

**Risk Score Calculation Sheet**

File Reference: Collett Goat Shed  
 Site Address: Old Mill Rd, Otaki Bay

Risk Factor	Elevation Facing			
	South	East	West	Very High
Wind Zone	Low	Low	Low	Low
Number of Storeys	Low	Low	Low	Low
Roof/Wall Intersection	Low	Low	Low	Low
Eaves Width	Low	Low	Medium	Medium
Envelope Complexity	Low	Low	Low	Low
Deck Design	Low	Low	Low	Low
<b>Subtotal</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Total</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>

Permissible Claddings - North		Permissible Claddings - South	
Faced To Frame	Cavity	Faced To Frame	Cavity
All Timber weatherboard	Masonry Veneer	All Timber weatherboard	Masonry Veneer
Fibre cement weatherboard	Stucco	Fibre cement weatherboard	Stucco
Vertical profiled metal	Horizontal profiled metal	Vertical profiled metal	Horizontal profiled metal
Fibre cement sheet	Fibre cement sheet	Fibre cement sheet	Fibre cement sheet
Plywood sheet	Plywood sheet	Plywood sheet	Plywood sheet
EPS	EPS	EPS	EPS

Permissible Claddings - East		Permissible Claddings - West	
Faced To Frame	Cavity	Faced To Frame	Cavity
All Timber weatherboard	Masonry Veneer	All Timber weatherboard	Masonry Veneer
Fibre cement weatherboard	Stucco	Fibre cement weatherboard	Stucco
Vertical profiled metal	Horizontal profiled metal	Vertical profiled metal	Horizontal profiled metal
Fibre cement sheet	Fibre cement sheet	Fibre cement sheet	Fibre cement sheet
Plywood sheet	Plywood sheet	Plywood sheet	Plywood sheet
EPS	EPS	EPS	EPS

All workmanship and materials shall be in accordance with New Zealand Standards 3604 :1999 and the Building Act : 1991. All non specific Construction shall be in accordance with the provisions of the New Zealand Building Code. The Contractor shall verify all dimensions on site before commencing work. Written dimensions are to take priority over scaled dimensions. All plans are too be read in conjunction with the specifications and Engineer's details.

Client:  
**Proposed New Residence for:**  
**S & K COLLETT**  
 Lot 39, Old Mill Rd, Marlborough.

Drawn: Jennian  
 Design: Jennian  
 Date: May 2005  
 Scales: as shown  
 Job No:

Drawing Title:  
**SITE PLAN**

General Notes / Comments:  
 10 NOV 2005  
 V. JENNIAN  
 0853 016 0000

Client Approval	
Cad File Reference	
Revision No	
Sheet No 1	Set of: 6

**Jennian HOMES.**

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**PRODUCER STATEMENT – DESIGN**

**PSD**

**05178D**

Issued by: **David King for Tasman Consulting Engineers Limited**

Issued to: **S & K Collett**

In respect of: **Proposed new Shed & Wastewater System (for shed & future house)**

At: **Lot 39 Old Mill Rd, Okiwi Bay, Marlborough Sounds**

Lot **39**

DP

**311754**

SO

Tasman Consulting Engineers Ltd have been engaged by: **S & K Collett**

to provide: **Design and detailing**

services in respect of the requirements of Clauses **B1 & B2** of the Building Regulations 1992 for

**Part** of the building work as listed below.

List of Items covered by this Producer Statement

<b>1</b>	<b>Wastewater disposal system (Secondary treated with sub-surface irrigation)</b>
<b>2</b>	
<b>3</b>	
<b>4</b>	
<b>5</b>	

The design has been prepared in accordance with Clauses / Parts **B1 & B2** (respectively) of the approved documents issued by the Building Industry Authority and the work is described on the following plans, drawings, sketches and the specification and other documents according to which the building is proposed to be constructed.

Drawing/Sketch Title	Ref No	No of Shts	Date
<b>05178 Sheet 1 &amp; 2</b>	<b>05178</b>	<b>2</b>	<b>08-11-05</b>

Prepared by

**Tasman Consulting Engineers**

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000, I BELIEVE ON REASONABLE GROUNDS that subject to...

i. verification of the following assumptions...

Item	Description of assumptions to be verified during construction
<b>1</b>	<b>Soil category for wastewater is Category 5</b>
<b>2</b>	
<b>3</b>	

ii. all proprietary products meeting the performance specification requirements, the drawings, specifications, and other documents according to which the building is proposed to be constructed comply with the relevant provisions of the building code.

**This Producer Statement is valid for 1 year from the date of issue.**

**This Producer Statement does not cover stability of the site.**

**No guarantee is expressed or implied in respect of damp proofing to retaining walls - See Insp Schedule also.**

*David King*

**David King ME(Civil) MIPENZ (Structural) CPEng IntPE**  
3 / 237 Queen St  
P O Box 3631  
Richmond, NELSON

Date: **08-11-05**

**05178D**

SO

\* Since damp proofing is very dependent upon workmanship in application, the inspection is to verify that correct materials are used - No guarantee is expressed or implied in respect of poor workmanship or inadequate application.

# ON-SITE WASTEWATER REPORT

1

## 1.0 Location details

1.1 Client Name	<b>S &amp; K Collett</b>	Project	<b>05178 - New shed (New house later)</b>
Contractor (If Known)	<b>NA</b>	Lot Num/DP	
Site Address	<b>Lot 39, Old Mill Rd, Okiwi Bay, Marlborough Sounds</b>		
Phone Number (If Known)	<b>NA</b>		
Site/Survey Plan details	<b>Tasman Consulting Engineers Limited - Sheet 1 Job</b>		
Grid Ref: E / N	<b>2565455E - 6009986N</b>		
Aerial Photo details	<b>NA</b>		
Topo Map Details	<b>Infomap 260 Sheet 026 Croisilles 1:50,000</b>		
Local Authority	<b>Marlborough District Council</b>		
Site Plan Details	<b>Tasman Consulting Engineers Limited - Sheet 1 Job 05178</b>		
Site Evaluator Name	<b>Ron O'Hara</b>		
Date of Site Inspection	<b>7 October 2005</b>	Signature:	.....

## 1.2 Soil Type & Major soil considerations from Soil Maps

**NA**

## 1.3 Geology of Site from Geological Maps

**Yca - Ward Formation - Bedded indurated sandstone & minor conglomerates (Close to the mapped boundary with Q2a - clay bound gravel forming colluvial fans) - See attached plotted site position on geological map**

## 1.4 Climate

Annual Rainfall	<b>1820mm</b>	Annual Evaporation	<b>NA</b>
General Comment	<b>Rainfall data taken from Engineering report by Cameron Gibson &amp; Wells Ltd Dated May 2005</b>		
Data Source Used			

## 1.5 Water Supply to Site

Supply type	<b>Reticulated</b>	( Reticulated , Rainwater Collection, Well)
Volume / Person / Day	<b>180</b>	( 180 l/p/day for Well / reticulated 140 l/p/day for Rainwater)
House Bedrooms	<b>4</b>	Num
Design Number of Persons	<b>8</b>	Num
Design Wastewater Daily Flow	<b>1440</b>	(Litres per Day)

## 2.0 On Site Evaluation

## 2.1 Work Undertaken

0.0 Details of site work (brief)

**Visual inspection on site - inspected soil profile in bank cutting at rear of garage & dug small hole within the irrigation area.**

Weather

**Light rain**

## 2.2 Topography

Average slope across site

**25 degrees (From Cameron Gibsion & Wells Report)**

Ground Cover

**Dense scrub - bracken & gorse**

Geology (Confirm with P1)

**Geology confirmed**

Soil Type (Confirm with P1)

**NA**

Drainage Pattern Description

**The proposed irrigation field is located on relatively uniform sloping ground facing South-East - The overall field has a very slight convex shape, but may reasonably be considered Linear - Planar**

Boundary Clearance - Min (m)

**2m**

Clearance Available (m)

**7m+**

Stream/Water Clearance - Min (m)

**20m**

Clearance Available (m)

**NA**

Well/Bore Clearance (Min)

**50m**

Clearance Available (m)

**NA**

Waterways (Describe)

**The lot is located on the south-east side of a north-east sloping ridge - no significant waterways cross the lot.**

Stands of Trees / Shrubs / Shelterbelts (Describe)

**Scattered pine and other small trees among regenerating bush**

Buildings Adjacent (Describe)

**No other buildings on site at present - One existing house is located at least 50m to the north east of the proposed building sitet.**

Land Use History (Describe)

**Unknown**

Other Comments

**NA**

## 2.2 Site Exposure

Site Aspect

**The lot is located on the south-east side of a north-east sloping ridge**

Predominant Wind Direction

**The site is exposed primarily to northerly and to a lesser extent to southerly winds**

Topographical Features

**No significant topographical features other than those listed above.**

**2.4 Environmental Assessment**

Describe any environmental concerns eg high water table, native plants intolerant of Phosphorus, swamp etc

**Relatively limited soil horizon - Cameron Gibson Wells report identifies 600mm of topsoil / silty clay soil overlying weathered rock.**

**2.5 Site Stability**

Geotech Assessment Req'd (Y/N)

**N (see Cameron Gibson Wells report)**

Geotech Engineers

Author of Report

Date of report

**2.6 Drainage Controls**

	Summer	Winter	Episodic
Depth of Water Table (m)	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>
Are Cutoff Drains Required (Y/N)	<b>Yes - Cutoff drain across the top of the irrigation field to divert overland stormwater flows away from the disposal field.</b>		

**2.7 Reserve Area**

Reserve area Required (%)	<b>100%</b>	(%)
Setback Distance from House	<b>Min 5m</b>	(m)

## 3.0 Soil Investigation

Investigation Method

**Shallow test hole**

(Borehole, Shallow pit, Excavated deep pit)

Report on Investigation

**A small test hole was dug at the lower end of the proposed disposal area. The test hole confirmed the reported soil type as given in the Cameron Gibson & Wells Ltd report. (Yellowish brown silty clay - moderate plasticity, slight staining, not sticky, not gritty, ribbon length 45mm to 50mm - field texture ZCL silty clay loam)**

Recommended Category

**5**

(1 to 6)

DLR or DIR

**DIR = 2.83mm / m<sup>2</sup>/day** (mm per sq.m per day)

Reasons for recommended DIR/DLR

**Soil is between silty loam (topsoil) and light clay - The soil layer is relatively thin (600mm) and overlies weathered rock.**

## 4.0 General Comments

4.1 Ground Water Quality Issues (if Any)

**Moderately slow draining light clay soils will prevent rapid draining through soils - only risk is of overland flow.**

4.1 Type of Land Application System Considered Best Suited

**Sub-surface drip line irrigation OR covered surface drip line irrigation - the drip lines should be placed at least 100mm below the soil surface or covered with 100mm of mulch/leaf litter.**

4.1 Overall evaluation of minimum land application area including primary area, reserve, setback, separation distances etc

**Land application area required for proposed bedroom house is 510 sq.m for irrigation, plus 2.0m border around disposal area plus allowance for 100% reserve area. Estimated total area = 1200 sqm.**

4.1 Other Comments

**NA**

5.0 System Design

Volume / Person / Day	180	( Litres/Person/Day)
House Bedrooms	4	Num
Design Number of Persons	8	Num
Design Wastewater Daily Flow	1440	(Litres per Day)
Category (From Page 5)	5	(1 to 6)
Proposed Disposal System	Aerated Wastewater Treatment System + subsurface Dripline irrigation	
DLR or DIR (From Page 5)	2.83	(mm per sq.m per day)
Required Base Area	510	(sq.m)

5.2 Trenches / Beds

Septic Tank Size		(Litres)	Volume (ltr)	Primary	Secondary
Number of Chambers		(Num)			
Outlet Filters (Y/N)			Filter Type		
Ave Trench Length		(m)			
Trench Width		(mm)			
Number of Trenches		(Num)			
Trench Base Area		(sq.m)			

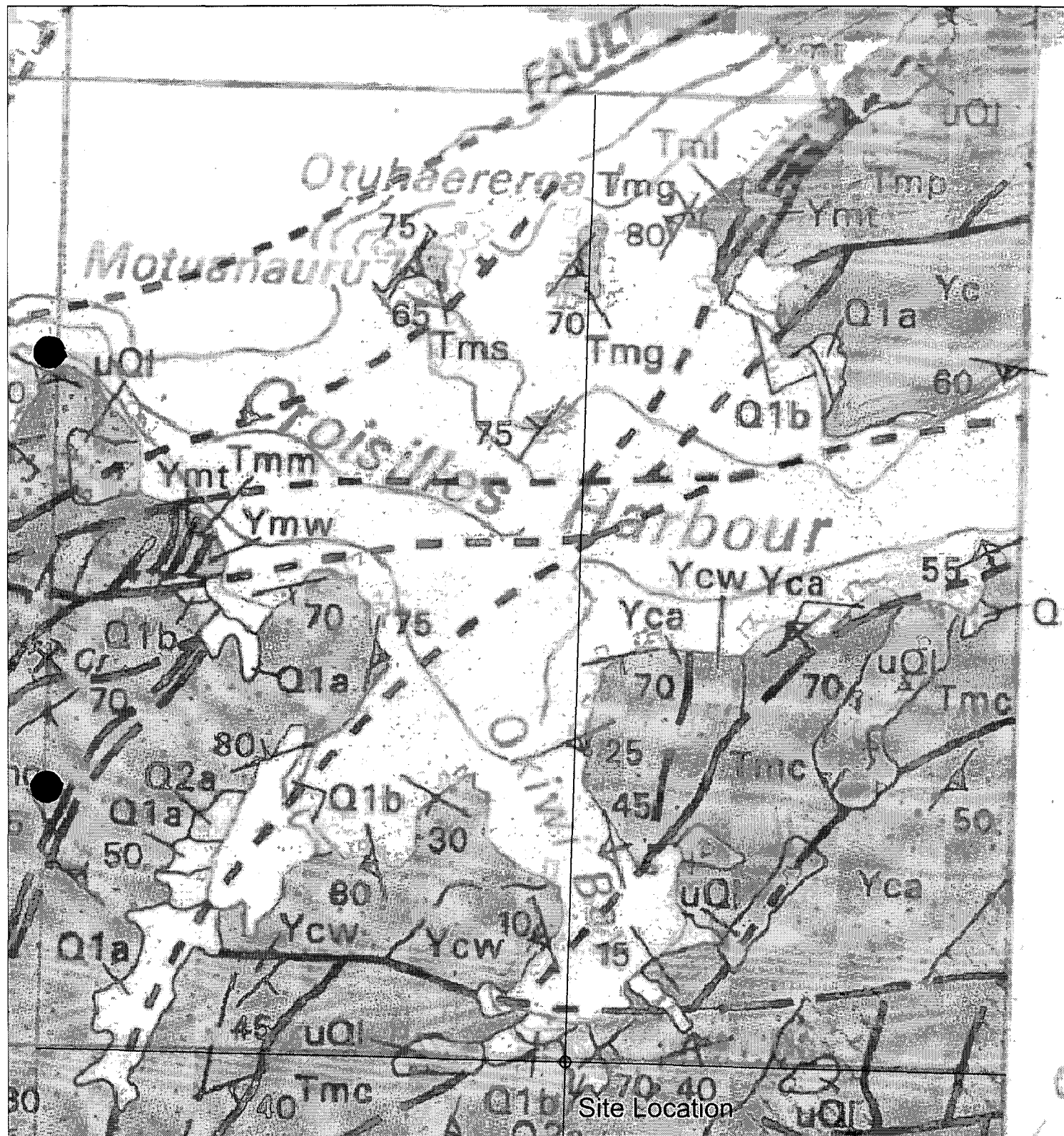
5.3 Secondary Treatment / Irrigation

Ave Irrigation area Length	30m	(m)
Ave Irrigation area Width	17	(m)
Total Irrigation Area	510 sqm	(sq.m)
Irrigator Pipe Diameter	16	(mm)
Emitter spacing	1000	(mm)
Pipeline spacing	1000	(mm)
Flushing Valve Required (Y/N)	Y	(Y/N)

5.4 Other System

Full System Description	
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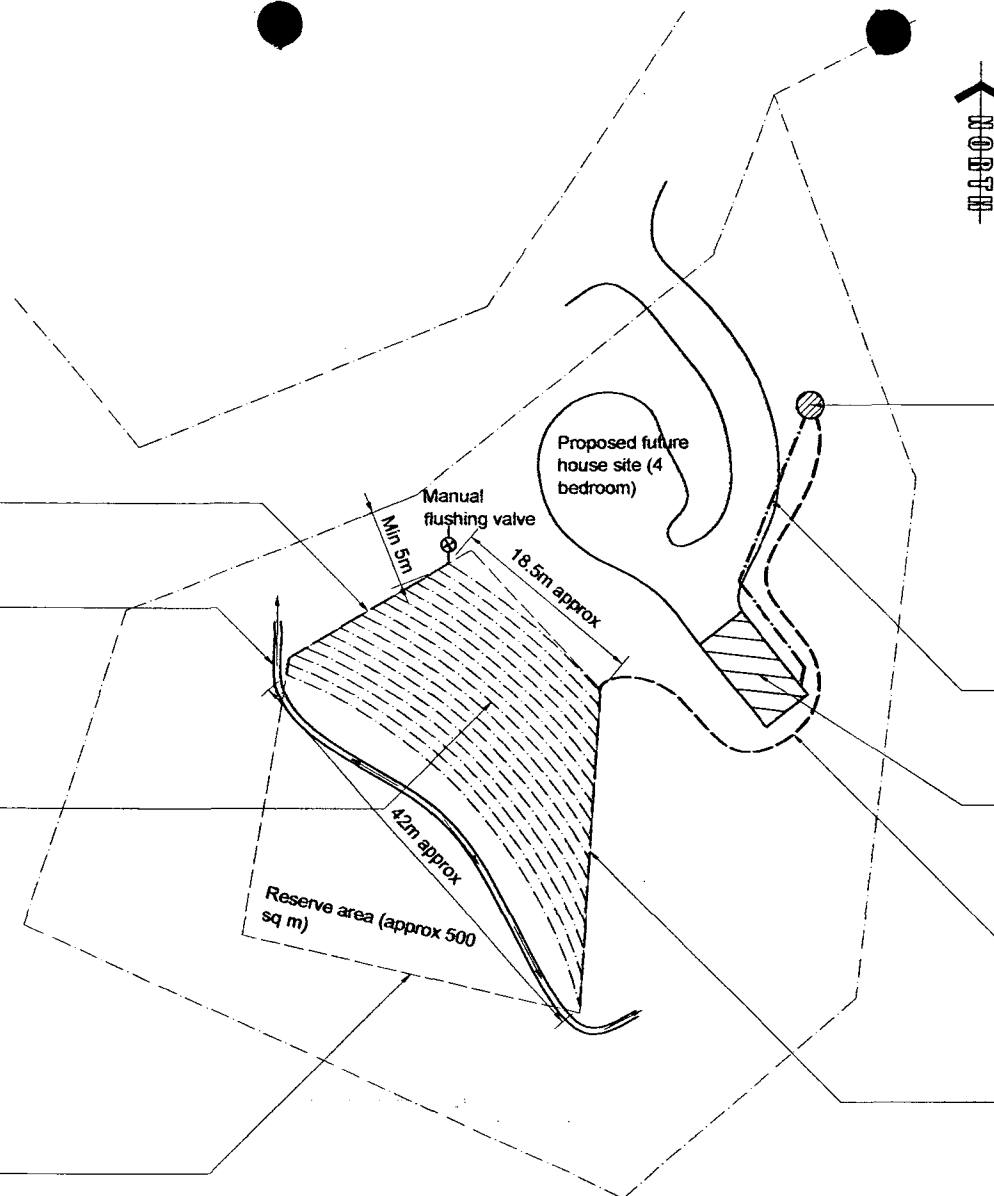


House: 4 Bedrooms - total 4 Br  
Assumed occupancy: 8 Persons  
Flow allowance: 180 litres per person per day  
Total Daily flow: 1440 litres per day  
Soil type assessment: Category 5(Light Clay)  
Design Irrigation Rate: 20 mm per week  
Required area for disposal: 510 sq metres

Construct a stormwater cut-off drain uphill from disposal area construct to min fall of 1:100 around the ends of the disposal area to prevent surface overland water flows from entering the land disposal area

**Irrigation Area** to be located on sloping ground above the house site - min 5m away from the top of any cut embankment  
- 510m total length of 16mm dia LDPE lateral pipelines - lines at max 1.0m centres (total application area to be at least 510m<sup>2</sup> minimum) - Install flushing valve at lowest end of irrigation field to enable flushing of lines

Area designated in Cameron Gibson Wells  
wastewater report as land application area  
(primary area plus provision for 100 %  
reserve area)



05 11 13

1. All construction to comply with AS/NZS 1547:2000.
2. Prohibited Discharges to the System:
  - a) Oil, grease, fats (e.g. from a deep fryer)
  - b) Petrol, machinery oil
  - c) Household/garden chemical wastes (e.g. solvents, paints, photographic chemicals, pesticides etc.)
  - d) Disposable nappies, tampons, condoms etc.
  - e) Stormwater drainage must not be connected to the tank.
3. The irrigation area shall be fenced to prevent access by children or animals

Install manufacturer certified Textile Waste-Water Treatment System (Recirculating Textile Packed Bed Reactor) - Oasis Clearwater Texass, or Innoflow Advantex AX10 (or equivalent) - located at least 3.0m from house - System shall be certified by the manufacturer to be capable of treating effluent to a Secondary standard of at least ...  
BOD5 < 20 mg / ltr  
SS < 30 mg / ltr  
In addition the system should be tolerant to shock loading and intermittent use.

100mm PVC sewer pipe from the new accommodation unit to the AWTS tank - min 1 in 80 fall

- Proposed New Shed - Sanitary fixtures will include shower and toilet

25mm dia LDPE distribution line from pump chamber to irrigation area

25mm dia LDPE manifold lines to BOTH  
ends of 16mm lines - to distribute effluent  
evenly to irrigator lines

## WASTEWATER TREATMENT SYSTEM - SITE PLAN

Scale 1 : 500

**tasman  
consulting  
engineers**

3 / 237 Queen St  
Richmond  
Ph: (03) 544-6404  
Fax: (03) 544-6694

**SITE PLAN - WASTEWATER SYSTEM**  
**S & K COLLETT**  
**LOT 39 OLD MILL RD, OKIWI BAY, MARLBOROUGH SOUNDS**

Date: 07-11-05

File: 05178

Scale:  
approx 1:500

Sheet: 1

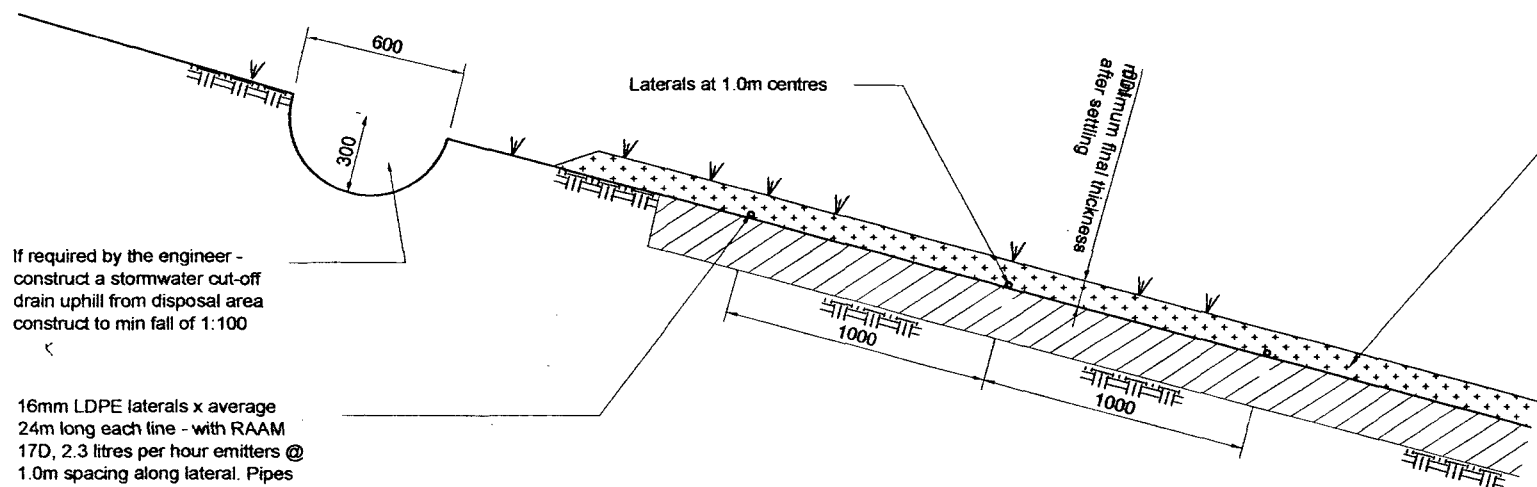
If required by the engineer -  
construct a stormwater cut-off  
drain uphill from disposal area  
construct to min fall of 1:100

16mm LDPE laterals x average  
24m long each line - with RAAM  
17D, 2.3 litres per hour emitters @  
1.0m spacing along lateral. Pipes  
to have a minimum of 100mm soil  
cover.

### OPTION A - SUB-SURFACE IRRIGATION SYSTEM

N.T.S.

Hand dig irrigator lines to depth of  
approx 100mm, place irrigator  
pipeline and cover with lightly  
tamped soil



If required by the engineer -  
construct a stormwater cut-off  
drain uphill from disposal area  
construct to min fall of 1:100

16mm LDPE laterals x average  
24m long each line - with RAAM  
17D, 2.3 litres per hour emitters @  
1.0m spacing along lateral. Pipes  
to be laid on the cultivated ground  
surface then covered with at least  
125mm of coarse bark or mulch -  
mulch / bark shall be able to resist  
wind or water erosion

### OPTION B - SURFACE IRRIGATION SYSTEM

N.T.S. (PREFERRED OPTION)

Cover irrigation pipes with at least  
100mm of leaf litter, friable topsoil  
or mulch

NOTE:

All construction shall comply with Appendix 4.5 C & 4.5D of NZS  
1547:2000

The drainlayer shall have a copy of this standard on site during  
construction of the irrigation field

**tasman  
consulting  
engineers**

3 / 237 Queen St  
Richmond  
Ph: (03) 544-6404  
Fax: (03) 544-6604

**WASTEWATER SYSTEM - IRRIGATION FIELD**  
**S & K COLLETT**  
**LOT 39 OLD MILL RD, OKIWI BAY, MARLBOROUGH SOUND**

Date: 07-11-05

File: 05178

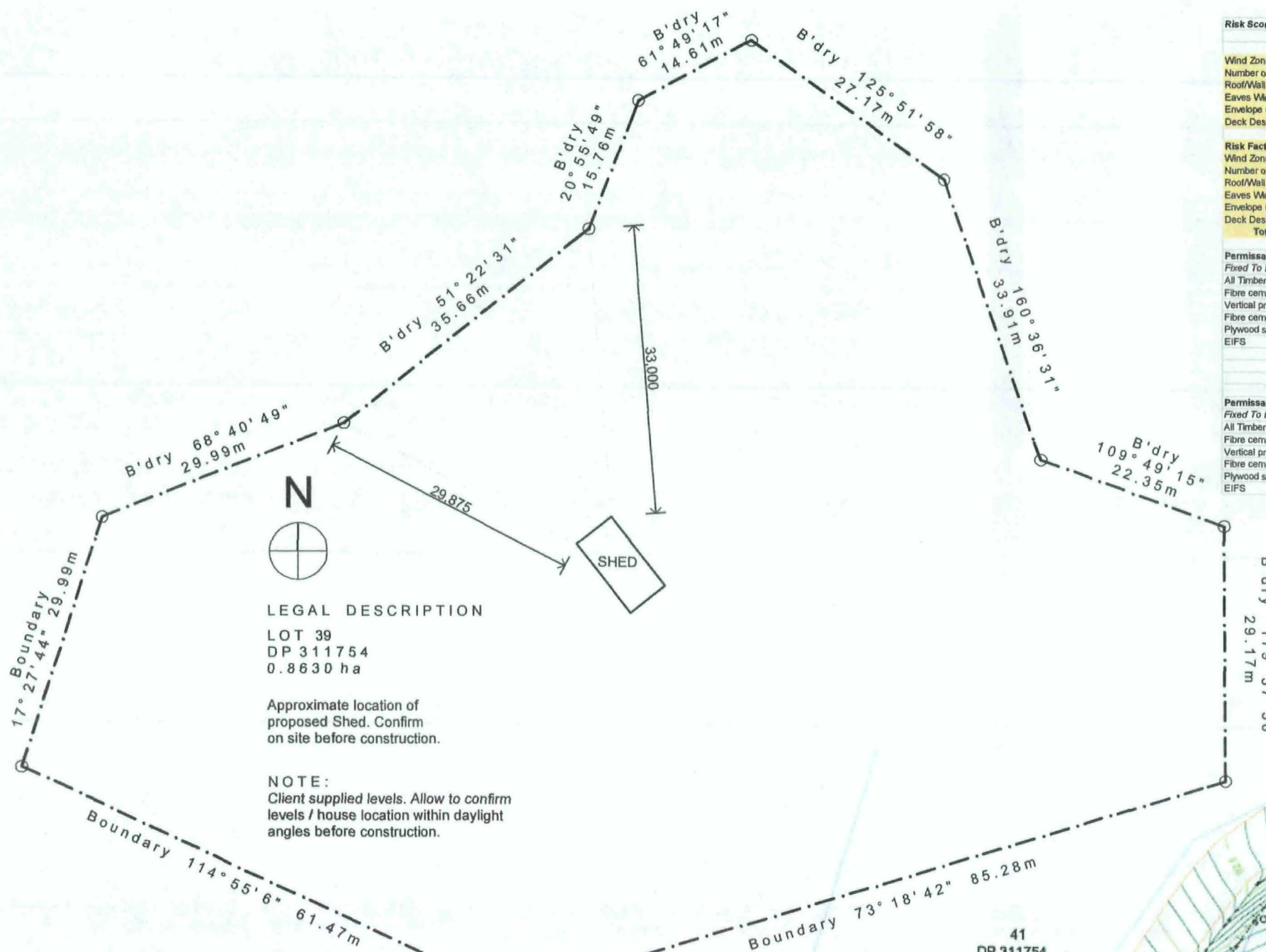
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Sheet: 2



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Written dimensions are to take priority over scaled dimensions.  
All plans are to be read in conjunction with the specifications and Engineer's details.

Risk Score Calculation Sheet				File Reference: Collett- Boat Shed	
	North	South	East	West	Site Address: Old Mill Rd, Oklwi Bay
Wind Zone	Very High	Very High	Very High	Very High	
Number of Storeys	Low	Low	Low	Low	
Roof/Wall Intersection	Low	Low	Low	Low	
Eaves Width	Low	Low	Medium	Medium	
Envelope Complexity	Low	Low	Low	Low	
Deck Design	Low	Low	Low	Low	
<b>Risk Factor</b>	<b>Subtotal</b>	<b>Subtotal</b>	<b>Subtotal</b>	<b>Subtotal</b>	
Wind Zone	2	2	2	2	
Number of Storeys	0	0	0	0	
Roof/Wall Intersection	0	0	0	0	
Eaves Width	0	0	1	1	
Envelope Complexity	0	0	0	0	
Deck Design	0	0	0	0	
<b>Total</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	
<b>Permissible Claddings - North</b>		<b>Permissible Claddings - South</b>			
Fixed To Frame	Cavity	Fixed To Frame	Cavity		
All Timber weatherboard	Masonry Veneer	All Timber weatherboard	Masonry Veneer		
Fibre cement weatherboard	Stucco	Fibre cement weatherboard	Stucco		
Vertical profiled metal	Horizontal profiled metal	Vertical profiled metal	Horizontal profiled metal		
Fibre cement sheet		Fibre cement sheet			
Plywood sheet		Plywood sheet			
EIFS		EIFS			
<b>Permissible Claddings - East</b>		<b>Permissible Claddings - West</b>			
Fixed To Frame	Cavity	Fixed To Frame	Cavity		
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Fibre cement sheet		Fibre cement sheet			
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EIFS		EIFS			



#### LEGAL DESCRIPTION

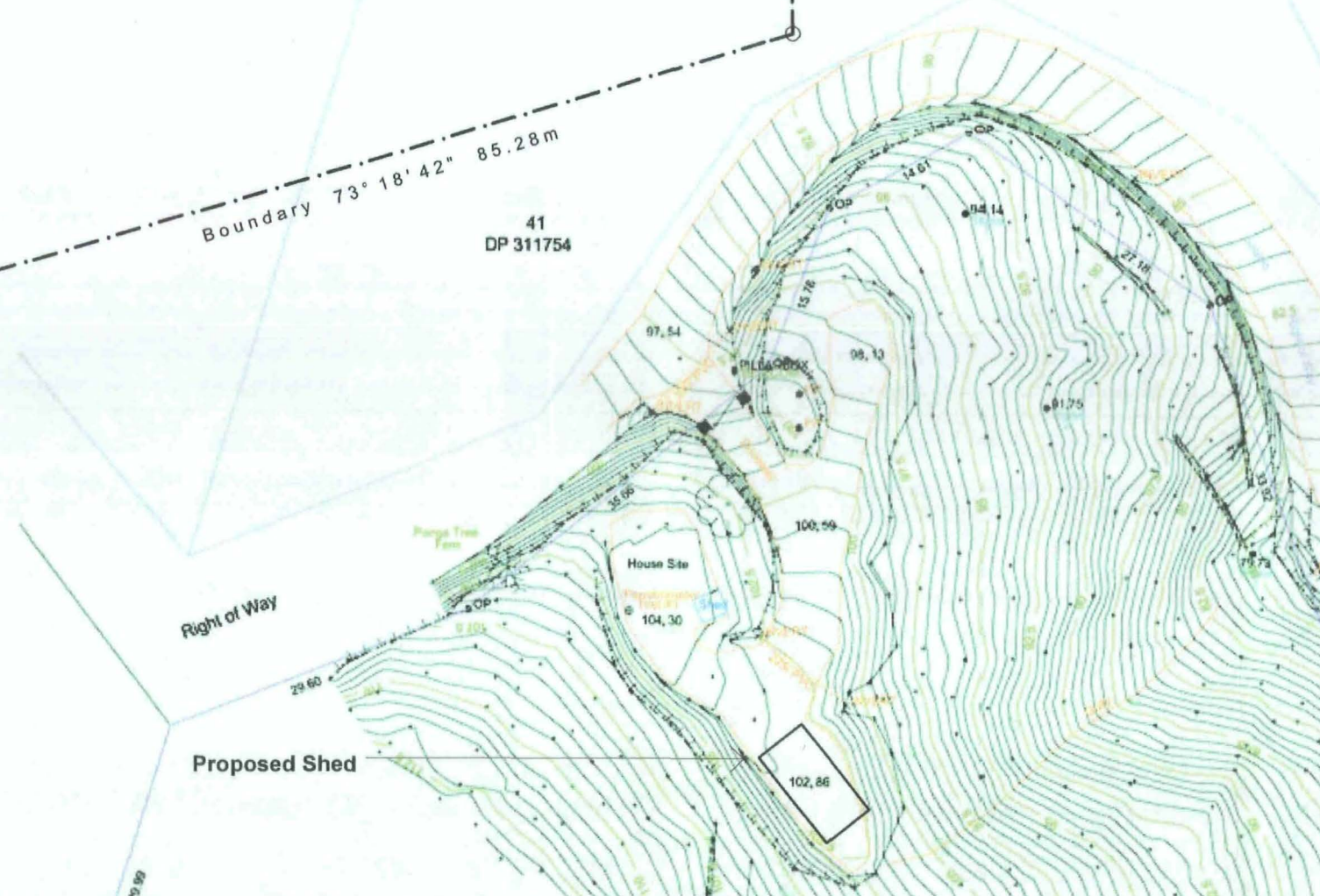
LOT 39  
DP 311754  
0.8630 ha

Approximate location of proposed Shed. Confirm on site before construction.

NOTE:  
Client supplied levels. Allow to confirm levels / house location within daylight angles before construction.

#### SITE LOCATION PLAN

SCALE 1:600



Client:

**Proposed New Residence for:**  
**S & K COLLETT**  
**Lot 39, Old Mill Rd, Marlborough.**

Drawn: Jennian

Design: Jennian

Date May 2005

Scales: as shown

Job No

Drawing Title:

**SITE PLAN**

General Notes / Comments:

DATE 10 NOV 2005

MARLBOROUGH DISTRICT COUNCIL

Client Approval	
Cad File Reference	
Revision No	
Sheet No 1	Set of: 6

**Jennian HOMES**

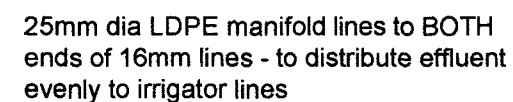
This Drawing is copyright. Under no circumstances may this drawing be reproduced in any other form without the written permission of the Client



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Total Daily flow: 1440 litres per day  
Soil type assessment: Category 5(Light Clay)  
Design Irrigation Rate: 20 mm per week  
Required area for disposal: 510 sq metres

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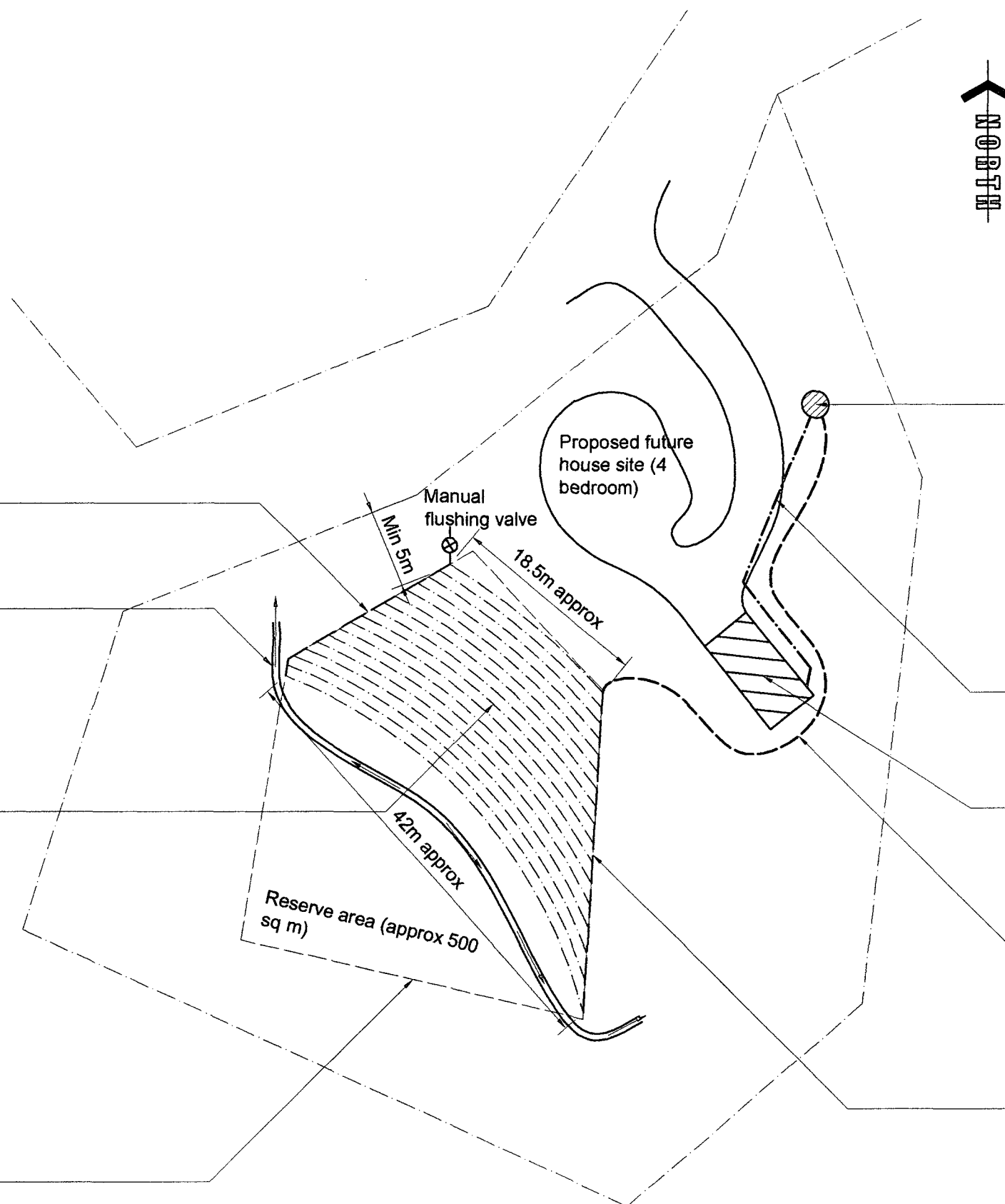
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Area designated in Cameron Gibson Wells  
wastewater report as land application area  
(primary area plus provision for 100 %  
reserve area)



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## WASTEWATER TREATMENT SYSTEM - SITE PLAN

Scale 1 : 500

**tasman  
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Ph: (03) 544-6404  
Fax: (03) 544-669.

**SITE PLAN - WASTEWATER SYSTEM  
S & K COLLETT  
LOT 39 OLD MILL RD, OKIWI BAY, MARLBOROUGH SOUNDS**

Date: 07-11-05

File: 05178

Scale:  
approx 1:500

Sheet: 1

If required by the engineer -  
construct a stormwater cut-off  
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16mm LDPE laterals x average  
24m long each line - with RAAM  
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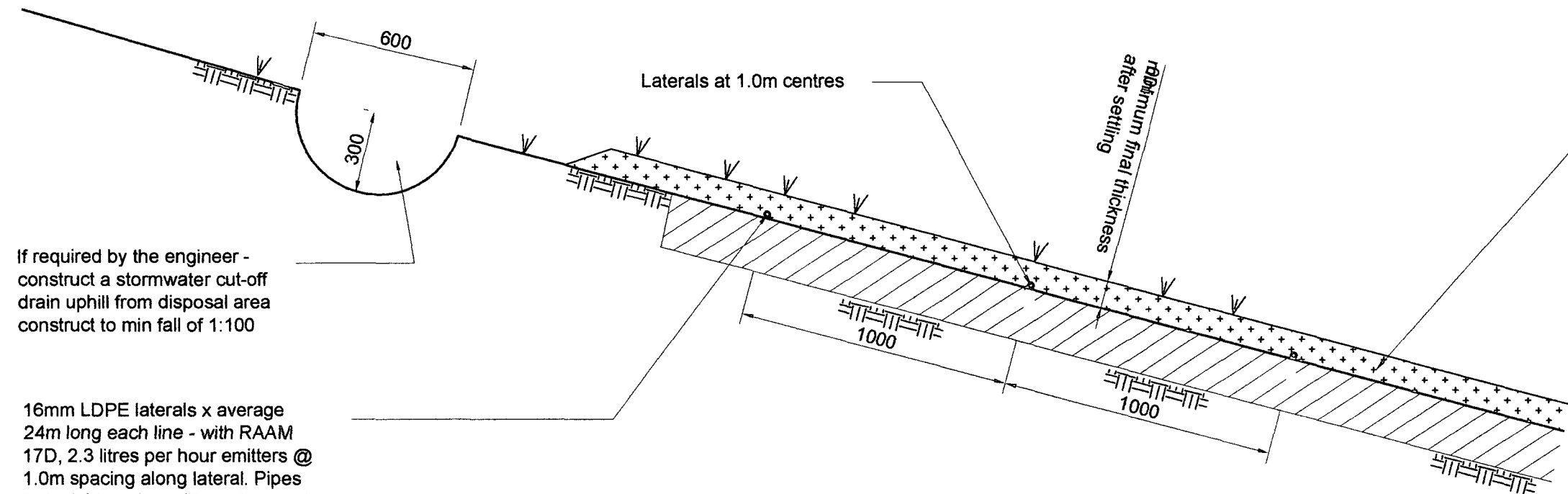
### OPTION A - SUB-SURFACE IRRIGATION SYSTEM

N.T.S.

Hand dig irrigator lines to depth of  
approx 100mm, place irrigator  
pipeline and cover with lightly  
tamped soil

#### NOTE:

It is recommended that prior to placing the  
irrigator lines over the disposal area all gorse  
and small scrub be cleared, leaving larger  
native bushes and trees where practical.



If required by the engineer -  
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The drainlayer shall have a copy of this standard on site during  
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