Virginia Taylor-5133

From: Kerrigan Engineers [kerrigan.engineers@xtra.co.nz]
Sent: Friday, 18 July 2008 1:39 p.m.
To: Virginia Taylor-5133
Subject: Re: Re U080536-Flaxbourne Motels Limited
Attachments: RC calcs2.PDF; RC calcs1.PDF

Virginia,

Thankyou for your request for information.

Attached is my calculation sheets with the information you are after.

Please note though that the numbers provided in my resource consent report are not a design. Hence the construction maybe based on differing numbers depending on the constructed design.

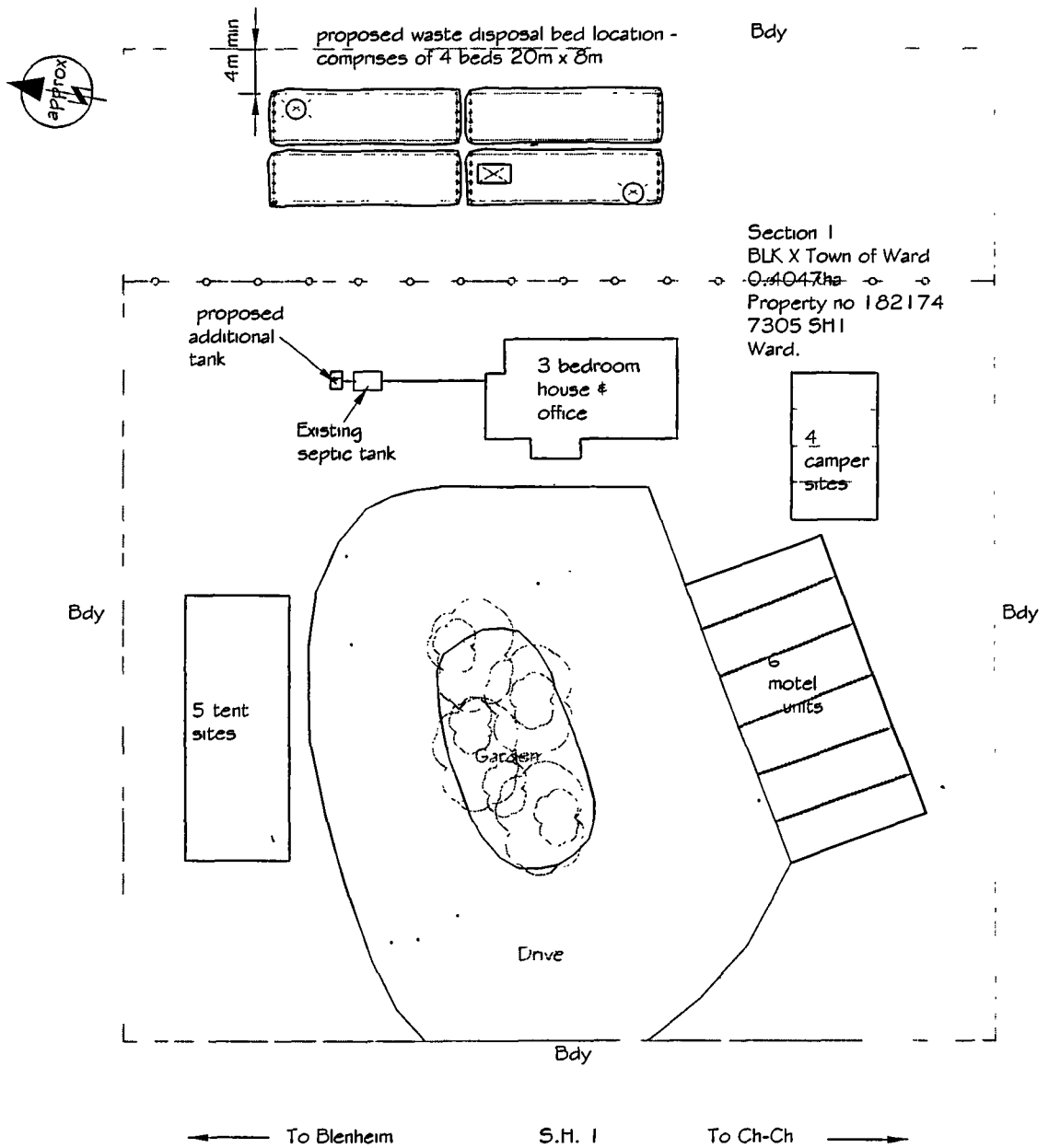
We trust this is clear.

Ragards

Graham Kerrigan

> ----- Original Message -----
> **From:** Virginia Taylor-5133
> **To:** kerrigan.engineers@xtra.co.nz
> **Sent:** Monday, July 14, 2008 2:32 PM
> **Subject:** Re U080536-Flaxbourne Motels Limited
>
> Thank you for the further information received 7 July 2008
> In Jenny's absence, the report has been assessed by Glen Parker who has requested the following:
> Please provide information as how the figure supplied for load capacity required per day was calculated, specifying the bed capacity of the motel units and number of people per tent site and campervan site.
>
> Application will be placed on hold from 14 July 2008, until this information has been received
> Please contact Glen Parker directly if you have any queries regarding this request
>
> Regards
>
> *Virginia Taylor*
> Resource Management Officer
> Marlborough District Council
> Ph: 03 520 7400 Extn 5133
> virginia.taylor@marlborough.govt.nz

v No.	Revision Note:	Date:	Approved:	Checked:



SITE PLAN

scale 1:750

KEY TO SYMBOLS:

⊙	approx. Bore hole location
⊠	approx. Excavation pit location

Designed by:	Drawn by:	Approved by/ Date-	Scale:	Revision No:
gck	ect	June 2008	as shown	

KERRIGAN ENGINEERS

Project Title: **A1 MOTELS - MAIN ROAD WARD**

Sheet Title: **ON SITE WASTE DISPOSAL - RESOURCE CONSENT**

Dwg. No. 2792

Sht. 1 of 1

U080536.

KERRIGAN ENGINEERS LTD.

Calculation Sheet

Graham Kerrigan
MIPENZ(Civil & Structural) CPEng IntPE(NZ)

Job No 2792
Sheet No 1 of
Date:

Project Title: A1 Motel – Main Road Wanaka

Introduction The following calculations determine on site waste disposal system necessary to satisfied consented loading for motel development

Loading

Peak loading governs design.

	No.	Peak usage Usage	Total
6 motel units (@ 3 people/unit)	18	180	3240
5 tent sites (@ 3 people/site)	15	180	2700
4 Campers (@ 3 people/site)	12	180	2160
3 bedroom HS office	6	180	1080
			9180 Lts/day

Wastes will discharge into topsoil 10 mins.

D.L.R. ⇒ 15-20 mm Say 15 mm/day

Conservative. This equates to 612 m² bed. Say 40 m bed x 15 m wide

5/6/08

KERRIGAN ENGINEERS

Ph.: 578-4085, 025-640-4296. P.O. Box 1092 Blenheim

Introduction: The design assumes the possibility of campers van discharging there holding tank to the septic system. Hence the following determines the additional loading & the effect on the sizing of the drainage bed.

Loading Primary Cabins 9180 Litres

Additional 4 campers 480 Litres
@ 120 Litres

9660 Litres

For DLR = 15 mm/day bed area = 644 m²

Say 40 × 16 bed area.

KERRIGAN ENGINEERS LTD

Graham Kerrigan
MIPENZ(Civil & Structural)
CPEng IntPE(NZ)
P O Box 1092
95b Maxwell Road
Blenheim

Ph: 03 578-4085
Fax: 03579-3478
Mobile 027 649 4299
E.mail: kerrigan.engineers@xtra.co.nz

Our Ref: 2792

3 July 2008

Marlborough District Council
P O Box 443
Blenheim

Attention: Virginia Taylor

Dear Virginia

U080536 – A1 MOTEL, WARD

Please find enclosed our engineering report for onsite waste disposal for the above subject project.

We trust this is satisfactory.

Yours sincerely

Graham Kerrigan
MIPENZ(Civil & Structural)CPEng IntPE(NZ)

CC: Mr & Mrs Burkhart.

KERRIGAN ENGINEERS LTD

ENGINEERING REPORT

For A1 Ward Motels Limited

Site Evaluation for Onsite Waste Water Disposal
at State Highway 1, Ward, Marlborough

22
6 motel units - how many beds per unit ie capacity of motel in terms of bed
1 permanent residence (3 bdr) 6×180=1080
5 tent sites 2 per site
4 campervan sites

provide

June 2008 - **FINAL**

By Graham Kerrigan

Job Number: 2792

KERRIGAN ENGINEERS LTD

Engineering Report
A1 Ward Motels Ltd
Onsite Waste Water Disposal

CONTENTS

A SYNOPSIS

SCOPE OF INVESTIGATION

The site was inspected on 15 November 2007. The site evaluation generally followed the recommendations of NZS/AS 1547:2000.

Appended to this report is the site and soil evaluation sheets based on the forms of NZS/AS1547:2000.

SUMMARY/ CONCLUSIONS

The purpose of this report is to satisfy Marlborough District Councils Resource Management plan requirements to discharge domestic wastewater.

The owners are planning a small upgrade to the existing motel and camping facilities at State highway 1 in Ward. The works includes renewing the existing on site waste disposal system to meet the planned upgrade needs and comply with the current standards.

The soils of the discharge site are appropriate for on site waste disposal. We consider a septic tank and low pressure effluent disposal (LPED) treatment system would meet the design volume of about 9500 litres/day.

We consider that a 13000 litre septic storage volume would suffice. There is an existing 9000 (approx) litre septic tank on site. This tank may be able to be reused to achieve the desired septic storage volume along with the installation of an additional 4500 litre tank and pump vault and filter.

The site soils are considered category 3 with a daily loading rate of 15mm/day per AS/NZS 1547:2000. The required discharge bed area will be approximately 640m2. This bed is large and should be sectioned into 4 areas. Each area should be 'irrigated' separately to achieve an even dispersal of waste over the whole area.

We consider that there would be no adverse effects on the environment as a result of installing a septic tank, filter and LPED to a bed discharge system so long as the considerations /recommendations outlined in this report are followed.

RECOMMENDATIONS

Based on the foregoing report we make the following recommendations with respect to the installation of an on site waste disposal system at this property:

- The discharge site is considered suitable for on site waste disposal of primary treated effluent.

- A 13000 litre septic storage volume would suffice for the design usage of 9600 litres per day.

- There is an existing 9000 litre septic tank on site. We recommend a 4500 litre septic tank with a zabel or similar outlet filter be installed in addition to this existing 9000 litre tank.

- The existing tank will need to be assessed to determine that it is sound and appropriate for use.

- Two or more monitoring bore should be installed adjacent the existing septic tank to enable future checking of the ground for any contamination from leaking wastes.

- The bed should be split into four or more areas. Each pumped discharge should be to alternate areas of the bed so that there is better dispersal of waste throughout the whole bed over time.

- To construct the discharge bed the top vegetated layer of soils should be removed and a bed of gravels laid to form a filter layer compliant with NZS1547:2000.

- The discharge pipe work, cover gravels and topsoil finish should overlay this filter layer so that it is proud of the natural ground. The bed should be shaped to ensure runoff does not pond at any location.

- The site is exposed to the weather and hence there is potential for evapotranspiration of wastes. Therefore the bed should be appropriately planted to utilise the evapotranspiration potential.

- Only registered tradesmen familiar with the construction of an Low Pressure Effluent Disposal (LPED) systems and working to the National Plumbing and Drainage code NZS/AS 3500 should carry out all plumbing and drainage works associated with this treatment and land application system.

B REPORT

INTRODUCTION

The purpose of this report is to satisfy Marlborough District Councils Resource Management plan requirements to discharge domestic wastewater.

The following report evaluates the options for wastewater treatment and on site disposal at A1 Motels in Ward.

The property is owned by Mr & Mrs Burkhart. The site includes a six motel units and a permanent residence. The residence and units discharge to an existing septic tank system that discharges to ground. The specific construction, location and condition of this discharge system is unknown, however we suspect is likely to be nearing the end of its useable life.

The owners are planning a small upgrade to the present shower and ablution block. The owners plan to develop the site to include five tent sites and four campervans site within the present grounds. As part of this development the owner plan to upgrade the existing on site waste disposal system to meet the future needs and comply with the current standards.

SITE DESCRIPTION

The site is legal description is Section 1, Blk X town of Ward, property number 182174, and is located at 7305 State Highway 1 Ward.

The general ground slope is flat at the proposed discharge location. The discharge bed area is currently grassed pasture. There is an existing large septic tank on site. The tank measure 3m x 2m x 1.5m which equates to about 9000 litre capacity. The condition of the tank is unknown.

There are no natural water ways within 30m of the disposal location. We do not expect there to be ground water within 600mm of the lowest point of the proposed disposal bed system.

The proposed discharge bed area is considered rural and the bed site is exposed.

SITE INVESTIGATION

The site was investigated on the 15 November 2007. The investigation included the observation of an excavation at the proposed discharge bed location.

The soil profiles determined from the on site investigation are top soil overlaying silty alluvial gravel of an indeterminable depth (refer to the appendix for the soil profile assessment). There was no evidence of a water table within the excavation.

Based on this investigation the site soils are considered category 3 with a daily loading rate of 15mm/day per AS/NZS 1547:2000.

The site is generally dry and is exposed to the weather and hence there is potential for evapotranspiration of wastes.

WASTE WATER TREATMENT SYSTEM

We consider a septic tank and low pressure effluent disposal (LPED) treatment system would be appropriate to meet the design needs.

The discharge site is considered suitable for on site waste disposal of primary treated effluent. There are no concerns at the site with respect to proximity to natural water ways or high ground water table. Hence we consider that additional treatment beyond standard septic tank settlement and anaerobic treatment is not warranted.

Loading:
We are advised from the owners that the occupancy in peak periods would be 6 motel units, 5 tents sites, 4 camper sites, and the 3 bedroom house and office. In addition to the site occupancy guest camper vans may dump their stored waste tanks. Generally most camper vans generally can carry 120 litres of septic waste. Account is also needed for the dumping of this stored camper van waste.

We consider that a representative design volume should be in the order of 9500 litres. The daily usage should be estimated based on the Marlborough District Council guidelines and NZS/AS 1547:2000.

Tank:
Determination of the tank volume is outside the recommendation of Marlborough District Council guidelines and NZS/AS 1547:2000. However based the commentary of 4.3A3.2 of NZS/AS 1547:2000 the scum and sludge volumes generated from the wastes and the required retention times, the volumes can be calculated. We consider that a 13000 litre septic storage volume would suffice. This size would provide appropriate waste retention time in excess of 24 hours. The scum and sludge storage volume should also be sufficient to provide an economic period between clean outs.

There is an existing 9000 (approx) litre septic tank on site. We recommend a 4500 litre septic tank with a zabel or similar outlet filter be installed in addition to this existing tank. We consider that if the existing septic tank is still sound it can remain in use and the 4500 litre tank can be installed to provide additional settlement volume and a pump vault. The existing tank will need to be assessed to determine that it is sound. Two or more monitoring bore holes should be installed adjacent the existing septic tank to enable future checking of the ground for any contamination from leaking wastes.

Disposal Bed:
The proposed bed location is to the east of the motel/ camp ground area. The location soils are topsoil overlaying silt bound gravels.

The site soils are considered category 3 with a daily loading rate of 15mm/day per AS/NZS 1547:2000. The required bed area is therefore approximately 640m2.

We consider that the top vegetated layer of these soils should be removed and a bed of gravels laid to form a discharge bed compliant with NZS1547:2000.

The pipe work, cover gravels and topsoil finish should overlay this bed so that it is proud of the natural ground. The bed should be split into four or more areas. These

areas should be sloped to ensure runoff from each area discharges away from the bed location.

Each pumped discharge should be to alternate areas of the bed so that there is better dispersal of waste throughout the whole bed over time. Alternate discharge to each area be can be achieved by laying separate supply pipe to each area. The main pump supply can alternately discharge to these areas via a sequencing valve.

We recommend that only registered tradesmen familiar with the construction of an LPED land application systems and working to the National Plumbing and Drainage code NZS/AS 3500 should carry out all plumbing and drainage works associated with this treatment and land application system.

ASSESSMENT OF ENVIRONMENTAL EFFECTS

The recommendations presented in this report are based on the requirements of NZS/AS 1547:2000. So long as the design and construction are carried out to the recommendations and considerations of this report, and NZS/AS 1547:2000, and the MDC Guidelines for onsite waste disposal, we consider there will only be acceptable environmental effects on this site, or the adjoining properties, or the waterways of the area, and the natural or physical resources of the area.

We consider that there are no site conditions that would diminish the natural break down of the wastes in such as fashion as to cause concern for the environment.

In addition given the anticipated relatively small volume of liquid waste entering the underlying soil structure we consider that with proper drainage control, there is very little risk that the waste volume could create slope instability.

LIMITATION OF REPORT

This report has been prepared solely for the benefit for the Mr & Mrs Burkhart with respect to our understanding of their. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such parties' sole risk.

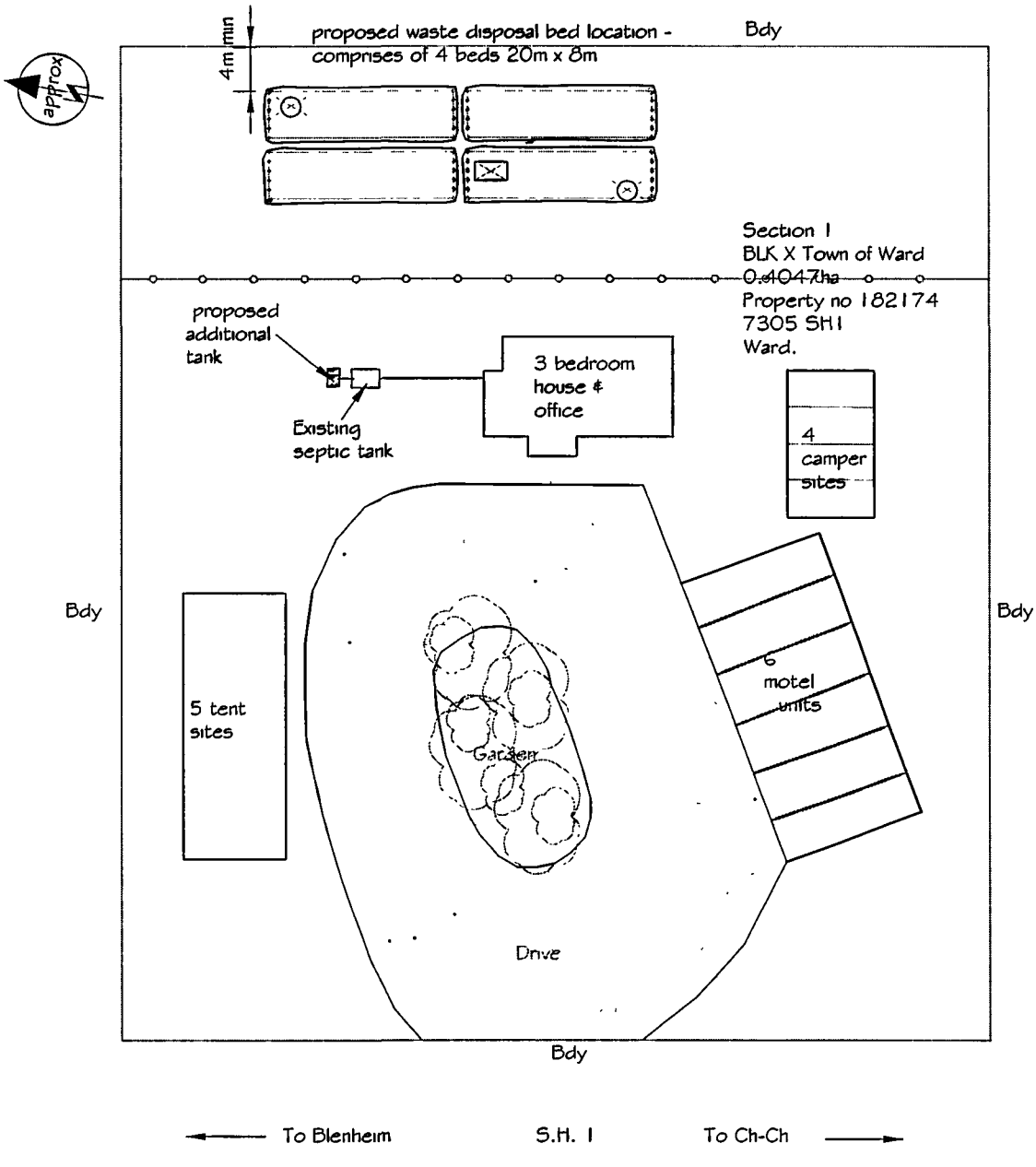
This report is based on our interpretation of our visual examination and limited soil tests only and does not preclude the possibility of differing soil properties and/or other relevant physical features being present between the test locations or hidden from view. Opinions and judgements expressed herein are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions. Where opinions or judgements are to be relied on they should be independently verified with appropriate legal advice.

APPENDICIES

Appendix 1

Site plan

Rev No.	Revision Note:	Date:	Approved:	Checked:



SITE PLAN

scale 1:750

KEY TO SYMBOLS:

- approx. Bore hole location
- approx. Excavation pit location

Designed by:	Drawn by:	Approved by/ Date-	Scale:	Revision No:
gck	ect	June 2008	as shown	

KERRIGAN ENGINEERS

Project Title:
A1 MOTELS - MAIN ROAD WARD

Sheet Title:
ON SITE WASTE DISPOSAL - RESOURCE CONSENT

Dwg. No. 2792

Sht. 1 of 1

Appendix 2

Site & Soil Evaluation sheets

SITE AND SOIL EVALUATION REPORT

1.0 SITE INFORMATION (deck-top evaluation)

1.1 Location details

Locality	:	Ward
Owner	:	A1 Motels
Address	:	SH 1, Ward
Phone No	:	
Lot No	:	
Survey plan details	:	
Regional Authority	:	Marlborough District Council
Site plan details	:	Job No 2792 Sht 1

1.2 Geology of site from geological map: Sheet 16 - Kaikoura

1.3 Climate :

Annual rainfall	:	na
Annual evaporation	:	na

General comment (rainfall intensities, seasonal variation etc)

1.4 Intended water supply source

Public supply	:	Local system

1.5 Local experience with existing onsite systems

Have carried out some onsite waste disposal designs in the area. Also the evaluator is accredited with the MDC to do investigation and design.

1.6 Preliminary evaluation of solutions which could be feasible

Septic tank and drainage field

1.0 SITE EVALUATOR(S)

1.1	**Name** (principal evaluator)	:	Graham Kerrigan
	Designation	:	Chartered Professional Engineer
	Company	:	Kerrigan Engineers Limited
	Address	:	95b Maxwell Road, Blenheim
	Phone	:	03 5784085
	Fax	:	03 5793478

2.0 ONSITE EVALUATION

2.1 Work undertaken

Details	:	Site inspection, viewed excavations
Date	:	15 November 2007

Weather (on day & preceding week): Dry

2.2 Topography

Slope	:	Generally flat
Ground cover	:	Grass rural
Drainage patterns	:	Soakage and runoff to the east
Site plan details attached	:	Yes
Waterways	:	Outside 30m
Stands of trees/shrubs	:	None in proximity
Well, bores	:	Outside 30m
Embankment	:	None in proximity
Buildings	:	None in proximity
Other	:	Nil
Site history (land use)	:	

2.3 Site exposure

Site aspect	:	Southeasterly
Pre-dominant wind direction	:	Northerly
Presence of shelter belts	:	Nil

Presence of topographical features or structures:

2.4 Environmental concerns (eg: native plants intolerant of phosphorus load, high water table, swamp, waters etc)

N/A

2.5 Site stability

Is expert assessment necessary? Flat site, no stability concerns

2.6 Drainage controls

Depth of seasonal water-table	:	None found
Need for cut-off drains/diversion banks	:	none necessary

Need for surface water collector/cut-off drains: none necessary

2.7 Availability of reserve/setbank areas (show details on sketch plan)

Reserve area available for extensions: Ample room available on site
% of design area :
Setback distance :

2.8 Photographs attached :

3.0 SOIL INVESTIGATION

3.1 Soil profile determination
Method : Viewed exploration pits
Other :

3.2 Reporting (attach detailed soil/report as appropriate, see soil profile information and data sheet, figure 4.1A1)

Layer	Lower depth mm	Moisture Condition	Colour (moist)	Field Texture	Coarse Fragments %volume	Structure	Sample Taken (Y/N)	Permeability	Other assessment
1	300-400	Dry		Topsoil	Nil	N/A	N	Permeable	
2	500 – not determined to 1.2m	Dry		Alluvial bound silt	Many	Single grained	N	Permeable	

3.3 Estimated soil category (refer to table 4.1.1 and clause 4.1.4.1)
Summary : DLR = Category 3

Soil layer	1	2	3	4	5	6	7
Soil category	3	3					

Remarks: Site is relatively flat and we expect that soil stratification would be reasonably uniform throughout drainage area.

3.4 Recommended DLR
refer to clause 4.1.4.2 : Category 3 : DLR = 15mm
Reasons for DLR recommendations : Most suited to site conditions

4.0 GENERAL COMMENTS

LPED loading is proposed to evenly spread load over all pipes.

There is ample area for reserve field.

Appendix 3

Professional Opinion

KERRIGAN ENGINEERS LTD

OPINION AS TO LAND STABILITY

I **GRAHAM CHRISTOPHER KERRIGAN** hereby confirm that:

I am experienced in the field of soils engineering and more particularly land and foundation stability and am formally recognized by the Marlborough District Council. I am familiar with and understand the purpose of the Marlborough District Council's geo-technical reporting standards. This professional opinion is furnished to the Marlborough District Council regarding slope stability of the property for A1 Ward Motels Ltd, Ward with respect to the proposal to discharge septic waste on site.

The following professional opinion is based on the assumption that the data obtained from the reported investigation (titled "Engineering report for A1 Ward Motels Ltd - Site Evaluation for Onsite Waste Water Disposal at State Highway 1, Ward, Marlborough dated June 2008) is representative of the disposal area under consideration.

In my professional opinion having examined the site it is reasonable for Council to assume that the data referred to above is representative of the area under consideration.

In my professional opinion, and having regard to the specifics of the site which I have investigated to the extent that acceptable engineering practices require, and with the plans and specifications being made in accordance with acceptable engineering principles and practices and following the recommendations set out in the referenced report, a construction, in accordance with such plans and specifications, will meet proper engineering standards and should not cause slope instability to the disposal area.

G C Kerrigan
MIPENZ(Civil & Structural)CPEng IntPE(NZ)

June 2008

File Ref: U080536

Case Officer: Virginia Taylor

17 June 2008

ISO 9001:2000
Form Ref CI855

S92 request

Attention G Kerrigan
Kerrigan Engineers Limited
PO Box 1092
Blenheim 7240

Dear Sir

Request for Further Information -

U080536 – Flaxbourne Motels Limited – State Highway 1, Ward

Under section 92 of the Resource Management Act 1991, the Marlborough District Council requests further information for your application for a

To establish a camp ground facility providing 5 tent sites and 4 camper sties to an existing motel complex and to discharge domestic waste water to land on Sec 1 Block X Town of Ward.

Requested Information

The further information required is detailed below. It will help the Council to better understand your proposed activity, its effect on the environment and the ways any adverse effects on the environment might be mitigated.

1. The discharge portion of the application has been reviewed by Council staff and their assessment has concluded that discharge consent is required. Please provide a soil and site assessment and design report together with an AEE evaluation for the activity.

2. Please provide a detailed site plan showing all connections discharging to the system. This should include all the details of the existing system and all details of what is proposed for the new system.

3. As requested in my letter to the applicant on 6 June 2008, please provide information as to the volume that will be discharged from campervans and where within the site is the facility for discharging campervan holding tanks?

Responding to this request

Within 15 working days from the receipt of this letter you must either:

- provide the requested information; or
- provide written confirmation that you can not provide the requested information within the timeframe, but do intend to provide it; or
- provide written confirmation that you do not agree to provide the requested information.

The processing of your application has been put on hold from 17 June 2008.

If you can not provide the requested information within this timeframe, but do intend to provide it, then please provide:

- written confirmation that you can provide it
- the likely date that you will be able to provide it by, and
- any constraints that you may have on not being able to provide it within the set timeframe.

The Council will then set a revised timeframe for the information to be provided.

If you do not agree to provide the requested information, then please provide written confirmation of this to the Council. You may also choose to object to providing the information under s357 of the Resource Management Act 1991.

Restarting the processing of your application

The processing of your application will restart:

- when all of the above requested information is received (if received within 15 working days from the date of this letter), or
- from the revised date for the requested information to be provided, if you have provided written confirmation that you are able to provide the requested information, or
- from the date that you have provided written confirmation that you do not agree to providing the requested information, or
- 15 working days from the date of this letter (if you have not provided the requested information or written confirmation).

Once the processing of the application restarts

If you have not provided the requested information, then your application will continue to be processed and determined on the basis of the information that you have provided with the application. The Council may decline the application on the basis of insufficient information.

If you have provided all the requested information, then Council will consider its adequacy and make a decision on whether your application requires notification or limited notification, or, whether any parties are considered adversely affected from who you will need to obtain written approval in order for the proposal to be considered on a non-notified basis.

If the application is to be notified or limited notified, you will be further advised.

If notification is not required, Council will let you know the decision on the application within the required statutory timeframe. This assumes that your response to the above requests is adequate.

If you have any questions regarding this request, please do not hesitate to contact me.

Yours sincerely

Virginia Taylor
RESOURCE MANAGEMENT OFFICER

\\Vta....O:\Resourceconsent\2008\080501-080751\U080536-Flaxbourne Motels Ltd-S92Request-vta.le.doc Saved 17/06/2008 15:26:00

Virginia Taylor-5133

From: Barbara Burkhart [Barbara@burkhart-fish.co.nz]
Sent: Friday, 13 June 2008 11:00 a.m.
To: Virginia Taylor-5133
Subject: U08536- Resource Consent

Dear Virginia,

Effluent field: I have spoken to Kerrigan Engineers, in regard to your requests and he has written to you so if you don't see this by Monday could you please let me know and I will hound him!!!

Water Supply: This comes from the Ward Water Scheme

Trees on the Boundary between Sally Peters and A1 Ward Motels: No intention to cut down any trees.

Also to confirm that I have spoken to both the affected parties and at this stage do not see a problem with either.

Regards Barbara

Burkhart Fisheries Ltd
PO Box 40
Ward 7248
Marlborough
03 575 6877
03 575 6803

KERRIGAN ENGINEERS LTD

Graham Kerrigan
MIPENZ(Civil & Structural)
CPEng IntPE(NZ)
95b Maxwell Road
P O Box 1092
Blenheim

Ph: 03 578-4085
Fax: 03 579-3478
Mobile 027 649 4299
E.mail: kerrigan.engineers@xtra.co.nz

Our Ref: 2792

10 June 2008

FILE No.:
OFFICER:
DATE RECV'D 16 JUN 2008
MARLBOROUGH DISTRICT COUNCIL

Marlborough District Council
P O Box 443
Blenheim

Attention: Virgina Taylor
Planning Officer

Dear Virgina

A1 MOTELS – SH 1, WARD

We understand our client Mrs Burkhart has discussed the onsite waste proposal with you last week. Mrs Burkhart has requested that we write to you regarding the design of the disposal system. Attached is a plan of the proposed system showing the design for 9660 litres usage based on:

- 6 motel units
- 5 tent sites
- 4 camper van and camper van holding tank discharge
- 3 bedroom house and office

We understand from our previous phone discussion with Mr Alan Anderson of your office that our original estimate of approximately 9000 litres usage per day may not warrant a discharge consent. We trust the flow estimate does not change this. Please advise if this is incorrect.

We trust this information is of use and if you have any questions, please call me.

Yours sincerely

Graham Kerrigan
MIPENZ(Civil & Structural)CPEng IntPE(NZ)

cc: Mr & Mrs Burkhart

Motel
180l x 22 people = 3960

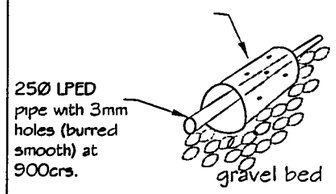
5 tentsites
= 10 p x 130l = 1300

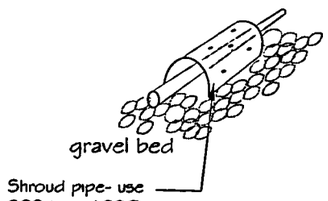
Campervans
8 p x 130l = 1040
(This is NOT counting holding tanks!!)

Hse
6 x 180l = 1080

7380 l/dy

Shroud pipe- use 300 long 100 Ø pipe perforated with many 12mm holes





Pipe Shroud Concepts
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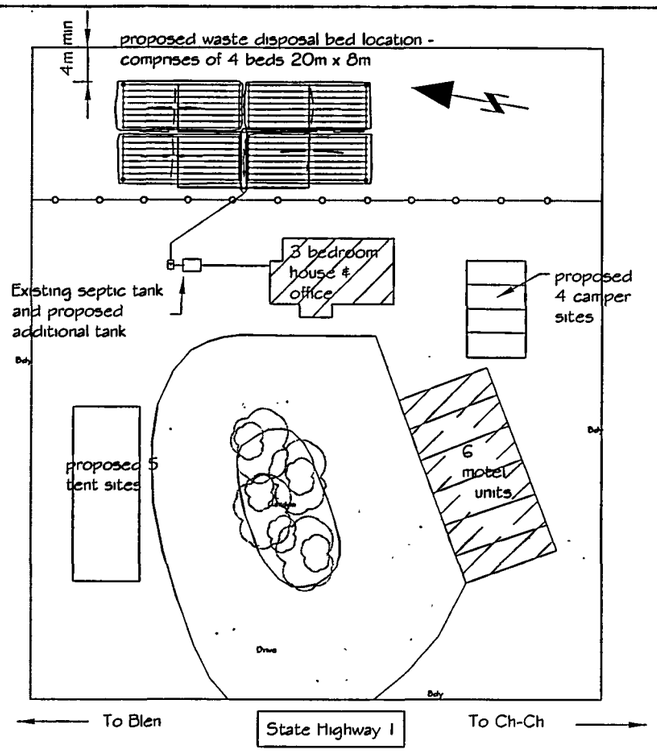
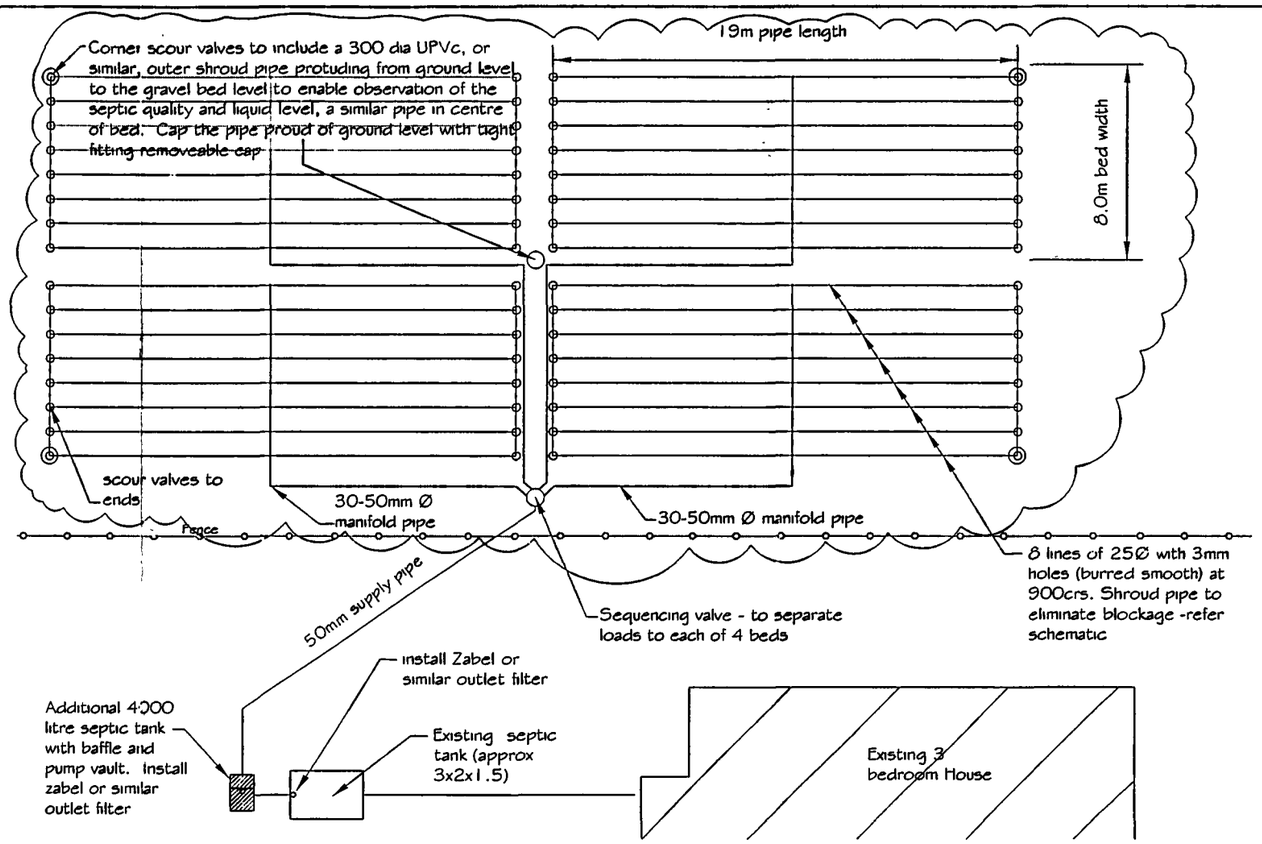
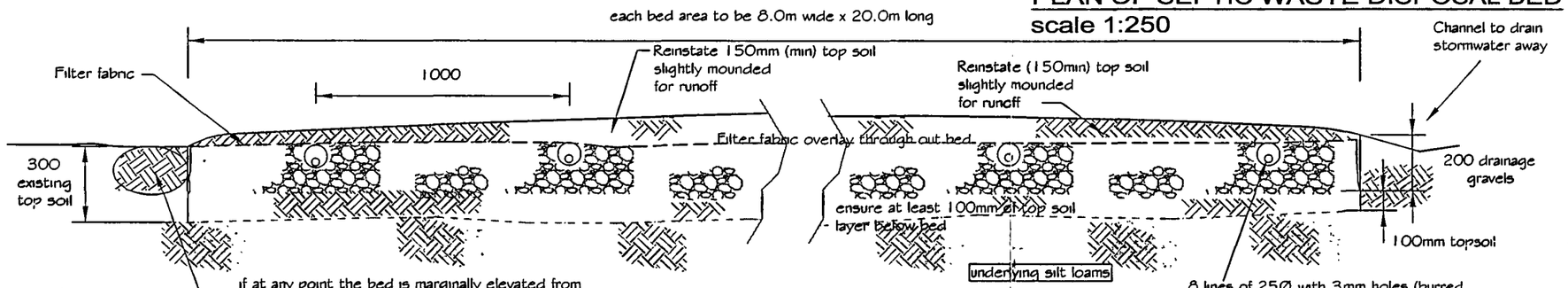


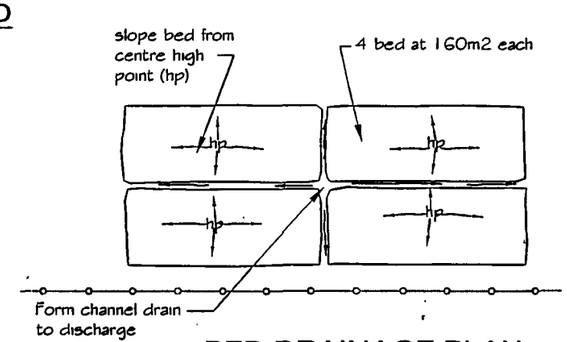
SITE PLAN
scale 1000



PLAN OF SEPTIC WASTE DISPOSAL BED
scale 1:250



TYPICAL SECTION
not to scale



BED DRAINAGE PLAN
not to scale

NOTES:

Septic Tank and Pump Chamber Notes:
- Owners should obtain Councils publications on on site waste disposal maintenance and refer to attached installation report.
- Only Registered tradesmen familiar with the construction of land application systems and working to the National Plumbing and Drainage Code NZS/AS 3500 should carry out the installation.
- The septic tank shall be constructed to AS/NZS 1546.

Design Data:
- system designed to AS/NZS 1547:2000
- Intermittent Loading only - upto 9000 (max) l/day
- Soil structure - 300mm topsoil
  - 800mm + loamy clay silts highly structured
- Soil Category - 3 loams highly structured
- Design Loading Rate, DLR, = 15mm/day

Land Application Notes:
- Surface water should be diverted around the perimeter and up-slope of the land application area.
- All pipework to be sewer grade and compliant with NZS 1477.
- Rock backfill shall be clean, durable and decay resistant,and range in size from 20mm to 60mm in diameter.

Pump System Notes:
- Start and stop operation via floats etc to ensure dosing of 1200 litres.
- High level floats and audible and visual alarm required at prominant position to warn of any fault in pump system.
- pump duty to be approximately 7 litres/sec with a operation head of approximately 1.5m at the furthest extremity of the discharge bed. Pump operation should be approximately 2- 3 minutes to disharge

Rev.	Revision Note.	Appr.	Date.
A	Increase in bed size		June 08

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Project Title:
A1 MOTELS - MAIN ROAD WARD

Sheet Title:
ON SITE WASTE DISPOSAL - LPED DISCHARGE BED

DRN:	APPROVE:
ECT	GCK
DES:	DATE:
GCK	June 2008

SCALE: AS SHOWN

Dwg. No. 2792
Sht. 1
rev. A