

Our Ref: MJJ: LD: HRP13260
Contact: Liam Donald

5 February 2014

Chief Executive Officer
Cairns Regional Council
PO Box 359
CAIRNS QLD 4870

Attention: Michelle Henderson

Dear Michelle,

**RESPONSE TO INFORMATION REQUEST – MATERIAL CHANGE OF USE – HOUSE
AND HOME BASED BUSINESS (BED & BREAKFAST) – CAPE TRIBULATION ROAD,
DIWAN – LOT 41 ON RP739765**

In accordance with Section 278 of the *Sustainable Planning Act 2009 (SPA)*, please find outlined below our response to Council's Information Request dated 16 September 2013.

1. *Provide a full On-Site Sewerage Disposal Report prepared in accordance with the FNQROC Development Manual. Amongst other things, the report should nominate clearances to boundaries and watercourse and location of reserve area.*

Response:

Please refer to the attached On-Site Sewerage Disposal Report prepared by ETS Geotechnical.

The attached report outlines the proposed on-site waste treatment method along with separation distances to boundaries, watercourse, buildings on site and other matters.

The report recommends that a surge control tank in addition to 2 x 20m by 3.5m conventional beds be utilised.

2. *Provide a landscaping plan which demonstrates compliance with the requirements of the Douglas Shire Planning Scheme 2008, particularly the applicable Locality Code, Planning Area Code and the Landscaping General Code, as well as the requirements of the Planning Scheme Policy No 7 – Landscaping, which states that a minimum of 75 per cent of the planting is to be endemic or native species, with palms used as accent plants only. The landscaping plan is to show that the balance area of the site not built upon is to be revegetated with native vegetation and in accordance with the Plant Species Schedule in Planning Scheme Policy No 7 – Landscaping.*

Cardno (Qld) Pty Ltd
ABN 57 051 074 992

Level 2
56 Gordon Street
Mackay QLD 4740
Australia

PO Box 244
Mackay QLD 4740
Australia

Phone: +61 7 4953 2877
Fax: +61 7 4953 2577
www.cardno.com

www.hrppc.com.au

Response:

The proposed development does not include additional on-site landscaping. Natural, with the majority of existing vegetation being retained, i.e. the proposal is located within existing cleared areas.

Any re-vegetation of areas as a result of the development will be with endemic species to the area.

Therefore, a Landscaping Plan has not been provided as part of this Response to Information Request.

If a Landscaping Plan is considered mandatory, we respectfully request that Council please condition this requirement as part of their Decision Notice.

3. *Provide clarification on the proposed number of bed spaces for the House and Home Based Business use, including detail on the bed spaces intended for use by guests, and the number of bed spaces intended for use by staff (if applicable).*

Response:

A total of up to twenty (20) guests and two (2) resident staff members are provided with accommodation / bed spaces. The house will provide accommodation for staff/ permanent residents only.

All other accommodation allocated to guests (total of 20 bed spaces) will be provided in 'accommodation huts' on the subject site.

The proposed sewerage treatment system documentation being prepared under 'Point 1' of Council's Information Request will reflect the same, which caters for 20 equivalent persons (up to 20 guests, up to 2 resident staff, and 1 non-resident staff).

4. *Provide detail of proposed external finishes and colours for all proposed buildings and structures, including water tanks. It is noted that the proposal plans indicate utilising white or a reflective surface for all building roofs, as well as large portions of the external walls/doors of the proposed Barn. Please note that only non-reflective colours which complement the surrounding vegetation and view shed are acceptable, for example greens, browns, blues and greys.*

Response:

The external finishes of the buildings on site will comprise of a non-reflective color bond steel. It is anticipated that the colour will be 'olive green' subject to availability and price.

It is considered that the external material for the on-site buildings and structures is able to be conditioned accordingly by Council, comprising a non-reflective material (i.e. color bond steel).

5. *The application documentation makes reference to housing a generator onsite for power generation. Please provide a site plan which indicates the proposed location for the generator shed, demonstrating that it is able to be accommodated within the existing cleared area, and is able to be positioned and housed (including noise attenuation materials) so as to mitigate noise nuisance to adjoining and near residents.*

Response:

The generator will be housed in the rear of the barn, undercover, being a generous separation distance from the House and 'accommodation huts'. In addition to this, the generator will be enclosed to further reduce any noise generation impacts on the proposed development.

The generator will also have very low decibels, taking into consideration that the use is for permanent and temporary residential purposes.

It is considered that the location of the generator is able to be conditioned accordingly, to minimise any noise amenity issues on the proposed development and adjoining land uses.

6. *Provide floor plans for all proposed buildings which show the room layout, with all room clearly labelled. The floor plans should clarify the number of bed spaces proposed for the House and the Home Bases Business, and should delineate between the guest accommodation and staff accommodation, if applicable.*

Response:

As noted in the applicant's response to item 3, a maximum of 22 persons will be able to be accommodated at any given time.

Two (2) beds will be provided for staff / permanent residents within the house (second level) and all addition twenty (20) bed spaces will be provided in the 'accommodation huts'.

Individual 'accommodation huts' will be supplied with three (3) beds, with the option for additional temporary bed spaces, as required (and depending on total number of persons staying on site in accordance with capped requirements of the on-site waste disposal report).

Furthermore, each 'accommodation hut' will be a private bathroom and toilet. All kitchen and laundry facilities will be provided in the house for guests to use.

As Council would appreciate, the applicant is hesitant to continue outlaying costs on the project without confidence that the Bed and Breakfast component of the application will be supported by Council, in principal. Therefore, it is requested that Council condition the as part of their Decision Notice the provision of Floor Plans for approval prior to the commencement of the use.

7. *Provide detail of any existing/proposed fencing on-site, noting that the Locality Code seeks that development impacts on wildlife movements, fauna habitats and habitat corridors are to be minimised wherever possible. Optimally, fencing (where required) is limited in extent to the confines of the cleared area around the House.*

Response:

The proposed development does not incorporate fencing.

This will ensure that the proposed development will have negligible impacts on the natural habitats and wildlife movements.


As the proposed development further will be maximising on an existing cleared area of the subject site, it is considered that the development will not impeded on the continued movement of fauna habitats and habitat corridors.

However, it is considered that if any future fencing is proposed, it is able to be conditioned that it be limited to the extents of the existing cleared site area to minimise any impacts on the existing fauna habitats and habitat corridors within the locality.

Pursuant to the provisions of Section 278 (1) (a) of the SPA it is advised that this response comprises all of the information requested and now request that Council proceed with the assessment of the development application.

If you have any queries please contact me on 4953 2877.

Yours faithfully



Michael Jewell
Office Manager and Principal
Planning
For Cardno HRP
(07) 4953 2877

Enc:
Attachment A – On-Site Waste Disposal Report prepared by ETS

cc: Mr Robert Wheeler – Cardno Cairns

**ATTACHMENT A – ON-SITE WASTE DISPOSAL REPORT
PREPARED BY ETS**



DIWAN ECO B & B TRUST

ONSITE SEWERAGE ASSESSMENT

**LOT 41 (RP739765) CAPE TRIBULATION ROAD
COW BAY**

REPORT No. GT14-004-001R DUNN REV 1

FEBRUARY 2014

REVISION NO. 1



Engineering Testing Services Pty Ltd

ACN 087 293 598
PO Box 252
Bungalow QLD 4870
BSA 1057711

Telephone: 07 4047 8600
Facsimile: 07 4047 8699
Email: info@engineeringtesting.com.au

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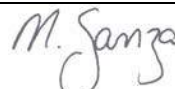
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1.0 INTRODUCTION

Engineering Testing Services Pty Ltd (ETS) have been engaged by Diwan Eco B & B Trust (C/- Gregory Dunn) to prepare an Onsite Sewerage Assessment (OSA) to assess the suitability of installing a wastewater treatment system to serve a proposed bed and breakfast development catering for a maximum of 20 equivalent persons (EP). The block has an area of approximately 9.98 hectares in the local government area of the Cairns Regional Council. This OSA addresses the requirements under AS/NZS1547:2000 for the proposed residence on the site.

2.0 LEGISLATIVE REQUIREMENTS

The Queensland Plumbing and Wastewater Code (the Code) specifies the requirements for onsite sewerage disposal and treatment systems that have a peak design capacity of 20 equivalent persons (EP) or less. The Code defines performance criteria for the following:

- ◆ Onsite Wastewater Management Systems
- ◆ Greywater Use Facilities
- ◆ Land Application Systems (including setback distances)
- ◆ Water Meters for New Premises
- ◆ Chief Executive Approvals (of treatment systems)

In consideration of an application for on-site treatment and disposal facilities, the local government is required to assess whether the application triggers referral for an Environmentally Relevant Activity under the Environmental Protection Act 1994. Disposal of on-site wastes becomes the Environmentally Relevant Activity (ERA) of sewage treatment when daily flows exceed 4,000 litres. Environmentally Relevant Activities require approvals from the Environmental Protection Agency, either as a concurrence agency or assessment manager.

This proposal does not exceed the daily flow limit therefore will not require referral to the Environmental Protection Agency.

Under Sections 440ZG of the EP Act, which relates to depositing prescribed contaminants in waters, it is an offence to deposit or release sewage and sewage

residues, whether treated or untreated, and any other matter containing faecal coliforms or faecal streptococci, including: for example:

- waste water pumped out from a septic tank, or
- solid or liquid waste from an on-site sewerage facility;

into waters, or a roadside gutter or stormwater drainage, or at another place, and in a way, so that the contaminant could reasonably be expected to wash, blow, fall or otherwise move into waters, a roadside gutter or stormwater drainage.

Relevant Australian Standards for the treatment of on-site effluent include the following:

- ◆ AS/NZS1547:2000 'On-site domestic-wastewater management'.
- ◆ AS1546 – 1998 'On-site domestic wastewater treatment units'
- ◆ AS3500 – National Plumbing and Drainage Code
- ◆ Department of Infrastructure and Planning 'Queensland Plumbing and Wastewater Code' April 2010 (the Code)

This report was prepared in accordance with the requirements of the standards set in these documents.

3.0 SITE AND SOIL EVALUATION

3.1 Site Assessment

The property is located on the north western side of Cape Tribulation Road and Ironbark Road, Cow Bay and is described as consisting of gentle slopes (2-3°). The land disposal area has a sandy clay loam soil with 'common' (10-20%) medium to coarse sized gravel fragments. The site was inspected on the 17th January 2014. At the time of inspection, the proposed land disposal area was located to the south of the proposed building locations and comprised a good coverage of thick long grass. Surrounding the grassed area was thick rainforest.

SITE FACTOR	RESULT
Area	9.98 hectares
Slope	Gentle slopes (2-3°) at the land disposal site
Drainage Pattern	Linear planar at land disposal area
Exposure	Partly shaded
Erosion and Land Slip	N/A
Boulders and Rock Outcrops	N/A
Vegetation	Ground cover (long thick grass) at the land disposal area
Water Course	N/A
Water Bore	N/A
Water Table	Not encountered
Cut and Fill	N/A
Flooding	Unknown
Channelled Runoff	N/A
Soil Surface Condition	Moist
Other Site Specific Factors	None

3.2 Soil Assessment

SOIL PROPERTY	RESULT
Colour	Pale brown
Texture	Sandy Clay Loam
Structure	Moderate
Coarse Fragments	Common (10-20% medium / coarse gravel)
Permeability	0.5 – 1.5 m/d
Soil Category	4
Design Loading Rate (DLR) (mm/day)	30 – Advanced Secondary, Conventional Bed
Design Irrigation Rate (DIR) (mm/week)	25 – Advanced Secondary

NOTE: This category of soil is classified as imperfectly drained.

4.0 SYSTEM SIZING FACTORS

4.1 Potable Water Supply

Water supply will be pumped from a bore to a tank.

4.2 Separation Distances

Table T7 from the “Queensland Plumbing and Wastewater Code” recommends the following horizontal separation distances for subsurface land application areas.

Feature	Recommended Separation Distance	Measured Distance
Top of bank of permanent water course; Top of bank of intermittent water course; Top of bank of a lake, bay or estuary Top water level of a surface water source used for agriculture, aquaculture or stock purposes; Easement boundary of unlined open stormwater drainage channel or drain.	Primary effluent: 50 metres (horizontal) Secondary effluent: 30 metres (horizontal). Advanced secondary effluent: 10 metres (horizontal).	>10m to watercourse from land disposal area
Bore or a 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).	>10m to water bore from land disposal area.
Unsaturated soil depth to a permanent water table.	Primary Effluent: 1.2 metres (vertical). Secondary Effluent: 0.6 metres (vertical). Advanced Secondary Effluent: 0.3 metres (vertical).	>0.3m

In accordance with Table T7 of the Code, the vertical separation requirement for an advanced secondary treated effluent is 0.3 metres. The required vertical separation was achieved at the land disposal area.

The horizontal separation distances as recommended in the Code can be achieved for advanced secondary effluent on the site.

Table T4 of the Code recommends the following horizontal separation distances for subsurface land application areas measured from the edge of the trench/bed excavation or any subsurface irrigation distribution pipework to the feature. These separation distances will be readily achieved on-site.

Feature	Separation Distance Down slope	Separation Distance Up slope	Separation Distance Level
Property boundaries, pedestrian paths and walkways, recreation areas, footings of buildings, retaining wall footings.	2 metres	4 metres	2 metres
In ground swimming pools	6 metres	6 metres	6 metres
In ground potable water tank*	6 metres	6 metres	6 metres

*Note: For primary effluent the separation distance from an in-ground potable water tank must be 15 metres.

Stormwater shall be diverted away from the land application areas.

The land application area shown on Figure 1, Appendix A meets all recommended horizontal separation distances for advanced secondary effluent quality.

4.3 Estimation of Daily Flows

It is understood that the Bed & Breakfast facility is to cater for up to 20 guests, 2 resident staff and 1 non-resident staff at a given time. The following typical wastewater flow design allowance is given in AS/NZS1547:2000 Appendix 4.2D for motels / hotels.

Classification	No.	Flow (L/person/day)	Total Flow (L/day)
Guests & resident staff	22	180*	3,960
Non-resident staff	1	40*	40
Total			4,000

* Based on use of water saving devices / fixtures.

As people may utilise the facility for short periods of time, it is recommended that a surge control tank be installed before the treatment system.

For design of an effluent land disposal system the total wastewater design daily flow rate should be taken as 4,000 litres per day, or 20 equivalent persons (EP), for the site.

To ensure the integrity of any treatment system standard water reducing fixtures should be incorporated to further reduce water consumption. These should include:-

- Shower flow restrictors
- Dual flush 6/3 litre water closet
- Aerator faucets
- Water conserving washing machines

4.4 Wastewater Treatment Options

Appendix 1 of the Code specifies the following effluent quality standards for the different standards of wastewater treatment.

Parameter	Primary Effluent (g/m ³)	Secondary Effluent (g/m ³)	Advanced Secondary Effluent (g/m ³)
Biological Oxygen Demand	120-240	20	10
Total Suspended Solids	65-180	30	10
Thermo-tolerant Organisms (org/100ml)	N/A	200	10
Suitable treatment system	Septic tank with outlet filter	Aerated wastewater treatment system.	Aerated wastewater treatment plant with sand filter

The recommended option for this site is:

Advanced Secondary Wastewater Treatment System: A wastewater treatment system with the capacity to treat at least 4,000 litres of wastewater per day would be required to serve the proposed Bed & Breakfast facility on the site. The advanced secondary standard effluent from the wastewater treatment system can then be disposed of to land.

4.5 Method of Disposal

Table 4.2B1 of AS/NZS1547:2000 identifies Land Application systems that are considered suitable for different site, soil and climatic factors. The land application systems that may be used on this site are conventional beds (Option 1) and/or surface/subsurface irrigation (Option 2) or a combination of both for advanced secondary standard effluent.

4.6 Required Disposal Area for Effluent Disposal

As per AS/NZS 1547:2000 Section 4.2A7.3.2 *Sizing*. - $L = Q / (DLR * W)$

Option 1 – Conventional Beds

Q = design daily flow in L/day =	4,000
DLR = Design Loading Rate mm/day =	30 (Secondary)
W = Width (m) =	7m
L = length (m) =	20m
Total Area (m²)	134

The required effluent disposal area for the advanced secondary system would be provided by two (2) conventional beds 20 metres long by 3.5 metres wide by 0.45m deep with a minimum one (1) sidewall to sidewall separation between trenches.

Option 2 – Surface/Subsurface Irrigation

Q = design daily flow in L/day =	4,000
DIR = Design Irrigation Rate mm/week =	25 (Secondary)
Total Area (m²)	1,120

The required area could be achieved by a surface/subsurface irrigated area of 1,120m².

Note: A combination of both of the above listed options could also be utilised for the site.

The configurations of each effluent disposal option may be amended to fit in with the actual final layout of the buildings and associated infrastructure but must achieve the above specified areas and conform to the requirements of AS/NZS 1547:2000 as a minimum.

It is recommended that:

- ❑ Stormwater is diverted away from the land disposal areas by bunding or diversion drains,
- ❑ Effluent is distributed uniformly over the land disposal area
- ❑ The land disposal areas are planted with suitable species where no established vegetation exists,
- ❑ Loadings should be alternated to rest sections of the land application areas and minimise the risk of clogging,
- ❑ A surge control tank is installed before the treatment system.

A cross section of the recommended land disposal option is shown in Figure 1, Appendix A.

5.0 SYSTEM INSTALLATION REQUIREMENTS

5.1 General

The systems and all of their components shall be designed and installed by a licensed Plumber in accordance with the manufacturer's recommendations and the relevant Australian Standards.

5.2 Wastewater Treatment Systems

In accordance with the requirements of AS/NZS1547:2000, an advanced secondary wastewater treatment system with a minimum capacity of 4,000 litres per day is required to service the proposed Bed & Breakfast facility on the site.

5.3 Available Reserve Area

AS/NZS1547:2000 Clause, 4.2.3.4 states that the reserve area may be reduced or eliminated if an improved wastewater-treatment is provided. Therefore, due to the environmental features on the property limiting the available locations, no reserve area has been nominated.

5.4 Earthworks and Stormwater

The effluent land disposal areas shall be graded to minimise contact between stormwater and the disposal area. All excess roof stormwater shall be collected and piped to a suitable discharge point away from any land disposal area.

6.0 SUMMARY & RECOMMENDATIONS

Date of Inspection	17 th January 2014
Location of Site:	Lot 41 (RP739765) Cape Tribulation Road, Cow Bay
Owner's Name:	Diwan Eco B&B Trust
Local Government:	Cairns Regional Council
Proposed Dwelling Type:	Bed & Breakfast Accommodation
Land Area:	9.98 hectares
Referral to EPA required:	No
Assumed Design Daily Flow:	Advanced Secondary Wastewater treatment system – 4,000 litres/day
Assumed Soil Category:	Category 4 – Sandy Clay Loam
Assumed Design Loading Rate:	30 mm/day – Conventional Beds, Advanced Secondary Effluent
Assumed Design Irrigation Rate:	25 mm/day – Surface / Subsurface Irrigation, Advanced Secondary Effluent
Wastewater Treatment Options:	Advanced Secondary standard wastewater treatment system (with a surge control tank) – 4,000 litres/day
Dimensions of Land Application Facility:	2 x Conventional Beds – 20mL X 3.5mW X 0.45mD (with a minimum 1m separation (sidewall to sidewall) between beds) or surface / subsurface irrigation area of 1,120m ²
Method of Calculations:	AS/NZS 1547:2000
Horizontal Separation Distances:	OK
Vertical Separation Distances:	OK
Potable Water Supply:	Pumped from a bore to a tank
Reserve Area:	Not Applicable

The installation of the treatment and disposal system shall be inspected by Engineering Testing Services Pty Ltd to ensure the intent of the design is met.

This report is based on the information provided by the client. If any aspect of the site preparation or proposed construction changes from that originally advised, the Engineer shall be notified so that any amendments can be made. Should soil or environmental conditions encountered on the site differ significantly from those indicated, the Engineer shall be notified before proceeding, as modifications to the design may be required.

Pollution Exclusion

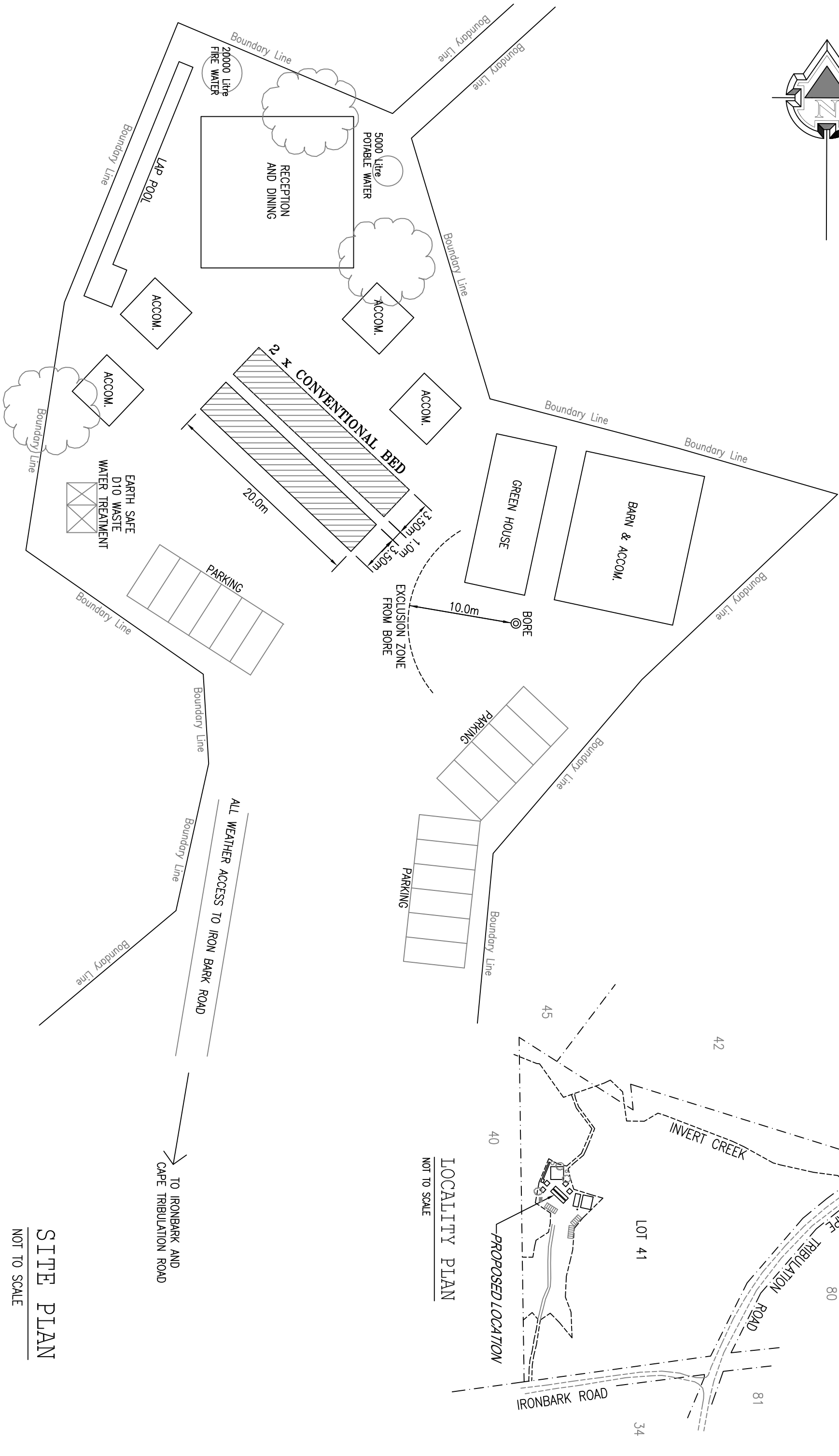
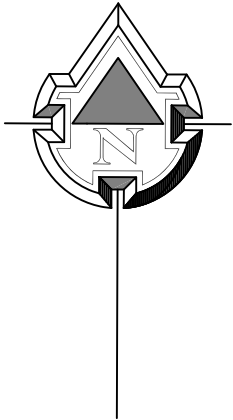
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DIWAN ECO B&B TRUST

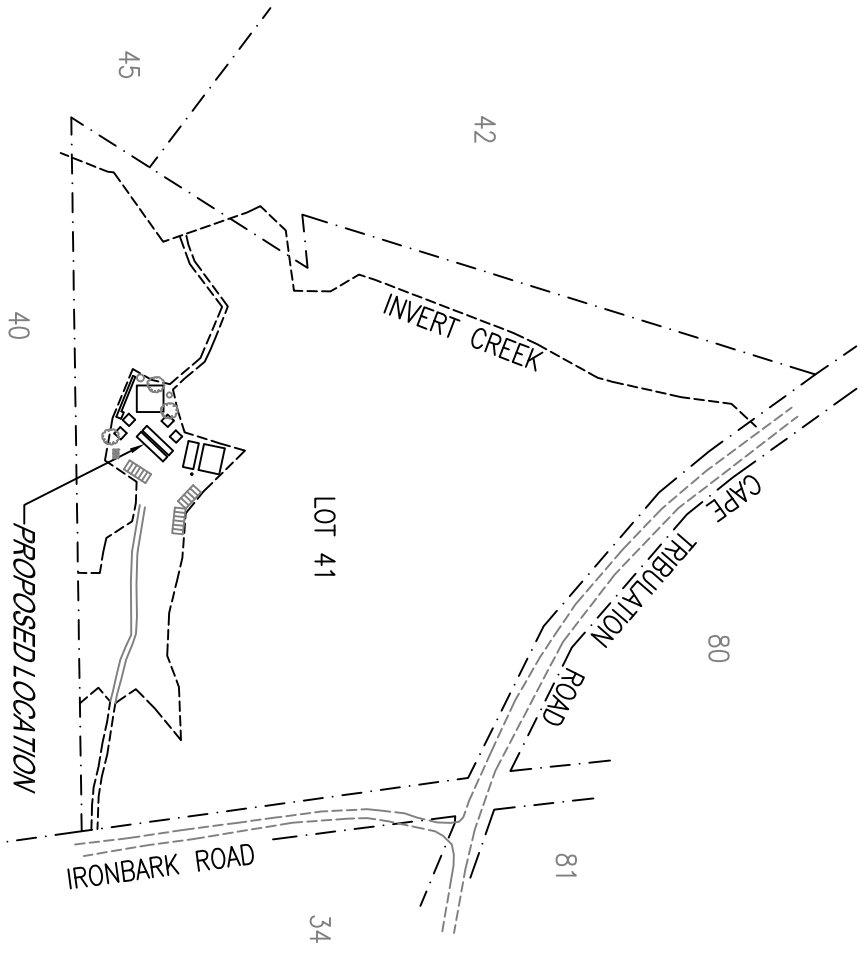
**LOT 41 CAPE TRIBULATION ROAD
COW BAY**

APPENDIX A

PLANS & DRAWINGS



LOCALITY PLAN
NOT TO SCALE



SITE PLAN
NOT TO SCALE

REVISIONS			
NO.			
A	30-01-14	INITIAL ISSUE	
	DATE	DESCRIPTION	APPROV.

CLIENT	DIWAN ECO B&B TRUST
ASSOCIATED CONSULTANTS	



Engineering Testing Services Pty Ltd
Unit 1, 220 South St, Cairns QLD 4870
Ph: 07 4774 4870
PO Box 282 Bundaberg QLD 4670
Nata Accred. No: 1833

Engineering Testing Services (Townsville) Pty Ltd
Unit D 26-30 Lorna Court Boffe QLD 4818
Ph: 07 4774 4151 Fax: 07 4774 4557
Nata Accred. No: 2594

Email: info@engineeringtesting.com.au - www.engineeringtesting.com.au

DRAWN	NINA	CHECKED	LI	ONSITE SEWERAGE ASSESSMENT			
DESIGNED		CHECKED		FIGURE 1 – INDICATIVE LAND DISPOSAL AREAS LOT 41 (RP739765) CAPE TRIBULATION ROAD COW BAY QLD 4873			
CAD REF.	GT14-004-FIG1	DATE	30-01-14				
APPROVED				SIZE	A3	SCALE	NOT TO SCALE
				DRAWING NO.	GT14-004-FIG1	No. 1 of 2 drgs	REVISION
						A	

NOTE

- 1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE LOCAL GOVERNMENT REQUIREMENTS AND THE FOLLOWING CODES :
 - AS 3500 NATIONAL PLUMBING AND DRAINAGE CODE
 - AS 1546.3 : 2001 ONSITE DOMESTIC WASTEWATER TREATMENT UNITS – AERATED WASTEWATER TREATMENT SYSTEM
 - AS 1547 : 2000 ONSITE DOMESTIC WASTEWATER MANAGEMENT
 - DEPARTMENT OF INFRASTRUCTURE & PLANNING QUEENSLAND PLUMBING AND WASTE WATER CODE APRIL 2010.
- 2. SURFACE WATER SHALL BE DIVERTED AROUND THE PERIMETER & UPSLOPE OF THE LAND APPLICATION AREA
- 3. THE TRENCH BED IS TO BE LEVEL AND SHOULD FOLLOW THE CONTOURS OF THE SITE

NOTE:
DISPOSAL AREA IS TO BE LOCATED A MINIMUM OF 2.0m FROM ANY BUILDING, 2.0m FROM BOUNDARIES AND 10.0m FROM ANY WATER COURSES OR BORES.

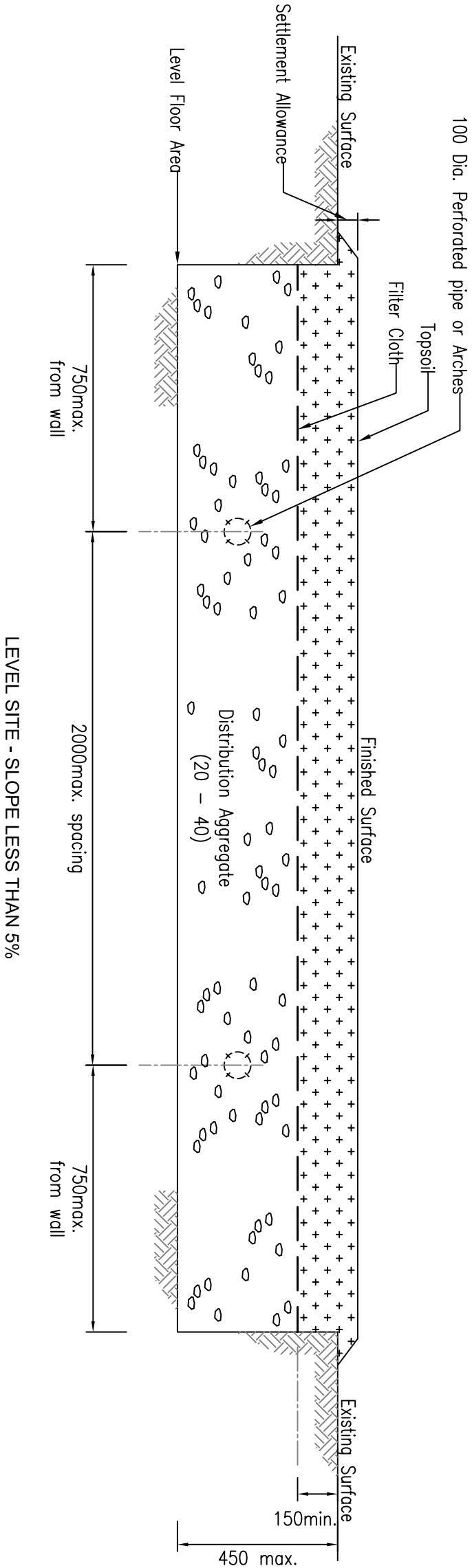


FIGURE 4.5A5 – CONVENTIONAL BED DETAILS (AS/NZS 1547:2000)

N.I.S.

REVISIONS			CLIENT		
			DIWAN ECO B&B TRUST		
			ASSOCIATED CONSULTANTS		
A	30-01-14	INITIAL ISSUE			
NO.	DATE	DESCRIPTION	APPROV.		

Engineering Testing Services Pty Ltd Unit 1, 220 Scott St, Cairns QLD 4870 Ph: 07 4774 4500 PO Box 282 Bundaberg QLD 4670 Nata Accred. No: 1833		Engineering Testing Services (Townsville) Pty Ltd Unit D 26-30 Lorna Court Boffa QLD 4818 Ph: 07 4774 4151 Fax: 07 4774 4557 Nata Accred. No: 2694	
ETS MATERIALS TESTING		NATA TECHNICAL COMPETENCE	
Email: info@engineeringtesting.com.au - www.engineeringtesting.com.au			

DRAWN	NINA	CHECKED	LI	ONSITE SEWERAGE ASSESSMENT		
DESIGNED		CHECKED		FIGURE 1 – INDICATIVE LAND DISPOSAL AREAS		
GT14-004-FIG1				LOT 41 (RP739765) CAPE TRIBULATION ROAD		
CAD REF.		DATE	30-01-14	COW BAY QLD 4873		
APPROVED		SIZE	A3	SCALE	NOT TO SCALE	DRAWING NO. GT14-004-FIG1
		No. 2 of 2 dgs	REVISION	A		