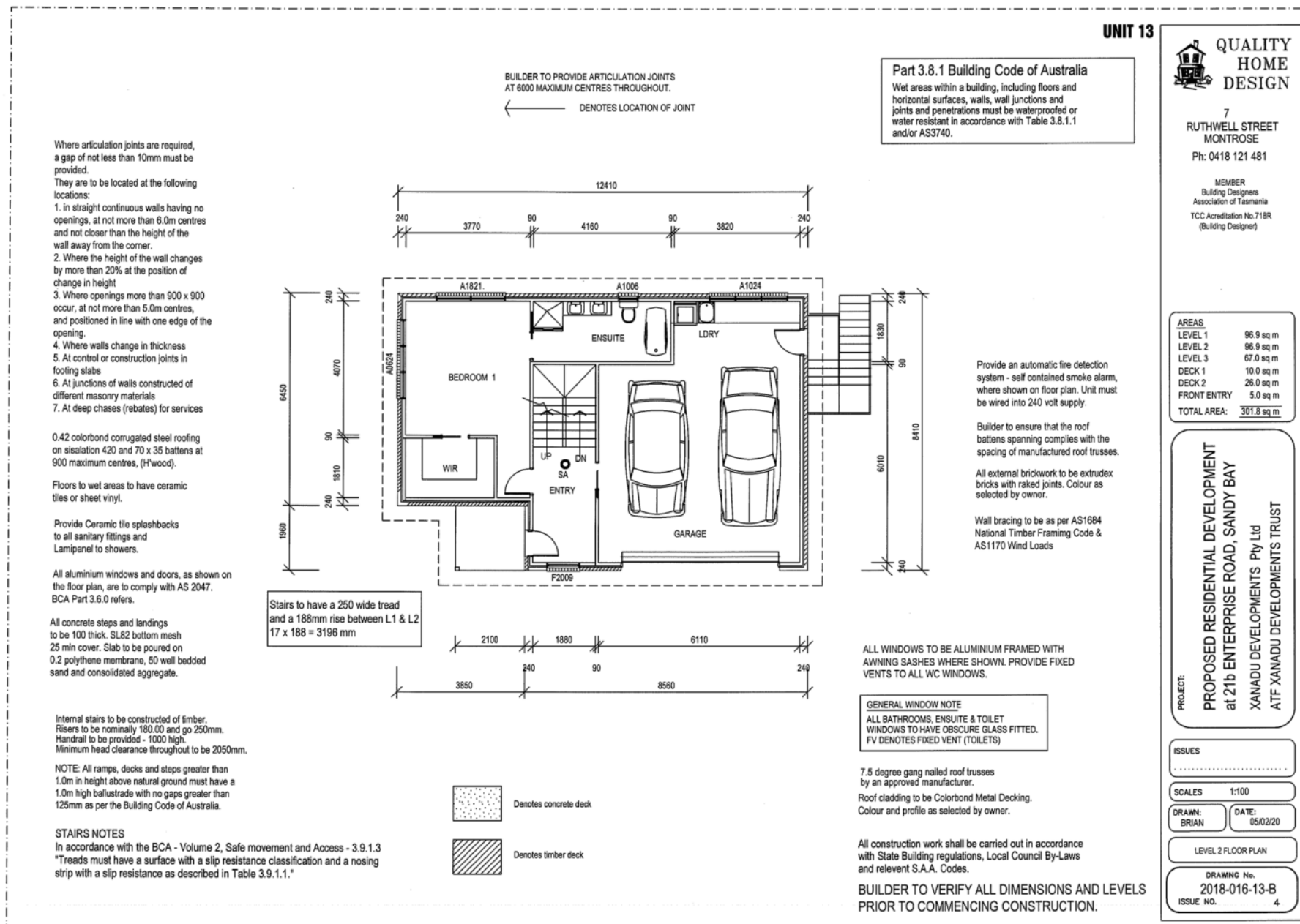
**BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS
 PRIOR TO COMMENCING CONSTRUCTION.**

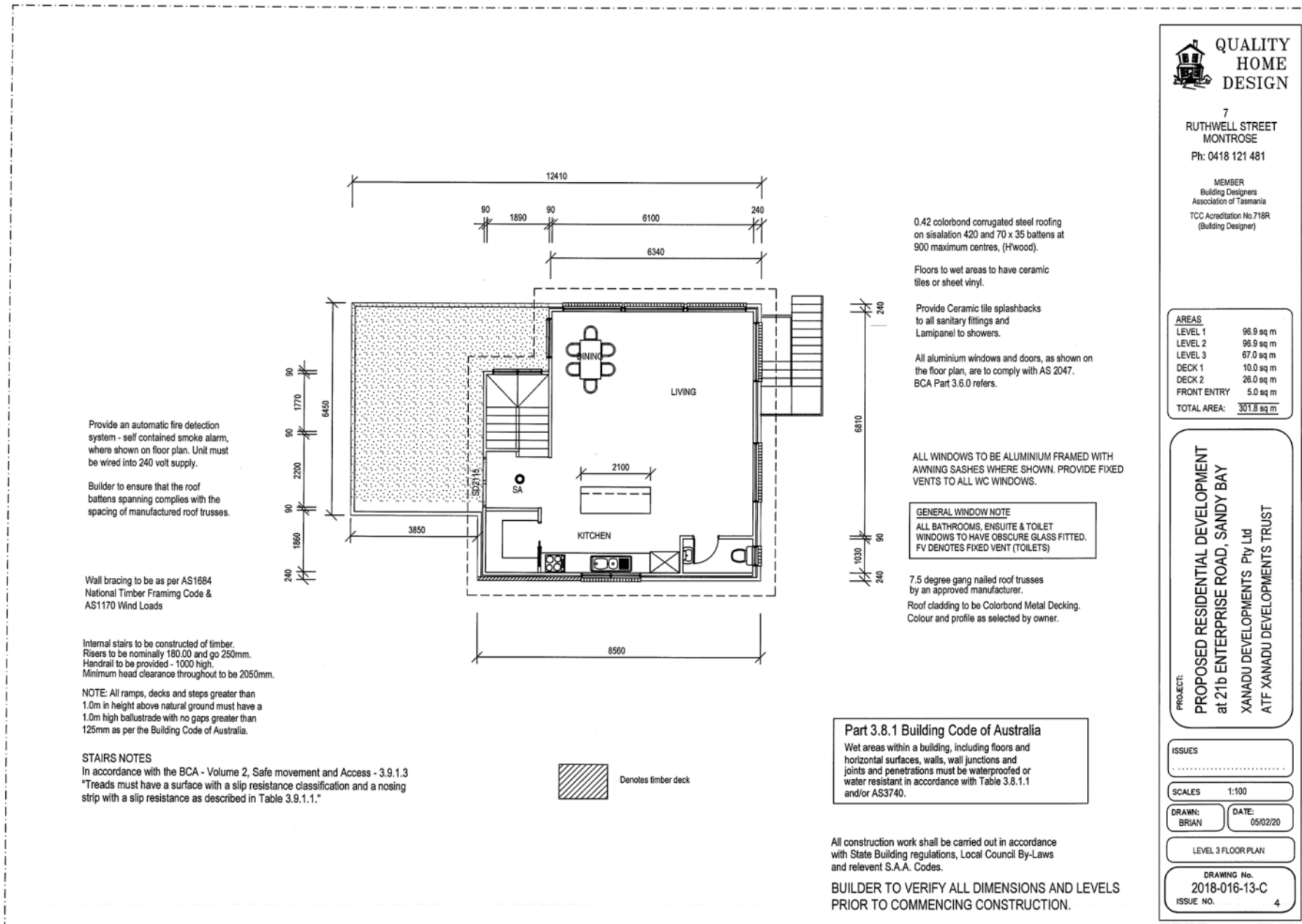


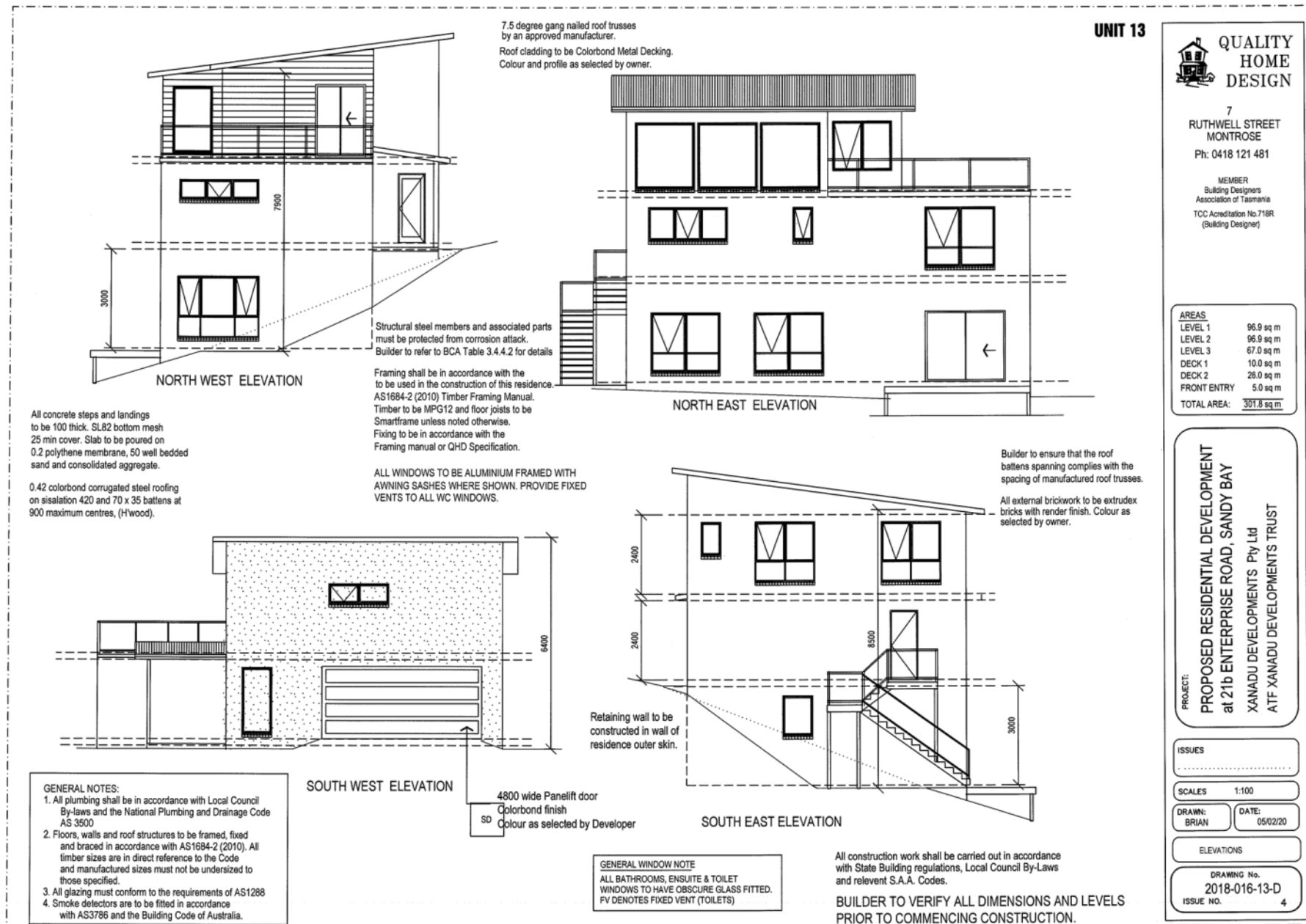


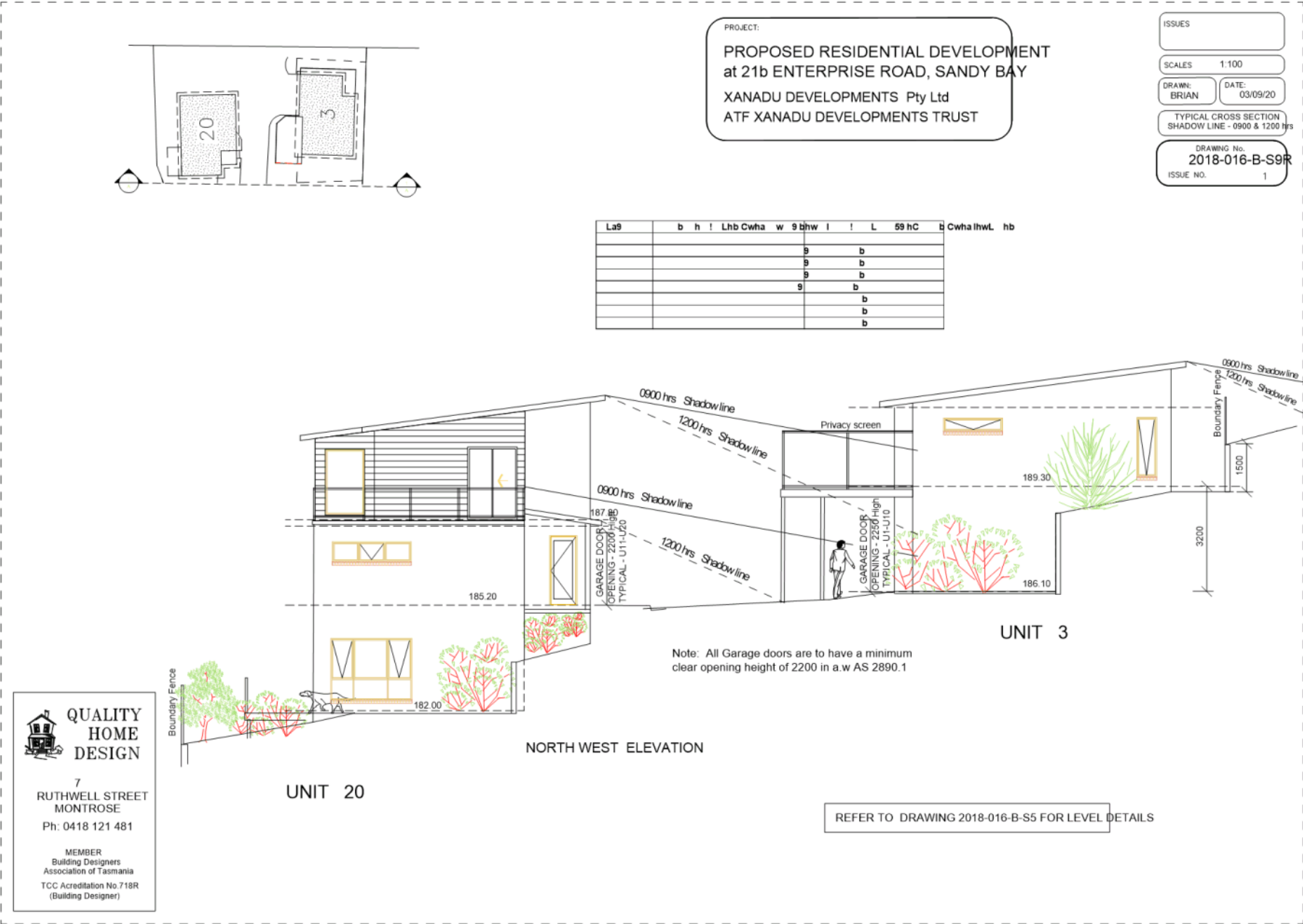


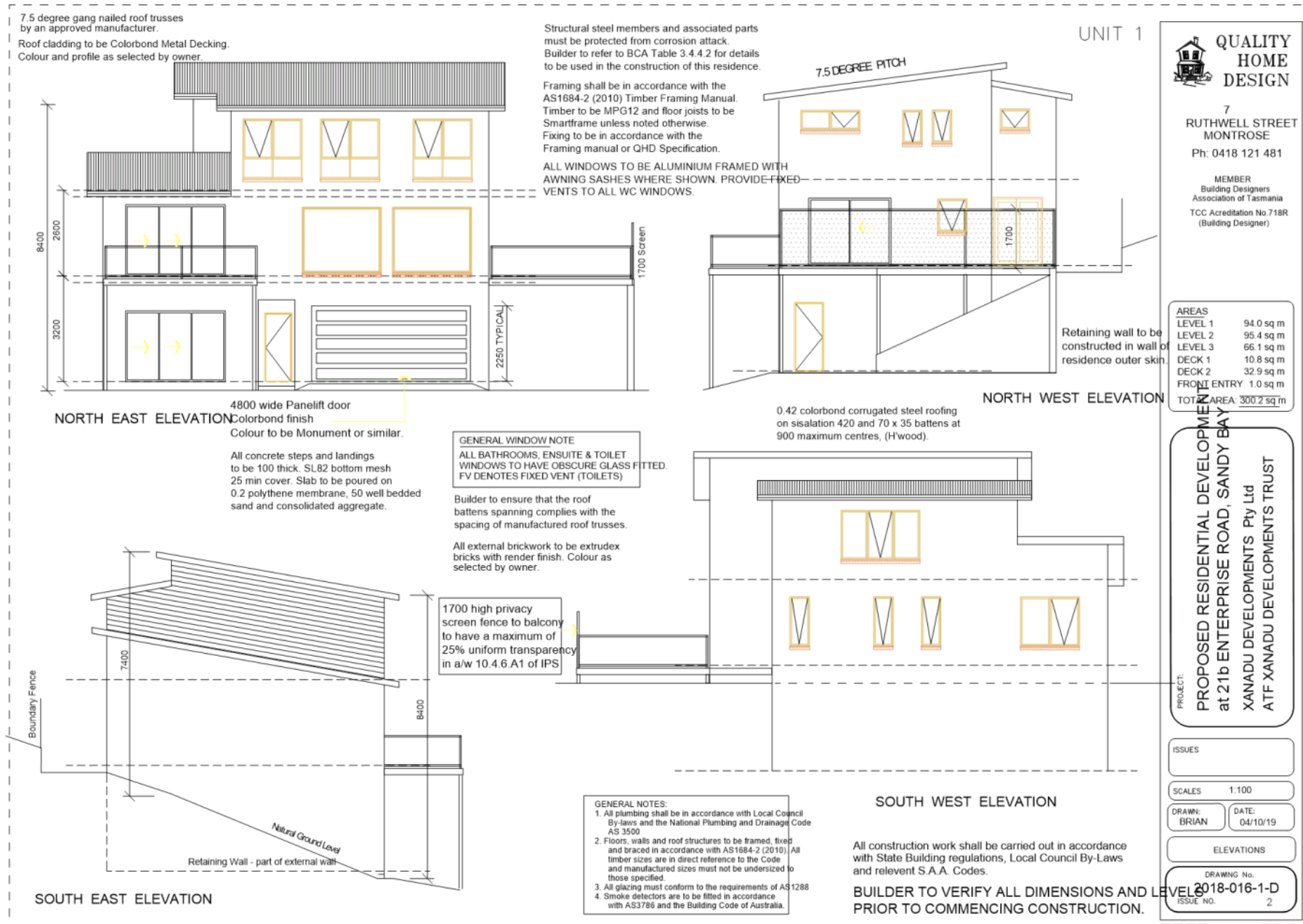


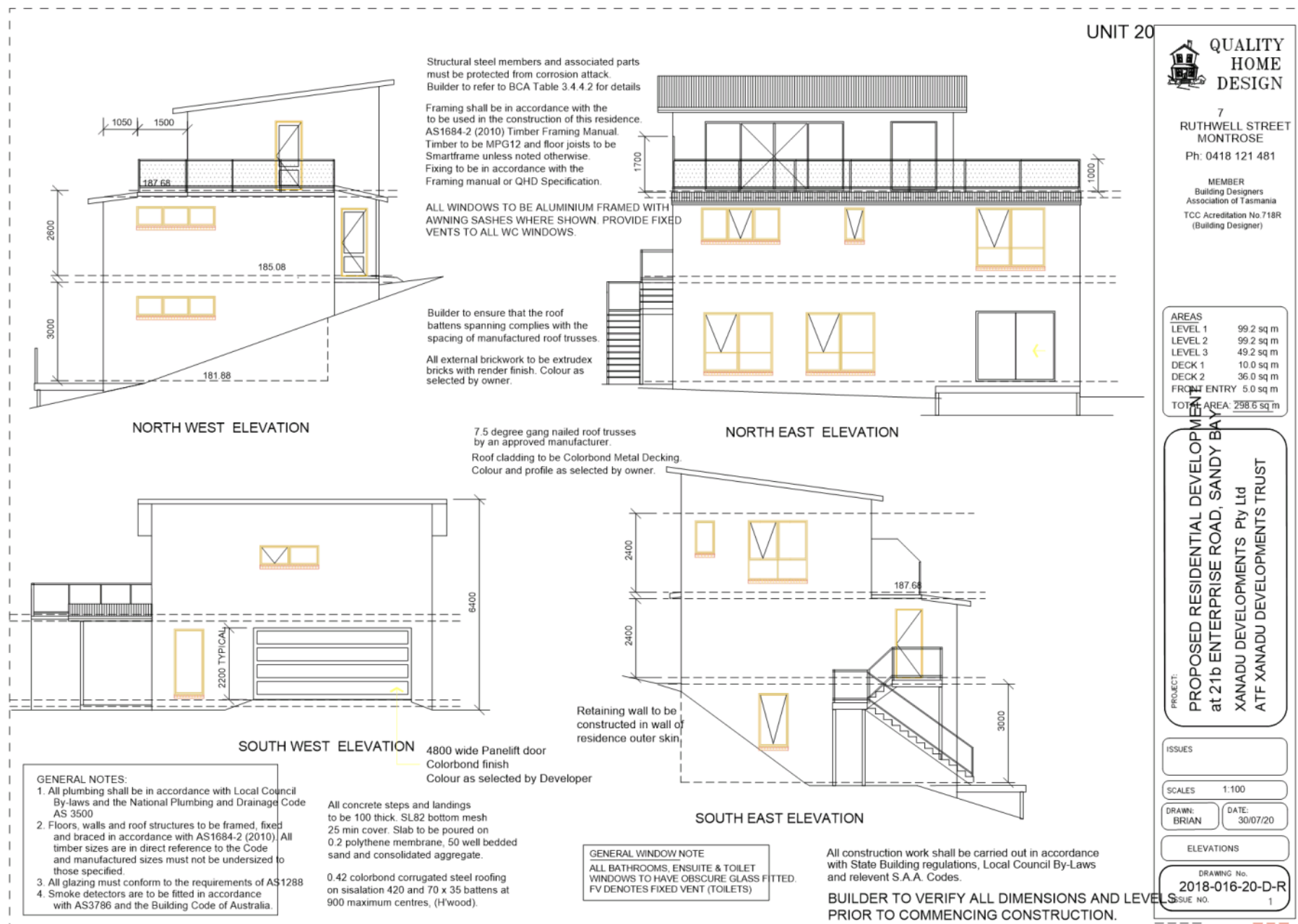










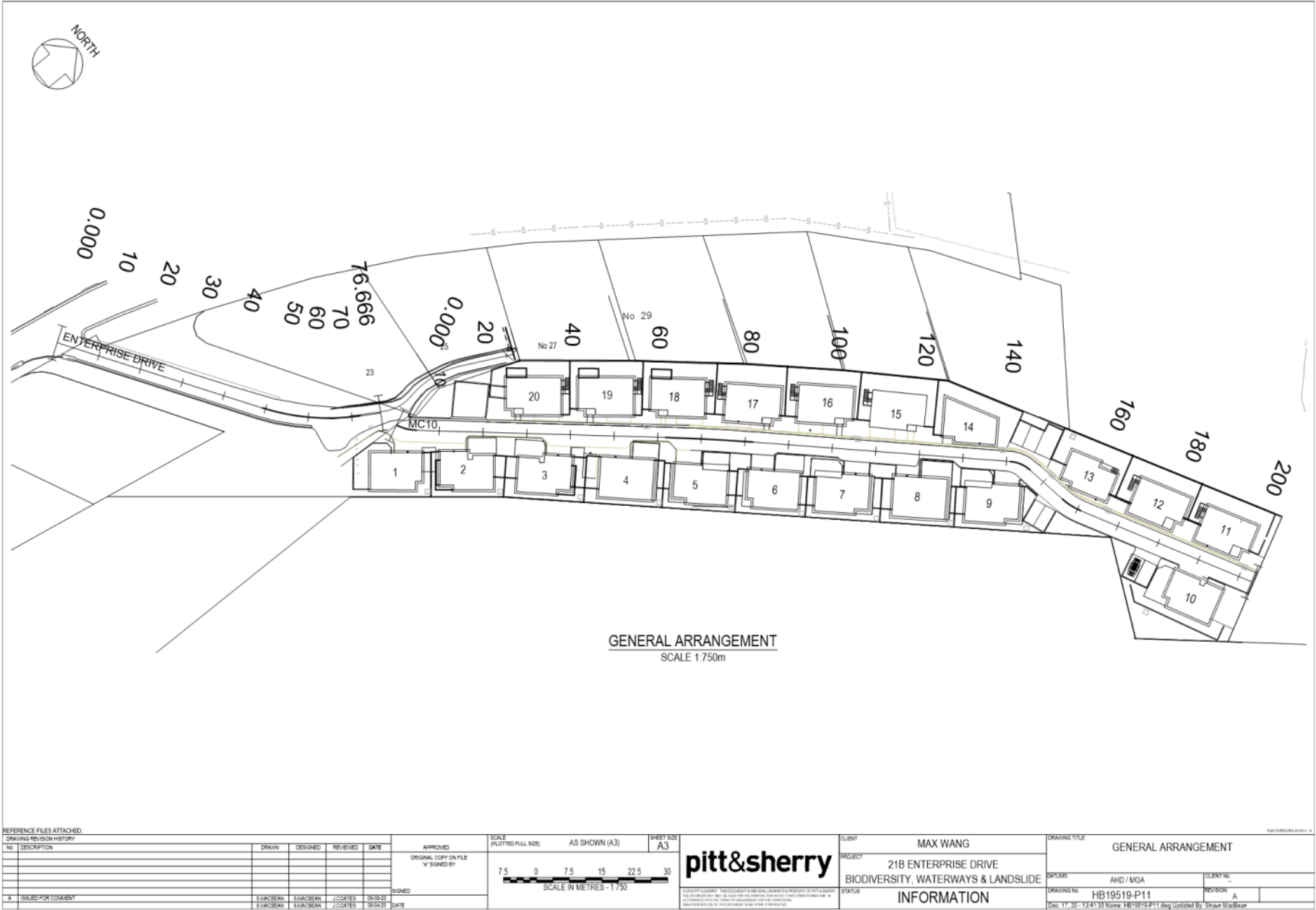


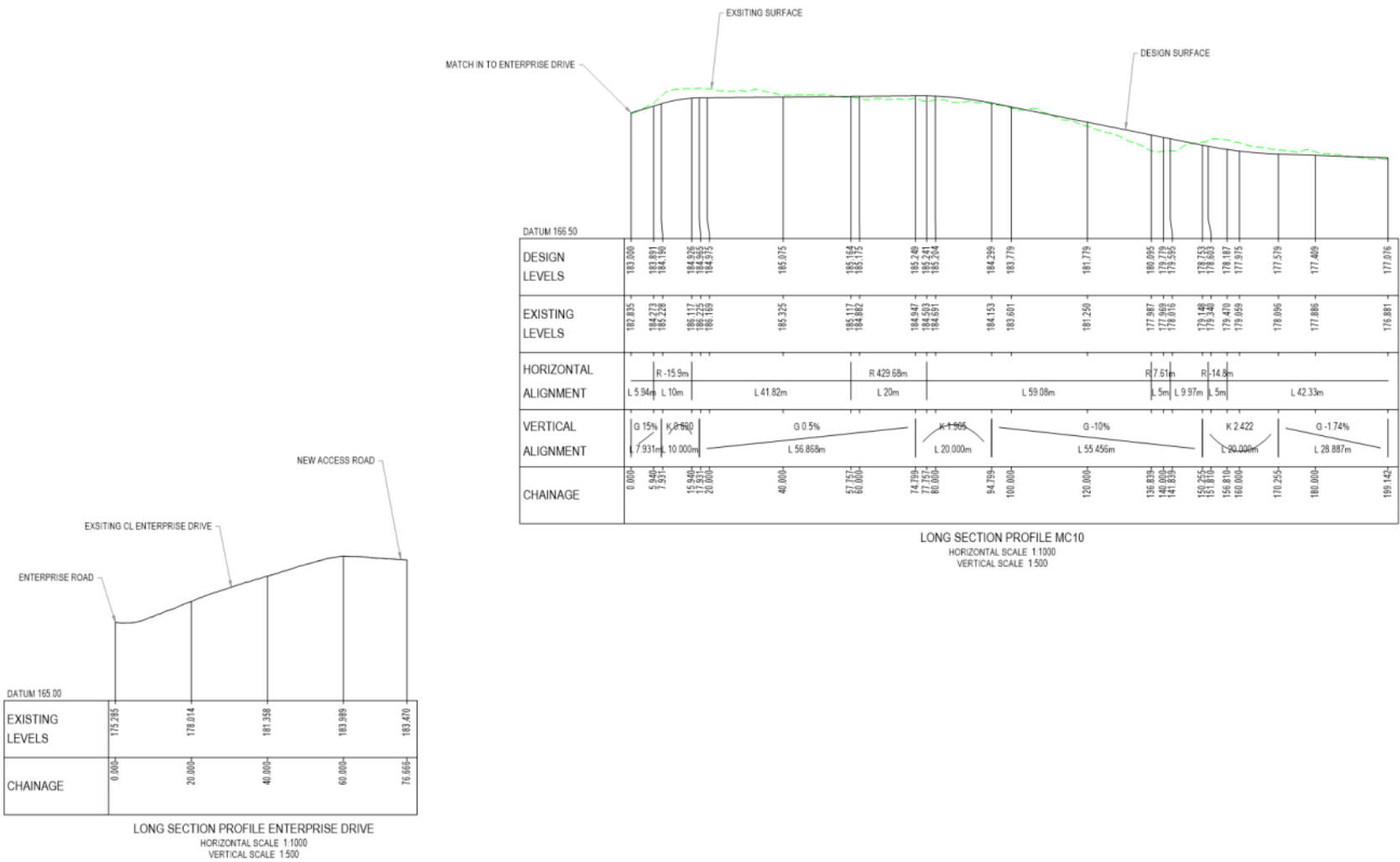


Circulation Road Grades and Crossfall

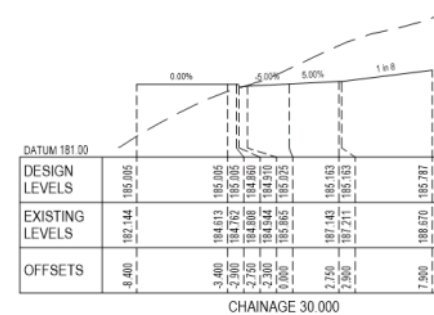
Appendix B

pitt&sherry

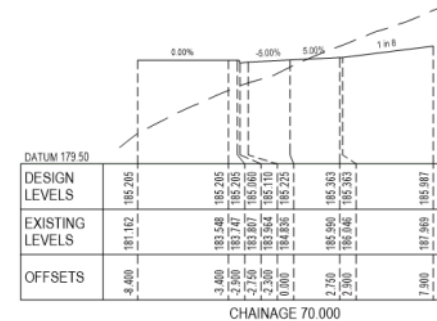


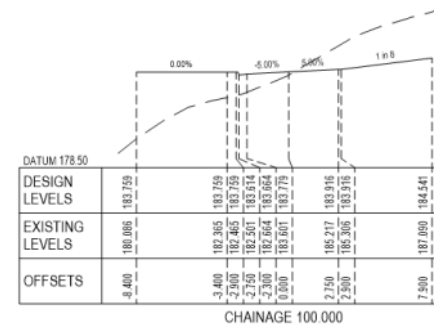


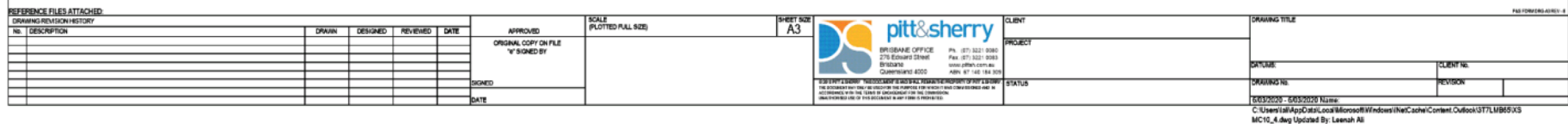
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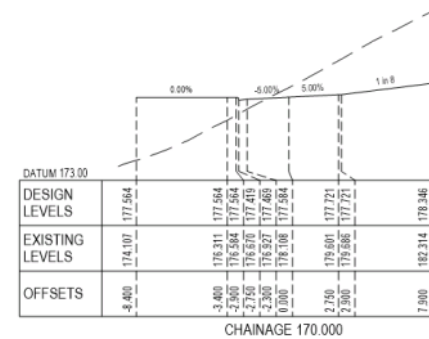




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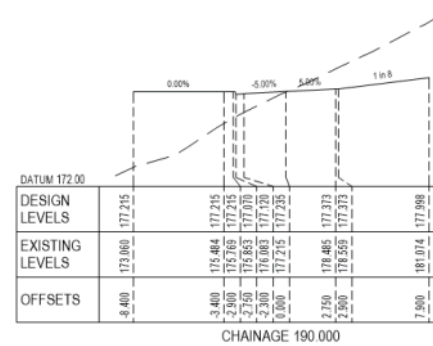
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Modeling Results - Existing

Appendix C

MOVEMENT SUMMARY

Site: 101 Site Access Road/ Enterprise Road Existing AM Peak Hour

New Site

Site Category: (None)

Giveaway Yield (Two Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh	Flow: HV	Deg. Satn v	Average Delay sec	Level o Service	95 Vehicles veh	Back of Queue Distance m	Prop. Queue	Effective Stop Rate	Aver. No Cycles	Average Speed km/h
South: Site Access Road												
1	L2	2	2.0	0.002	4.6	LOS A	0.0	0.0	0.09	0.51	0.09	46.4
3	R2	1	2.0	0.002	4.6	LOS A	0.0	0.0	0.09	0.51	0.09	46.0
Approach		3	2.0	0.002	4.6	LOS A	0.0	0.0	0.09	0.51	0.09	46.2
East: Enterprise Road												
4	L2	1	2.0	0.019	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	49.4
5	T1	36	2.0	0.019	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.9
Approach		37	2.0	0.019	0.1	NA	0.0	0.0	0.00	0.02	0.00	49.9
West: Enterprise Road												
11	T1	8	2.0	0.005	0.0	LOS A	0.0	0.0	0.03	0.06	0.03	49.6
12	R2	1	2.0	0.005	4.7	LOS A	0.0	0.0	0.03	0.06	0.03	48.6
Approach		9	2.0	0.005	0.5	NA	0.0	0.0	0.03	0.06	0.03	49.5
All Vehicles		49	2.0	0.019	0.5	NA	0.0	0.0	0.01	0.06	0.01	49.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameters dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV () values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 Site Access Road/ Enterprise Road Existing PM Peak Hour

New Site

Site Category: (None)

Giveaway Yield (Two Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh	Flow: HV	Deg. Satn v	Average Delay sec	Level of Service	95 Vehicles	Back of Queue Distance m	Prop. Queue	Effective Stop Rate	Aver. No Cycles	Average Speed km/h
South: Site Access Road												
1	L2	1	2.0	0.001	4.6	LOS A	0.0	0.0	0.05	0.52	0.05	46.5
3	R2	1	2.0	0.001	4.6	LOS A	0.0	0.0	0.05	0.52	0.05	46.1
Approach		2	2.0	0.001	4.6	LOS A	0.0	0.0	0.05	0.52	0.05	46.3
East: Enterprise Road												
4	L2	1	2.0	0.007	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	49.2
5	T1	13	2.0	0.007	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	49.8
Approach		14	2.0	0.007	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.7
West: Enterprise Road												
11	T1	29	2.0	0.016	0.0	LOS A	0.0	0.1	0.01	0.04	0.01	49.8
12	R2	2	2.0	0.016	4.6	LOS A	0.0	0.1	0.01	0.04	0.01	48.8
Approach		32	2.0	0.016	0.3	NA	0.0	0.1	0.01	0.04	0.01	49.7
All Vehicles		47	2.0	0.016	0.5	NA	0.0	0.1	0.01	0.06	0.01	49.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameters dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way control since the average delays not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV () values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



Modelling Results – Post Development

Appendix D

MOVEMENT SUMMARY

▽ Site: 101 Site Access Road/ Enterprise Road Post Development AM Peak Hour

New Site

Site Category: (None)

Giveaway Yield (Two Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh	Flow: HV	Deg. Satn v	Average Delay sec	Level of Service	95 Vehicles	Back of Queue Distance m	Prop. Queue	Effective Stop Rate	Aver. No Cycles	Average Speed km/h
South: Site Access Road												
1	L2	19	2.0	0.010	4.7	LOS A	0.0	0.3	0.10	0.50	0.10	46.4
3	R2	1	2.0	0.010	4.6	LOS A	0.0	0.3	0.10	0.50	0.10	45.9
Approach		20	2.0	0.010	4.7	LOS A	0.0	0.3	0.10	0.50	0.10	46.3
East: Enterprise Road												
4	L2	1	2.0	0.019	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	49.4
5	T1	36	2.0	0.019	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.9
Approach		37	2.0	0.019	0.1	NA	0.0	0.0	0.00	0.02	0.00	49.9
West: Enterprise Road												
11	T1	8	2.0	0.007	0.0	LOS A	0.0	0.2	0.08	0.21	0.08	48.6
12	R2	5	2.0	0.007	4.7	LOS A	0.0	0.2	0.08	0.21	0.08	47.7
Approach		14	2.0	0.007	1.8	NA	0.0	0.2	0.08	0.21	0.08	48.2
All Vehicles		71	2.0	0.019	1.7	NA	0.0	0.3	0.04	0.19	0.04	48.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameters dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way control since the average delays not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV () values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 Site Access Road/ Enterprise Road Post Development PM Peak Hour

New Site

Site Category: (None)

Giveaway Yield (Two Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow: Total veh	Flow: HV	Deg. Satn v	Average Delay sec	Level of Service	95 Vehicles	Back of Queue Distance m	Prop. Queue	Effective Stop Rate	Aver. No Cycles	Average Speed km/h
South: Site Access Road												
1	L2	7	2.0	0.004	4.6	LOS A	0.0	0.1	0.05	0.51	0.05	46.5
3	R2	1	2.0	0.004	4.7	LOS A	0.0	0.1	0.05	0.51	0.05	46.1
Approach		8	2.0	0.004	4.6	LOS A	0.0	0.1	0.05	0.51	0.05	46.4
East: Enterprise Road												
4	L2	1	2.0	0.007	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	49.2
5	T1	13	2.0	0.007	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	49.8
Approach		14	2.0	0.007	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.7
West: Enterprise Road												
11	T1	29	2.0	0.022	0.0	LOS A	0.1	0.5	0.04	0.19	0.04	48.8
12	R2	16	2.0	0.022	4.6	LOS A	0.1	0.5	0.04	0.19	0.04	47.9
Approach		45	2.0	0.022	1.6	NA	0.1	0.5	0.04	0.19	0.04	48.5
All Vehicles		67	2.0	0.022	1.7	NA	0.1	0.5	0.03	0.20	0.03	48.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameters dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way control since the average delays not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV () values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



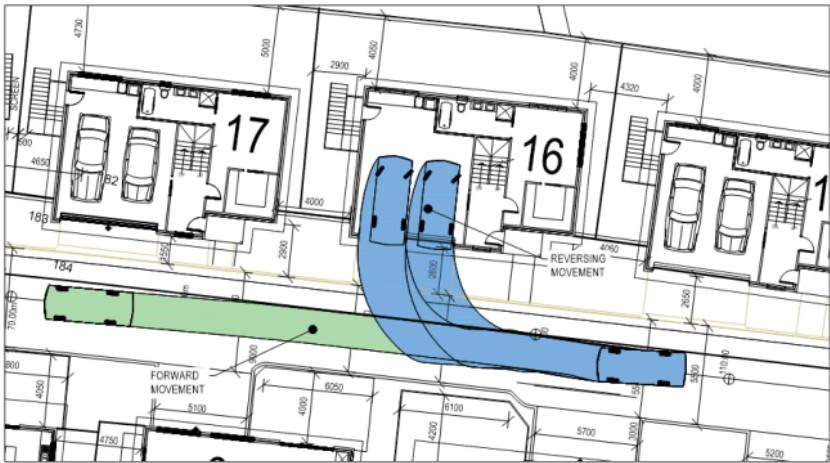
Swept Paths – Garages & Rubbish Truck

Appendix E

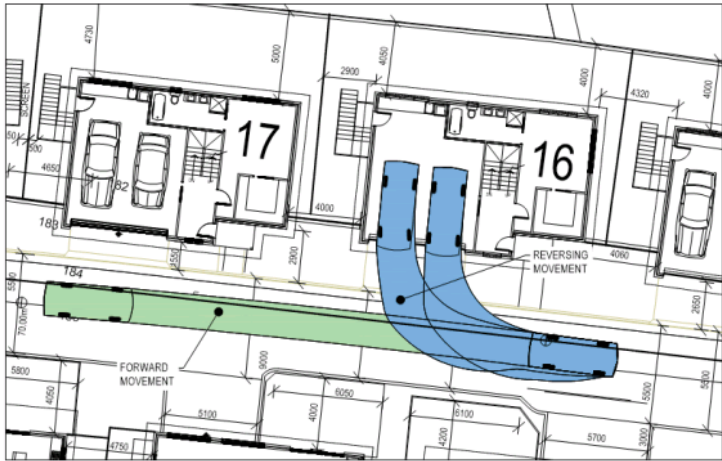
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SCALE 1:250



LOT No 16
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SCALE 1:250

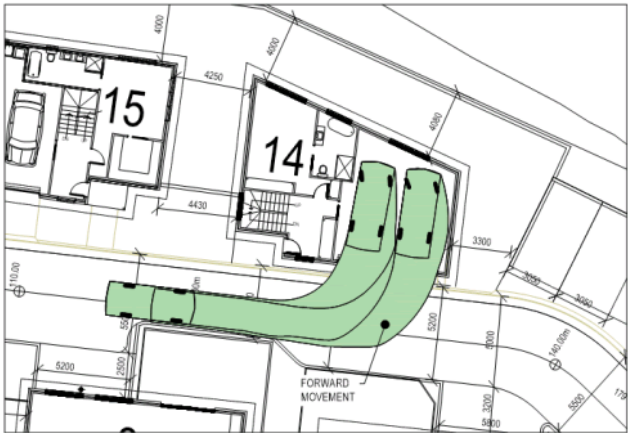


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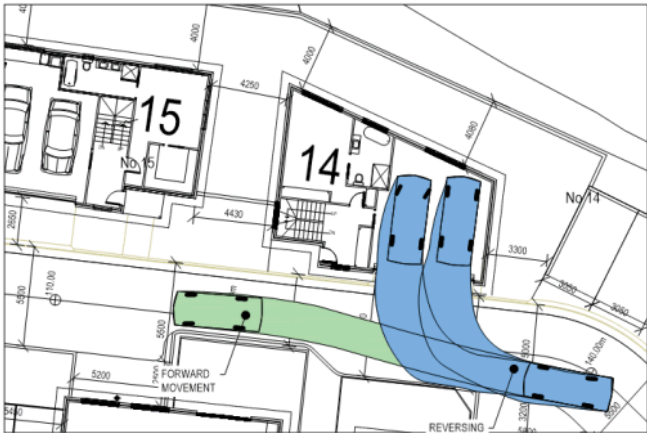


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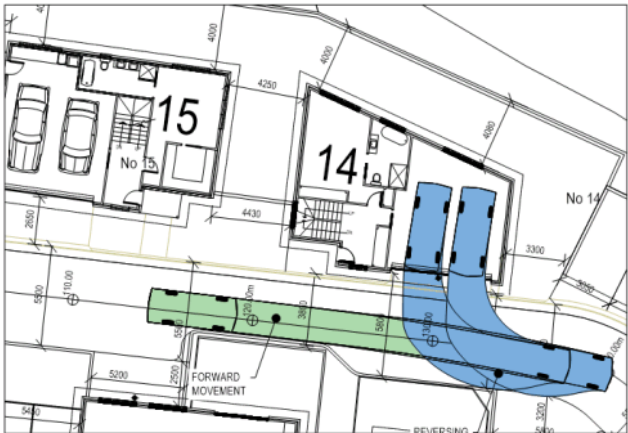
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									B99 / SERVICE VEHICLE MOVEMENTS		
									DRAWINGS		
									AHD / MGA		
									HB19519-P1		
									Sep. 11, 20 - 09:10:31 Name: HB19519-P1.dwg Updated By: Brian MacBeath		



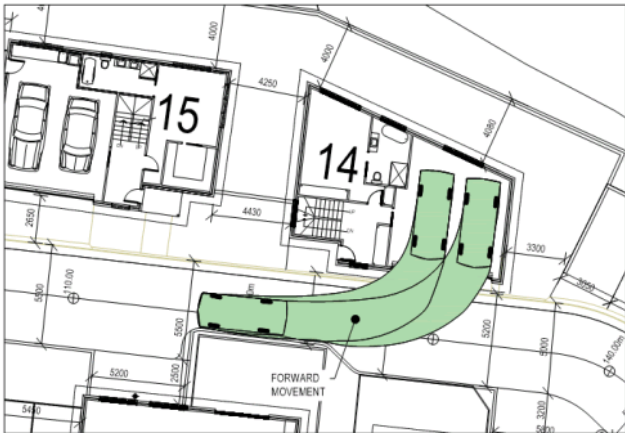
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SCALE 1:250



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SCALE 1:250



LOT No 14
FORWARD EXIT - B85 VEHICLE
SCALE 1:250

REFERENCE FILES ATTACHED:

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1	BUILDING LAYOUT REVISED	S. SARKIS	S. SARKIS	J. COATES	10-09-20
		S. SARKIS	S. SARKIS	J. COATES	10-03-21

APPROVED:

ORIGINAL COPY ON FILE "V" SIGNED BY:

SIGNED: _____

DATE: _____

SCALE (PLOTTED FULL SIZE): AS SHOWN (A3)

SCALE IN METRES - 1:250

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CLIENT: MAX WANG

PROJECT: 21B ENTERPRISE DRIVE
BIODIVERSITY, WATERWAYS & LANDSLIDE

STATUS: PRELIMINARY

DRAWING TITLE: SWEEP PATHS
B99 / SERVICE VEHICLE MOVEMENTS

DRAWN: AHD / MGA

DRAWING NO: HB19519-P2

REVISION: A

Rev: 11, 20 - 09-10-24 Name: HB19519-P2.dwg Updated By: Brian MacBeath

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21B Enterprise Road – 20 Multiple Dwellings

Contact

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Newcastle
Devonport

23 November 2020

Sam Bryan
development@taswater.com.au
GPO Box 1393
Hobart TAS 7001

Dear Sam

Re: PLN-20-740 – TWDA 2020/01828-HCC – Response to Request for Additional Information

Please see the following information in response to the request for additional information. The request for additional information dated 5 November 2020 is included for reference in Attachment A

Background

The proposed use is a private 20 lot development located at 21B Enterprise Drive. As part of a previous subdivision, a single sewer and water connection was provided by TasWater to the site. A DN100 PVC SN8 sewer connection and OD63 HDPE (PE100) PN16 water connection is provided at the entrance to the proposed site. The full As-Constructed plan is included in Attachment B, an excerpt of the connections is shown below in Figure 1.

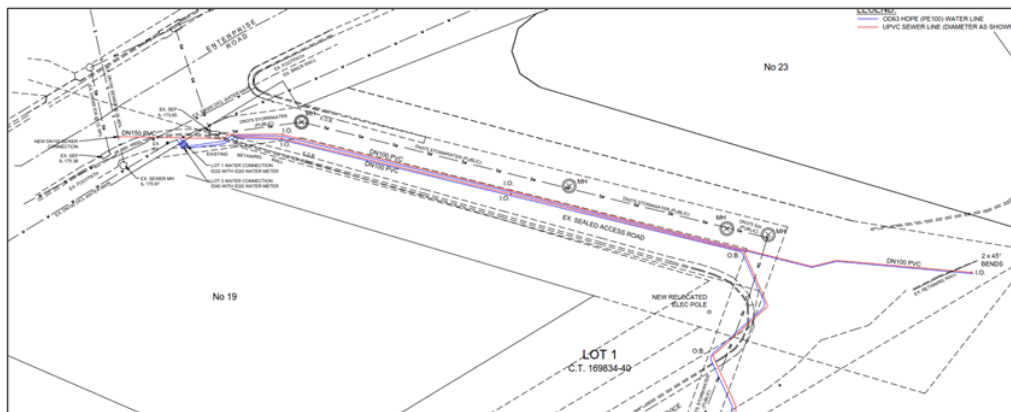


Figure 1: Water and Sewer Connection 21B Enterprise Road

The proposed development intends to make use of the existing water connection, although the pipe size will need to be increased to provide compliance for fire flows.



Sewer

In response to items 1 a), b) and c) (sewer flows), please see the flow calculation sheet provided in Attachment C. A summary of calculated flows is provided below

Case	Flow Rate
ADWF	0.1 L/s
PDWF	0.85 L/s
Design Flow (PDWF + GWI + RDI)	1.02 L/s

This proposed solution does contain a deep section of sewer (up to 8 metres deep), to allow the development to connect a sewer system through either public land or land to which the property has right to. To confirm the practicality of installing a private sewer connection at this depth, we have liaised with a directional drilling contractor. We were advised that this solution, although challenging, is a viable with drilling related construction methods.

To enable this solution to work, an additional 'shallow' main is required to provide connection points for the proposed lots. It would not be possible to directly connect to the 'deep' main.

Plans are included in Attachment E (HB19519-P4 and HB19519-P5) and present a plan and long-section of the proposed sewer. Note, the long section is only for the 'deep' sewer. This also shows the intended connection points for the sewer

Water

In response to items 1 d), e), f) and g) (water demand), please see the attached water demand calculation sheet provided in Attachment B. A typical sketch of the proposed water connection and horizontal alignment is included in Attachment E (HB19519-P8)

To confirm that the subject lot can be serviced by water, a water supply model has been developed. The following boundary condition information was provided by TasWater.

Scenario	Total Head (m)
Peak Day	215
Peak Day + 10 L/s Fire Flow	213

These boundary heads provided for the assumed connection location which is adjacent to fire plug A385247. This is shown in Figure 2.

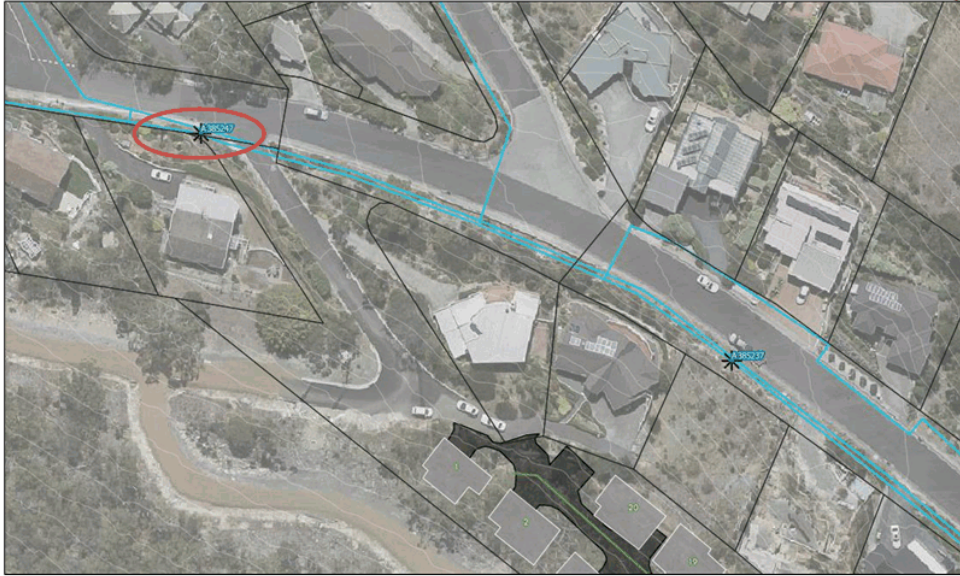


Figure 2: Boundary Condition (head) location

An EPANET model has been developed in accordance with the *TW WSA03-2011-3.1 MRWA V2.0 Supplement – Appendix B*. Both a peak day scenario and peak day plus fire flow scenario are assessed.

Peak Day Scenario

An average day demand of 685 L/ET/day has been applied to each lot. This has then been converted to a peak day demand of 1,542 L/ET/day (0.0178 L/s/ET). The residential diurnal pattern is also applied to each lot which incorporates the factor for peak hour demand (2.0). Each lot is assumed to be 1 ET (3 Bedroom Unit - RM03).

A DN100 water connection is assumed up to the proposed location of the fire hydrant, then DN50 thereafter. A Hazen-Williams roughness of 130 applied.

Figure 3 presents the model layout.

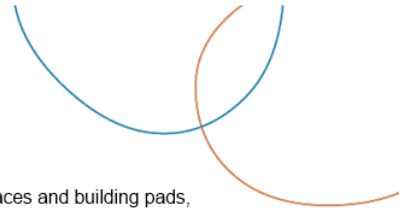


Table 1 presents elevations for each of the lots. To enable construction of roads surfaces and building pads, changes to elevation will occur. For lots 1 – 10, a cut of approximately 2 – 3 metres is required to construct buildings. Therefore, the adopted elevation for water supply modelling is the highest elevation on each of the lots post development.

Table 1: Lot Elevations

Lot Number	Existing Elevation (m AHD)	Design Elevation (m AHD) (Modelled)	Elevation at Connection Point (m AHD)
Lots 1, 2, 3 and 4	190	189.0	185.8
Lots 19 and 20	188	185.0	185.0
Lots 5, 6, and 7	190	189.0	185.8
Lots 16, 17 and 18	188	185.2	185.2
Lots 8 and 9	187	185.9	182.7
Lots 14 and 15	185	182.8	182.8
Lot 10	183	181.1	177.9
Lots 11, 12 and 13	180	177.3	177.2



Figure 3: EPANET model layout

Table 2 presents the resulting pressure and heads for the peak day scenario. Results are presented at hour 9:00 of the simulation this corresponds to the peak hour demand (2.0 factor)

Table 2: Peak Day @ 9:00 hrs

Node ID	Demand LPS	Head (m)	Pressure (m)
L_1_2_3_4	0.14	214.99	25.99
L_19_20	0.07	214.99	25.99
L_5_6_7	0.11	214.98	25.98
L_16_17_18	0.11	214.98	29.78
L_8_9	0.07	214.96	29.06
L_14_15	0.07	214.95	32.15
L_11_12_13	0.11	214.94	37.64
L_10	0.04	214.94	33.84
Reservoir	-0.71	215.00	0.00

Table 2.5.3.3 from the supplement requires a minimum pressure of 250 kPa (25m) (Residential Steep Grade). The elevation adopted for lots is based upon the highest elevation of lots (developed condition).

Based on the modelling undertaken, the service pressure meets the minimum required pressure.

Peak Day Scenario + Fire Flow Scenario

The fire flow scenario adopts a fire hydrant at the most disadvantaged location within the proposed development. The hydrant demand is assumed to be 10 L/s, whilst the background demand is assumed to be 2/3 of the Peak Hour demand).

The fire hydrant must operate at 250 kPa, whilst the system residual pressure must be at least 100 kPa in the entire service zone.

Figure 4 and Figure 5 show the time series demand and pressure respectively for the fire hydrant. **Error! Reference source not found.** presents the residual system pressure whilst the fire hydrant is in operation.

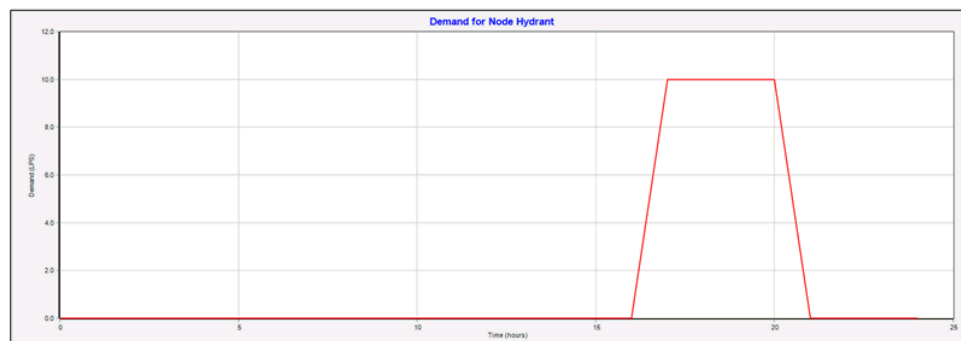


Figure 4: Fire Hydrant – Demand

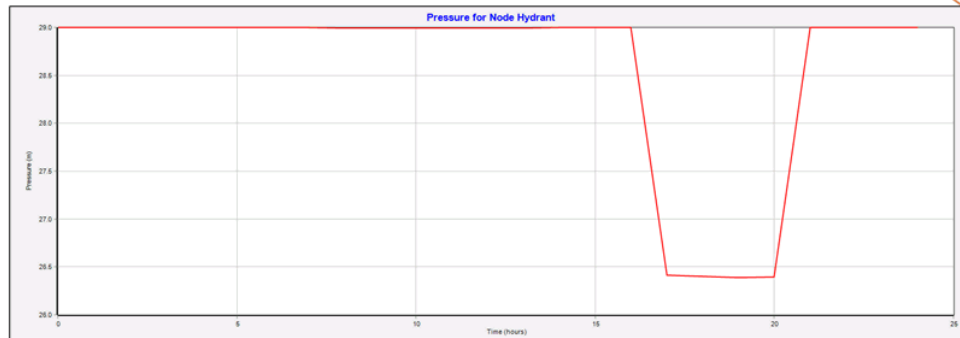


Figure 5: Fire Hydrant – Pressure

Table 3: Peak Day + Fire Flow @ 19:00 hrs

Node ID	Demand LPS	Head (m)	Pressure (m)
L_1_2_3_4	0.06	211.18	22.18
L_19_20	0.03	211.08	26.08
L_5_6_7	0.05	210.39	21.39
L_16_17_18	0.05	210.38	25.19
L_8_9	0.03	210.38	24.48
L_14_15	0.03	210.38	27.58
L_11_12_13	0.05	210.38	33.08
L_10	0.02	210.38	29.28
Hydrant	10.00	210.39	26.39
Reservoir	-10.32	213.00	0.00

The assessment suggests the sufficient flow is able to be provided for firefighting purposes whilst maintaining sufficient pressure in the remainder of the system.

The modelling undertaken does not show any significant loss in the system. This is likely attributed to low velocities in the water supply network. A peak hour flow rate for the developed is estimated to be 0.72L/s which equates to a velocity of approximately 0.1 m/s for a DN100 pipe.

The closest identified connection point for water supply is a DN100 DI/CL in Enterprise Road, adjacent to the fire plug (TasWater asset ID A385247). The connection location is shown below in Figure 2. As part of the recent subdivision, a OD63 HDPE (nominal DN50 internal) connection was provided by TasWater.

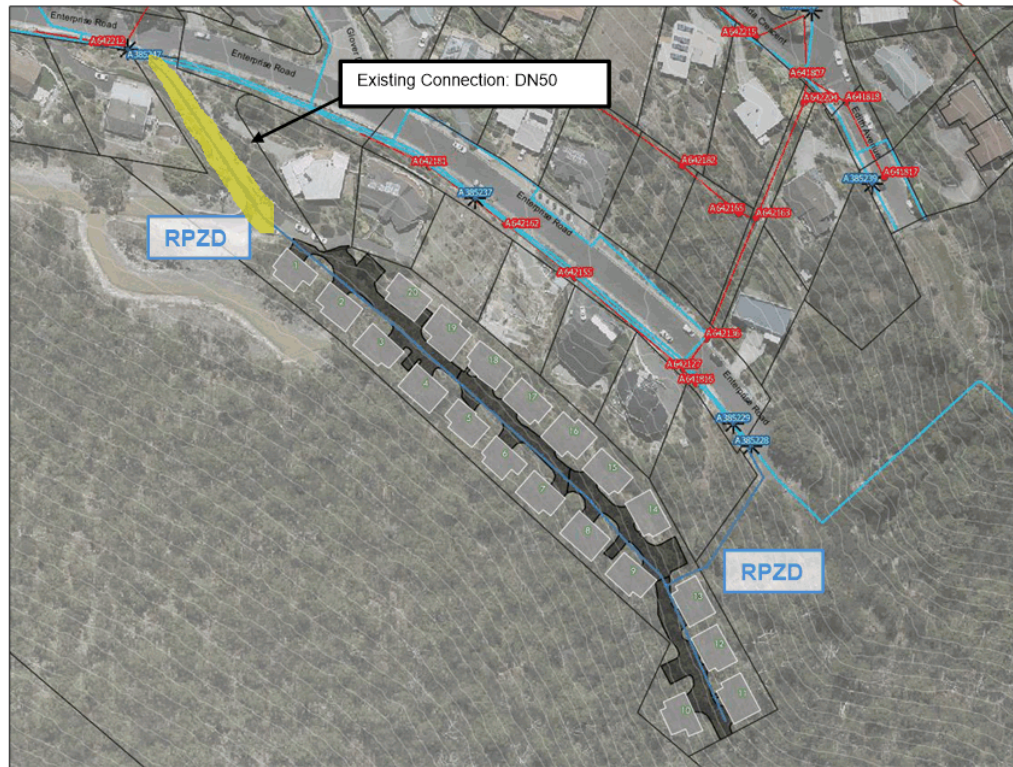


Figure 6: Proposed Water Service Connection

The following site-specific requirements are identified at this stage of the development process and should be considered throughout.

- There are two pressure zones that the proposed development can practically connect to. These are the Mount Nelson 'Bend 7' Pressure Zone, and the Enterprise Road Pump Pressure Zone. The pump pressure zone was introduced to address an existing water supply issue. Connection to this zone is not proposed. It is recommended that the proposed development connects to the Mount Nelson 'Bend 7' Pressure Zone (DN100 D1CL). It is noted that the provided water connection is service by the Mount Nelson 'Bend 7' Pressure Zone.
- There is opportunity to loop the water main by connecting the eastern most end of the development to the existing water main. A suitable location is east of fire-plug (asset ID A38529, DN100 D1CL). An easement would be required over No. 26 Edith Avenue to achieve the looped connection.
- As a hydrant is required within the proposed development. The minimum water main size should be DN100. This will require the upgrade of the existing water connection to DN100. The main supplying lots 10, 11, 12 and 13 are able to be service by a nominal DN50 main.
- To prevent back flow to the existing water supply system, a Reduced Pressure Zone Device (RPZD) will be required at both connection points to the proposed development. Indicative locations are provided in Figure 3.
- With regard to Table 8.8.8, TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA Edition V2.0, for general residential development, the maximum fire hydrant spacing is the lesser of 120m from the rear boundary of all properties to the hydrant measured along the hose-path length or 90m and at street intersections. To provide adequate coverage, two hydrants are required, one at the entrance the development (outside Lot 1) and another outside Lot 16.



Yours sincerely

Joshua Coates
Associate Civil Engineer

Enc. Attachment A – Request for Additional Information
 Attachment B – Previous As-Constructed Plan
 Attachment C – Sewer Flow Calculation
 Attachment D – Water Demand Calculation
 Attachment E – Indicative Service Plan Water and Sewer



Request for Additional Information

For Planning Authority Notice

Council Planning Permit No.	PLN-20-740	Application date	2/11/2020
TasWater details			
TasWater Reference No.	TWDA 2020/01828-HCC	Date of response	05/11/2020
TasWater Contact	Sam Bryant	Phone No.	0474 933 294
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	21B ENTERPRISE RD, SANDY BAY	Property ID (PID)	9192359
Description of development	Multiple Dwellings x 20	Stage No.	
Additional information required			
<p>Additional information is required to process your request. To enable assessment to continue please submit the following:</p> <ol style="list-style-type: none"> 1. To allow TasWater to determine potential hydraulic service capacity limitations, please provide the following: <ol style="list-style-type: none"> a. Average dry weather sewage flow (ADWF) at the point of connection; b. Peak dry weather sewage flow (PDWF) at the point of connection; c. Total sewage flow at the point of connection; d. The required Peak day flow rate in L/s and the required residual pressure (kPa) at the point of connection. e. Peak day usage in L/day f. Probable simultaneous water demand (PSD) for the proposed development; g. The required fire flow rate in L/s and the required residual pressure (kPa) at the point of connection. <p style="margin-left: 40px;">NOTE: The pressures will need to include losses through the actual connection, the associated pipework and the elevation changes.</p> <ol style="list-style-type: none"> h. Calculations of the number of Equivalent Tenements. <p style="margin-left: 40px;">NOTE: The engineering design calculations must comply with AS/NZS 3500.0:2003 Plumbing and Drainage and the Sewerage and Water Codes of Australia - Melbourne Retail Water Agencies Integrated Code version(s) published by the Water Services Association of Australia, and as amended by TasWater's Supplements.</p> 2. Please provide a concept servicing plan for water & sewer services which shows the following: <ol style="list-style-type: none"> a. Indicative location of water extensions (if applicable) required to service the development; b. Indicative location of proposed TasWater easements in accordance with the relevant TasWater supplement (outline the minimum widths); c. The required location of property water & sewer connection(s) accurately dimensioned relative to the existing/proposed boundaries noting that: <ol style="list-style-type: none"> i. One sewer and one water property service connection must be provided to each lot; ii. The property water service for each lot must be sized appropriately and located just inside the property boundary at the road frontage in accordance with the standard property connection details contained in TasWater's Water Metering Guidelines; iii. The sewer property service connections for each lot must be sized appropriately and 			



- must be located at the low point of the lot just inside the property boundary;
- iv. Dedicated fire assemblies and domestic meters must be indicatively located;
 - v. Redundant connections must be shown to be cut and sealed.

Advice

Service Locations

Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure.

- A permit is required to work within TasWater's easements or in the vicinity of its infrastructure.

Further information can be obtained from TasWater

- TasWater has listed a number of service providers who can provide asset detection and location services should you require it. Visit www.taswater.com.au/Development/Service-location for a list of companies
- TasWater will locate residential water stop taps free of charge
- Sewer drainage plans or Inspection Openings (IO) for residential properties are available from your local council.

To view our assets, all you need to do is follow these steps:

- 1) Open up webpage - <http://maps.thelist.tas.gov.au/listmap/app/list/map>
- 2) Click 'Layers'
- 3) Click 'Add Layer'
- 4) Scroll down to 'Infrastructure and Utilities' in the Manage Layers window, then add the appropriate layers.
- 5) Search for property
- 6) Click on the asset to reveal its properties

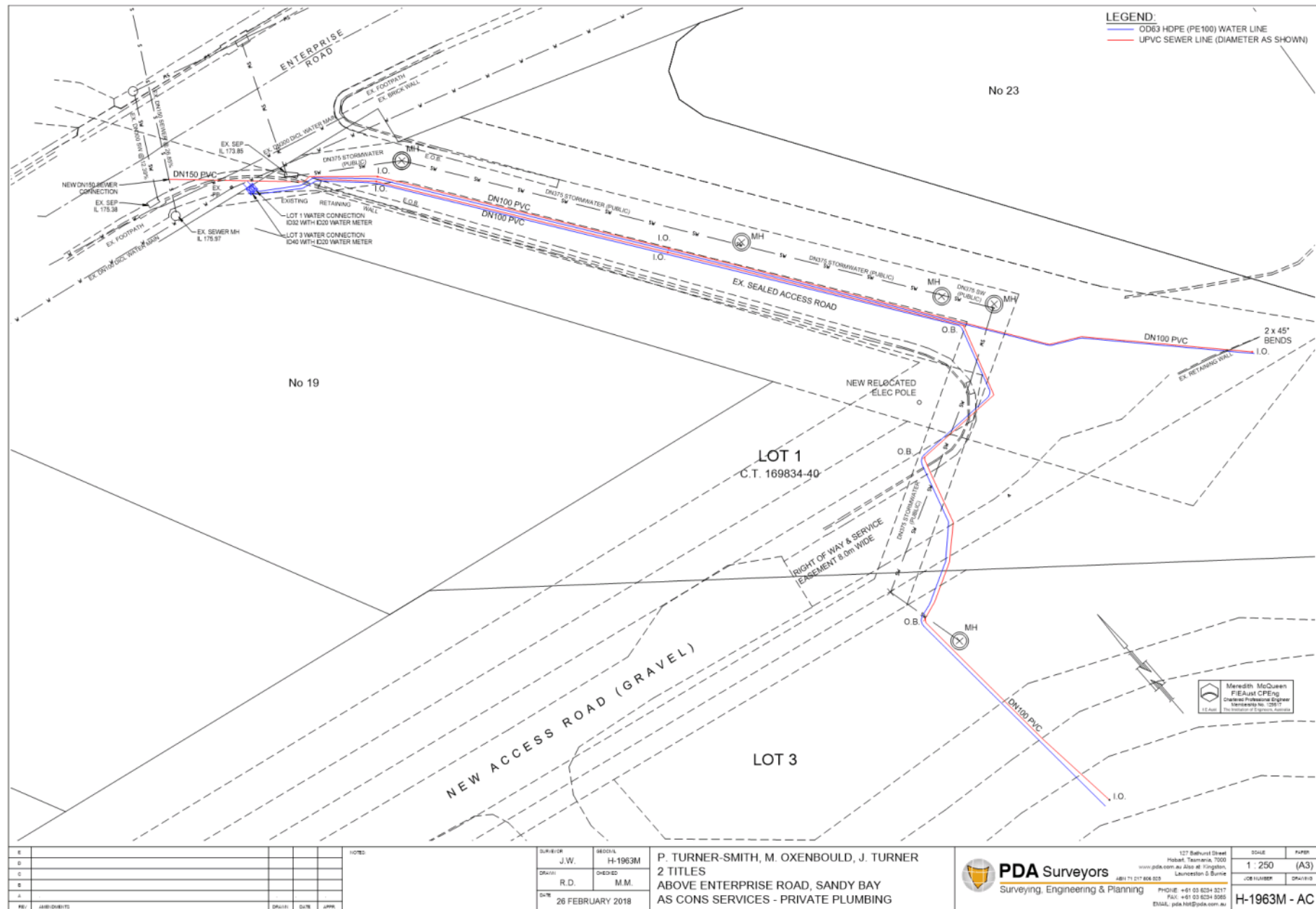
Authorised by

Jason Taylor

Development Assessment Manager

TASWATER CONTACT DETAILS

Email	development@taswater.com.au	Web	www.taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001		



pitt&sherry

Project: 21B ENTERPRISE DRIVE
Subject: SEWER FLOW CALCULATIONProject No.: HB19519
Page: 1/2
Prepared by: J. COATES
Date: 9/1/20
Checked:

$$ADWF = ET \times \text{LOADING RATE (L/ET/DAY)}$$

$$ET: 20 \times 3 \text{ BEDROOM UNITS (ET=1)} \quad RM 03$$

$$\therefore ET = 20$$

$$\text{LOADING RATE} = 450 \text{ L/ET/DAY} \quad (\text{NEW RESIDENCES POST 2014})$$

$$\therefore ADWF = 20 ET \times 450 \text{ L/ET/DAY}$$

$$= 9000 \text{ L/DAY}$$

$$= 0.10 \text{ L/s}$$

$$PDWF = d \times ADWF$$

$$d \text{ DERIVED FROM FIGURE C1, APP C, WSA02-2014-3.1}$$

$$AREA_{DEV} = 0.7 H_A \rightarrow d = 8.2$$

$$\therefore PDWF = 8.2 \times 0.1042$$

$$= \underline{0.85 \text{ L/s}}$$

GW1

$$GW1 = 0.025 \times A_x \text{ PORTION WET} \quad * (\text{ASSUME PORTION WET} = 0.5)$$

$$= 0.025 \times 0.7 \times 0.5$$

$$= \underline{0.009 \text{ L/s}}$$

pitt&sherry

Project: 21B ENTERPRISE DRIVE
Subject: SEWER FLOW CALCULATIONProject No.: HB19519
Page: 2/2
Prepared by: J. COATES
Date: 9/1/20
Checked:

RDI (RATIONAL METHOD)

DRAINS

$$RDI = 0.028 \times A_{EFF} \times C \times I$$

$$A_{EFF} = A \times (\text{DENSITY}/150)^{0.5}$$

DENSITY < 150 EP/HA

$$EP = 3.5 \times N^2 \text{ SINGLE DWELLINGS (20)} \\ = 70$$

$$\text{DENSITY} = 70 \text{ EP} / 0.7 \text{ HA} \\ = 49 \text{ EP/HA}$$

$$\therefore A_{EFF} = 0.70 \times \sqrt{(49/150)} \\ = 0.4$$

C = LEAKAGE SEVERITY COEFFICIENT (TABLE C1, APPC, W8702-2014-3-1)

$$S_{ASPECT} = 0.5$$

$$N_{ASPECT} = 0.2$$

$$\therefore C = 0.7$$

$$I_{1,2} = 12.3$$

$$\text{FACTOR}_{SIZE} = (40/0.7)^{0.12} \\ = 1.625$$

$$\text{FACTOR}_{CONTAIN} = 1.0$$

$$\therefore I = 12.3 \times 1.625 \times 1.0 \\ = 20.0$$

$$\therefore RDI = 0.028 \times 0.4 \times 0.7 \times 20 \\ = 0.16 \text{ L/s}$$

$$\text{DESIGN FLOW} = PDWF + GWT + RDI \\ = 0.85 + 0.009 + 0.16 \\ = 1.02 \text{ L/s}$$

pitt&sherryProject: 213 ENTERPRISE ROAD
Subject: WATER SUPPLY ASSESSMENTProject No.: HB19519
Page: 1
Prepared by: J. COATES
Date: 13/01/2020
Checked:

WATER SUPPLY ZONE: MT NELSON 'BEND 7' RESERVOIR

→ Ø 30m

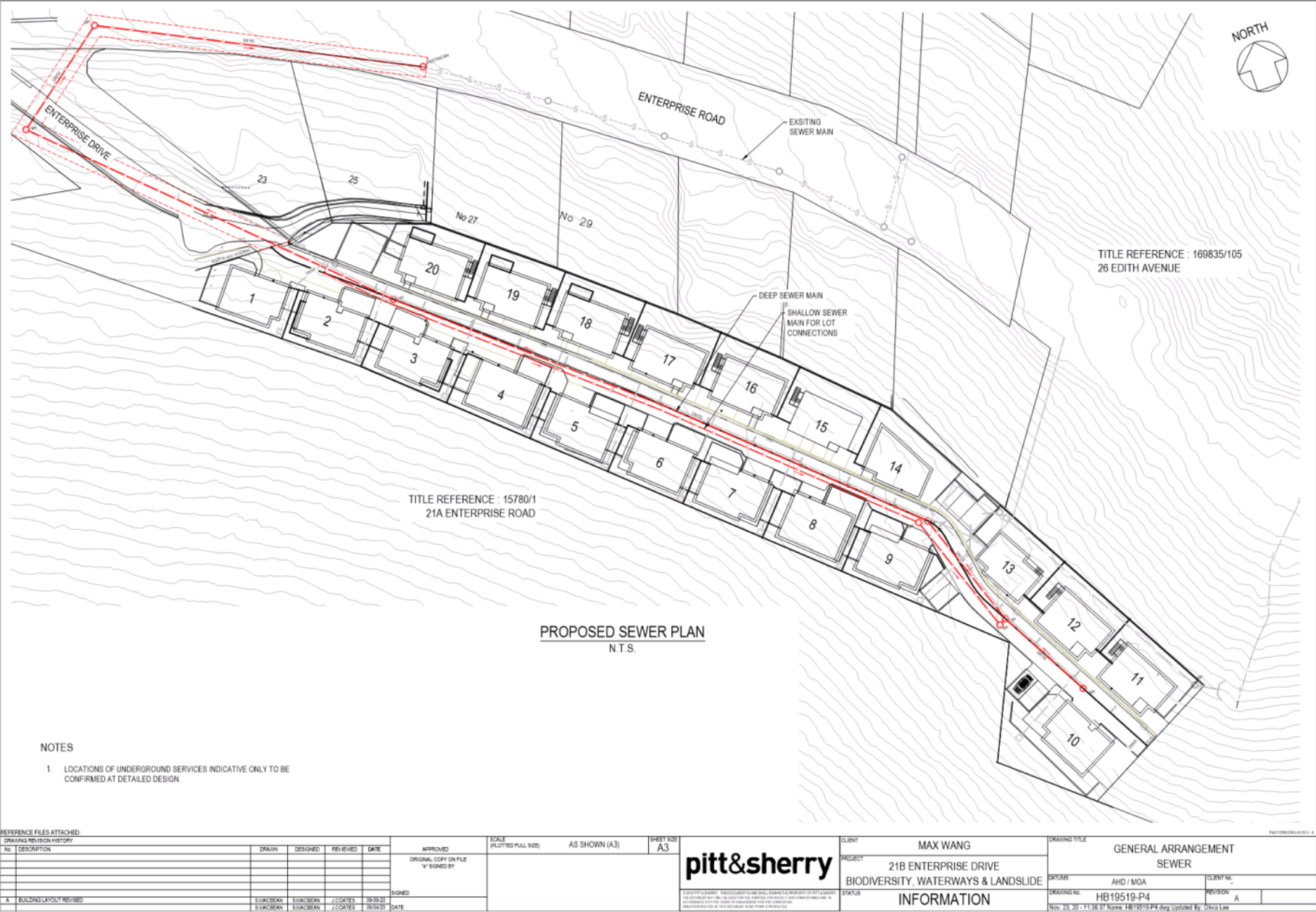
→ TOP WATER LEVEL = 220m AHD
BOTTOM WATER LEVEL = 214m AHD
1/3 FULL = 216m AHD

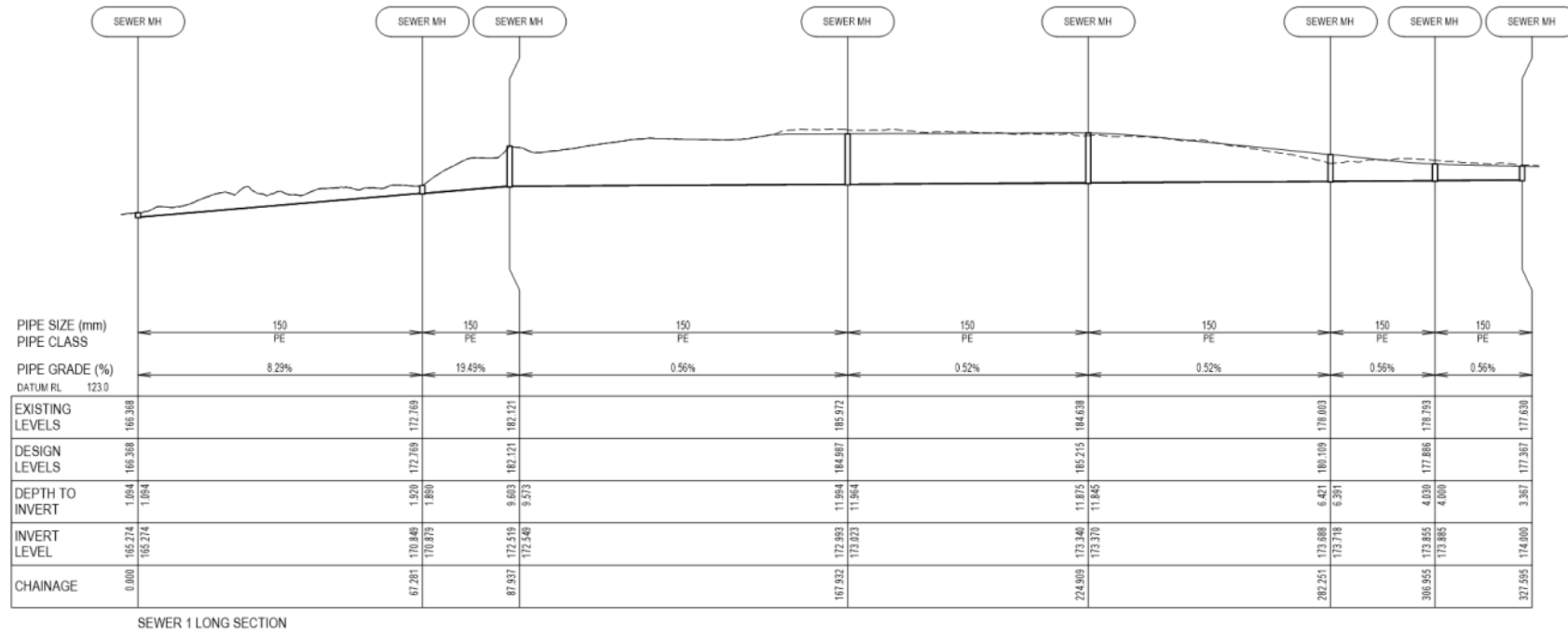
ELEVATION @ CONNECTION = 184m AHD


PEAK DAY DEMAND = 0.017836 L/ET/S

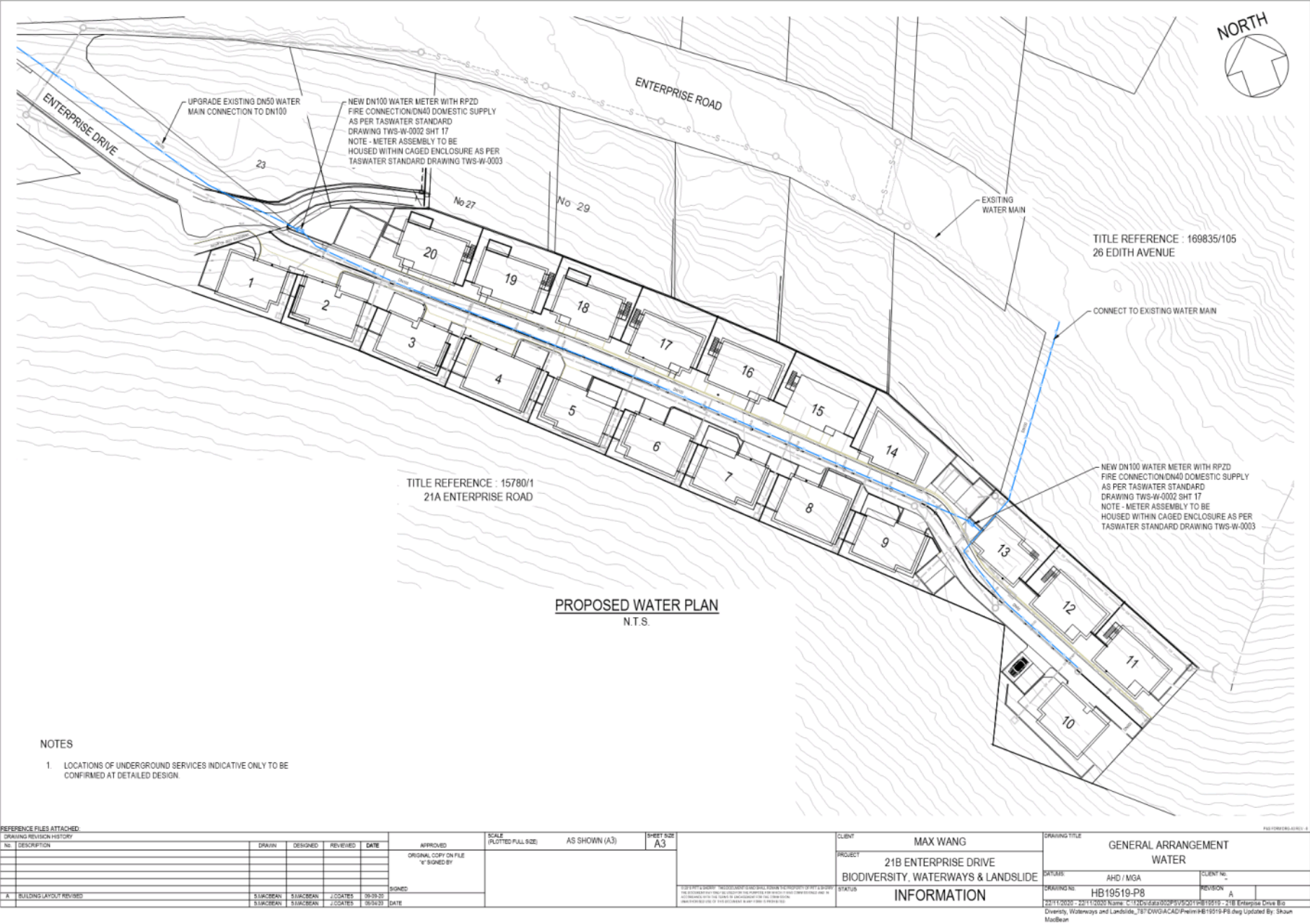
LOTS	ELEVATION	FLOW (ET=1)	FLOW (ET=0.8)
1, 2, 3, 4	188m AHD	0.0713 L/S	0.057 L/S
19, 20	183.5m AHD	0.0357 L/S	0.0286 L/S
5, 6, 7	188m AHD	0.0535 L/S	0.0428 L/S
16, 17, 18	183.5m AHD	0.0535 L/S	0.0428 L/S
8, 9	185m AHD	0.0357 L/S	0.0286 L/S
14, 15	178m AHD	0.0357 L/S	0.0286 L/S
10	183.5m AHD	0.0178 L/S	0.0142 L/S
11, 12, 13	175m AHD	0.0535 L/S	0.0428 L/S
		0.36 L/S	0.29 L/S

2009





REFERENCE FILES ATTACHED: DRAWING REVISION HISTORY					APPROVED		SCALE	AS SHOWN (A3)	SHEET SIZE	<div><p>"PITTS & SHERRY" IS THE REGISTERED SERVICE MARK OF THE PROPERTY OF PITTS & SHERRY, INC. REGISTERED AT THE U.S. PATENT AND TRADEMARK OFFICE. ALL RIGHTS ARE RESERVED. NO PART OF THIS DOCUMENT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.</p></div>	CLIENT	DRAWING TITLE		
NO.	DESCRIPTION	DRAWN	DESIGNED	REVIEWED	DATE	ORIGINAL COPY ON FILE "Y" SIGNED BY		A3	PROJECT		MAX WANG	LONGITUDINAL SECTION SEWER		
						DEDICED						DATE:	AHD / MGA	
													DRAWING NO.:	HB19519-P5.dwg
													REVISION:	
													CLIENT NO.:	
												PROJECT:	21B ENTERPRISE DRIVE CIVIL WORKS INFORMATION	
		S. GARCIA	S. GARCIA	J. GARCIA	10/10/20	DATE				STATUS	EBC02020 - 2024/2026 Name: C:\DOWACAD\DWG\B050617\21B19519 - 21B Enterprise Drive Bldg Diversity, Waterways and Landuse: E:\DOWACAD\DWG\B050617\21B19519-P5.dwg Updated By: Shaun Modman			





Submission to Planning Authority Notice

Council Planning Permit No.	PLN-20-740	Council notice date	2/11/2020
TasWater details			
TasWater Reference No.	TWDA 2020/01828-HCC	Date of response	30/12/2020
TasWater Contact	Anthony Cengia	Phone No.	0474 933 293
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	21B ENTERPRISE RD, SANDY BAY	Property ID (PID)	9192359
Description of development	Multiple Dwellings x 20		
Schedule of drawings/documents			
Prepared by	Drawing/document No.	Revision No.	Date of Issue
Quality Home Design	2018-016-B-S4R, 2018-016-B-S4-1R to 2018-016-B-S4-10R	1	03/09/2020
Pitt & Sherry	HB19519 Sheets P4, P8 & P9	A	09/09/2020
Conditions			
<p>SUBMISSION TO PLANNING AUTHORITY NOTICE OF PLANNING APPLICATION REFERRAL</p> <p>Pursuant to the <i>Water and Sewerage Industry Act</i> 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:</p> <p>CONNECTIONS, METERING & BACKFLOW</p> <ol style="list-style-type: none"> A suitably sized water supply with metered connections and sewerage system and connection to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit. <p>Advice: TasWater will not accept direct fire boosting from the network unless it can be demonstrated that the periodic testing of the system will not have a significant negative effect on our network and the minimum service requirements of other customers serviced by the network. To this end break tanks may be required with the rate of flow into the break tank controlled so that peak flows to fill the tank do not also cause negative effect on the network.</p> Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost. Prior to commencing construction/use of the development, any water connection utilised for construction/the development must have a backflow prevention device and water meter installed, to the satisfaction of TasWater. <p>DEVELOPMENT ASSESSMENT FEES</p> <ol style="list-style-type: none"> The applicant or landowner as the case may be, must pay a development assessment fee of \$1,139.79 to TasWater, as approved by the Economic Regulator and the fee will be indexed, until the date paid to TasWater. <p>The payment is required within 30 days of the issue of an invoice by TasWater.</p> 			

**Advice****General**

For information on TasWater development standards, please visit

<http://www.taswater.com.au/Development/Development-Standards>

For application forms please visit <http://www.taswater.com.au/Development/Forms>

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

Authorised by

A handwritten signature in black ink, appearing to read "J. Taylor".

Jason Taylor

Development Assessment Manager

TasWater Contact Details

Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

Application Referral Environmental Development Planner - Response

From:	Rowan Moore Environmental Development Planner 6 May 2021
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	21B ENTERPRISE ROAD, SANDY BAY 21A ENTERPRISE ROAD, SANDY BAY 26 EDITH AVENUE (CT 169835/105), SANDY BAY 35 ENTERPRISE ROAD, SANDY BAY ADJACENT ROAD RESERVE
Proposal:	20 Multiple Dwellings and Associated Works
Application No:	PLN-20-740
Assessment Officer:	Richard Bacon,

Referral Officer comments:

Codes Applicable:

Code	Applicable	Exempt	Permitted	Discretionary
E1.0 Bushfire-Prone Areas	No			
E3.0 Landslide	Yes	No	No	Yes - E3.7.3 P1
E9.0 Attenuation	No			
E10.0 Biodiversity	Yes	No	No	Yes - E10.7.1 P1
E11.0 Waterway & Coastal	Yes	No	No	Yes - E11.7.1 P1 & P4
E16.0 Coastal Erosion	No			
E18.0 Wind & Solar Energy	No			
E20.0 Acid Sulfate Soils	No			

Assessment:

Approval is sought for 20 multiple dwellings on a vacant 8030m² lot at 21B Enterprise Road, Sandy Bay.

Associated works include earthworks, vegetation clearing, driveways and parking areas, landscaping, boundary fencing and services. Vegetation clearing to establish a bushfire hazard management area is also proposed on 21A Enterprise Road and 26 Edith Avenue.

Landslide Code

The Code applies because development is proposed within a landslide hazard area (medium

landslide hazard area). The area has been modelled as having some susceptibility to debris flow. The landslide hazard area is shown in Figure 1 below.



Figure 1: Landslide hazard area (orange) relative to the house site (blue outline) and bushfire hazard management area (red outline)

The relevant standards are under clause E3.7.3 as 'major works' are proposed within the landslide hazard area.

There is no acceptable solution for E3.7.3 A1. Performance criterion P1 states the following:

Major works must satisfy all of the following:

- (a) no part of the works is in a High Landslide Hazard Area;*
- (b) the landslide risk associated with the works is either:*
 - (i) acceptable risk; or*
 - (ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.*

No works are proposed within a High Landslide Hazard Area.

A slope stability risk assessment was submitted with the application.

The assessment concludes that the debris flow risk is 'very low' and risk mitigation measures are not required (i.e. risk is 'acceptable').

The assessment also concludes that the risk of rock roll during construction works is 'low' and 'acceptable'. However it also states that due care should be taken:

During excavation and construction works it is possible that rocks could be dislodged and roll downslope. Currently there is a deep ditch at the base of the property that is likely to

intercept such rocks, however it is clear that this will need to be filled to complete the development as planned. As such, due care should be taken during construction. Large rocks that are moved should be placed such that they are stable and sitting on the largest, flattest face available. Where possible rocks that are moved should be placed on the shallowest available slope. If a large (>500mm minimum dimension) rock is excavated and has no flat faces such that it can be placed in a stable position locally, it should be moved to an area where it can be placed in a stable position. With suitable care being taken the risk posed by boulder roll during construction is assessed to be low.

It is recommended that a condition be applied to any permit granted requiring implementation of the recommended measures to ensure the risk is 'tolerable'.

The assessment also includes the following comments regarding runoff management:

It is likely that during periods of heavy rainfall runoff will sheet down the slopes, potentially causing damage. Drainage should be designed to intercept and divert this water; however, care should be taken not to increase the volume of water in the stream line to the east of the property as this would then raise the level of hazard for people downstream of the development.

The proposed stormwater system for the development has been designed to capture all 5% AEP flows, and would not significantly increase the volume of water in the drainage line as an existing cut-off drain currently captures and directs surface runoff to the drainage line.

With regard to vegetation removal for bushfire hazard management, the assessment report states the following:

With regard to bushfire management, it will be important when removing trees that the root systems are not removed so that the extra disturbance associated with rapid removal of root systems does not occur. Keeping scattered groups of trees as recommended in the bushfire report will assist in retaining support for the slopes and reduce the risk of any large ground movement. These scattered clumps and any retained low vegetation will assist in reducing the risk of rocks rolling down slope and will also provide barriers that may slow or stop rolling rocks. The general intent and detail of the bushfire plan is not at odds with the landslide risk management measures for this area.

Conditions are recommended to give effect to these recommendations.

Based on the submitted Slope Stability Assessment, the landslide risk is considered tolerable in accordance with P1(b)(ii) and the exercise of discretion is recommended subject to the recommended conditions.

Biodiversity Code

The Code applies because the removal of native vegetation is proposed within a biodiversity protection area. Approximately 2000m² of the proposed upslope bushfire hazard management area is within a biodiversity protection area (refer to Figure 2 below).



Figure 2: Proposed bushfire HMA (red outline) relative to the biodiversity protection area (green)

The submitted bushfire hazard management plan includes the following prescriptions for the hazard management area:

Remove trees and shrubs within HMA. Retain individual mature eucalypts or clusters of mature eucalypts not exceeding 20m in dimension with minimum 20m separation to other areas of vegetation. Trim lower branches of retained trees to minimum 2m above ground level. Slash grasses, remove ground fuels including branches, bark, leaves and dead vegetation regularly. Plant bushfire resisting plants where appropriate... Establish garden and hardstand areas within development site. Ensure any flammable materials such as dead branches, leaves and bark are cleared regularly.

The submitted natural values determination includes the following comment regarding the proposed bushfire hazard management within the biodiversity protection area (BPA) and the waterway protection area for the nearby watercourse:

The bushfire management plan does not require all the trees to be removed thus the majority of impact is to the tall shrub layer and below. It is estimated that 5 small to medium sized white peppermints (dbh less than 70 cm) may be impacted in order to meet the requirements of the bushfire management plan, in addition to the removal of the shrub layer.

The relevant standards are under clause E10.7.1. The proposal does not comply with A1(a) because no building area has been approved for this site on a subdivision plan. The proposal does not comply with A1(b) because the development is not for a single dwelling. The development doesn't comply with A1(c) because an area of more than 1000m² would be disturbed. The development must therefore comply with the related performance criterion, P1.

The submitted natural values determination describes the vegetation as follows:

The vegetation within the search area is dominated by *Eucalyptus pulchella* dry forest and woodland (DPU) (Figure 1). The grassy/shrubby *Eucalyptus pulchella* forest is widespread on the hills of Mt Nelson. The canopy is dominated by white peppermint *Eucalyptus pulchella*, with the occasional white gum *Eucalyptus viminalis* (Plates 1-3). Understorey shrubs and small trees include hop bush *Dodonaea viscosa*, black wattle *Acacia mearnsii*, Tasmanian blanketleaf *Bedfordia salicina*, bull oak *Allocasuarina littoralis*, silver wattle *Acacia dealbata* and native cherry *Exocarpos cupressiformis*. The shrub and herb layer is species poor and prominent species are peach berry heath *Lissanthe strigosa*; variable saw sedge *Lepidosperma laterale*, velvet tussockgrass *Poa rodwayi* and native cranberry *Astroloma humifusum*.

To the east of the property and within the bushfire hazard management area is an ephemeral upper tributary to Maning Rivulet. It is expected that water will only flow into this during high rainfall events, and for short periods. A small increase in *Lepidosperma laterale* is evident here.

A photo showing the typical vegetation is presented as image 1 below.



Image 1: Typical vegetation on the site (photo taken from Natural Values Determination)

The main findings of the NVD are:

- the native vegetation community within the study area is '*Eucalyptus pulchella* dry forest and woodland' (DPU);
- no threatened flora species were observed;
- no mature trees were observed;
- no potential trees hollows were observed;
- one location with large dolerite boulders has some potential for use by native mammals as a lay-up, but no signs of recent usage was evident and the site is unlikely to be used for breeding purposes;
- no threatened fauna were recorded, however eastern-barred bandicoots may use the

- land and masked owls may hunt in the area; and
- one declared weed species (boneseed) was recorded.

While section 4 of the NVD makes reference to 'moderate priority biodiversity values', this is a typographical error as the report doesn't identify any significant habitat values and doesn't address the part of the performance criterion related to moderate priority biodiversity values. In addition, an amended NVD was submitted for the previous application on this site that clarified that only low priority biodiversity values were present.

With regard to low priority biodiversity values, performance criterion P1 states the following:

Clearance and conversion or disturbance must satisfy the following:

(a) if low priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings...

The only element of the proposed development that would have a direct impact upon vegetation within the BPA is the bushfire hazard management area. There could also be some impact on the root zones of vegetation within the BPA from excavation works for Unit 10.

If no dwellings were proposed in this southern section of the lot (i.e. units 10, 11 and 12 were deleted), the hazard management area within the BPA could be reduced by approximately 1400m² to 600m². If house 10 only was deleted, the hazard management area encroachment into the BPA would be reduced by approximately 1000m² to 1000m².

Unit 10 could not realistically be sited elsewhere on the lot and has a relatively compact footprint, so it is difficult to see how the hazard management area for Unit 10 could be reduced without a higher level of bushfire-resistant construction. The proposed bushfire hazard management area (HMA) is based on the dwellings being constructed to BAL-12.5, which is the lowest level of fire-resistant construction under the Australian Standard.

If the next-highest level of bushfire-resistant construction (BAL-19) was adopted for dwellings 4-10 on the south-western side of the proposed internal driveway, the extent of the HMA within the BPA would be reduced by approximately 1275m² to 725m². If BAL-29 were adopted for these units, the extent of the HMA within the BPA would be reduced to approximately 350m².

If only Unit 10 was constructed to BAL-19, the area of the HMA within the BPA would be reduced by approximately 700m² to 1300m².

In my opinion, BAL-12.5 construction does not minimise impacts as far as reasonably practicable. Higher levels of bushfire-resistant construction (BAL-19 and BAL-29) could be adopted that would comply with the deemed-to-satisfy solutions for the building regulations for bushfire-prone areas. BAL-19 construction requirements are not particularly onerous, and only add a relatively small additional cost to overall construction costs (estimated at \$5-10K per dwelling). BAL-29 construction adds significant additional costs per dwelling (estimated to be around \$40K).

It is recommended that a condition be applied to any permit granted limiting vegetation clearing within the biodiversity protection area to that required to achieve BAL-12.5 for Units 1-3 and 11-20 and BAL-19 for Units 4-10 (which would have hazard management areas extending into the BPA at BAL-12.5). This would reduce the area of the BPA affected from

approximately 2000m² to 725m². In my opinion this minimises impacts as far as reasonably practicable given:

- the biodiversity significance of the vegetation;
- the additional construction costs associated with BAL-19 and BAL-29 construction; and
- the fact that the proposed level of vegetation clearing would be 'permitted' under the standard if the proposal were for a single dwelling (E10.7.1 A1(b)).

Not all vegetation needs to be removed within the bushfire HMA and a condition is recommended to ensure the minimum vegetation necessary is removed.

Waterway and Coastal Protection Code

The Waterway and Coastal Protection Code applies because development is proposed within a waterway protection area (WPA). There is a small watercourse passing to the south-east of the dwelling lot, which is a tributary of Maning Rivulet. The watercourse starts as a drainage line near the proposed house lot and gradually increases in size moving downstream below Edith Avenue where it takes on the form of a more significant watercourse with a deeper, wider channel and banks and exposed bedrock bed.

The location of the watercourse and the associated WPA is shown in Figure 3 below. A photo of the watercourse near the proposed house lot is shown in Image 2.

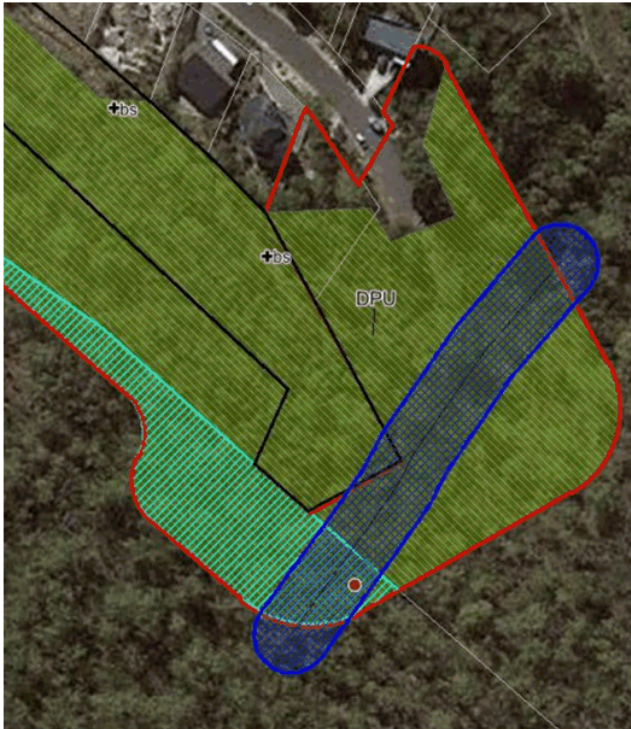


Figure 3: Creek line and associated waterway protection area (blue outline) (taken from Natural Values Determination)



Image 2: Watercourse near the proposed house lot (taken from submitted Natural Values Determination)

A small part of the WPA is located within the house lot and would be directly impacted by the development. The remainder is outside the house lot and would only be impacted by the proposed bushfire hazard management area.

There is also a cut-off drain that runs the length of the house lot that technically meets the definition of a 'watercourse' under the Scheme (refer to Image 3 below). This was constructed to address runoff issues for the down-slope properties fronting Enterprise Road.



Image 3: Cut-off drain on 21B Enterprise Road

The relevant standards are under clause E11.7.1. The proposal does not comply with acceptable solution A1 because there is no approved building area for the land on a

subdivision plan. Performance criterion P1 states the following:

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values;*
- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (c) avoid or mitigate impacts on riparian or littoral vegetation;*
- (d) maintain natural streambank and streambed condition, (where it exists);*
- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;*
- (f) avoid significantly impeding natural flow and drainage;*
- (g) maintain fish passage (where applicable);*
- (h) avoid landfilling of wetlands;*
- (i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and 'Tasmanian Coastal Works Manual' (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.*

It is important to note that most of the vegetation within the WPA has already been approved for removal under planning permits PLN-06-00175-01 and PLN-14-00572-01 that approved the subdivision of 26 Edith Avenue. Under that approval, all of the WPA within the proposed HMA for the 21B Enterprise Road proposal would either be developed as a public road, a private dwelling/garden, bushfire building protection zone and/or bushfire fuel modified buffer zone. If that development proceeds, less vegetation is likely to be retained within the WPA than under the current proposal for 21B Enterprise Road. The 26 Edith Avenue subdivision is being developed in stages, and I am not aware of any decision by the developer to not proceed with those stage sin the future.

The natural values of the waterway protection area are fairly limited, and are only marginally more significant than the vegetation in the area generally. It is an ephemeral watercourse that is only likely to carry surface flows during, or immediately following, periods of rain. As such, there is little riparian vegetation in the true sense (i.e. adapted to higher ground moisture levels or inundation). There is no standing water that provides aquatic habitat and few other habitat features that are not present in the surrounding forest.

The vegetation within the WPA only needs to be reduced to satisfy the HMA prescriptions of the bushfire hazard management plan, and some vegetation can be retained. However, the majority of the shrubs and some of the trees would be removed, and groundcovers such as grasses will need to be slashed. The vegetation affected isn't considered to be particularly significant from a biodiversity conservation perspective.

The volume of water entering the watercourse is likely to be similar pre- and post-development as the existing cut-off drain collects up-slope water and directs it to the watercourse slightly further down than the proposed stormwater outfall for the development. Scour protection is proposed for the outfall, and pre-treatment of the stormwater is proposed to reduce pollutant loads. The proposed detention system would also reduce peak flows, minimising erosion.

There may be a slight increase in water volumes in the watercourse during rain as a result of the proposed vegetation removal as there would be less vegetation drawing water from the soil, meaning the soil will become saturated more quickly.

The proposed stormwater system would incorporate pit traps and a filtration system to reduce pollutant loads prior to discharge. The submitted stormwater report estimates a 92% reduction in total suspended sediments, 70% reduction in phosphorus, 46% reduction in nitrogen and a 95% reduction on gross pollutants would be achieved by the proposed system. These values exceed the recommended targets in the State Stormwater Strategy. It is likely that sediment loads being introduced to the watercourse from the proposed stormwater system would be reduced under the proposal because the existing cut-off drain is un-lined and would be subject to erosion.

In addition to the rock pitching scour protection proposed for the stormwater outfall, the submitted stormwater report makes the following recommendation for plantings to stabilise the area around the outfall:

It is recommended in addition to the rock pitching and within the creek bank area that native grasses, sedges and sags be planted throughout. Species such as tussock grass and common wallaby grass recommended as a minimum. Planting is recommended for a minimum of 8m past the culvert outlet, subject to detailed design and associated investigations.

A condition requiring Council-approval of the scour protection design and landscaping design has been recommended by Council's Stormwater Unit.

Erosion within the WPA can also be minimised by careful implementation of the bushfire hazard management area. The root systems of trees should be kept in-situ (as per the recommendations of the slope stability assessment) and ground disturbance should be minimised with the use of hand tools rather than machinery. This would also ensure the potential animal 'lay-up' identified in the natural values determination would not be destroyed. A condition to this effect is recommended.

Impacts to riparian vegetation would be limited to the minimum necessary to achieve an adequate bushfire hazard management area. It should be noted that the 'riparian vegetation' in this instance is basically the same as the vegetation throughout the remainder of the site, and is not considered particularly significant from a biodiversity conservation perspective. Conditions are recommended for any permit granted requiring a vegetation management plan identifying vegetation to be removed and retained, and any revegetation, to ensure impacts upon riparian vegetation are minimised.

Natural streambed and streambank condition would not be significantly altered by the proposal, as flow volumes will be similar pre- and post-development, and no physical changes to the stream are proposed or are necessary. The submitted natural values determination states '*there will be some minor impacts in the surrounding area of the waterway for bushfire hazard management however retaining trees in this section combined with erosion and sediment planning will ensure natural streambank/bed processes continue to function*'. A condition is recommended to ensure the physical form of the watercourse is not impacted during establishment of the bushfire HMA.

There is little in-stream habitat of significance in this section of the watercourse, and the habitat within the watercourse is largely the same as the surrounding habitat. There may be a few more rocks within the channel, however rocks are common throughout the area. Fallen branches and leaves will be removed however as part of the bushfire HMA. The submitted natural values determination states the following:

In stream habitat is largely a 1m lower lying area within the bushfire hazard area and contains water only at high rainfall times where it quickly disperses downstream. The level of vegetation removal is not anticipated to affect instream natural habitat as long as minimal clearing in this area is implemented as discussed.

The proposed development will not impede the flow of water in the watercourse.

Fish passage is not applicable in this section of this watercourse.

No wetlands would be filled.

Works can be carried out in accordance with the Waterways and Wetlands Works Manual, and the soil and water management plan for establishment of the HMA should reflect this.

The cut-off drain is a relatively-recent, artificial feature with few natural values. Removal of the cut-off drain would not lead to increased erosion or sedimentation. The vegetation adjacent the drain is not significant and isn't really riparian vegetation in the true sense of the word. The drain isn't a natural feature so does not have natural streambank and streambed condition or 'natural flow and drainage' and it doesn't have any habitat features of significance.

On balance, the proposal is considered consistent with E11.7.1 P1, subject to the recommended conditions, and the exercise of discretion is recommended.

Acceptable solutions A2 and A3 are not applicable.

The proposal does not comply with acceptable solution A4 because a new stormwater point source discharge is proposed within the watercourse. Performance criterion P4 states the following:

Development involving a new stormwater point discharge into a watercourse, wetland or lake must satisfy all of the following:

(a) risk of erosion and sedimentation is minimised;

(b) any impacts on natural values likely to arise from erosion, sedimentation and runoff are mitigated and managed;

(c) potential for significant adverse impact on natural values is avoided.

The proposal will comply with this performance criterion subject to my recommended conditions and the related conditions recommended by Council's Stormwater Unit.

Representations

A large number of representations were received, including some raising environmental development matters. These are addressed in Table 1 below.

Issue Raised	Response
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<i>Bushfire</i>	
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I note the recommended Hazard management strategies by Lark & Creese consultants relies upon bush clearing but also ongoing maintenance by private landholders to regularly clear away bush debris. How realistic is that?

I also have concern that the plans, as far as I can tell, do not provide for access by firefighting vehicles to get up into the bush behind the proposed dwellings to put out any spot fires. The Units appear to be crammed close together without consideration for that potential issue.

By the way the recommendation of Mr Creese that the road needs a turning circle at the end does not show in the plan.

If Council approves the proposed high-density housing scheme above Enterprise Road despite it not complying with the scheme in numerous ways, it will be unable to avoid responsibility for the potential outcome of a major fire emergency when evacuating traffic coming down the hill blocks emergency trucks/ambulances/police etc. from reaching the proposed site.

TFS is concerned that without clearer detail about the level of disturbance that is proposed there is the potential for conflicting permit conditions to be imposed (i.e. limiting vegetation removal) meaning the resultant hazard management area may not perform as intended. It will also be difficult for Council to verify whether works are compliant with the approved bushfire hazard management plan.

The bushfire report is silent with respect to when the required hazard management area is required to be implemented. There is no reference to staging the development, which suggests all vegetation removal will occur in a single stage.

Private landowners are always responsible for implementing and maintaining bushfire hazard management areas on private land.

The submitted bushfire hazard management plan does not require a fire trail. It is up to the certified bushfire practitioner to determine whether a fire trail is necessary. Bushfire risk mitigation is not a consideration for this application as the Bushfire-prone Areas Code is not applicable.

Bushfire risk mitigation is not a consideration for this application as the Bushfire-prone Areas Code is not applicable.

Traffic engineering issue

A condition is recommended for a Council-approved vegetation management plan that specifies vegetation to be retained within the biodiversity protection area and waterway protection area to ensure clearing of vegetation is the minimum necessary within the bushfire hazard management area. It is up to the applicant to ensure a proposed vegetation management plan is consistent with the future bushfire requirements of a building application.

This can be clarified in the recommended vegetation management plan and construction management plan.

TFS has seen many cases whereby hazard management areas have not been properly established or verified prior to building work being completed and seeks to avoid these situations from occurring in future. It is therefore recommended that Council condition the permit to require an amended report be provided that specifies when the hazard management area on adjoining properties must be implemented so there is a clear point at which verification can occur.

The proposed landscaping plans include the planting of various native and introduced shrubs and small trees as well as areas to be covered with bark mulch. TFS is concerned with the proposed massing of flammable plants and mulch where they will directly adjoin proposed dwellings. This landscaping concept will likely increase vulnerability to ember attack and is inconsistent with the required function of a hazard management area in an urban interface area. It is recommended that Council condition its approval on a revised landscape plan being provided to reduce vulnerability to bushfire. Ways in which this could be achieved might include using less flammable species and providing greater separation between clumps of vegetation and between garden beds and buildings. Bark mulch could be replaced with a non-flammable alternative or limited in its application.

Formalising a legal right of access to hazard management areas on adjoining properties together with an obligation to maintain them is critical for long term maintenance. The bushfire report identifies the need for a Part 5 Agreement to be entered into with the adjoining landowners for the purpose of maintaining hazard management areas but does not specify when this must be formalised. TFS has seen example whereby these types of title restrictions have not been formalised prior to building work occurring, which has resulted in non-enforceable (or non-existent) hazard management areas. For this reason, it is recommended that the required Part 5 Agreements (or alternative mechanisms) be formalised and implemented prior to commencement of any building work.

There is no head of power for such a condition as a bushfire hazard management plan is not required for this development under the planning scheme. In addition, even if the Bushfire-Prone Areas Code were applicable, it is questionable whether such a condition could be legally applied given section 51(2)(d)(i) of the Act which requires planning authorities to accept certified bushfire hazard management plans when determining an application for a permit. Advice is recommended for any permit granted that the applicant discuss bushfire issues with the TFS prior to lodging any building application.

Agree, however there is no head of power to address this as part of the planning application as a bushfire hazard management plan is not required under the planning scheme. Advice is recommended for any permit granted that the applicant discuss bushfire issues with the TFS prior to lodging any building application.

Agree, however there is no head of power to address this as part of the planning application as a bushfire hazard management plan is not required under the planning scheme. In addition, Council's internal policy is to not be parties to Part 5 Agreements for bushfire plans for Building Act/Regulations purposes, so an alternative mechanism (e.g. easement) will be required. Advice is recommended for any permit granted that the applicant discuss bushfire issues with the TFS prior to lodging any building application.

The bushfire hazard management plan includes a requirement for the hazard management areas to be maintained at all times however it does not provide any direction about who is responsible for this. In situations whereby multiple lots (strata or freehold) rely on a shared hazard management area, there needs to be clear direction about who is expected to undertake maintenance. In our experience, relying on multiple owners to individually undertake maintenance of parts of the shared hazard management area is not a practicable long-term solution. In this situation the most appropriate approach is for maintenance to be undertaken by the development's strata corporation. To ensure this occurs, it is recommended that Council condition the permit to require the future strata plan include a provision obligating the strata corporation to undertake the required maintenance within specified timeframes.

The bushfire report seeks to justify reducing the carriageway width from the Deemed-to-Satisfy standard required for building compliance. For building compliance purposes, this would require the preparation and approval of a Performance Solution. The proposed Performance Solution has not been prepared in accordance with the National Construction Code 4-step process and as such, TFS has not been consulted in its design. Please be aware that should the developer be unsuccessful in gaining TFS support for the Performance Solution, the access design would likely need to be revised, which may then affect the site layout.

Native Vegetation and Biodiversity

Huge amount of trees would have to be removed to achieve bushfire safety.

Loss of wildlife habitat

Agree, however there is no head of power to address this as part of the planning application as a bushfire hazard management plan is not required under the planning scheme. In addition, even if the Bushfire-Prone Areas Code were applicable, it is questionable whether such a condition could be legally applied given section 51(2)(d)(i) of the Act which requires planning authorities to accept certified bushfire hazard management plans when determining an application for a permit. Advice is recommended for any permit granted that the applicant discuss bushfire issues with the TFS prior to lodging any building application.

Noted

The proposed bushfire hazard management area is very large and would impact approximately 2ha of vegetated land. A condition has been recommended to reduce the extent of the HMA within the biodiversity protection area. According to the natural values determination, only about 5 small-medium sized gums would need to be removed within the biodiversity protection area and waterway protection area.

There would be a considerable loss of general fauna habitat, however most of the area is not subject to the Biodiversity Code and the habitat is not considered moderately or highly significant for threatened fauna.

Loss of habitat to endangered species

The development would result in the loss of general habitat that could be utilised by a range of threatened fauna, including Tasmanian devils and eastern-barred bandicoots, but the habitat is not considered moderately or highly significant for threatened fauna.

Many native birds live and breed in the area I fear for their future with so much of their habitat to be destroyed.

There would be a considerable loss of general fauna habitat, however most of the area is not subject to the Biodiversity Code and the habitat is not considered moderately or highly significant for threatened fauna.

I noted that the flora and fauna report did not include Echidnas which have been often seen in the area and Blue Tongue Lizards that live in the area

Noted. The focus of natural values surveys are threatened fauna, and habitat for non-threatened fauna is only classified as being of low priority biodiversity significance under the Code.

The endangered species Tasmanian Devil had been observed in the vicinity in years gone by.

Devils are likely to use the land from time-to-time, however no dens were recorded in the area. The submitted natural values determination only considered the habitat to be of low priority biodiversity value for Tasmanian devils.

The proposed development will increase pressure on the Skyline reserve and the bushland's biodiversity and environment. The development's biodiversity survey was limited in scope and did not take account of interconnections between the proposed development site and the adjoining Skyline reserve, and the cumulative impact of such developments on the environment. Removal of vegetation and habitat on the site and clearing of the required bushfire hazard management area beyond the development site, will impact the adjacent area of the reserve and may lead to further reduction of biodiversity. The reserve provides a valuable biodiversity refuge which contributes to the maintenance of biodiversity in the Hobart area. The reserve's popularity and extensive recreational use reflects the growing demand and appreciation of such valuable spaces in Hobart and the proposed high-density living on the edge of the Skyline reserve will increase this pressure further. The Skyline reserve is also vital in maintaining the treed skyline around Hobart

The proposed development (including bushfire HMA) would be set back a minimum of approximately 85m from Bicentennial Park. This buffer should ensure 'edge effects' on the reserve are minimal. However, the proposed clearing will reduce habitat availability in the area and many fauna are likely to re-locate to surrounding bushland, increasing competition in those areas. The submitted natural values determination concluded that the development would have no significant impact on threatened fauna or threatened fauna habitat.

I do not want the land to be cleared as this will remove all areas for parrots, wallabies and reptiles to live.

The land would support some species following clearing, however biodiversity is likely to be reduced.

It is important to acknowledge the impact on the Biodiversity Protection Area and prompts the question why do we have a protection area if it's not going to be protected?

A biodiversity protection area is simply an area where the Biodiversity Code applies.

There are 14 different threatened fauna on the list of species potentially impacted by the development. The report ignores that there have been sightings of several of the species on the list

Having been involved in a number of large industrial wildlife and environmental studies during my professional career, I can only say that the wildlife survey seems to be cursory, lacking in inquisitiveness and historical. There seems to have been no attempt to make any contact with local residents regarding this study, which seems to have been the characteristic of everything that the Proponent has done during this DA preparation. Perhaps he is aware of how destructive this Proposal would be to the local community.

As local residents backing onto the bushland both myself and my wife have seen owls and we constantly hear their calls during different times of the year. During the process of this second DA, I have seen a White bellied Sea Eagle overfly my house. We have also seen on several occasions in our back yard, late at night, the near endangered Tasmanian Bettong (photographed in my back yard, attached) not mentioned in the environmental report.

The study has also focussed on what is not in the forest rather than what is in this vibrant forest. We have sighted on many occasions Yellow Tail Black Cockatoos, Currawongs, Mountain Dragons, Blue Wrens, Robins, various species in the Raptor Class, Green Rosellas, Echidnas, various species in the Honey Eater class, various small birds like white eyes and so the list goes on and of course large numbers of wallabies and possums.

This massive, out of character Proposal which will cause huge loss of habitat for native animals and birds should not be allowed as these animals are also residents of Hobart and will be displaced from their homes. I am a wildlife carer and know that brushtail and ringtail possums cannot be relocated as they are not accepted by other possums, if, by necessity, they have to leave their original home. All these naive possums, wallabies and reptiles will become road kill or be killed by the animals in the areas they try to move to.

The necessary fire setbacks would be an unacceptable incursion into the parkland

How can Council allow the clearing of more than 20,000m² of land 2HA in this pristine valley?

The application contains minimal information about how the proposed hazard management areas will be established, the amount of vegetation removal that is proposed or what will be retained.

The author of the report would only be aware of the sightings if they are recorded in the Natural Values Atlas.

The methods used for the natural values determination are very standard for a development of this nature.

These may be the threatened masked owl, or non-threatened species. The submitted natural values determination indicated that masked owls may forage (hunt) in the area, but that there no hollows suitable for breeding recorded. The vegetation was considered to be of low priority biodiversity value for threatened species.

Natural values surveys, and the Biodiversity Code, focus upon impacts to threatened specie habitat rather than general fauna habitat.

The focus of the Biodiversity Code is the protection of habitat for threatened species rather than non-threatened species.

The bushfire hazard management areas would not extend into Bicentennial Reserve.

There are limited planning scheme controls on vegetation clearing over most of the land.

The degree of information provided regarding the establishment of bushfire hazard management areas is considered just adequate to be able to assess the application under the Biodiversity Code.

The supporting Slope Stability Risk Assessment (prepared by Pitt & Sherry) does not consider the effect of the proposed vegetation removal on slope stability.

The supporting Natural Values Assessment (prepared by North Barker) does consider hazard management areas but – in the absence of detail about the proposed vegetation removal – is reliant on assumptions about what may or may not be removed.

The submitted slope stability assessment considers the potential impact of vegetation removal on slope stability (section 15).

The degree of information provided regarding the establishment of bushfire hazard management areas is considered just adequate to be able to assess the application under the Biodiversity Code.

Waterways

The Manning Rivulet which runs through Lot 105 and in the cleared land/forest zone is important to the local community. We see it as a community asset and strongly object to its degradation as appears will happen with development. Erosion of its banks will occur.

Significant degradation of the watercourse is not expected subject to the recommended conditions.

Construction Management

We are also concerned about the mental and physical health aspects of 4 to 5 years of rock hammering noise that will invade the whole hillside, in this steep hard rock terrain.

Noise is an unavoidable aspect of development, and construction noise is not a valid reason to refuse a development under the planning scheme. Clause 8.11.3 does allow the planning authority to impose conditions to minimise the impact of construction works, and a condition is recommended for any permit granted requiring the implementation of a Council-approved construction management plan which addresses noise and vibration.

As above.

Increased noise pollution from construction.

The foundations will be dug out of solid, dolerite rock which will require continual use of rock hammering machinery which emit highly dangerous noise levels of up to 113 decibels. This will endanger and permanently damage the hearing of numerous residents. Noise above 85 decibels for one day only, in a workplace situation will result in permanent hearing damage, let alone years of rock hammering at 113 decibels. The effect of this protracted noise will also cause mental health problems for the residents in this long established community.

Nearby residents would not be exposed to such high noise levels as they would be spatially separated from the machinery. However, there is a risk of residents being exposed to unreasonable noise levels and durations during construction works (particularly excavation) and this will need to be carefully addressed by the developers. A condition is recommended for any permit granted requiring the implementation of a Council-approved construction management plan which addresses noise and vibration, and demonstrates that all feasible and reasonable mitigation measures will be employed.

Erosion

Erosion concern due to loss of vegetation.

The removal of vegetation from the hillside may lead to increased erosion. The large amount of surface rock and shallow soils means the slope is unlikely to be highly susceptible to erosion though. Groundcover plants are already relatively sparse through the area. As shrub and tree cover is removed groundcovers will increase due to light availability which will help to protect and stabilise surface soils. The risk can be minimised by restricting clearing to the minimum necessary for adequate bushfire protection, keeping root systems in the ground, avoiding the use of mobile machinery when establishing the HMA and implementing appropriate soil and water management measures. Conditions are recommended to require these measures. Building control matter.

Why build so high up that far on the side of a hill it could end up undermining our land.
Erosion of banks of Manning Rivulet concern.

Significant increased erosion of the watercourse is not expected subject to the recommended conditions. Flow regimes would not change significantly, scour protection is proposed for the stormwater outfall, some vegetation will be retained and soil and water management measures will be required.

Removing the trees will lead to alteration of the natural drainage (surface runoff and groundwater runoff) and could cause water erosion and water infiltration problems to residents lower down the slope

Significant down-slope erosion or infiltration impacting down-slope residents is not expected subject to the recommended conditions.

Landslide

The proposed development site is prone to flooding and landslip. The development site's high gradient, the proposed removal of vegetation, including in the bushfire HMA beyond the development site, and laying of large impervious surfaces will increase the risk of local flooding and landslip. The existing stormwater infrastructure has limited capacity to cope with such increase and the diversion of excess run off to the local rivulet will extend the geographic range of the flood and erosion risks.

Land slip and instability also has the potential to degrade the quality of habitat and vegetation cover in the adjacent biodiversity protection area

The submitted slope stability assessment concludes that landslide risk associated with the development is tolerable. Runoff from the development site is currently diverted to the watercourse via a cut-off drain.

Significant land instability within the biodiversity protection area is not expected as a result of the development.

Units 10, 11, 12 and 13 appear to be in a landslip area, and clearing this area of vegetation further destabilizing the slope, may cause risks of landslides impacting adjoining land, property and assets, creating an unacceptable risk.

Dislodged dolerite boulders up to 2m in diameter rolling down the slope would be a significant risk to injury, damage to property and even death. Very significant protection works would need to be put in place to mitigate these risks.

The submitted slope stability assessment concludes that landslide risk associated with the development is tolerable.

The submitted slope stability assessment assessed the risk of rock roll as low and acceptable, however it does recommend measures to be taken during construction to minimise the risk (managing individual boulders). A condition is recommended requiring implementation of the recommended measures. Council may also want to consider requiring a rock roll protection structure between the development site and down-slope properties.

Part 5 Agreement

Registered on the land title associated with the proposal site (CT Ref 169834/40) is an Agreement entered into pursuant to Section 71 of the *Land Use Planning and Approvals Act 1993* (Dealing No. E11345) in July 2015 requiring that certain measures be taken and maintained to meet bushfire safety requirements into the future. These requirements include prohibitions that affect units 8 to 16;

Non-compliance with a Part 5 agreement is not relevant to the exercise of any specific discretion and therefore does not give rise to a basis to refuse a proposal. The Part 5 Agreement would need to be appropriately amended, superseded or ended however to ensure the proposed development does not conflict with the Agreement.

With regard to the Part 5 Agreement bushfire plan, this is too old to be used to satisfy future building applications for lots within the Edith Avenue subdivision so new BHMPs for future houses on these lot swill be required anyway. If the proposed development at 21B Enterprise Road proceeds, the development and hazard management area for that development would provide adequate low threat vegetation and hazard management areas for development of the relevant lots in the Edith Avenue subdivision.

Part 5 Agreement E11345 -as a whole it is clear that Council intended to prohibit and/or restrict the type of use and development that can occur on these properties, including preventing the construction of dwellings on part of the 21B Enterprise Road. This is particularly clear when one has regard to condition 28 of the planning permit attached to the agreement and the legend of the development plan.

The Edith Avenue subdivision did not propose residential lots at 21B Enterprise Road. Condition 28 was to reflect the amended layout of the Edith Avenue subdivision.

That part of the 21B Enterprise Road that is within the "Fuel Modified Buffer Zone" where no dwellings are to be constructed in accordance with the Development Management Plan dated August 2006 (Drawing No. F493M-31B).

The Part 5 Agreement would need to be appropriately amended, superseded or ended to ensure the proposed development does not conflict with the Agreement. Advice to this effect is recommended for any permit granted.

With regard to the Part 5 Agreement bushfire plan, this is too old to be used to satisfy future building applications for lots within the Edith Avenue subdivision so new BHMPs for future houses on these lot will be required anyway and the existing bushfire plan is effectively redundant. If the proposed development at 21B Enterprise Road proceeds, the development and hazard management area for that development would provide adequate low threat vegetation and hazard management areas for development of the relevant lots in the Edith Avenue subdivision.

EMPCA

The project is a level 2 activity under the *Environmental Management and Pollution Control Act 1994*, and as such needs a range of other permits and approval processes not currently being sought. By any measure the volume of extraction far exceeds the 5,000m³.

Quarries are only Level 2 Activities under Schedule 2 of EMPCA where a mining lease is required for the activity under the *Mineral Resources Development Act 1995* or is within a State Forest.

Part 5 Agreement

Part 5 Agreement E11345 applies to the owner(s) of 21B Enterprise Road and 26 Edith Avenue, and relates to the Edith Avenue subdivision. It affects 21B Enterprise Road in that it requires a building protection zone and fuel modified buffer zone over some of the land when Lots 37, 38 and 29 of the Edith Avenue subdivision are developed.

The Edith Avenue subdivision bushfire plan is now too old to be used to satisfy the current building regulations for bushfire-prone areas and new BHMPs will be required for those building applications. If the proposed development at 21B Enterprise Road proceeds, low threat vegetation areas and hazard management areas would exceed that required under the Edith Avenue subdivision bushfire plan anyway.

The Agreement will need to be amended, superseded or ended to ensure there is no conflict with the Agreement and advice to this effect is recommended for any permit granted.

Recommended Conditions:

Rock roll mitigation measures

Clearing based on BAL-19 construction for Units 4-10

Construction EMP

Recommended Advice:

A Part 5 Agreement will need to be amended, ended or superseded

Seek TFS advice on BHMP

Council unlikely to agree to being party to bushfire Part 5 Agreement

Application Referral Development Engineering - Response

From:	Cam Cecil, Dave Morley
Recommendation:	
Date Completed:	
Address:	21B ENTERPRISE ROAD, SANDY BAY 21A ENTERPRISE ROAD, SANDY BAY 26 EDITH AVENUE (CT 169835/105), SANDY BAY 35 ENTERPRISE ROAD, SANDY BAY ADJACENT ROAD RESERVE
Proposal:	20 Multiple Dwellings and Associated Works
Application No:	PLN-20-740
Assessment Officer:	Richard Bacon,

Referral Officer comments:**COMMENTS:****Summary:**

PLN-20-740 - 21B ENTERPRISE ROAD PLN-20-740 - 21A ENTERPRISE ROAD PLN-20-740 - 26 EDITH AVENUE.

Multiple Dwellings and Associated Works.

The development application at 21b Enterprise Road proposes 20 units, 10 either side apposing each along the 200 meter access. This is an extremely compact lot, approximate 34 m wide and 201 m long in a difficult to develop area of Sandy Bay with a 1 in 2 (45%) cross fall or "slope" towards the rear of the Enterprise Road properties (Figure 1).

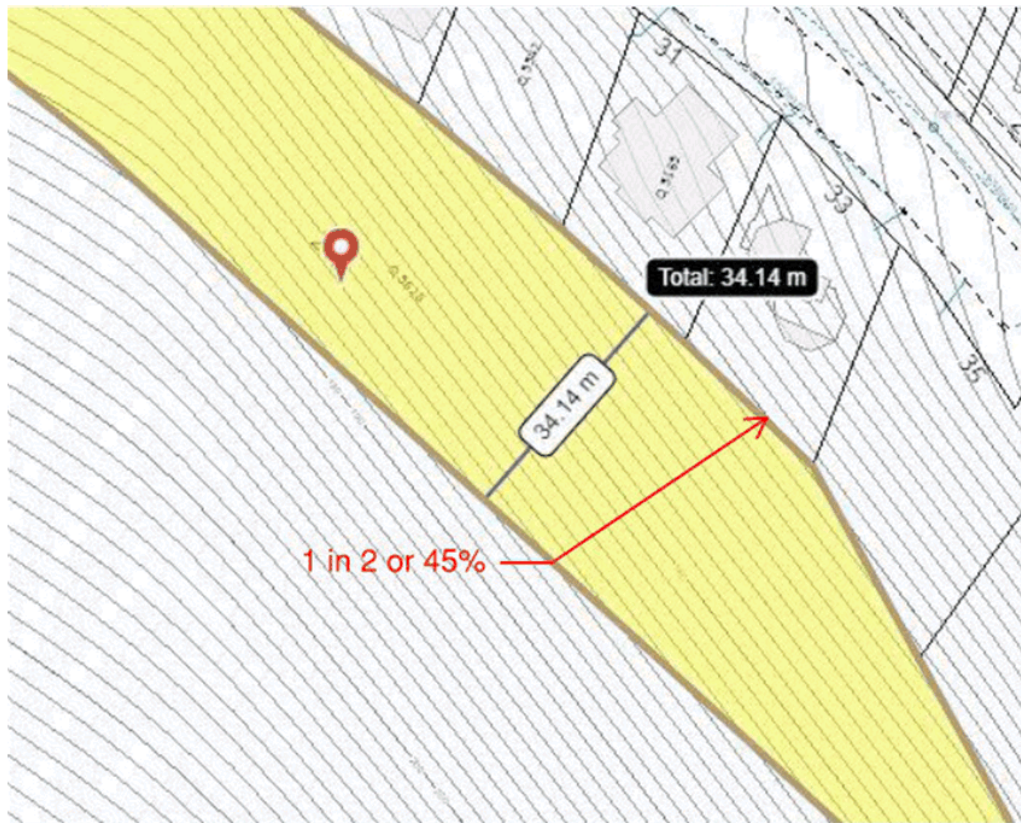


Figure 1: demonstrates the crossfall gradient of the lot.

Refusal is recommended

Code E5.5.1 Existing Accesses and Junctions

The objective:

To ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.

E5.5.1

- A3- Not Met- A increase of 40 Vehicles per day is proposed at the existing junction.
- P3 (a) – **Not Supported**. The entry/exit into the site is approximately half way along Enterprise Road. The only entry/exit onto Enterprise Road is via Birngana Avenue. These two entry exit points oppose each other by thirty (30) meters. This section that cuts Enterprise Road will receive all of the through traffic generated from the site. This impact of this could result in a choke point restricting access to the Southern Side residents of Enterprise Road and Glover Drive. Parking is available in this section of road which will reduce the width of the road considerably increasing the choke point by narrowing this small road section (Figure 2). The increases in vehicle movement in this area may also result in a concentrated conflict zone between vehicles moving and parked.
- P3 (b) – Supported. Agree with TIA. Mainly light vehicles (Cars)
- P3 (c) – Supported. Agree with TIA. The access appears to be suitably designed for traffic in entering and exiting at the same time

- P3 (d) – Supported. Agree with TIA. The access joins Enterprise Road. Both are residential.
- P3 (e) – Supported. Agree with TIA. Speed limit of Enterprise Road may potentially be less than the prescribed 50 km/hr.
- P3 (f) – Supported. Agree with TIA. No other access appears possible.
- P3 (g) – Supported. Agree with TIA. There is a known shortage of housing in Hobart
- P3 (h) – **Not Supported**. The TIA's effort to address this performance criteria states "This Traffic Impact Assessment has been prepared for the proposed development and identifies that it is not expected to have any major impacts on the safety and operation of the surrounding road network". The report does not provide detail on how the only one access to Enterprise Road, starting at the intersection of Niree Heights and Beddome St have the capacity to absorb another 214 vehicles per day.
- P3 (i) – **Not Supported**. A TIA was provided to aid assessment. The TIA is reasonably well written and professionally presented. However the TIA is limited in scope and omits key assessment areas such as the impact on the surrounding road network(s), Local area intensification and choke points/conflict areas.



Figure 2: Section of Enterprise Road of concern. Blue squares indicate cars that may be parked, increasing the choke point.

NOTE:

The TIA fails to mention that:

- Glover Drive
- Acushla Court
- Eureka Avenue
- Waymouth Avenue
- Cartela Street
- Birngana Avenue
- Niree Lane
- Niree Heights

shown in Figure 3 (black lines) feed into this single intersection before splitting left or right and finally entering Sandy Bay. A significantly larger number than the TIA mentions. No option other than refusal is available.

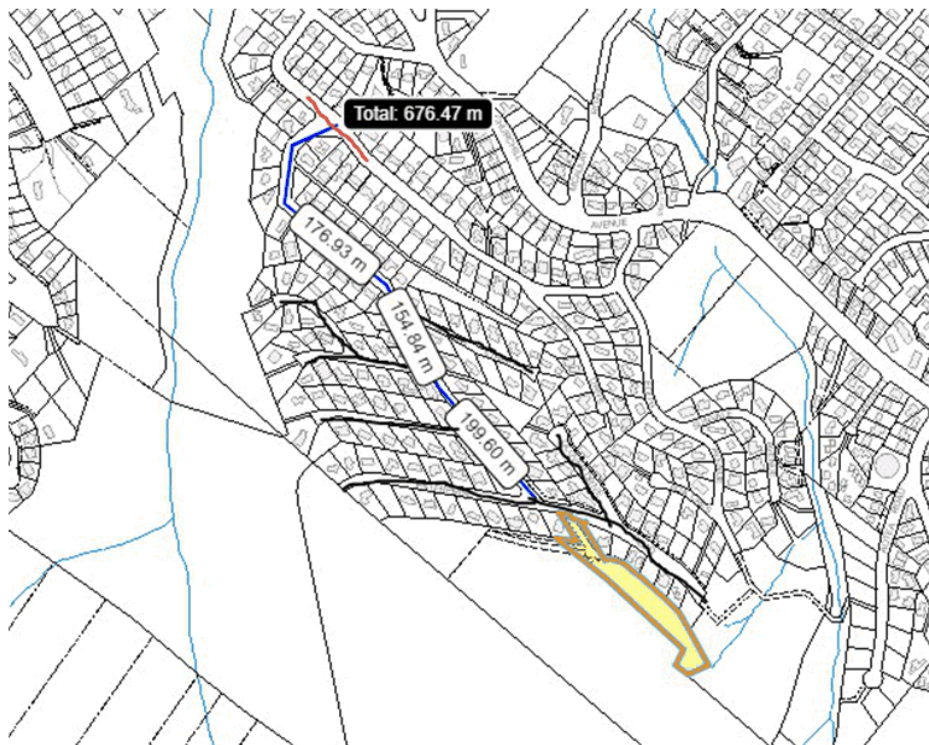


Figure 3: demonstrates the distance need to travel from the site along Birngana Avenue and Niree Heights (blue line) to the intersection of Niree Heights and Beddome Street, Black line indicates other feeder roads being picked up on the way to the single intersection.

Discretion Clause 5.6.4: Site Distance at Access and Junction - Does not meet the Acceptable solution but can be supported under performance.

Discretion Clause 6.6.1: Number of Car Parking Spaces - The development meets the minimum requirement of two (2) car parks per dwelling. Five (5) visitor car spaces are required. Seven (7) visitor spaces are proposed plus one (1) DDA space. Visitor spaces are

located at opposing ends of the development. The parking discretion due to the parking excess would be beneficial to the site and is no reason for refusal.

Discretion Clause 6.7.2: Design of Vehicle Access - Acceptable solution A1 not met. No separation of pedestrians and vehicles. Therefore a performance based assessment. Can be accepted under performance.

Comments:

P1 (a):

Pedestrian access into the development and pedestrian safety. Access to the dwelling from their own car spaces can be done internally. No separation of vehicles and pedestrians is provided on site. This poses some risk for visitors walking from the visitor car spaces and entering the dwellings particularly 11, 12, 13 14, 17, 19 and 20. There is also a concern for safe egress for someone requiring use of the DDA space and potential distances they may need to travel along the access that has not been well defined or separated from vehicle traffic. Areas of concern are highlighted in Figure .

A surplus of visitor parking and the placement of vehicle barriers and bollards and adequate lighting near entrances that require them may reduce the risk of interference.

Cyclists have not been assessed due to the nature of the topography.

P1 (b):

Adequate passing bays provided.

P1 (c):

Access and circulation roadway appears suitable.

P1 (d):

Access and circulation roadway appears suitable.

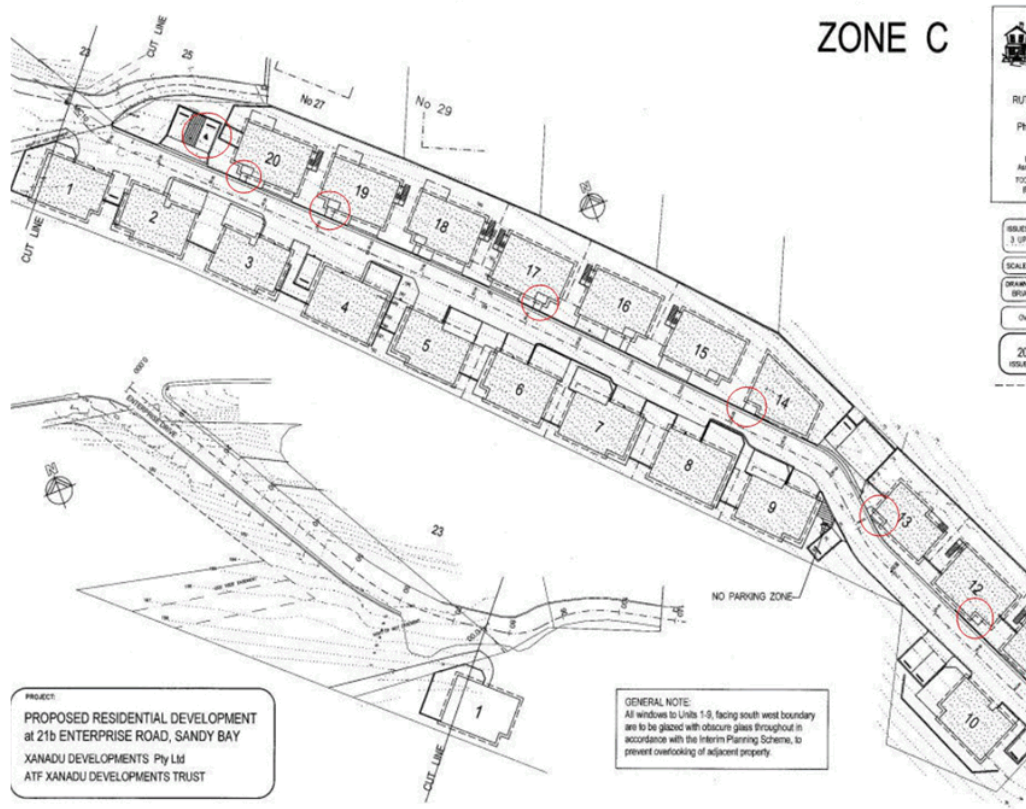


Figure 4: Possible conflict points circled.

Discretions:

- Clause 5.6.4 sight distance at access and junctions
- Clause 6.6.1 Number of Car Parking Spaces
- Clause 6.7.2 design vehicle access-safe sight distances

CONDITIONS:

If council approves this development then the following conditions apply:

General Conditions:

- ENG1: Pay Costs
- ENG 2a: Vehicular barriers compliant with the Australian Standard AS/NZS1170.1:2002 must be installed
- ENG 2b: Vehicular barriers compliant with the Australian Standard AS/NZS1170.1:2002 design must be submitted
- ENG 2c: Vehicular barrier certification
- ENG 3a: The access driveway and parking module (parking spaces, aisles and manoeuvring area) must be designed and constructed in accordance with Australian Standard AS/NZS2890.1:2004
- ENG 3b: Driveway and access design
- ENG 3c: The access driveway and parking module (parking spaces, aisles and manoeuvring area) must be constructed in accordance with the Design Consultants documentation received by the Council.
- ENG 4: Surface treatment
- ENG 5: The number of car parking spaces approved on the site, for use is Forty Nine (9)
- ENG 9: All car parking spaces for people with disabilities must be delineated to

Australian/NZS Standard, Parking facilities Part 6: Off-street parking for people with disabilities AS/NZS 2890.6: 2009
 ENG 12: Construction waste management plan
 ENG 12: Stormwater detention
 ENG 13: An ongoing domestic waste management plan for all recycling/compost bins must be implemented post construction.
 ENG tr1: Traffic management within the access
 ENG tr2: A construction traffic and parking management plan
 ENG sw1: Stormwater
 ENV 2: SWMP design (Stormwater Unit / EDP Report)

ADVICE:

- Dial before you dig
- Fees and charges
- Building Permit
- Plumbing Permit
- Occupation of the Public Highway
- Driveway surfacing over highway reservation
- Right of Way
- Condition endorsement engineering
- Work in the highway reservation
- New Service Connection
- Stormwater

REPRESENTATIONS:

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E5.0 Road and railway access code

E5.1 Purpose			E5.1.1 The purpose of this provision is to: (a) protect the safety and efficiency of the road and railway networks; and (b) reduce conflicts between sensitive uses and major roads and the rail network.
E5.2 Application of this Code	YES	NO	
			This Code applies to use or development of land:
	Yes	No	(a) that will require a new vehicle crossing, junction or level crossing; or
	Yes	No	(b) that intensifies the use of an existing access; or
	Yes	No	(c) that involves a sensitive use, a building, works or subdivision within 50m metres of a Utilities zone that is part of:
	Yes	No	(i) a rail network;
	Yes	No	(ii) a category 1 - Trunk Road or a category 2 - Regional Freight Road, that is subject to a speed limit of more than 60km/h kilometres per hour.

Clause for Assessment		Comments / Discussion (in bold)
Clause 5.5.1 Existing road accesses and junctions NOT APPLICABLE		<p><u>Documentation submitted to date appears not to invoke clause E5.5.1.</u></p> <p>No intensification of existing road accesses and/or junctions proposed.</p>
Clause 5.5.1 Existing road accesses and junctions PERFORMANCE CRITERIA		<p>The existing road access must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date does not satisfy the Acceptable Solution for clause E5.5.1 (A3) and as such, shall be assessed under Performance Criteria.</u></p> <p><u>Acceptable Solution A3: - NON COMPLIANT</u> The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater.</p> <p>Rates generated will be greater than 40 vehicles per day and 20%</p> <p><u>Performance Criteria – P3:</u> Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:</p> <p>(a) the increase in traffic caused by the use; - The increased traffic generated by the proposed development is likely to be 428 vehicles per day based on 10.7 trips per dwelling when all units are fully developed and occupied based on the TIA.</p> <p>(b) the nature of the traffic generated by the use; - All traffic generated by the proposed development will be residential in nature.</p> <p>(c) the nature and efficiency of the access or the junction; - The driveway access servicing the site will operate at a high level of service based on the relatively low traffic volumes.</p> <p>(d) the nature and category of the road; - Enterprise Road is a minor collector road that has a relatively low traffic volume near the site. It provides access to a residential catchment that is relatively stable and closed in nature.</p> <p>(e) the speed limit and traffic flow of the road; - The general urban speed limit of 50-km/h applies to Enterprise Road. This speed limit is appropriate for the residential nature of the development.</p>

		<p>(f) any alternative access to a road; - No alternative access is possible for the proposed development.</p> <p>(g) the need for the use; - The need for the use has not been assessed and is this report. Housing shortfall is TIA's justification for the need</p> <p>(h) any traffic impact assessment; and - Traffic Impact Assessment was submitted. TIA does not satisfactorily address the implications that an extra 214 vehicle/per day will have on the surrounding road network. On this basis Refusal is recommended.</p> <p>(i) any written advice received from the road authority. - Written advice was requested by the road authority (Council) relating to the access.</p> <p>Based on the above assessment and given the submitted documentation, the proposed access is not accepted under <i>Performance Criteria P3:E5.5.1</i> of the Planning Scheme, and is recommended for refusal.</p>
Clause 5.5.2 Existing level crossings		<p><u>Documentation submitted to date appears not to invoke clause E5.5.2.</u></p> <p>No intensification of an existing level crossings proposed.</p>
Clause 5.6.1 development adjacent to roads and railways		<p><u>Documentation submitted to date appears not to invoke clause E5.6.1.</u></p> <p>No development adjacent to category 1 or category 2 road proposed.</p>

<p>Clause 5.6.2 road and access junctions</p> <p>ACCEPTABLE SOLUTION</p>		<p>The road and access junctions must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does appear to satisfy the Acceptable Solution for clause E5.6.2.</u></p> <p><u>Acceptable solution - A1</u> No new access or junction to roads in an area subject to a speed limit of more than 60km/h. - N/A</p> <p><u>Acceptable solution - A2 - COMPLIANT</u> No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less.</p>
<p>Clause 5.6.3 new level crossings</p> <p>NOT APPLICABLE</p>		<p><u>Documentation submitted to date appears not to invoke clause E5.6.3.</u></p> <p>No new level crossings proposed.</p>
<p>Clause 5.6.4 sight distance at access and junctions</p> <p>PERFORMANCE CRITERIA</p>		<p>The sight distance at access and junctions must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does not satisfy the Acceptable Solution for clause E5.6.4 and as such, shall be assessed under Performance Criteria.</u></p> <p><u>Acceptable solution - A1: - NON COMPLIANT</u> Sight distances at: (a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and (b) rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia. - N/A</p> <p>In this case, the required SISD is 80 metres, noting that the vehicle speed has been assumed to be equal to the posted speed limit of 50-km/h.</p> <p><u>Performance Criteria – P1:</u> The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles, having regard to: (a) the nature and frequency of the traffic generated by the use; - All traffic generated by the proposed development will be residential in nature. Traffic volumes are supported by Councils Traffic Engineer</p>

			<p>(b) the frequency of use of the road or rail network; - No assessable information about the lower catchment area has been provided.</p> <p>(c) any alternative access; - No alternative access is possible for the proposed development.</p> <p>(d) the need for the access, junction or level crossing; - NA</p> <p>(e) any traffic impact assessment; - Traffic Impact Statement was submitted.</p> <p>(f) any measures to improve or maintain sight distance; and - TIA suggests trimming of vegetation to improve sight distances. No suggestion as to how this will be maintain.</p> <p>(g) any written advice received from the road or rail authority. - No written advice was requested by the road authority (Council) relating to the access.</p> <p>Council is of the opinion that the Acceptable Solution for clause E5.6.4 is not met due to:</p> <ul style="list-style-type: none"> • sight lines being potentially obstructed by vegetation and embankments adjacent to the access • sight lines not geometrically satisfied <p>however, given the submitted plans and documentation the development may therefore be accepted under <i>Performance Criteria P1:E5.6.4</i> of the Planning Scheme.</p>

E 6.0 Parking and Access Code

E6.1 Purpose			E6.1.1
			The purpose of this provision is to:
	Yes	N/A	(a) ensure safe and efficient access to the road network for all users, including drivers, passengers, pedestrians and cyclists;
	Yes	N/A	(b) ensure enough parking is provided for a use or development to meet the reasonable requirements of users, including people with disabilities;

	Yes	N/A	(c) ensure sufficient parking is provided on site to minimise on-street parking and maximise the efficiency of the road network;
	Yes	N/A	(d) ensure parking areas are designed and located in conformity with recognised standards to enable safe, easy and efficient use and contribute to the creation of vibrant and liveable places;
	Yes	N/A	(e) ensure access and parking areas are designed and located to be safe for users by minimising the potential for conflicts involving pedestrians, cyclists and vehicles; and by reducing opportunities for crime or anti-social behaviour;
	Yes	N/A	(f) ensure that vehicle access and parking areas do not adversely impact on amenity, site characteristics or hazards;
	Yes	N/A	(g) recognise the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking;
	Yes	N/A	(h) provide for safe servicing of use or development by commercial vehicles.
E6.2 Application of this Code	YES	—	This code applies to all use and development.
Clause for Assessment			Comments / Discussion (in bold)
<p>Clauses 6.6's are all to do with parking number assessment. These will be assessed by planner based on DE assessment of the following relevant clauses.</p> <p>PERFORMANCE CRITERIA</p>			<p>The parking number assessment must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.6.1 (a) and as such, shall be assessed under Performance Criteria.</u></p> <p>Acceptable solution - A1: - NON COMPLIANT</p> <p>The number of on-site car parking spaces must be:</p> <p>(a) no less than and no greater than the number specified in Table E6.1;</p> <p>- Submitted documentation does not satisfy this requirement, a Excess of <i>three (3)</i> car parking spaces proposed. This includes one DDA space.</p> <p>Performance Criteria - P1:</p> <p>The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:</p> <p>(a) car parking demand;</p> <p>- The empirical parking assessment indicates that the provision of forty eight on-site car parking spaces will sufficiently meet the likely demands associated with the development, with the exception of onsite visitor parking.</p> <p>(b) the availability of on-street and public car parking in</p>

the locality;

-Information Not Available

(c) the availability and frequency of public transport within a 400m walking distance of the site;

-Not available

(d) the availability and likely use of other modes of transport;

- The site is not located a convenient walking distance from shops, schools and services.

(e) the availability and suitability of alternative arrangements for car parking provision;

- No alternative parking provision is available or considered necessary.

(f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;

- Not applicable.

(g) any car parking deficiency or surplus associated with the existing use of the land;

- Not applicable.

(h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;

- Not applicable.

(i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;

- Not applicable.

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

- Not applicable.

(k) any relevant parking plan for the area adopted by Council;

- Not applicable.

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code; and

- Not applicable.

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant

		<p>trees listed in the Significant Trees Code.</p> <p>- No impact.</p> <p>Based on the above assessment and given the submitted documentation, the parking provision may be accepted under <i>Performance Criteria P1:E6.6.1</i> of the Planning Scheme. This is particularly due to the actual parking demands that will be generated by the development.</p>
<p>Clause 6.7.1 number of vehicle accesses</p> <p>ACCEPTABLE SOLUTION</p>		<p>The number of vehicle accesses must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date appears to be able to satisfy the Acceptable Solution for clause E6.7.1.</u></p> <p>Acceptable solution: - COMPLIANT</p> <p>The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater.</p> <p>One (1x) crossover Enterprise Road - Existing, no additional crossover(s) proposed.</p>
<p>Clause 6.7.2 design vehicle access</p> <p>PERFORMANCE CRITERIA</p>		<p>The design of the vehicle access must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date appears to invoke clause E6.7.2.</u></p> <p>No separation of vehicles and pedestrians, Therefore performance based assessment</p> <p>Acceptable under P1 (a), (b), (c) and (d)</p>

<p>Clause 6.7.3 vehicle passing</p> <p>ACCEPTABLE SOLUTION</p>		<p>Vehicle passing must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date appears to be able to satisfy the Acceptable Solution for clause E6.7.3.</u></p> <p>Acceptable solution - A1: - COMPLIANT</p> <p>Vehicular passing areas must:</p> <p>(a) be provided if any of the following applies to an access:</p> <p>(i) it serves more than 5 car parking spaces; - Yes</p> <p>(ii) is more than 30 m long; - Yes</p> <p>(iii) it meets a road serving more than 6000 vehicles per day; - No</p> <p>(b) be 6 m long, 5.5 m wide, and taper to the width of the driveway; - Submitted documentation appears to satisfy this requirement</p> <p>(c) have the first passing area constructed at the kerb; - Submitted documentation appears to satisfy this requirement</p> <p>(d) be at intervals of no more than 30 m along the access. - Submitted documentation appears to satisfy this requirement</p>
<p>Clause 6.7.4 on site turning</p> <p>ACCEPTABLE SOLUTION</p>		<p>On-site turning must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date appears to satisfy the Acceptable Solution for clause E6.7.4.</u></p> <p>Acceptable solution - A1: - COMPLIANT</p> <p>On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following:</p> <p>(a) it serves no more than two dwelling units; - APPLIES</p> <p>(b) it meets a road carrying less than 6000 vehicles per day. - APPLIES</p>
<p>Clause 6.7.5 layout of parking area</p> <p>ACCEPTABLE SOLUTION</p>		<p>The layout of the parking area must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date appears to satisfy the Acceptable Solution for clause 6.7.5.</u></p> <p>Acceptable Solution A1: - COMPLIANT</p> <p>The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard.</p>

		<ul style="list-style-type: none"> • Car Parking Space Dimensions (AS2890.1 Fig 2.2 = 2.4x5.4m Class 1A): - Submitted documentation appears to satisfy this requirement • Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side): - Submitted documentation appears to satisfy this requirement • Headroom: (AS2890.1 Fig 5.3 = 2.2m clearance): - Submitted documentation appears to satisfy this requirement • Parking Space Gradient (5%): - Submitted documentation appears to satisfy this requirement • Aisle Width (AS2890.1 Fig 2.2 = 5.8m Class 1A): - Submitted documentation appears to satisfy this requirement • Garage Door Width & Apron (AS2890.1 Fig 5.4 = 2.4m wide => 7m wide apron): - Submitted documentation appears to satisfy this requirement • Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance): - Submitted documentation appears to satisfy this requirement • Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m): - Submitted documentation appears to satisfy this requirement • Transitions (AS2890.1 Section 2.5.3 = 12.5% summit, 15% sag => 2m transition): - Submitted documentation appears to satisfy this requirement • Vehicular Barriers (AS2890.1 Section 2.4.5.3 = 600mm drop, 1:4 slope): - Submitted documentation appears to satisfy this requirement • Blind Aisle End Widening (AS2890.1 Fig 2.3 = 1m extra): - <u>N/A</u> • "Jockey Parking" (Performance Assessment): - <u>Not indicated</u>
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<p>Clause 6.7.6 surface treatment</p> <p>ACCEPTABLE SOLUTION</p>			<p>The surface treatment must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date does satisfy the Acceptable Solution for clause E6.7.6.</u></p> <p>Acceptable Solution - A1: - COMPLIANT</p> <p>Parking spaces and vehicle circulation roadways must be in accordance with all of the following;</p> <p>(a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; and</p> <p>(b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.</p> <p>Submitted plans indicate a concrete surface treatment and able to be drained to an approved stormwater system. Condition on Planning Permit to ratify timing.</p>
<p>Clause 6.7.7 Lighting of parking area</p> <p>Planner and health unit to assess</p>	—	—	Planner to assess
<p>Clause 6.7.8 Landscaping</p> <p>Planner to assess</p>	—	—	Planner to assess

<p>Clause 6.7.9 motor bike parking</p> <p style="text-align: center;">NOT APPLICABLE</p>		<p>The motor bike parking must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.7.9 and as such, shall be assessed under Performance Criteria.</u></p> <p>Acceptable Solution A1: - NON COMPLIANT</p> <p>The design of motorcycle parking areas must comply with all of the following:</p> <p>(a) be located, designed and constructed to comply with section 2.4.7 "Provision for Motorcycles" of AS/NZS 2890.1:2004 Parking Facilities Part 1; and</p> <p>(b) be located within 30 m of the main entrance to the building.</p> <p>Performance Criteria - P1:</p> <p>The design of motorcycle parking areas must provide safe, obvious and easy access for motorcyclists having regard to all of the following:</p> <p>(a) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building; and</p> <p>- Acceptable, submitted documentation appears to satisfy this requirement</p> <p>(b) avoiding creation of concealment points to minimise the risk.</p> <p>- Acceptable, submitted documentation appears to satisfy this requirement</p> <p>Based on the above assessment and given the submitted documentation, the motorcycle parking provisions may be accepted under <i>Performance Criteria P1:E6.7.9</i> of the Planning Scheme.</p>

<p>Clause 6.7.10 bicycle parking</p> <p style="text-align: center;">NOT APPLICABLE</p>			<p>The bicycle parking must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date appears not to invoke clause E6.7.10.</u></p> <p><u>Acceptable Solution A1:</u> The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.</p> <p><u>Acceptable Solution A2:</u> The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard.</p> <p>User Class: Residential</p> <p>Table E6.2 sets out the number of bicycle parking spaces required. The requirement for spaces for a use or development listed in the first column of the table is set out in the second and forth columns of the table with the corresponding class set out in the third and fifth columns. If the result is not a whole number, the required number of (spaces) is the nearest whole number. If the fraction is one-half, the requirement is the next whole number.</p> <p style="text-align: center;">NO REQUIREMENT</p>
<p>Clause 6.7.11 bicycle end trip</p> <p>Planner to assess</p>	—	—	Planner to assess
<p>Clause 6.7.12 siting of car parking</p> <p>Planner to assess based on DE assessment of Clause 6.7.5 layout of parking area</p>	—	—	Planner to assess

<p>Clause 6.7.13 facilities for commercial vehicles</p> <p style="text-align: center;">ACCEPTABLE SOLUTION</p>		<p>The facilities for commercial vehicles must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does satisfy the Acceptable Solution for clause E6.7.13.</u></p> <p>Acceptable Solution A1: - COMPLIANT</p> <p>Commercial vehicle facilities for loading, unloading or manoeuvring must be provided on-site in accordance with Australian Standard for Off-street Parking, Part 2 : Commercial. Vehicle Facilities AS 2890.2:2002, unless:</p> <p>(a) the delivery of all inward bound goods is by a single person from a vehicle parked in a dedicated loading zone within 50 m of the site; and</p> <p>(b) the use is not primarily dependent on outward delivery of goods from the site.</p>
<p>Clause 6.7.14 access to a road</p> <p style="text-align: center;">ACCEPTABLE SOLUTION</p>		<p>The access to a road must satisfy the Acceptable Solutions of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does appear to satisfy the Acceptable Solution for clause E6.7.14.</u></p> <p>Acceptable Solution A1: - COMPLIANT</p> <p>Access to a road must be in accordance with the requirements of the road authority.</p> <p>Performance Criteria - P1:</p> <p>No Performance Criteria</p> <p>Submitted plans indicate existing access to a road with no changes proposed.</p>
<p>Clause 6.7.15 access to Niree Lane</p> <p style="text-align: center;">NOT APPLICABLE</p>		<p>The access to Niree Lane must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date appears not to invoke clause E6.7.15.</u></p> <p>No development proposed within Niree Lane.</p>

E 7.0 Stormwater

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E7.1.1 Purpose			E7.1.1 The purpose of this provision is to ensure that stormwater disposal is managed in a way that furthers the objectives of the State Stormwater Strategy.
E7.2 Application of this Code	YES	N/A	This code applies to development requiring management of stormwater. This code does not apply to use.
Clause for Assessment			Comments / Discussion (in bold)

<p>A1 (SW disposed to Public SW Inf via Gravity)</p> <p>ACCEPTABLE SOLUTION</p>		<p>The stormwater drainage and disposal must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date does not satisfy the Acceptable Solution for clause E7.7.1 (A1) and as such, shall be assessed under Performance Criteria.</u></p> <p>Acceptable Solution A1: - COMPLIANT</p> <p>Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.</p> <p>- Submitted plans appear to indicate stormwater from new impervious surfaces being able to be disposed of by gravity to public stormwater infrastructure.</p> <p>Performance Criteria - P1: Stormwater from new impervious surfaces must be managed by any of the following:</p> <p>(a) disposed of on-site with soakage devices having regard to the suitability of the site, the system design and water sensitive urban design principles; - <u>N/A</u></p> <p>(b) collected for re-use on the site; - <u>N/A</u></p> <p>(c) disposed of to public stormwater infrastructure via a pump system which is designed, maintained and managed to minimise the risk of failure to the satisfaction of the Council; and - <u>N/A</u></p> <p>Submitted plans appear to indicate stormwater from new impervious surfaces being able to be disposed of via a pumped system to public stormwater infrastructure.</p> <p>Based on the above assessment and given the submitted documentation, the stormwater disposal may be accepted under <i>Performance Criteria P1:E7.7.1 (A1)</i> of the Planning Scheme.</p> <p>To be verified at Plumbing Permit stage.</p>
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<p>A2 (WSUD) /P2 (Mechanical Treatment)</p> <p style="text-align: center;">NOT APPLICABLE</p>		<p>The stormwater drainage and disposal must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date appears not to invoke clause E7.7.1 (A2).</u></p> <p>Acceptable Solution A2: A stormwater system for a new development must incorporate water sensitive urban design principles R1 for the treatment and disposal of stormwater if any of the following apply: (a) the size of new impervious area is more than 600 m²; - No (b) new car parking is provided for more than 6 cars; - No (c) a subdivision is for more than 5 lots - No</p> <p>Submitted documentation appears to indicate no requirement for stormwater treatment.</p>
<p>A3 (Minor SW System)</p> <p style="text-align: center;">NOT APPLICABLE</p>		<p>The stormwater drainage and disposal must satisfy the Acceptable Solutions of the Hobart Interim Planning Scheme 2015 (HIPS 2015).</p> <p><u>Documentation submitted to date appears not to invoke clause E7.7.1 (A3).</u></p> <p>Submitted documentation appears to indicate no requirement for a minor stormwater system.</p>

<p>A3 (Minor SW System)</p> <p>ACCEPTABLE SOLUTION</p>		<p>The stormwater drainage and disposal must satisfy the Acceptable Solutions of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date does appear to satisfy the Acceptable Solution for clause E7.7.1 (A3).</u></p> <p>Acceptable Solution A3: - COMPLIANT</p> <p>A minor stormwater drainage system must be designed to comply with all of the following:</p> <p>(a) be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed; and - Acceptable, submitted documentation appears to satisfy this requirement</p> <p>(b) stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure. - Acceptable, submitted documentation appears to satisfy this requirement</p> <p>Performance Criteria – P3: No Performance Criteria.</p> <p>Submitted plans indicate proposed detention.</p> <p>Referred to the Stormwater Unit for determination and conditioning.</p>
<p>A4 (Major SW System accommodates 1:100 ARI)</p> <p>ACCEPTABLE SOLUTION</p>		<p>The stormwater drainage and disposal must satisfy the Acceptable Solutions of the Hobart Interim Planning Scheme 2015 (HIPS 2015). <u>Documentation submitted to date appears not to invoke clause E7.7.1 (A4).</u></p> <p>Acceptable Solution A4: - COMPLIANT</p> <p>A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years.</p> <p>Performance Criteria – P4: No Performance Criteria.</p> <p>Referred to the Stormwater Unit for determination and conditioning.</p>

PROTECTION OF COUNCIL INFRASTRUCTURE

Council infrastructure at risk	Why?
Stormwater pipes	Not required

Council road network	Yes - During construction