

GMA Certification Group Pty Ltd

BUILDING SURVEYORS

Queensland's leaders in Building Certification Services



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10 August 2018

The Chief Executive Officer
Douglas Shire Council
PO Box 723
MOSSMA Q 4877

Attention: Development Assessment

Dear Sir,

**Re: Material Change of Use Application
Proposed Dwelling – 12 Ives Avenue, Wonga Beach
Lot 5 SP892256**

GMA Certification Group have been engaged to assess an application for the construction of a dwelling on the abovementioned property. The property is within the Flood and Storm Tide Inundation overlay (Storm Tide Medium Hazard & Floodplain Assessment Overlay).

Accordingly, the application for Material Change of Use is enclosed for Council's assessment, which includes:

1. DA forms 1;
2. Assessment against the applicable Acceptable Solutions & Outcomes of the overlay Code;
3. Waste Water Report
4. 1 x copy of plans
5. Owners consent;

Assessment – Flood & storm tide hazard overlay code

The following table provides an assessment of the proposed development with regards to Performance Outcomes of the flood & storm tide hazard overlay code.

BUILDING APPROVALS & INSPECTIONS		BUILDING CERTIFICATION		FIRE SAFETY AUDITS	
Gold Coast	Sunshine Coast	Cloncurry	Chinchilla	Atherton	Childers
(07) 5578 1622	(07) 5449 0383	(07) 4742 2022	(07) 4669 1166	(07) 4091 4196	(07) 4126 3069

Flood and storm tide hazards overlay code		
Performance Outcomes	Acceptable Outcomes	Comment
For assessable and self assessable development		
<p>PO1 Development is located and designed to: ensure the safety of all persons; minimise damage to the development and contents of buildings; provide suitable amenity; minimise disruption to residents, recovery time, and rebuilding or restoration costs after inundation events</p>	<p>For dwelling houses, AO1.2 Development within the Flood and Storm Tide hazards overlay maps (excluding the Flood plain assessment sub-category) is designed to provide immunity to the Defined Inundation Event as outlined within Table 8.2.4.3.b plus a freeboard of 300mm. AO1.3 New buildings are: (a) not located within the overlay area; (b) located on the highest part of the site to minimise entrance of flood waters; (c) provided with clear and direct pedestrian and vehicle evacuation routes off the site. AO1.4 In non urban areas, buildings and infrastructure are set back 50 metres from natural riparian corridors to maintain their natural function of reducing velocity of floodwaters.</p>	<p>The dwelling is to be constructed within a developed area of Wonga Beach and will therefore have a similar floor level to existing dwellings in the vicinity.</p> <p>The current ground level where the dwelling is to be constructed is approximately 2.8m AHD. The building platform will be raised to 3.30m AHD and the finished floor level of the dwelling will be approximately 3.685m AHD.</p> <p>It is considered the proposed finished floor level of 3.685m AHD will provide an acceptable level of flood immunity consistent with other dwellings in the vicinity.</p> <p>NA</p>
<p>PO3 Development siting and layout responds to flooding potential and maintains personal safety</p>	<p>For Material change of use AO3.1 New buildings are: (d) not located within the overlay area; (e) located on the highest part of the site to minimise entrance of flood waters;</p>	<p>The proposed dwelling will be located on the highest part of the site so as to minimize the entrance of flood waters.</p> <p>To the owner's knowledge the property has not been inundated previously. Therefore, the proposed floor level is above any perceived flooding potential other than that projected out to 80 years.</p>

	<p>(f) provided with clear and direct pedestrian and vehicle evacuation routes off the site.</p> <p>Or</p> <p>AO3.2 The development incorporates an area on site that is at least 300mm above the highest known flood inundation level with sufficient space to accommodate the likely population of the development safely for a relatively short time until flash flooding subsides or people can be evacuated.</p> <p>or</p> <p>AO3.3 Where involving an extension to an existing dwelling house that is situated below DFE /Storm tide, the maximum size of the extension does not exceed 70m² gross floor area.</p> <p>AO3.1 The design and layout of buildings used for residential purposes minimise risk from flooding by providing: (a) parking and other low intensive, non-habitable uses at ground level;</p>	<p>Should flooding be envisaged from a cyclonic event, there are early mandatory evacuation periods for which residents can evacuate the site, should this be necessary.</p> <p>NA</p> <p>NA</p>
<p>PO6 Development avoids the release of hazardous materials into floodwaters.</p>	<p>AO6.1 Materials manufactured or stored on site are not hazardous or noxious, or comprise materials that may cause a detrimental effect on the environment if discharged in a flood event;</p> <p>or</p> <p>AO6.2 If a DFE level is adopted, structures used for the manufacture or storage of hazardous materials</p>	<p>No manufacture or storage of hazardous or noxious materials is proposed.</p>

	<p>are: (a) located above the DFE level; or (b) designed to prevent the intrusion of floodwaters. AO6.3 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE. AO6.4 If a flood level is not adopted, hazardous materials and their manufacturing equipment are located on the highest part of the site to enhance flood immunity and designed to prevent the intrusion of floodwaters.</p>	
<p>PO7 The development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities.</p>	<p>AO7 Development does not: (a) increase the number of people calculated to be at risk of flooding; (b) increase the number of people likely to need evacuation; (c) shorten flood warning times; and (d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes.</p>	<p>The proposal is for one dwelling. Therefore, the proposal does not affect envisaged disaster management response or recovery capabilities.</p> <p>Evacuation is self-managed at times of a cyclonic event with long lead times for mandatory evacuation.</p> <p>Wonga Beach is a small community therefore, evacuation routes will not be blocked by excessive traffic.</p>

Should you require any further information or wish to discuss the application, please contact me on 4098 5150 or by email adminpd@amacert.com.au

Kind Regards,



GMA Certification Group

BUILDING, DEVELOPMENT, PLUMBING & POOL DEPARTMENT **CONSENT FORM - LOCAL AUTHORITY**

Date: 29/6/18

ATTENTION: LOCAL AUTHORITY BUILDING, DEVELOPMENT, PLUMBING & POOL DEPARTMENT

Dear Sir/Madam,

RE: LOT 5 IVES AVE, WONGA BEACH
 RP/SP _____

I / We give NQ Homes Tropical Living Pty Ltd authorization to sign all necessary documentation on my/our behalf in order to obtain council approval.

I / We also undertake that the construction will be carried out in accordance with approved plans, specifications and other documents and in accordance with the Building Act 1975 - 1991 and the Standard Building By-Laws.

Signature
Owner

of



DALLAS FAYE WALKER



DA Form 1 – Development application details

Approved form (version 1.0 effective 3 July 2017) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application involving **code assessment or impact assessment**, except when applying for development involving building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development**, use this form (*DA Form 1*) and parts 4 to 6 of *DA Form 2 – Building work details*.

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: All terms used in this form have the meaning given under the *Planning Act 2016*, the *Planning Regulation 2017*, or the *Development Assessment Rules (DA Rules)*.

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (individual or company full name)	NQ HOMES
Contact name (only applicable for companies)	CINDY SMALL
Postal address (P.O. Box or street address)	C/- GMA CERTIFICATION GROUP
Suburb	P.O. BOX 831, PORT DOUGLAS
State	QLD
Postcode	4877
Country	
Contact number	4098 5150
Email address (non-mandatory)	adminpd@gmacert.com.au
Mobile number (non-mandatory)	
Fax number (non-mandatory)	
Applicant's reference number(s) (if applicable)	

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
<input checked="" type="checkbox"/> Yes – the written consent of the owner(s) is attached to this development application
<input type="checkbox"/> No – proceed to 3)



PART 2 – LOCATION DETAILS

3) Location of the premises (complete 3.1) or 3.2, and 3.3) as applicable)

Note: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.

3.1) Street address and lot on plan

- Street address **AND** lot on plan (all lots must be listed), **or**
- Street address **AND** lot on plan for an adjoining or adjacent property of the premises (appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon; all lots must be listed).

a)	Unit No.	Street No.	Street Name and Type	Suburb
		12	IVES AVENUE	WUNGA BEACH
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4893	5	RP 892256	DOUGLAS
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)

3.2) Coordinates of premises (appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)

Note: Place each set of coordinates in a separate row. Only one set of coordinates is required for this part.

- Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) (if applicable)
		<input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other:	

- Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) (if applicable)
		<input type="checkbox"/> 54 <input type="checkbox"/> 55 <input type="checkbox"/> 56	<input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other:	

3.3) Additional premises

- Additional premises are relevant to this development application and their details have been attached in a schedule to this application
- Not required

4) Identify any of the following that apply to the premises and provide any relevant details

- In or adjacent to a water body or watercourse or in or above an aquifer
Name of water body, watercourse or aquifer: _____
- On strategic port land under the *Transport Infrastructure Act 1994*
Lot on plan description of strategic port land: _____
Name of port authority for the lot: _____
- In a tidal area
Name of local government for the tidal area (if applicable): _____
Name of port authority for tidal area (if applicable): _____
- On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*
Name of airport: _____
- Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*
EMR site identification: _____

Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*

CLR site identification:

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

- Yes – All easement locations, types and dimensions are included in plans submitted with this development application
- No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

- Material change of use Reconfiguring a lot Operational work Building work

b) What is the approval type? *(tick only one box)*

- Development permit Preliminary approval Preliminary approval that includes a variation approval

c) What is the level of assessment?

- Code assessment Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):*

PROPOSED DWELLING & ATTACHED GARAGE

e) Relevant plans

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.

- Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

- Material change of use Reconfiguring a lot Operational work Building work

b) What is the approval type? *(tick only one box)*

- Development permit Preliminary approval Preliminary approval that includes a variation approval

c) What is the level of assessment?

- Code assessment Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):*

e) Relevant plans

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.

- Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development

Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application

- Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?

Material change of use	<input checked="" type="checkbox"/> Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	<input type="checkbox"/> Yes – complete division 2
Operational work	<input type="checkbox"/> Yes – complete division 3
Building work	<input type="checkbox"/> Yes – complete DA Form 2 – Building work details

Division 1 – Material change of use

Note: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.

8.1) Describe the proposed material change of use

Provide a general description of the proposed use	Provide the planning scheme definition (include each definition in a new row)	Number of dwelling units (if applicable)	Gross floor area (m ²) (if applicable)
Proposed dwelling	Dwelling House	1	125m ²

8.2) Does the proposed use involve the use of existing buildings on the premises?

Yes
 No

Division 2 – Reconfiguring a lot

Note: This division is only required to be completed if any part of the development application involves reconfiguring a lot.

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)

<input type="checkbox"/> Subdivision (complete 10))	<input type="checkbox"/> Dividing land into parts by agreement (complete 11))
<input type="checkbox"/> Boundary realignment (complete 12))	<input type="checkbox"/> Creating or changing an easement giving access to a lot from a construction road (complete 13))

10) Subdivision

10.1) For this development, how many lots are being created and what is the intended use of those lots:

Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?

Yes – provide additional details below
 No

How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?

Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment
12.1) What are the current and proposed areas for each lot comprising the premises?

Current lot		Proposed lot	
Lot on plan description	Area (m ²)	Lot on plan description	Area (m ²)

12.2) What is the reason for the boundary realignment?

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? (attach schedule if there are more than two easements)

Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? (e.g. pedestrian access)	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

Note: This division is only required to be completed if any part of the development application involves operational work.

14.1) What is the nature of the operational work?

<input type="checkbox"/> Road work	<input type="checkbox"/> Stormwater	<input type="checkbox"/> Water infrastructure
<input type="checkbox"/> Drainage work	<input type="checkbox"/> Earthworks	<input type="checkbox"/> Sewage infrastructure
<input type="checkbox"/> Landscaping	<input type="checkbox"/> Signage	<input type="checkbox"/> Clearing vegetation
<input type="checkbox"/> Other – please specify: _____		

14.2) Is the operational work necessary to facilitate the creation of new lots? (e.g. subdivision)

Yes – specify number of new lots: _____

No

14.3) What is the monetary value of the proposed operational work? (include GST, materials and labour)

\$ _____

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

DOUGLAS SHIRE COUNCIL

16) Has the local government agreed to apply a superseded planning scheme for this development application?

Yes – a copy of the decision notice is attached to this development application

Local government is taken to have agreed to the superseded planning scheme request – relevant documents attached

No

PART 5 – REFERRAL DETAILS

17) Do any aspects of the proposed development require referral for any referral requirements?
Note: A development application will require referral if prescribed by the Planning Regulation 2017.

No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the chief executive of the Planning Regulation 2017:

Clearing native vegetation

Contaminated land (unexploded ordnance)

<input type="checkbox"/> Environmentally relevant activities (ERA) <i>(only if the ERA have not been devolved to a local government)</i> <input type="checkbox"/> Fisheries – aquaculture <input type="checkbox"/> Fisheries – declared fish habitat area <input type="checkbox"/> Fisheries – marine plants <input type="checkbox"/> Fisheries – waterway barrier works <input type="checkbox"/> Hazardous chemical facilities <input type="checkbox"/> Queensland heritage place <i>(on or near a Queensland heritage place)</i> <input type="checkbox"/> Infrastructure – designated premises <input type="checkbox"/> Infrastructure – state transport infrastructure <input type="checkbox"/> Infrastructure – state transport corridors and future state transport corridors <input type="checkbox"/> Infrastructure – state-controlled transport tunnels and future state-controlled transport tunnels <input type="checkbox"/> Infrastructure – state-controlled roads <input type="checkbox"/> Land within Port of Brisbane's port limits <input type="checkbox"/> SEQ development area <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – community activity <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – indoor recreation <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – residential development <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – urban activity <input type="checkbox"/> Tidal works or works in a coastal management district <input type="checkbox"/> Urban design <input type="checkbox"/> Water-related development – taking or interfering with water <input type="checkbox"/> Water-related development – removing quarry material <i>(from a watercourse or lake)</i> <input type="checkbox"/> Water-related development – referable dams <input type="checkbox"/> Water-related development – construction of new levees or modification of existing levees <i>(category 2 or 3 levees only)</i> <input type="checkbox"/> Wetland protection area
Matters requiring referral to the local government: <input type="checkbox"/> Airport land <input type="checkbox"/> Environmentally relevant activities (ERA) <i>(only if the ERA have been devolved to local government)</i> <input type="checkbox"/> Local heritage places
Matters requiring referral to the chief executive of the distribution entity or transmission entity: <input type="checkbox"/> Electricity infrastructure
Matters requiring referral to: <ul style="list-style-type: none"> • The chief executive of the holder of the licence, if not an individual • The holder of the licence, if the holder of the licence is an individual <input type="checkbox"/> Oil and gas infrastructure
Matters requiring referral to the Brisbane City Council: <input type="checkbox"/> Brisbane core port land
Matters requiring referral to the Minister under the Transport Infrastructure Act 1994: <input type="checkbox"/> Brisbane core port land <input type="checkbox"/> Strategic port land
Matters requiring referral to the relevant port operator: <input type="checkbox"/> Brisbane core port land <i>(below high-water mark and within port limits)</i>
Matters requiring referral to the chief executive of the relevant port authority: <input type="checkbox"/> Land within limits of another port
Matters requiring referral to the Gold Coast Waterways Authority: <input type="checkbox"/> Tidal works, or development in a coastal management district in Gold Coast waters
Matters requiring referral to the Queensland Fire and Emergency Service: <input type="checkbox"/> Tidal works, or development in a coastal management district

18) Has any referral agency provided a referral response for this development application?

Yes – referral response(s) received and listed below are attached to this development application
 No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and the development application the subject of this form, or include details in a schedule to this development application (if applicable).

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

I agree to receive an information request if determined necessary for this development application
 I do not agree to accept an information request for this development application

Note: By not agreeing to accept an information request I, the applicant, acknowledge:

- that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties
- Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)

Yes – provide details below or include details in a schedule to this development application
 No

List of approval/development application references	Reference number	Date	Assessment manager
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			

21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work)

Yes – the yellow local government/private certifier’s copy of the receipted QLeave form is attached to this development application
 No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid
 Not applicable

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
\$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

Yes – show cause or enforcement notice is attached
 No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

- Yes – the required attachment (form EM941) for an application for an environmental authority accompanies this development application, and details are provided in the table below
 No

Note: Application for an environmental authority can be found by searching "EM941" at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.

Proposed ERA number:		Proposed ERA threshold:	
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Proposed ERA name:	
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- Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

- Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application
 No

Note: See www.justice.qld.gov.au for further information.

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

- Yes – this development application is accompanied by written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)
 No

Note: See www.qld.gov.au for further information.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

- Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter
 No

Note: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.

Koala conservation

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work within an assessable development area under Schedule 10, Part 10 of the Planning Regulation 2017?

- Yes
 No

Note: See guidance materials at www.ehp.qld.gov.au for further information.

Water resources

23.6) Does this development application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, taking overland flow water or waterway barrier works**?

- Yes – the relevant template is completed and attached to this development application
 No

Note: DA templates are available from www.dilgp.qld.gov.au.

23.7) Does this application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water** under the *Water Act 2000*?

- Yes – I acknowledge that a relevant water authorisation under the *Water Act 2000* may be required prior to

commencing development

No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

Yes – an associated resource allocation authority is attached to this development application, if required under the Fisheries Act 1994

No

Note: See guidance materials at www.daf.qld.gov.au for further information.

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the Water Act 2000?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the Coastal Protection and Management Act 1995?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Environment and Heritage Protection at www.ehp.qld.gov.au for further information.

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the Water Supply (Safety and Reliability) Act 2008 (the Water Supply Act)?

Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application

No

Note: See guidance materials at www.dews.qld.gov.au for further information.

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district?**

Yes – the following is included with this development application:

Evidence the proposal meets the code for assessable development that is prescribed tidal work (only required if application involves prescribed tidal work)

A certificate of title

No

Note: See guidance materials at www.ehp.qld.gov.au for further information.

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register?**

Yes – details of the heritage place are provided in the table below

No

Note: See guidance materials at www.ehp.qld.gov.au for information requirements regarding development of Queensland heritage places.

Name of the heritage place:		Place ID:	
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Brothels

23.14) Does this development application involve a **material change of use for a brothel?**

Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the Prostitution Regulation 2014

No

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.15) Does this development application involve new or changed access to a state-controlled road?

- Yes - this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
- No

PART 8 – CHECKLIST AND APPLICANT DECLARATION**24) Development application checklist**

I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17

 Yes*Note: See the Planning Regulation 2017 for referral requirements*If building work is associated with the proposed development, Parts 4 to 6 of *Form 2 – Building work details* have been completed and attached to this development application Yes
 Not applicable

Supporting information addressing any applicable assessment benchmarks is with development application

Note: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see [DA Forms Guide: Planning Report Template](#). Yes

Relevant plans of the development are attached to this development application

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see [DA Forms Guide: Relevant plans](#). YesThe portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (*see 21*) Yes
 Not applicable**25) Applicant declaration** By making this development application, I declare that all information in this development application is true and correct Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001**Note: It is unlawful to intentionally provide false or misleading information.***Privacy –** Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application.

All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, *Planning Regulation 2017* and the *DA Rules* except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the *Planning Regulation 2017*, and the access rules made under the *Planning Act 2016* and *Planning Regulation 2017*; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

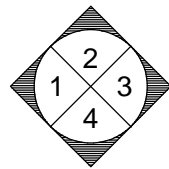
PART 9 – FOR OFFICE USE ONLY

Date received: Reference number(s):

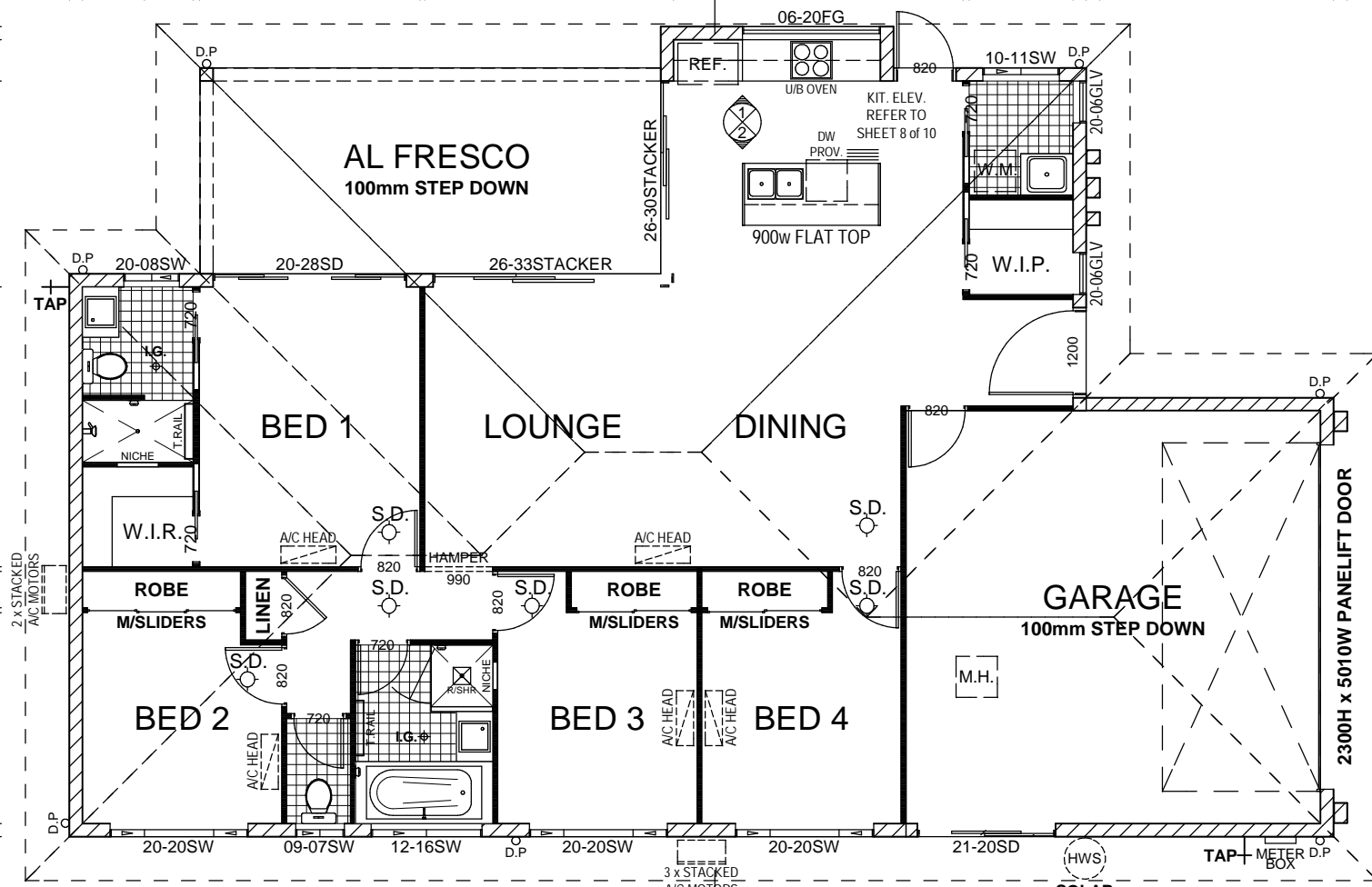
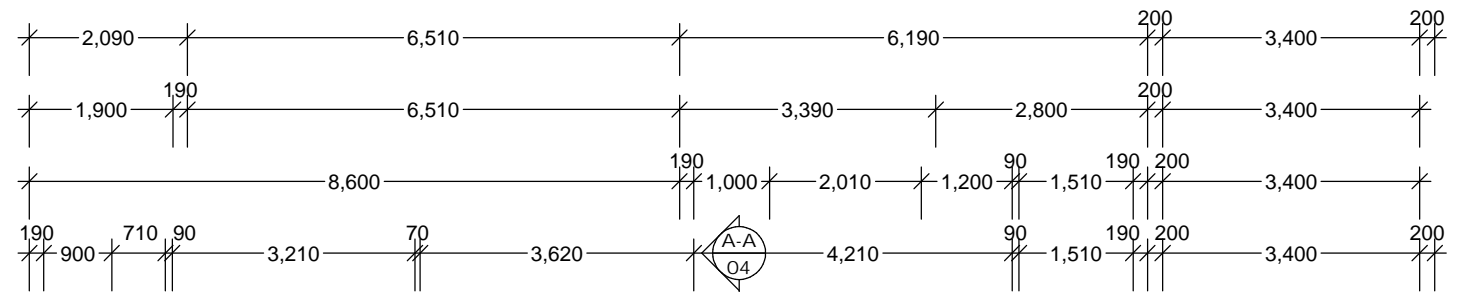
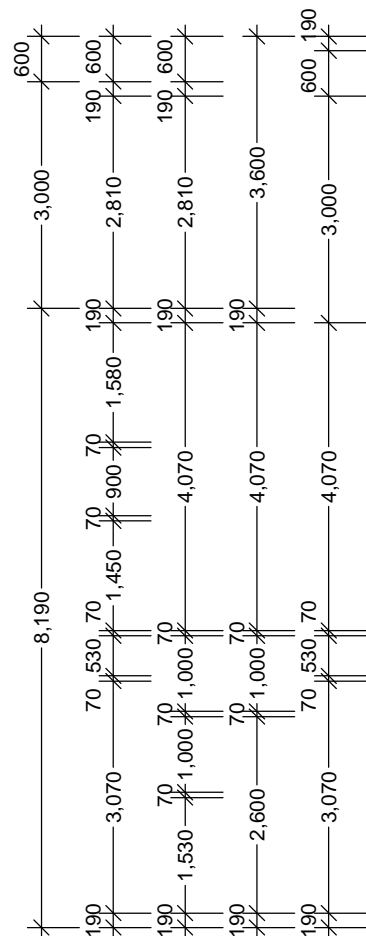
Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment	
<i>Note: For completion by assessment manager if applicable</i>	
Description of the work	
QLeave project number	
Amount paid (\$)	
Date paid	
Date receipted form sighted by assessment manager	
Name of officer who sighted the form	

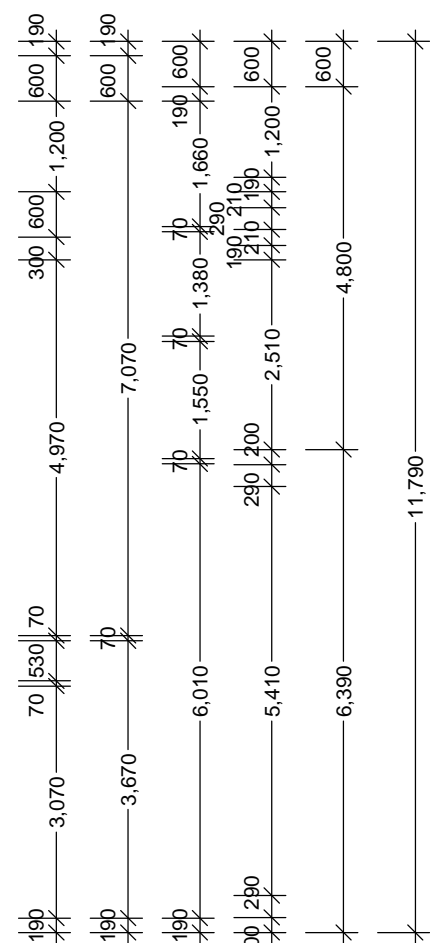
The *Planning Act 2016*, the *Planning Regulation 2017* and the DA Rules are administered by the Department of Infrastructure, Local Government and Planning. This form and all other required development application materials should be sent to the assessment manager.



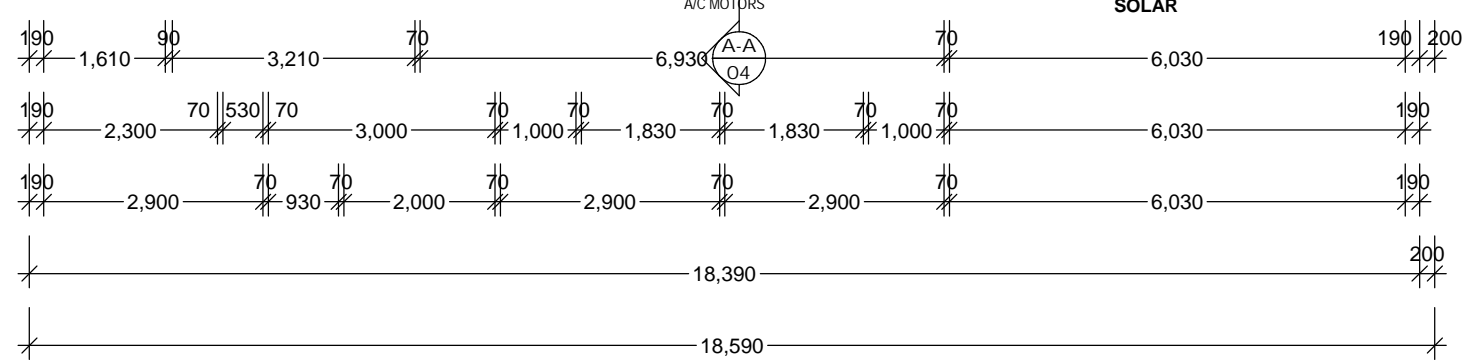
ELEVATION KEY



ENERGY EFFICIENCY NOTES:
 : ALL TAPWARE & SHOWERS TO BE 3 STAR min.
 : ALL TOILETS TO BE 4 STAR min.
 : SOLAR HOT WATER SYSTEM TO BE INSTALLED.



FLOOR AREAS
 LIVING - 125.62
 GARAGE - 39.36
 AL FRESCO - 20.10
 TOTAL - 185.09m²
 19.92 SQUARES



GENERAL NOTES :
 : Solar block 2 to all alum. framed glass windows and doors.
 : Dishwasher prov. with SPP and cold water plumb.
 : Lift off hinges to wc.
 : Mechanical exhaust to wc with no external opening.
 : Niches - 900H base with a 2100H head U.N.O.
 : Hampers and Openings - 2100H head U.N.O.
 : Bulkheads - 2100H U.N.O.

NOTE : ADDITIONAL BRACING WILL BE REQUIRE TO VANITY WALLS. (FLOATING VANTIES)



ABN: 73614916086
 QBCC: 15031495
 Address: P.O. BOX 863,
 Pt. DOUGLAS Qld. 4877
 Phone: (07)40985518
 Fax: (07)40985512

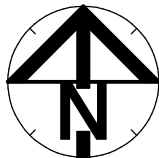
FLOOR PLAN WIND-'C2'
 N.B. ALL WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES - THIS DESIGN IS THE EXCLUSIVE PROPERTY OF NQ HOMES Pty. Ltd.

Client: DALLAS FAYE WALKER
 LOT 5, I VES AVENUE
 WONGA BEACH

Design: WONGA 175
 Facade: TRADITIONAL
 Inclusions: PREMIUM

Drawn By: S.C.
 Date: 29/07/2018
 Scale: 1 : 100

Amendments:
 Job Number: 366TL
 Sheet Number: 2 of 10



4
RP851593

15
RP887365

PLATFORM LEVEL APPROX -
R.L. 3.30 (+/-0.05)
* IMPORT FILL - 550mm APPROX
at worse point after scrape
* STORMWATER TO STREET
* DISCHARGE WASTE TO SEPTIC.

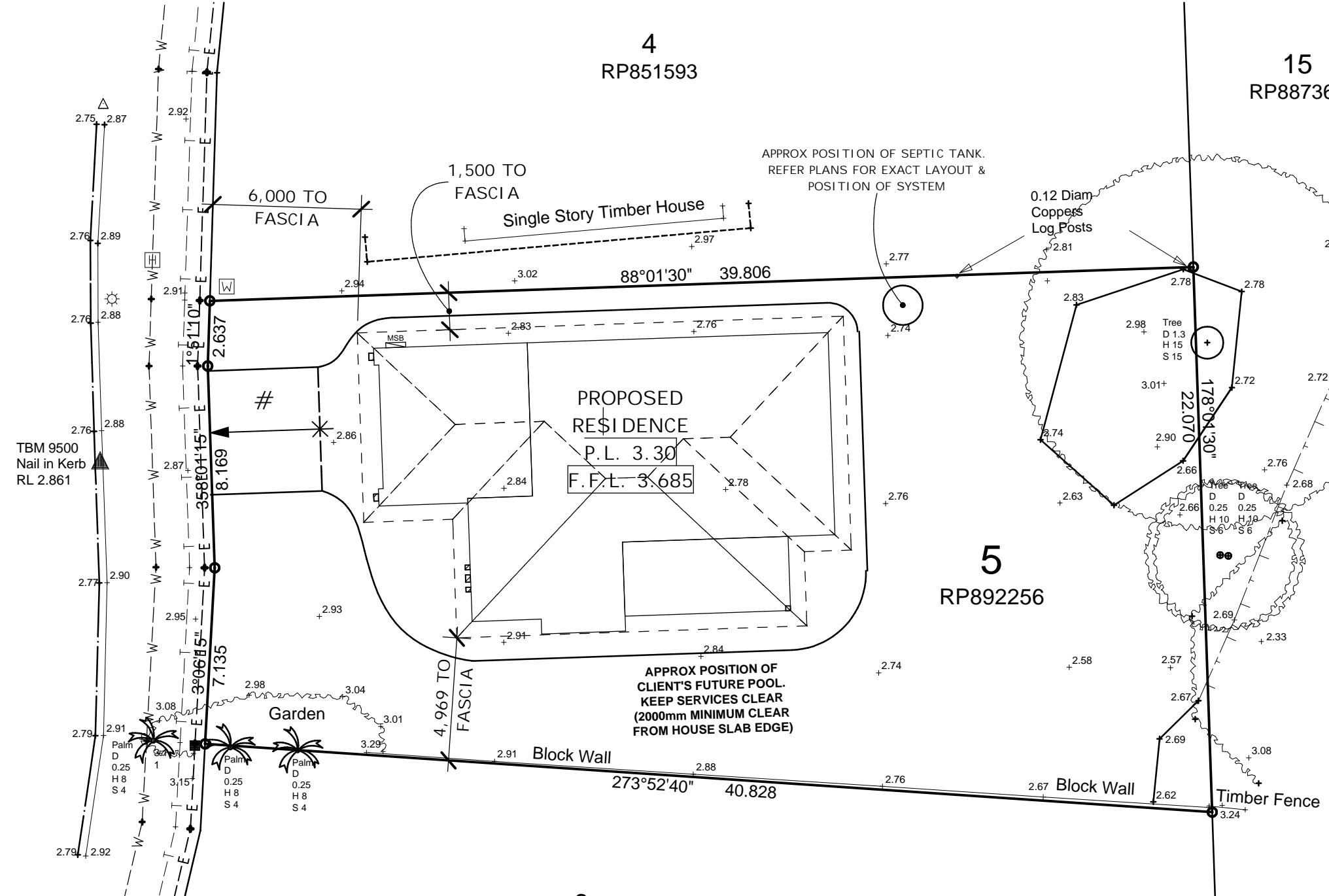
DRIVEWAY GRADIENT
1:9 @ 5m APPROX

NOTES -
- ANY RETAINING REQUIRED. BY CLIENT
- ANY TREE REMOVAL REQUIRED. BY CLIENT
- POOLS MUST BE 2000mm MIN. FROM ANY
SLAB EDGE OR PATIO COLUMNS. IF LESS
THAN 2000mm, ENGINEER TO BE CONSULTED.
- REFER TO SHEET 9 of 10 FOR SETOUT PLAN.
- REFER TO SHEET 10 of 10 FOR PLUMB. PLAN.

* FILL BATTER @ 1:3 MAX
* CUT BATTER @ 1:1.5 MAX

→ → → → → → → → → → → → → → → →
INDICATES 400mm WIDE x 75mm
DEEP GRADED TABLE DRAIN

IVES AVENUE



6
RP892256

5
RP892256

NOTES
Level Datum: AHD
Origin of Levels: PM73135
RL: 2.505
Origin of Coordinates: Stn 9500 Nail in Kerb
E 10010.835
N 9937.899
Meridian: RP892256

0 2 4 6 8 10
metres
SCALE 1:200 IS APPLICABLE ONLY
TO THE ORIGINAL SHEET SIZE (A3).

LEGEND

- Electricity Pillar
- ⊠ Telstra Pit
- ⊞ Fire Hydrant
- + · · · · + Road Crown
- IL of Mountable Kerb
- Back of Mountable Kerb
- Top of Bank
- Toe of Bank
- Timber Paling Fence
- U'ground Telstra (plotted from records)
- E — U'ground Electricity (plotted from records)
- W — U'ground Water (plotted from records)



ABN: 73614916086
QBCC: 15031495
Address: P.O. BOX 863,
Pt. DOUGLAS Qld. 4877
Phone: (07)40985518
Fax: (07)40985512

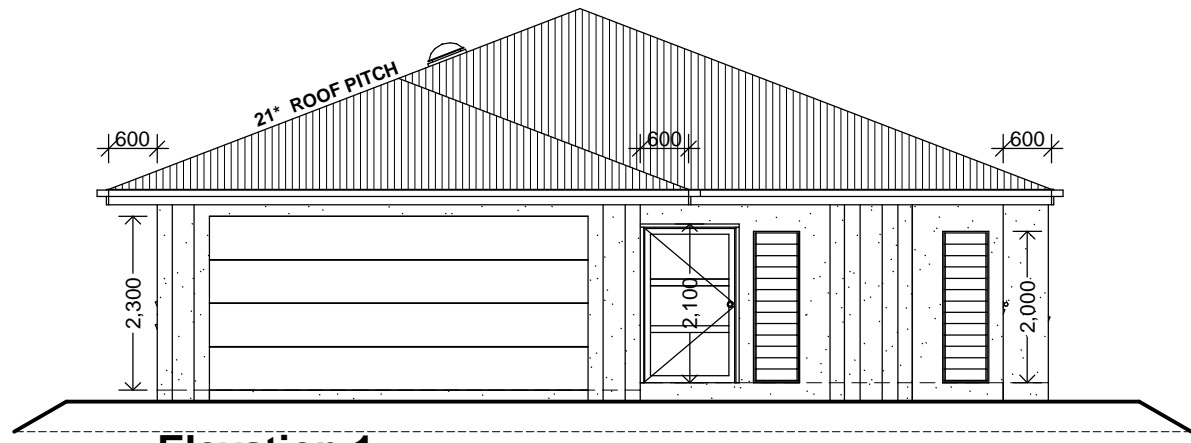
CONTOUR PLAN WIND-'C2'
N.B. ALL WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES - THIS DESIGN IS
THE EXCLUSIVE PROPERTY OF NQ HOMES Pty. Ltd.

Client:
DALLAS FAYE WALKER
LOT 5, IVES AVENUE
WONGA BEACH

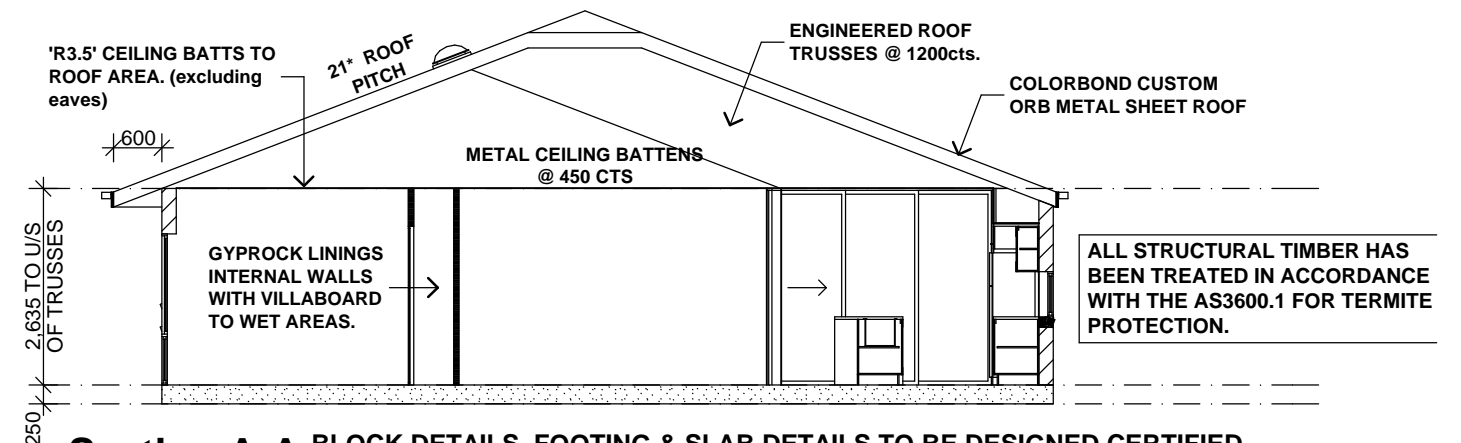
Design:
WONGA 175
Facade:
TRADITIONAL
Inclusions:
PREMIUM

Drawn By:
S.C.
Date:
29/07/2018
Scale:
1 : 200

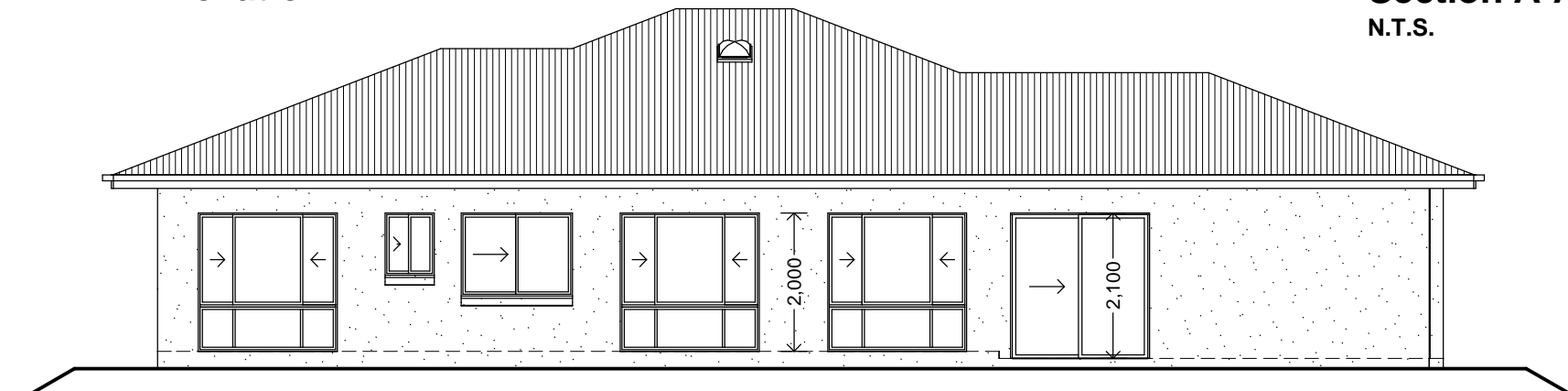
Amendments:
Job Number:
366TL
Sheet Number:
1 of 10



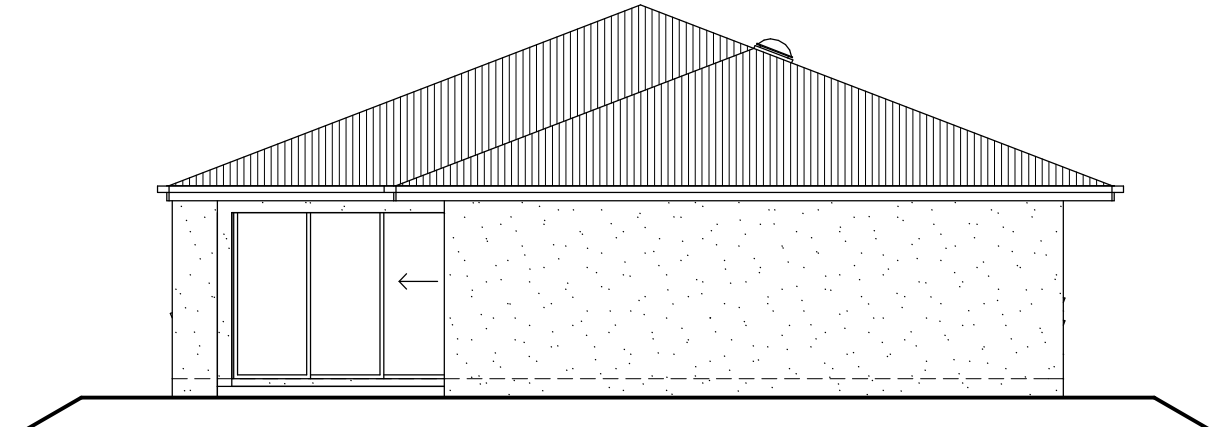
Elevation 1



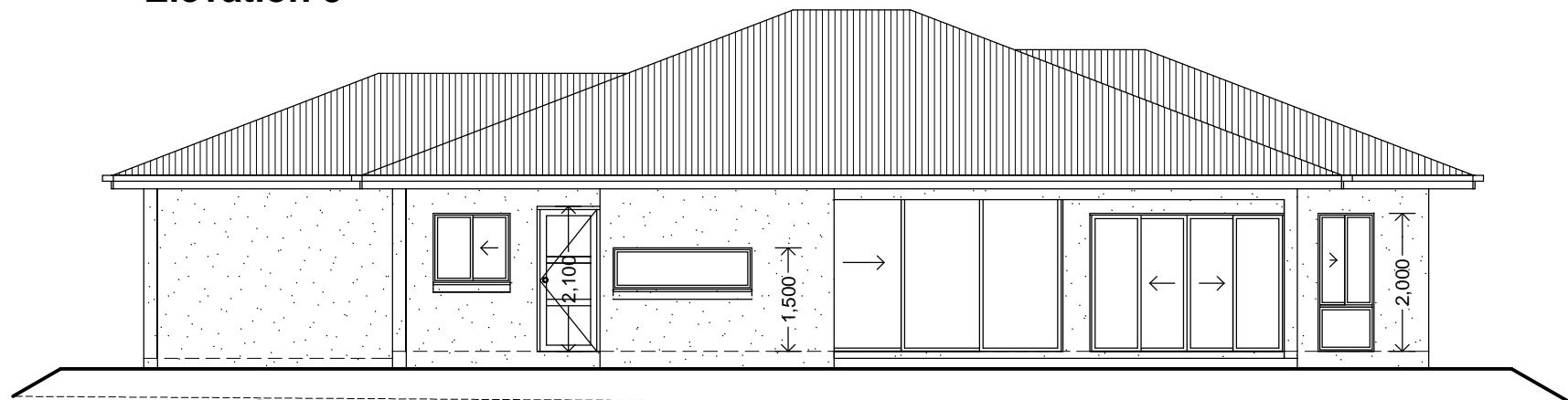
Section A-A BLOCK DETAILS, FOOTING & SLAB DETAILS TO BE DESIGNED, CERTIFIED AND INSPECTED BY A RPEQ ENGINEER PRIOR TO WORK BEING CARRIED OUT FOR A 'P' CLASS SITE AND WIND-'C2' WIND RATING.
N.T.S.



Elevation 2



Elevation 3



Elevation 4



ABN: 73614916086
QBCC: 15031495
Address: P.O. BOX 863,
Pt. DOUGLAS Qld. 4877
Phone: (07)40985518
Fax: (07)40985512

ELEVATIONS

WIND-'C2'

N.B. ALL WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES - THIS DESIGN IS THE EXCLUSIVE PROPERTY OF NQ HOMES Pty. Ltd.

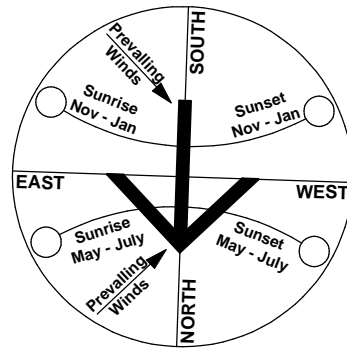
Client: DALLAS FAYE WALKER
LOT 5, IVES AVENUE
WONGA BEACH

Design: WONGA 175
Facade: TRADITIONAL
Inclusions: PREMIUM

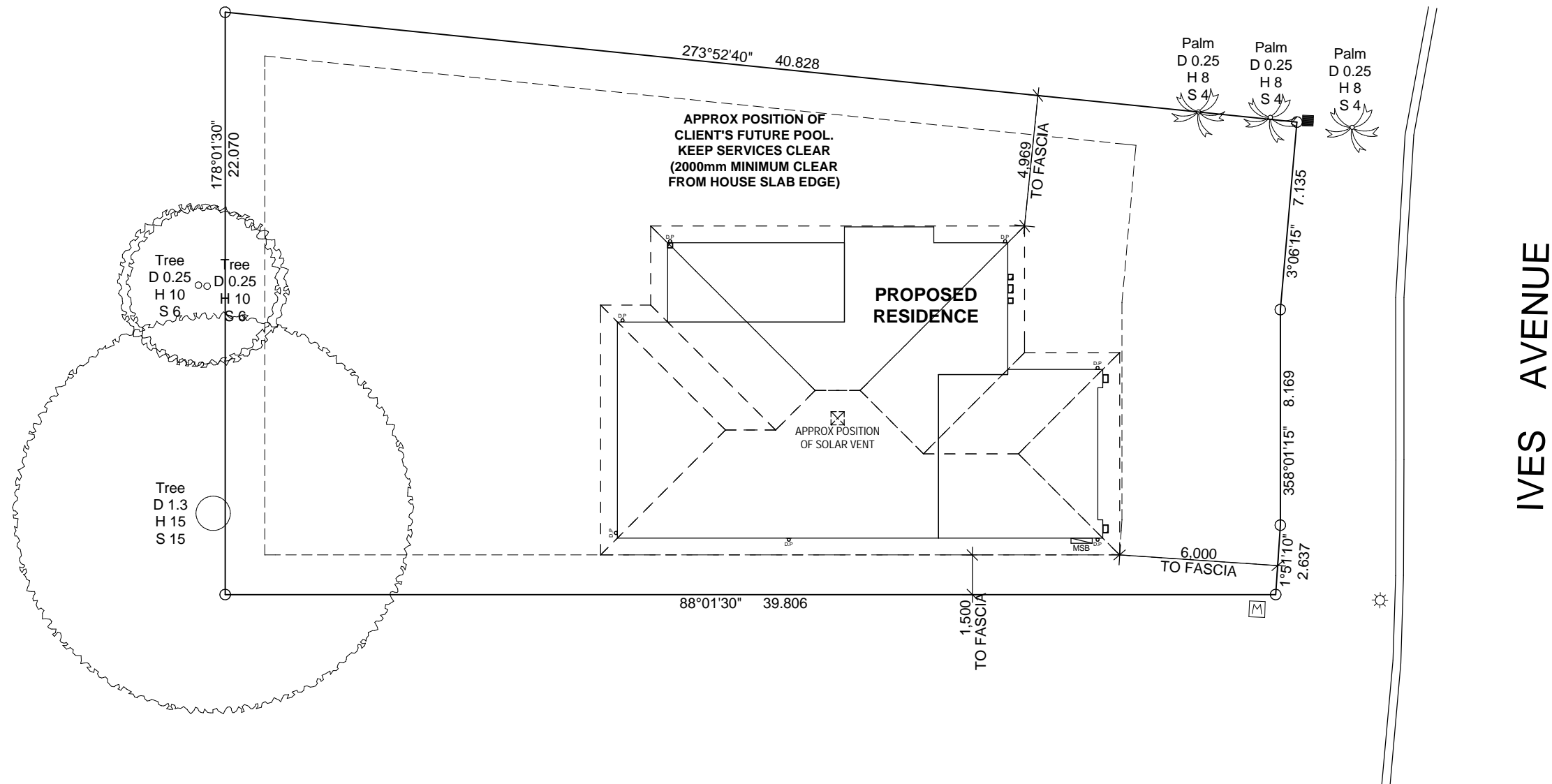
Drawn By: S.C.
Date: 29/07/2018
Scale: 1 : 100

Amendments:
Job Number: 366TL
Sheet Number: 3 of 10

LOT 5 ON RP892256
IVES AVENUE
WONGA BEACH



SC - 35mm DEEP SAWCUT WITHIN
8 HOURS OF CONCRETE POUR
- CUTOUT EVERY 2nd MESH BAR
ACROSS JOINT



IVES AVENUE



ABN: 73614916086
QBCC: 15031495
Address: P.O. BOX 863,
Pt. DOUGLAS Qld. 4877
Phone: (07)40985518
Fax: (07)40985512

SETOUT PLAN

WIND-'C2'

N.B. ALL WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES - THIS DESIGN IS THE EXCLUSIVE PROPERTY OF NQ HOMES Pty. Ltd.

Client:
DALLAS FAYE WALKER
LOT 5, I VES AVENUE
WONGA BEACH

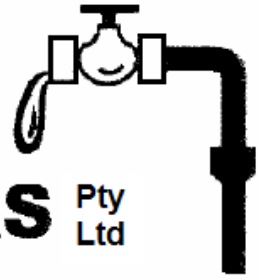
Design:
WONGA 175
Facade:
TRADITIONAL
Inclusions:
PREMIUM

Drawn By:
S.C.
Date:
29/07/2018
Scale:
1 : 200

Amendments:
Job Number:
366TL
Sheet Number:
9 of 10



**PLUMBING
& ROOF
CONTRACTORS** Pty
Ltd



20 Owen St, Craiglie
MOWBRAY, PORT DOUGLAS QLD 4877

PH: 0418 187 376

**ON SITE SEWERAGE FACILITIES
SITE ASSESSMENT & DESIGN**

NQ Homes Tropical Living

Site Evaluator:

Brian Petrus

Signature:

Date:

25th July 2018

Address

Lot 5 Ives Ave
Wonga Beach

Site & Soil Assessment

BP Plumbing Contractors Pty Ltd

ABN: 49 097 270 472
BSA: 896522
20 Owen St, Craiglie
Port Douglas
QLD 4877

Telephone: 0418 187 376
Email: bpplumb@bigpond.net.au

25th July 2018

Chief Executive Officer
Douglas Shire Council
64-66 front St
Mossman QLD 4873

Dear Sirs,

Re: On-site Wastewater Disposal – Lot 5 Ives Ave Wonga Beach QLD 4873

This is to certify that Brian Petrus of BP plumbing Contractors Pty Ltd has designed the on-site wastewater disposal system for the above mentioned site in accordance with the following Australian Standards and specifications

- ❖ AS/NZS1547 - On-site Domestic Wastewater Management
- ❖ - Plumbing & Drainage Act 2012
- ❖ - Standard Plumbing & Drainage Regulation 2003
- ❖ - Qld Plumbing & Wastewater Code
- ❖ - Plumbing Code of Australia]
- ❖ AS/NZS3500 - Plumbing & Drainage

Location Details:

- Suburb/Town: - Wonga Beach
- Survey Plan Details: - Lot 5 RP892256
- Total Area: - 800m²
- Local Government Authority: - Douglas Shire Council

Owner Details:

- Owner: - C/- NQ Homes Tropical Living
- Address: - N/a

Site & Soil evaluation for an onsite sewerage system

❖ **Description** - 4 bedroom residence

❖ **Water Supply Source** - Town water

❖ **Site Details**

Existing vegetation - Short grass
 Slope - <1%
 Drainage Pattern - Linear planer
 Soil Drainage - Good
 Water Course - >10m
 Flooding Potential - Nil
 Existing Buildings - Nil
 Water Table - >1.6m
 Water Bore/Well - -
 Predominant wind direction - South Easterly

❖ **Site Stability**

Is expert Evaluation necessary - No

❖ **Climate** - Port Douglas Area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Mean Rainfall (mm)	394	424	425	204	72	49	26	25	32	49	108	205	2013
Evapotransporation (ET, mm)	112	98	99	89	88	90	93	93	97	104	108	112	1183

Source: Australian Bureau of Meteorology

❖ Separation Distances

The following separation distances should be adapted as per on-site sewerage code

Feature	Recommended Horizontal Distance	Measured Distance
Footings of Buildings	Boundaries of land application areas should be positioned at least 2.0 metres downslope, 4.0metres upslope from the footing or where the site is flat, 2.0 metres from any point of the building	
Property boundaries, pedestrian paths & walkways, recreation areas	Boundaries of land application areas should be positioned at least 2.0 metres downslope, 4.0 metres upslope from the footing or where the site is flat, 2.0 metres from any point of the feature.	
Retaining wall footings	Boundaries of land application areas should be positioned at least 2.0 metres downslope, 4.0 metres upslope from the footing or where the site is flat, 6.0 metres from any point of the retaining wall footing.	
In ground swimming pool	6.0 metres from any point of the swimming pool.	
In ground portable water tank	Primary Effluent – 15 metres from the boundary of the land application area. Secondary Effluent – 6 metres from the boundary of the land application area.	
<p>Note: The separation distances are recommended only. The local government may upon considering the public health and environmental risks reduce or increase the distances given in the table</p>		

Feature	Recommended Horizontal Distance	Measured Distance
Top of bank of permanent water course; Top of bank of intermittent water course; Top of bank of lake; Top water level of a surface used for agriculture, aquiculture or stock purposes; Easement boundary of unlined open stormwater drainage or channel or drain.	Primary effluent: 50 metres (horizontal) Secondary effluent: 30 metres (horizontal) Advanced Secondary effluent: 10 metres (horizontal)	
Bore or dam used or likely to be used for human and or domestic consumption.	Primary effluent: 50 metres (horizontal) Secondary effluent: 30 metres (horizontal) Advanced Secondary effluent: 10 metres (horizontal)	
Unsaturated soil depth to a permanent water table.	Primary effluent: 50 metres (horizontal) Secondary effluent: 30 metres (horizontal) Advanced Secondary effluent: 10 metres (horizontal)	
<p>Note: The separation distances are recommended only. The local government may upon considering the public health and environmental risks reduce or increase the distances given in the table</p>		

Soil Properties - CAT 2 DLR 50

❖ Design Criteria

Proposed development	-	4 bedroom residence
No of persons using facilities	-	6 persons
Design flow rate with standard water reduction fixtures	-	150L / per day
Total Flow Rate	-	900L / per day
DLR	-	50

❖ Reserve/Secondary Area

AS 1547-2000 requires a reserve area of 100% of the design area to be available for future replacement of the land application facility.

Reserve/Secondary area available

❖ Disposal System Required

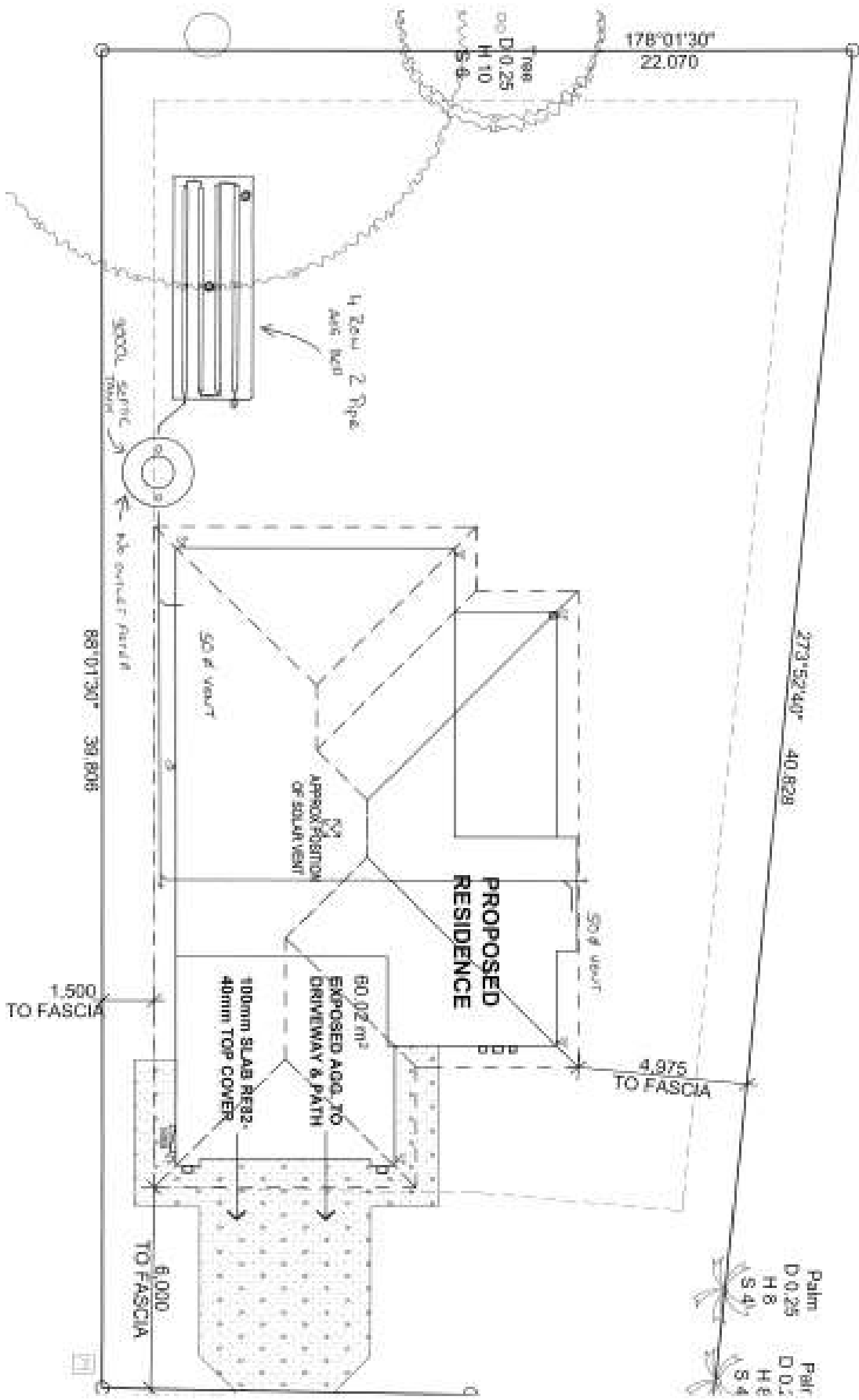
Provide an onsite disposal system to secondary stage treatment

Disposal Area required with the use of standard water reduction fixtures inc 6/3L water closets, shower flow restrictors, aerator outlets & water conserving automatic washing machines

$$\begin{aligned}\text{Disposal area} &= \frac{\text{volume of effluent in litres / day}}{\text{design loading rate in mm / day}} \\ &= \frac{900 \text{ /day}}{50\text{mm /day}} \\ &= 18\text{m}^2 \text{ disposal area}\end{aligned}$$

PROPOSED SYSTEM

To comprise of a 3000L septic tank with 18m² of AES disposal bed as per attached drawings



1000L SUMP TOWER

88°01'30" 38.808

1.500 TO FASCIA

6.000 TO FASCIA

50 ft gable

APPROX POSITION OF SOLAR VENT

60.02 m² EXPOSED AGG. TO DRIVEWAY & PATH

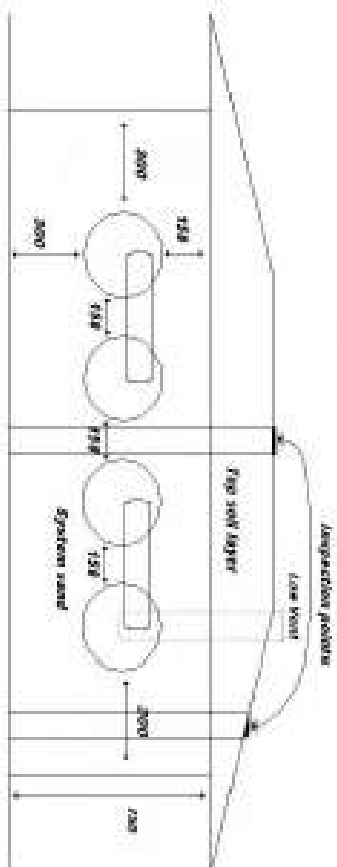
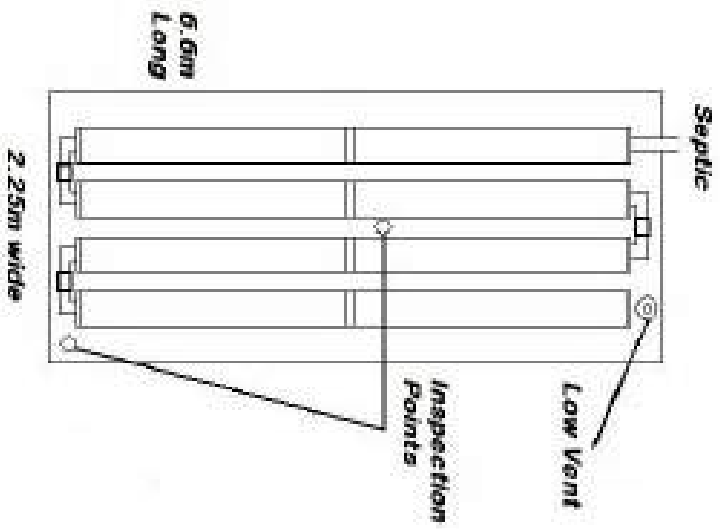
42cm 2 Pipe PVC Pipe

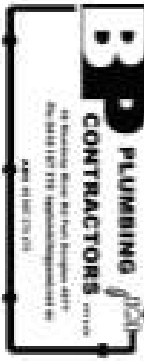
4.975 TO FASCIA

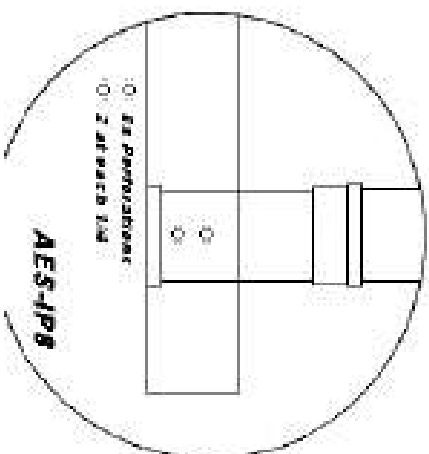
273°52'40" 40.828

178°01'30" 22.070

Palm D:0.25 H:8 S:4
 Palm D:0.1 H:6 S:4



 <p>BP PLUMBING CONTRACTORS <small>48 Waterloo Street, Wellington, New Zealand Tel: 0445 197 199 Fax: 0445 197 198 www.bpplumbing.co.nz</small></p>	Address	
	Lot 5 Innes Ave	Wongah Beach
	Date: 29/07/2018	





Advanced Enviro-septic Design Calculator V1.5

"Always the BEST Option" until site and soil conditions rule it out.

Site Address Lot 3 from the Wings Road	Town TGM	Post Code 4073
Client Name WJ Evans		
Designer Name WJ Evans	Designer P/L Number 41827814	Designer Lic Number (see 41827814)
Plumber Name WJ Evans	Plumber P/L Number 41827814	Plumber Lic Number (see 41827814)
Council Area Darwin	Designated EOI Div Number 401	Date 04/01/2014

This Calculator is a guide only, involving soil classification, weather tables, water tables and all other site conditions advised by the qualified designer.

System Designer's selection calculation flow only		IMPORTANT NOTES																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;"> <input type="checkbox"/> System as building unit, "SB" for Advanced Secondary or "DB" Secondary </td> <td style="width: 5%; text-align: center;">00</td> <td style="width: 60%;">>> This design is for a SECONDARY system.</td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Is this a new installation? Y or N </td> <td style="text-align: center;">01</td> <td rowspan="2"> <input type="checkbox"/> Minimum depth must also be 0.6m or 2 x 0.6m from the site <input type="checkbox"/> A single tank under floor is NOT RECOMMENDED </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Plumber of project </td> <td style="text-align: center;">02</td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Daily Design Flow Address use: Litres/DAY read Day </td> <td style="text-align: center;">03</td> <td rowspan="2"> <input type="checkbox"/> Larger AEO must use the flow and depth chart below </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Number of sites required to satisfy conditions </td> <td style="text-align: center;">04</td> </tr> <tr> <td> <input type="checkbox"/> weather table Category as established by site soil water situation (A, B, C, D, E, F, G) </td> <td style="text-align: center;">05</td> <td rowspan="2"> <input type="checkbox"/> Larger AEO must use the flow and depth chart below </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Design Loading Rate based on site soil water situation (L/D read day) </td> <td style="text-align: center;">06</td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> How long is pipe before system based area </td> <td style="text-align: center;">L/D</td> <td> <input type="checkbox"/> Min. 4m pipe before installation is 80% more to establish water table or rock </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Water System Budgeted Stage in % for standard AEO system to calculate </td> <td style="text-align: center;">07</td> <td> <input type="checkbox"/> Note: Groundwater conditions fall in Local application areas 7 </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Is this design a gravity system like an under floor (Y or N) </td> <td style="text-align: center;">08</td> <td> <input type="checkbox"/> A House Vent & LHM VENT required on this system </td> </tr> </table>	<input type="checkbox"/> System as building unit, "SB" for Advanced Secondary or "DB" Secondary	00	>> This design is for a SECONDARY system.	<input type="checkbox"/> Is this a new installation? Y or N	01	<input type="checkbox"/> Minimum depth must also be 0.6m or 2 x 0.6m from the site <input type="checkbox"/> A single tank under floor is NOT RECOMMENDED	<input type="checkbox"/> Plumber of project	02	<input type="checkbox"/> Daily Design Flow Address use: Litres/DAY read Day	03	<input type="checkbox"/> Larger AEO must use the flow and depth chart below	<input type="checkbox"/> Number of sites required to satisfy conditions	04	<input type="checkbox"/> weather table Category as established by site soil water situation (A, B, C, D, E, F, G)	05	<input type="checkbox"/> Larger AEO must use the flow and depth chart below	<input type="checkbox"/> Design Loading Rate based on site soil water situation (L/D read day)	06	<input type="checkbox"/> How long is pipe before system based area	L/D	<input type="checkbox"/> Min. 4m pipe before installation is 80% more to establish water table or rock	<input type="checkbox"/> Water System Budgeted Stage in % for standard AEO system to calculate	07	<input type="checkbox"/> Note: Groundwater conditions fall in Local application areas 7	<input type="checkbox"/> Is this design a gravity system like an under floor (Y or N)	08	<input type="checkbox"/> A House Vent & LHM VENT required on this system
<input type="checkbox"/> System as building unit, "SB" for Advanced Secondary or "DB" Secondary	00	>> This design is for a SECONDARY system.																									
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 | |

PLEASE CHECK YOU MAY BE FALL FROM TANK THROUGH SYSTEM PIPES

COMMENTS - " ?" for optional input the Designer to complete. "

Designers need to be familiar with special requirements of Local Authorities. E.g. Minimum falls from flyris tanks outside to Local application areas etc.

Please be aware restricted to provide good construction techniques as per AS 1582 and as provided on AEO installation but not those supplied with components.

AEO System Calculation Summary	AEO Dimensions	
Total System load - litres / day (L/D)	800	lit
Min Length of AEO pipe - see the local loading	5.7	m
Number of FULL AEO Pipe lengths per site	2	lit
Total Capacity of AEO System pipe in Litres	1600	lit

	AEO System	System No. lengths
L/D in (L/D)	0.4	4.0
W table in (W)	0.20	6.00
Total Depth	0.20	6.20
A. area in L	0.48	5.2

DO YOU REQUIRE TO LOCATE LIGHTING OF PIPE IN THIS DESIGN (OPTION Y)?

IF YES PLEASE TO LOCAL AUTHORITY FOR PERMITS DESIGN OPTION IN THE " ?"

AEO IMPLANTATION POINT PRINTS A B/C... L = (L/D x W) for this design Serial design is	Length	Width	Minimum AEO tank pipes required -
A/B	x	2.75	= 10.8
			m2 total

AEO PIPE	AEO 1 meter fibre required?	0	lit
AEO/C	AEO/C Compliance option?	0	m
AEO/D	AEO/D Other options	0	m
AEO/E/F	AEO Clarges alternative	0	m
AEO/G/H	AEO 0.6m long dependent on flow	0	m
AEO/I	AEO Type of Pipe Required	m	
TOTAL SYSTEM AEO REQUIRED (Whole Only)		0	m

PLEASE email your AEO CA L/D and Drawings to:

DESIGNER WJ EVANS ENVIRO-SEPTIC CONSULT

Designer level 10 in flyris tank etc.

- This AEO Calculator is a design with no other checking of the AEO components and configuration and is a guide only. It must not
- used as a replacement for a "BEST" standard and installed and designed by a (Qualified Designer)
- (Designer does not accept any responsibility for site soil evaluation, loading calculations or O&M except for the designer for this calculation)
- AEO pipes can be used in depth on site. They are applied in local areas only.

SUITABLE VEGETATION FOR WET SOILS

TYPES OF VEGETATION

CLIMBERS

Bougainvillea
Hardenbergia
Hibbertia Scandens

Kennedia
Lonicera Japonica
Pandorea Jasminoides

GRASSES

Buffalo

Kykuku

GROUND COVER

Acanthus Mollis
Coprosma X Kirki
Grevillea Poorinda

Liriope Muscari
Ophiopogon
Royal Mantle

PERENNIALS

Agapanthus Preaecox
Astor Novi-Belgii
Canna X Generalis
Chrysanthemum Maximum

Gazania X Hybrida
Salvia X Superba
Stokesia Laevis
Viola Hederacea

SHRUBS

Abelia X Grandiflora
Acacia Longifolia
Callistemon Citrinus
Cassia Bicapsularis
Ceratostigma
Chaenomeles Lageneria
Correa Alba
Cotoneaster Glaucophyllus
Cotoneaster Lacteus
Caphea Ignea
Euonymus Japonicus
Euphorbia Millii

Euhorbia Pulcherrima
Hebe Speciosa
Jasminum Mesnyi
Jasminum Officinale
Jasminum Polyanthum
Lantana Camara
Lantana Montevidensis
Leptospermum Flavescens
Narium Oleander
Pyracantha Fortuneana
Thunbergia Alata
Weastringia Fruticosa

TREES

Angophora Costa
Banksia Integrifolia
Callistemon Salinus
Callistemon Viminalis
Casuarina Glauca
Casuarina Stricta
Eucalyptus Botryoides
Eucalyptus Robusta
Hakea Salicifolia
Hakea Saligna

Leptospermum Laevigatum
Leptospermum Petersonii
Melaleuca Armillaris – Sandy Soil
Melaleuca Linariifolia – Clay Soils
Melaleuca Quinquenervia – Sandy Soil
Melaleuca Styphelioides – Clay Soils
Nyssa Sylvatica
Photinea X Frasieri “Robusta”
Tristaniopsis Laurina

All vegetation should be checked with Local Authorities & Nurseries prior to installation for suitability to each region

NOTICE TO LAND OWNER

Your sanitary drainage installation consists of a septic tank and an application system. To ensure the operational effectiveness of this installation the following advice should be adhered to.

OPERATION AND MAINTENANCE:

GENERALLY

On-site sewerage treatment plants and the associated land application facilities are complex systems that are prone to failure if operated and maintained incorrectly. All on-site sewerage facilities require a high degree of user dedication in terms of operation and maintenance to ensure that the design performance of the facility is achieved for the expected life of the facility.

All on-site sewerage facilities or components of the facility have a finite life. For instance, septic tanks may have an expected life of 25 years, whilst the associated land application facility may have an expected life of 5 to 15 years depending on the nature of the specific site.

OPERATION AND MAINTENANCE PROCEDURES

Operation and maintenance procedures are undertaken to a regular schedule appropriate to the nature and type of treatment and land application facility and in accordance with any manufacturers instructions; and Continuity of operation and maintenance is achieved throughout changes of ownership and/or changes in use or development of the site.

OPERATION

Practice water conservation, and avoid exceeding the hydraulic capacity of the facility. **DO NOT USE OR INSTALL A GARBAGE GRINDER.**

Minimise the input of cleaning agents, detergents, disinfectants, bleaches, alkalis, oil, petrol, acids, degreasers, photography chemicals, cosmetics, lotions, pesticides and herbicides into the facility.

Not place materials such as disposal nappies, female napkins, paper towels, cigarette butts, bones and coffee grounds into the facility.

Be observant regarding signs of unsatisfactory performance, including unusual odours, leaks from the facility or choking.

Contact the service agent following observation of unsatisfactory performance or breakdown.

Protect facility components from structural damage, such as from vehicles.

Be familiar with safety procedures.

Establish a time pattern of desludging.

Keep the area in the vicinity of the on-site sewerage facility tidy to facilitate ease of operation and maintenance.

Where appropriate, or required by a condition of approval, enter into an annual service contact with a service agent, and

Retain copies of all service reports.

SEPTIC TANKS

It is recommended that septic tanks be inspected at two yearly intervals. The inspection should include an assessment of the sludge and scum levels and checking of the outlet and inlet square junctions for blockages.

Septic Tanks should be desludged when:

- The scum layer is within 100mm of the bottom of the inlet square junction or the sludge layer is within 200mm from the bottom of the inlet.
- The sludge occupies the basic allowances of the septic tank: on
- The sludge scum occupy two-thirds the volume of the tank (or first stage of a two stage system).

The desludging procedure should ensure that 400-500mm of liquid is retained in the tank, and that the tank is immediately refilled with water to the outlet level.

LAND APPLICATION SYSTEMS

Regular visual checking of correct system operation by households, and an annual inspection by service contractors should be undertaken. Signs of system failure include:

- Surface ponding and run-off or treated effluent;
- Degrading of soil structure (Sheet or Rill erosion, surface crusts, hard surface);
- Poor vegetation growth; and
- Unusual odours