CAMERON GIBSON & WELLS LTD

CONSULTING CIVIL & STRUCTURAL ENGINEERS

12050-3

6 January 2003

Marlborough District Council
PO Box 443
BLENHEIM

Attn: Angus Laird

Dear Sir

RE: Effluent Field, Mehrtens Residence, U021236

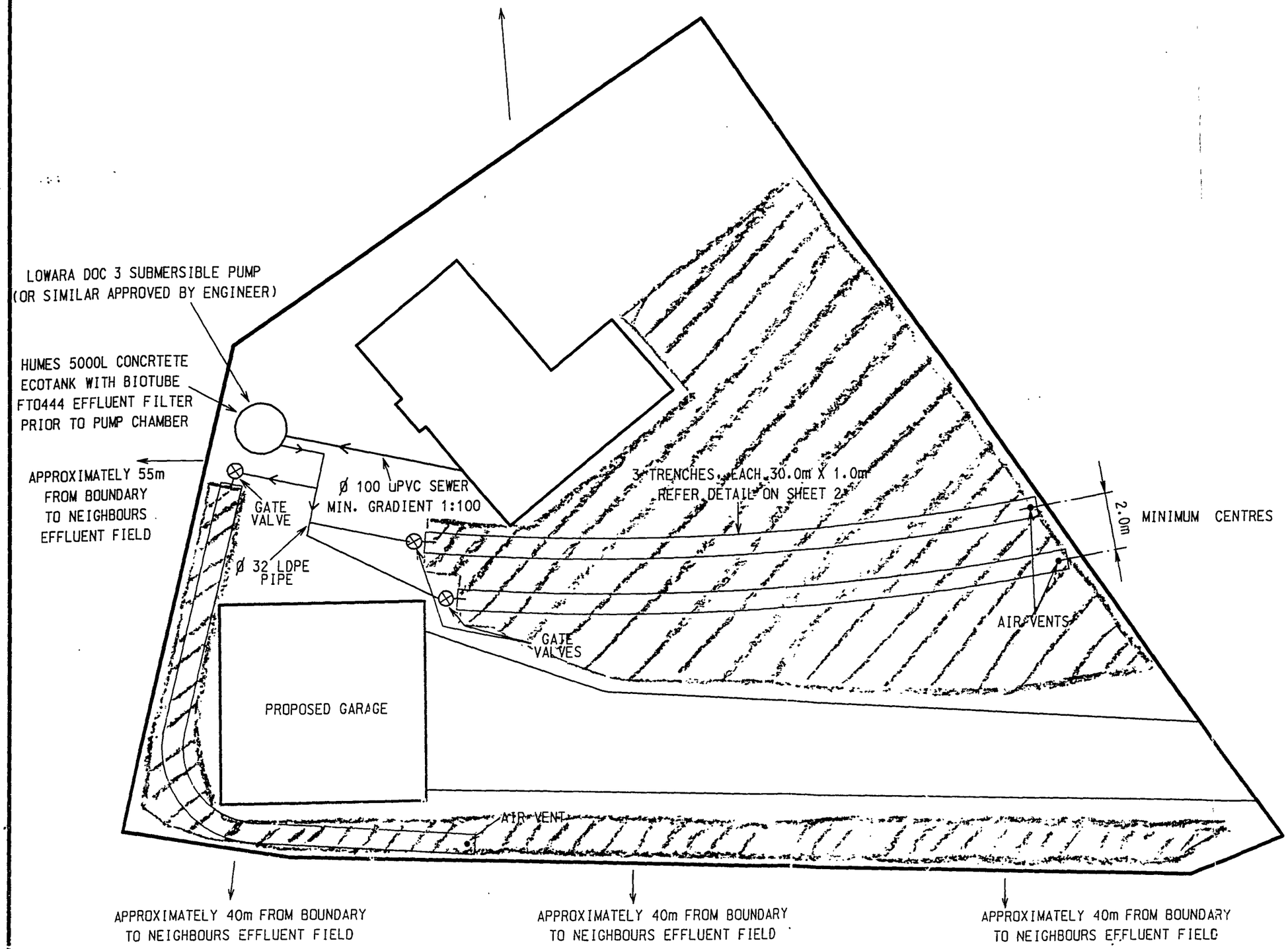
We have received your second request for further information.

Please find attached our drawing 12050 amendment C, showing approximately 600 m² suitable for effluent treatment.

We trust this satisfies your request.

Yours sincerely

Leanne Reeve
Environmental Engineer
CAMERON GIBSON & WELLS LTD



Notes

(1)Verify all dimensions on site
(2)Do not scale from drawing
(3)Exact location of the septic tank and pipework to be determined on site
(4)The Novaflo and treatment surface of each trench is to be laid level
(5)The valves prior to each trench are to be adjusted to ensure even flow to each trench

ACENZ

KEY

AREA SUITABLE FOR EFFLUENT TREATMENT 600m² SHOWN.

No	Date	Amendment	Drn	Chd	Apd
C	6/01	FURTHER SECTION 92	LR		
B	13/12	SECTION 92 REQUEST	JH		
A	18/11	FOR APPROVAL	JH	LR	

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
PH. 548-8288 NELSON FAX 548 8412
EMAIL COWL@XTRA.CO.NZ

Design	LR
Drawn	JH
Checked	LR
Approved	RG
Date	18/11/2002

Job Title
MEHRTENS PROPERTY PENZANCE BAY

Drawing Title
EFFLUENT FIELD LAYOUT

Scale	Of Sheets
1:200	2
Job No 12050	Sheet 1

File Ref: U021236

Ask For: Angus Laird

Cameron Gibson Wells Ltd
44 Halifax Street
Nelson

Attn: Leanne Reeve

Dear Leanne,

Application for Resource Consent-Mehrtens, Kelvin

Thank you for the further information received by Council on the 16th of December 2002.

After reviewing AS/NZS 1547:2000 I agree that the maximum trench width requirement is not logically explained and accept that a 1 metre bed/trench would be suitable for this site.

With regard to my question regarding the northern trench, I assumed that you were familiar with the site and that the difficulties of installing a trench, as shown on the site plan, (required to be flat through all of the 28.2 m proposed length) when taking into account the slope of the ground would be apparent.

It has been brought to my attention that there is a consent notice attached to the title (copy enclosed). This has a number of conditions relevant to the disposal of domestic waste water.

I'm sure you are aware that these conditions must be complied with regardless of any conditions imposed under a discharge permit, therefore could you provide a scale diagram showing the 400m^2 of suitable disposal area (to allow for adequate reserve).

Until this information is received the discharge permit processing will be put on hold under section 92 of the Resource Management Act, 1991.

If this is unclear or you have any queries please contact me.

Yours faithfully

ANGUS LAIRD
RESOURCE MANAGEMENT OFFICER

CAMERON GIBSON & WELLS LTD

CONSULTING CIVIL & STRUCTURAL ENGINEERS

12050-2

13 December 2002

Marlborough District Council
PO Box 443
BLENHEIM

Attn: Angus Laird

Dear Sir

RE: Effluent Field, Mehrtens Residence, U021236

We have received your request for further information and offer the following comment.

You have noted the proposed trench width of 800 mm is greater than the maximum trench width of 600 mm given in table 4.5A1 of AS/NZS 1547:2000. We would like to draw your attention to the fact that there is practically no difference between a conventional piped trench as shown in figure 4.5A1 and a conventional bed as shown in figure 4.5A5 apart from the width. In fact, a conventional bed could be 1 m wide and have only one distribution pipe. Whereas, a conventional trench can be up to 600 mm wide and has one distribution pipe. As the design loading rates for trenches and beds are the same, and the DLR relates to the size of the horizontal bottom area, the only difference between a 600 mm wide trench and a 1.0 m wide bed would be the total length of the system.

We do not see any reason why we do not use a trench 800 mm wide, as it fits with all other requirements of a trench and a bed, and is a practical width for an excavator.

You make a statement that the topography in the area of the proposed northern trench would make installation problematic, and is unlikely to operate satisfactory. We require more detail from you as to what the problem actually is, before we can respond.

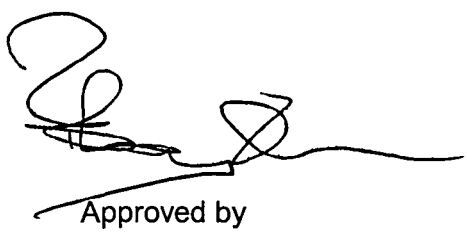
DIRECTORS/REGISTERED ENGINEERS: R.W.L. WELLS BE FIPENZ * S.R. CAMERON BE (HONS) MIPENZ * R.B. GIBSON BE MIPENZ
44 HALIFAX STREET NELSON PHONE 0-3-548 8259 FAX 0-3-546 8412 EMAIL cgwl@xtra.co.nz
191 HIGH STREET MOTUEKA PHONE 0-3-528 8123 FAX 0-3-528 4456

We are unhappy that the statutory time clock has stopped, and therefore we have changed our design as per the attached drawings. We trust these changes adequately address your concerns.

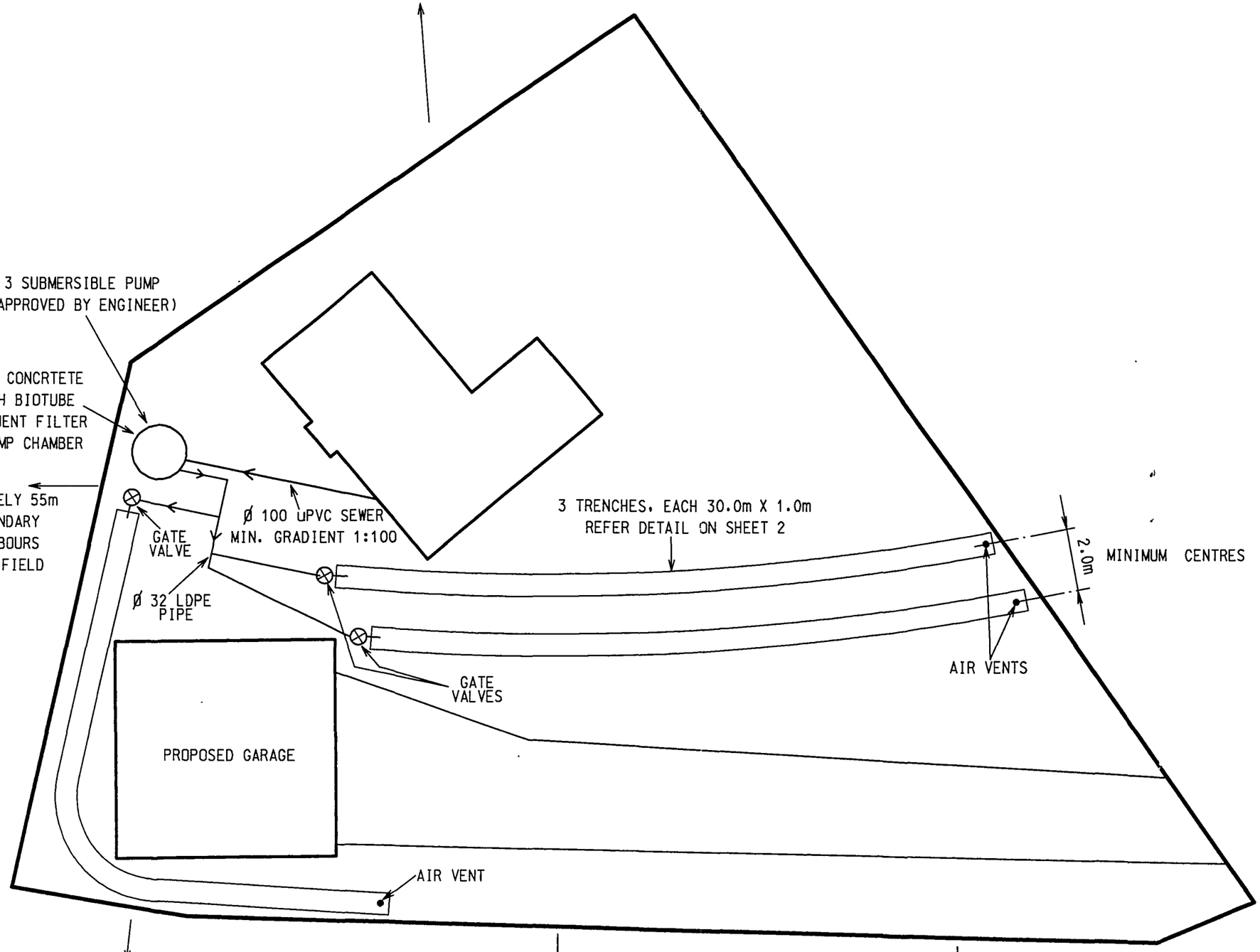
If you have any queries, please contact the writer.

Yours sincerely

Leanne Reeve
Environmental Engineer
CAMERON GIBSON & WELLS LTD



Approved by
Rodney Gibson
CAMERON GIBSON & WELLS LTD



Notes

(1)Verify all dimensions on site
(2)Do not scale from drawing
(3)Exact location of the septic tank and pipework to be determined on site
(4)The Novaflo and treatment surface of each trench is to be laid level
(5)The valves prior to each trench are to be adjusted to ensure even flow to each trench

ACENZ

No	Date	Amendment	Drn	Chd	Apd
B	13/12	SECTION 92 REQUEST	JH		
A	18/11	FOR APPROVAL	JH	LR	

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
PH. 548-8288 NELSON FAX 548 8412
EMAIL CGWL@XTRA.CO.NZ

Design	LR
Drawn	JH
Checked	LR
Approved	RG
Date	18/11/2002

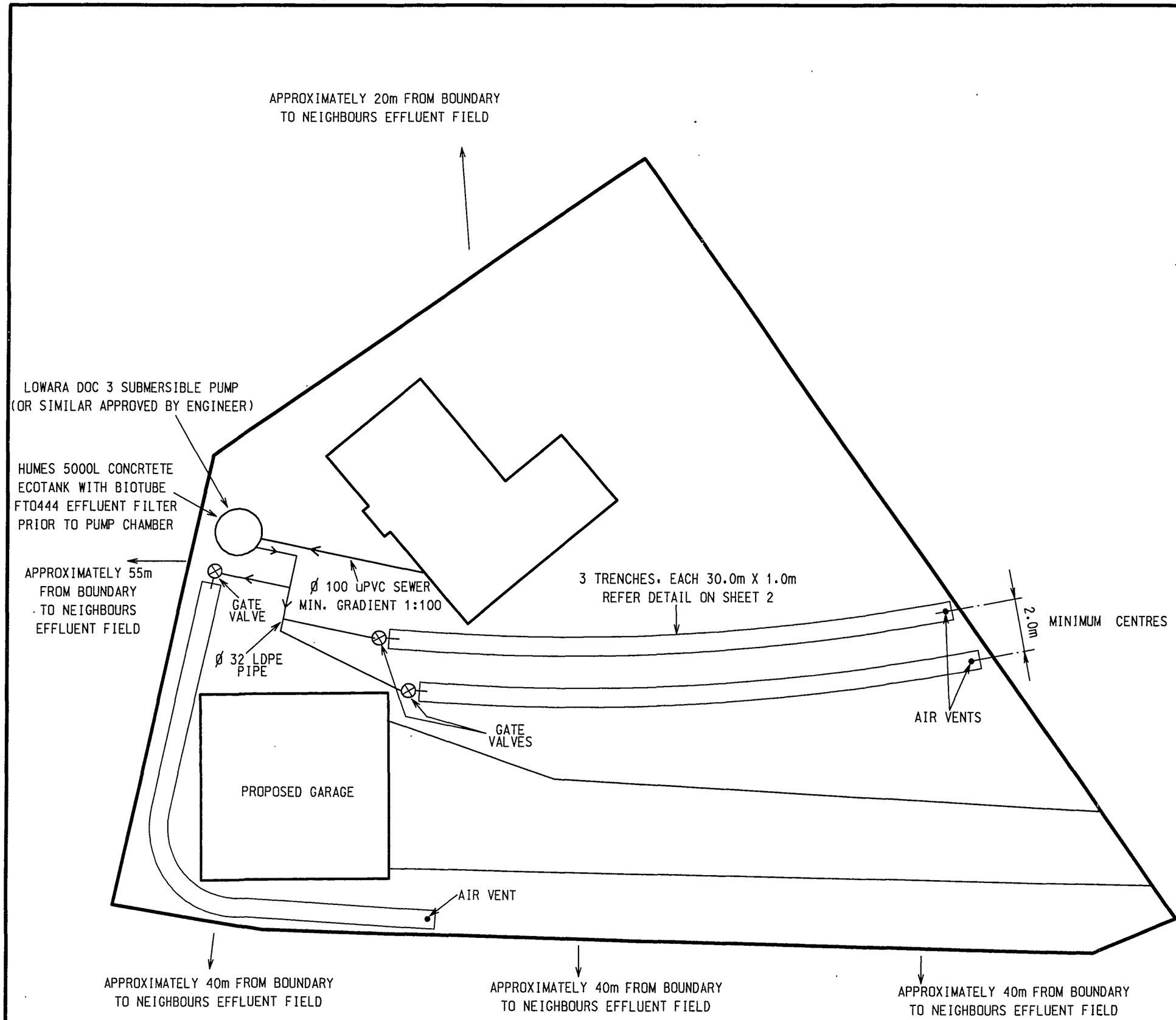
Job Title

MEHRTENS PROPERTY PENZANCE BAY

Drawing Title

EFFLUENT FIELD LAYOUT

Scale	Of Sheets
1:200	2
Job No 12050	Sheet 1



Notes

(1)Verify all dimensions on site
(2)Do not scale from drawing
(3)Exact location of the septic tank and pipework to be determined on site
(4)The Novaflo end treatment surface of each trench is to be laid level
(5)The valves prior to each trench are to be adjusted to ensure even flow to each trench

ACENZ

No	Date	Amendment	Drn	Chd	Apd
B	13/12	SECTION 92 REQUEST	JH	LR	
A	18/11	FOR APPROVAL	JH	LR	

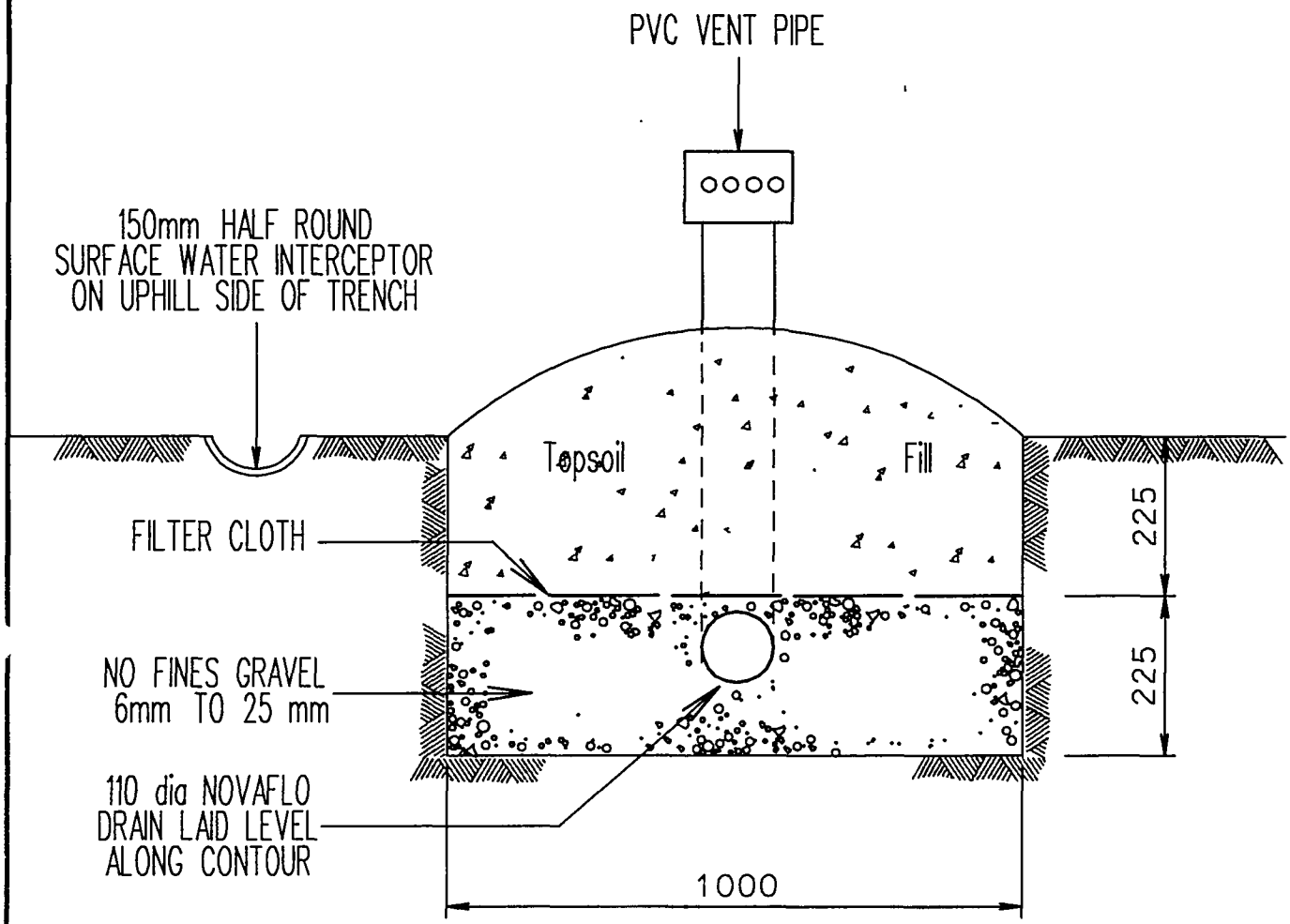
CAMERON GIBSON
& WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
PH. 548-8388 NELSON FAX 548 8412
EMAIL CGWL@XTRA.CO.NZ

Design	LR
Drawn	JH
Checked	LR
Approved	RG
Date	18/11/2002

Job Title
MEHRTENS
PROPERTY
PENZANCE BAY

Drawing Title
EFFLUENT FIELD
LAYOUT

Scale	Of Sheets
1:200	2
Job No 12050	Sheet 1



No	Date	Amendment	Drn	Chd	Apd
A	13.12.02	SECTOIN 92 REQUEST	MS		

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

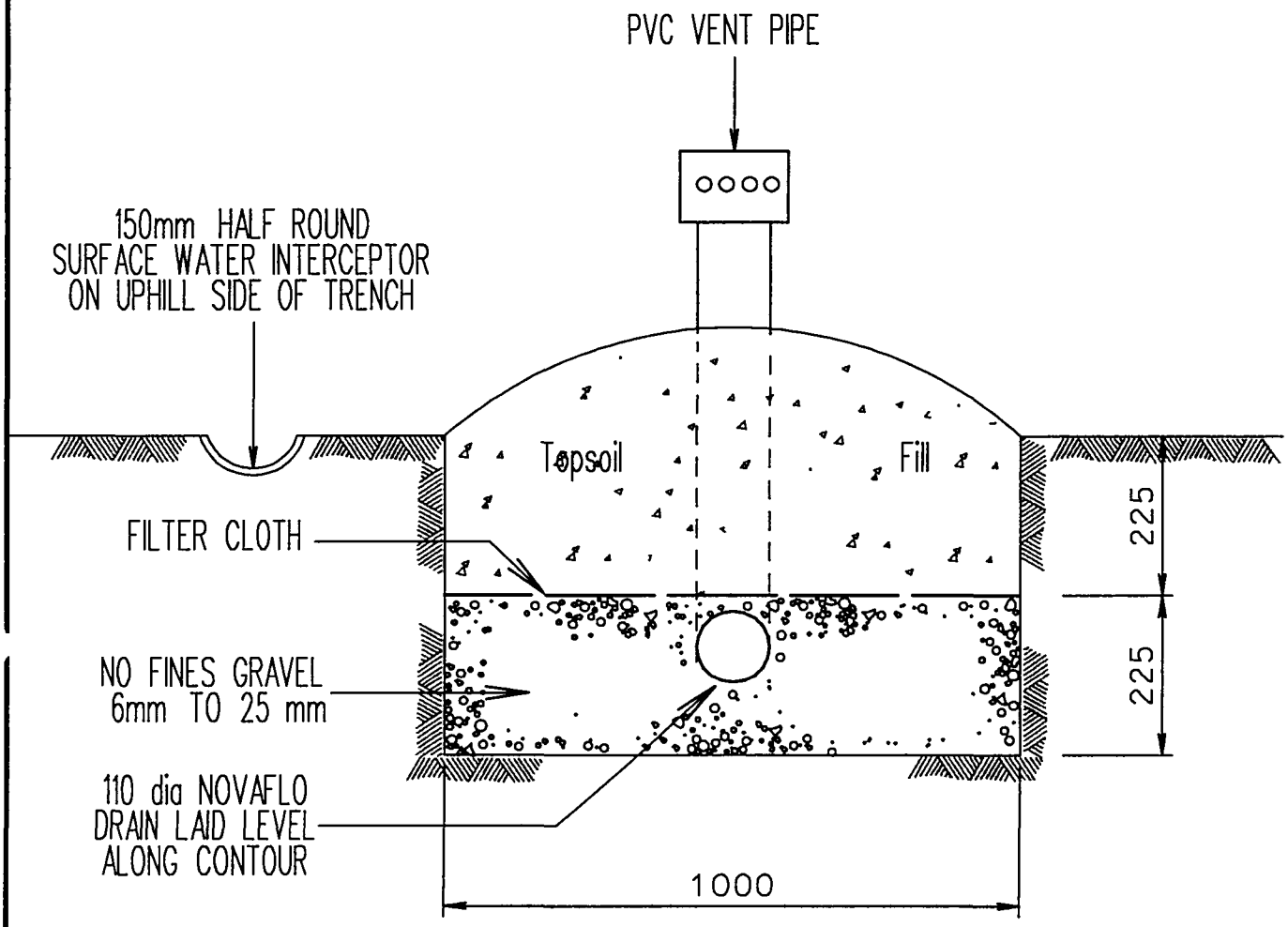
44 HALIFAX STREET
NELSON

PH 548-8259
FAX 546-8412

Design	LR
Drawn	JH
Checked	LR
Approved	RG
Date. NOVEMBER 2002	

Title: CONVENTIONAL BED DETAIL

Scale	Job No.	Sheet
NTS	12050	2



No	Date	Amendment	Drn	Chd	Apd
A	13.12.02	SECTOIN 92 REQUEST	MS		

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

44 HALIFAX STREET
NELSON

PH 548-8259
FAX 546-8412

Design	LR
Drawn	JH
Checked	LR
Approved	RG
Date	NOVEMBER 2002

Title: CONVENTIONAL BED DETAIL

Scale	Job No.	Sheet
NTS	12050	2

File Ref: U021236

Case Officer: Angus Laird

ISO 9002
Form Ref CI 352

10 Dec 2002

S92 request

Cameron Gibson & Wells Ltd
44 Halifax Street
Nelson 7001

Attn: Leanne Reeve

Dear Leanne,

Application for Resource Consent
Mehrtens, Kelvin
Worlds End Road Penzance Bay Central Pelorus West
Section 92 – Request for Further Information

I note that the trench width in the application is 800 mm. AS/NZS 1547:2000 (table 4.5A1) gives a maximum trench width of 600mm.

Also after recently visiting the site it appears that the topography in the area of the proposed northern trench would make installation problematic and the trench is unlikely to operate satisfactorily.

I would appreciate if you could provide some comment on the above.

While we are waiting for this information the statutory time clock effectively stops and will restart once this information is received. If you anticipate a lengthy delay in obtaining this information, please contact us.

If you consider that this request for further information is unreasonable, then you may exercise your right under section 357 of the Resource Management Act 1991 and lodge an objection to this request. Any notice of objection should be in writing and be made within 15 working days of the date of this letter.

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

Yours sincerely

Angus Laird
RESOURCE MANAGEMENT OFFICER

CAMERON GIBSON & WELLS LTD

CONSULTING CIVIL & STRUCTURAL ENGINEERS

12050-1

18 November 2002

Marlborough District Council
PO Box 443
BLENHEIM

Attn: Resource Consents Officer

Dear Sir/Madam

RE: Effluent Field, Mehrtens Residence, Lot 15 Worlds End Road, Penzance Bay

A system design has been developed for the management of wastewater flows derived from the above residence.

The following report outlines the design of a suitable system to be assessed by Marlborough District Council for compliance with Building Consent requirements. The proposed on site sewage disposal is not a permitted activity under the Marlborough Sounds Resource Management Plan (1.9.2.13) due to the location of the effluent field being closer than 50 m from another subsoil disposal field, therefore Resource Consent is required.

The system involves a septic tank with flow screened through an effluent filter prior to pumped discharge in a conventional effluent trench field.

1.0 Septic Tank

Wastewater flows shall drain to a dual–chamber Humes precast concrete Ecotank with a nominal volume of 5000 L. Compliance with section 2.4.9 *(Watertightness)* of AS/NZS 1546.1:1998 shall be required.

Pre-treatment occurs in the septic tank, providing adequate retention of design flows to allow for a significant reduction in contaminant concentrations. The effluent quality is further enhanced by use of a Biotube effluent filter positioned at the outlet of the tank. Effluent is then dose-loaded to the effluent field.

DIRECTORS/REGISTERED ENGINEERS: R.W.L. WELLS BE FIPENZ * S.R. CAMERON BE (HONS) MIPENZ * R.B. GIBSON BE MIPENZ

44 HALIFAX STREET NELSON PHONE 0-3-548 8259 FAX 0-3-546 8412 EMAIL cgwl@xtra.co.nz
191 HIGH STREET MOTUEKA PHONE 0-3-528 8123 FAX 0-3-528 4456

The level of solids accumulated in the tank should be checked annually and serviced as required. The volume of solids (scum and sludge) should not be more than $^2/_3$ of the total tank volume. The pump-out service interval is anticipated to be approximately 3 years at design flows. The Biotube effluent filter typically requires maintenance only as often as the pump-out of tank contents is required.

2.0 Pump

The pump is to be a Lowara DOC 3 submersible pump (or similar approved by the Engineer) and is to be housed within the pump chamber of the Ecotank.

3.0 Effluent Field

Conventional effluent trench technology shall be utilised to release flows into the soil for further treatment. The design loading rate is set at 10 mm/day in accordance with AS/NZS 1547:2000. Refer to Appendix One for the design basis of the system.

There are to be four trenches, each 28.2 m long and 800 mm wide. To ensure even distribution of the effluent over the trenches, gate valves will be used to throttle the flow so that each trench received a quarter of the overall flow.

The effluent is transported from the septic tank to the trenches by way of Ø32 mm LDPE pressure pipe. The pipe protrudes into each trench and discharges to the inside of a length of Ø110 mm Novaflo. Refer to the details provided on Sheet 2, Appendix Two.

The Novaflo and the treatment surface of each trench are to be laid level to allow for even distribution over this area. The Novaflo in each trench is vented in order to promote aerobic treatment processes. The layout of the effluent field is shown in Sheet 1, Appendix Two.

The proposed effluent field is to be located within 50 m of other subsoil disposal fields, with the approximate distances to neighbouring fields indicated on the site plan. The closest neighbouring effluent field is approximately 20 m to the north-west of the property. There will be no affect on this neighbouring property as the neighbouring property is uphill of the proposed effluent field.

There are three other effluent fields approximately 40 m from the south-eastern boundary of the property as indicated on the attached effluent field layout plan. The nature of these systems is unknown, however, we are confident that with the appropriate loading rate of the trenches, that there will be no apparent effects on the neighbouring property from this proposed system.

The gate valves to throttle the flow at the start of each trench can also be used to isolate any of the trenches should any unexpected problem occur. If at some stage in the future the disposal field fails there is plenty of room on the site for reserve trenches.

4.0 Conclusion

A wastewater management system has been designed to serve the Mehrtens residence in accordance with AS/NZS 1547:2000. The system is appropriate to the site.

There is plenty of area available for reserve trenches if necessary.

If you have any queries regarding the system outlined in this report, please contact the writer.

Yours sincerely

Leanne Reeve
Environmental Engineer
Cameron Gibson & Wells Ltd

Approved by
Rodney Gibson

Appendix One

Design basis for the proposed wastewater treatment and discharge system.

Design Flow

No. of bedrooms	=	3
Design population	=	5 (Gunn, 1994)
Per capita design flow	=	180 L /cap/day
Design flow, Q	=	900 L /day

Pre-treatment – Septic Tank

Nominal capacity	=	5000 L
Retention time	=	5.5 days
Effluent filter at outlet	=	Biotube FTO444

Pump

Submersible pump	=	Lowara DOC 3 (or similar approved by engineer)

Distribution

Transport to Trenches	=	Ø32 mm LDPE pipe

Application Rate

Soil	=	Silty clay loam, moderately structured Category 4, AS/NZS 1547:2000
Design Loading Rate (DLR)	=	10 mm/day

Discharge

Conventional Trench

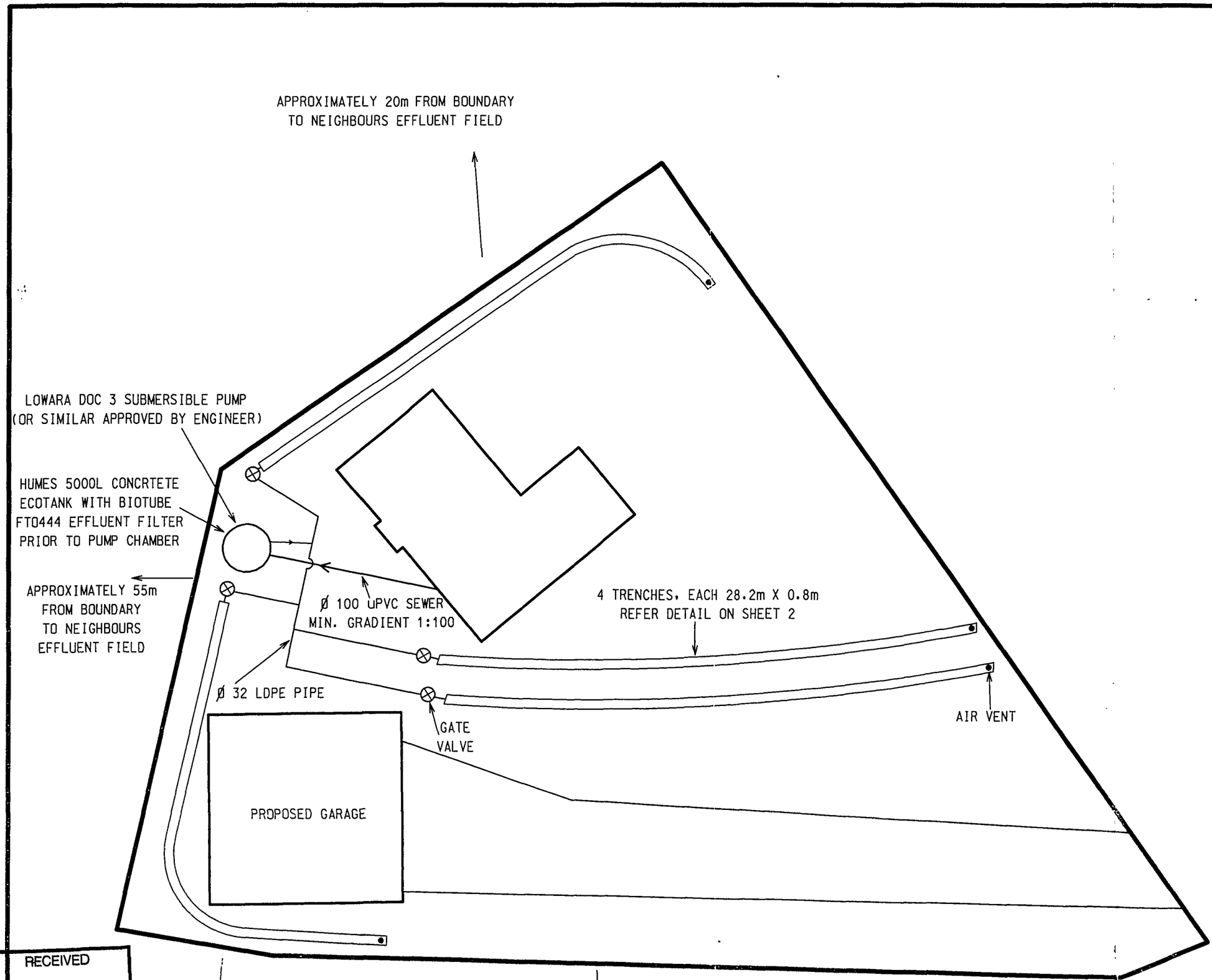
Treatment area	=	900 ÷ 10
	=	90 m²
Width of each trench	=	0.8 m
Total distribution length	=	112.5 m
Number of trenches	=	4
Length of each trench	=	28.2 m
Distance between trenches	=	minimum 2 m centres

Layout

The layout of trenches is shown in Sheet 1 of Appendix Two. There are four conventional trenches, each 28.2 m long and 0.8 m wide.

Appendix Two Drawings

12038, Sheet 1: Effluent Field Layout
12038, Sheet 2: Conventional Trench Detail



RECEIVED
21 NOV 2002
MARLBOROUGH DISTRICT COUNCIL

Notes

(1)Verify all dimensions on site
(2)Do not scale from drawing
(3)Exact location of the septic tank and pipework to be determined on site
(4)The Novaflo and treatment surface of each trench is to be laid level
(5)The valves prior to each trench are to be adjusted to ensure even flow to each trench

ACENZ

021236

No	Date	Amendment	Drn	Chd	Apd
A	18/11	FOR APPROVAL	JH		

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
PH. 546-8256 NELSON FAX 546 8412
EMAIL CGWL@XTRA.CO.NZ

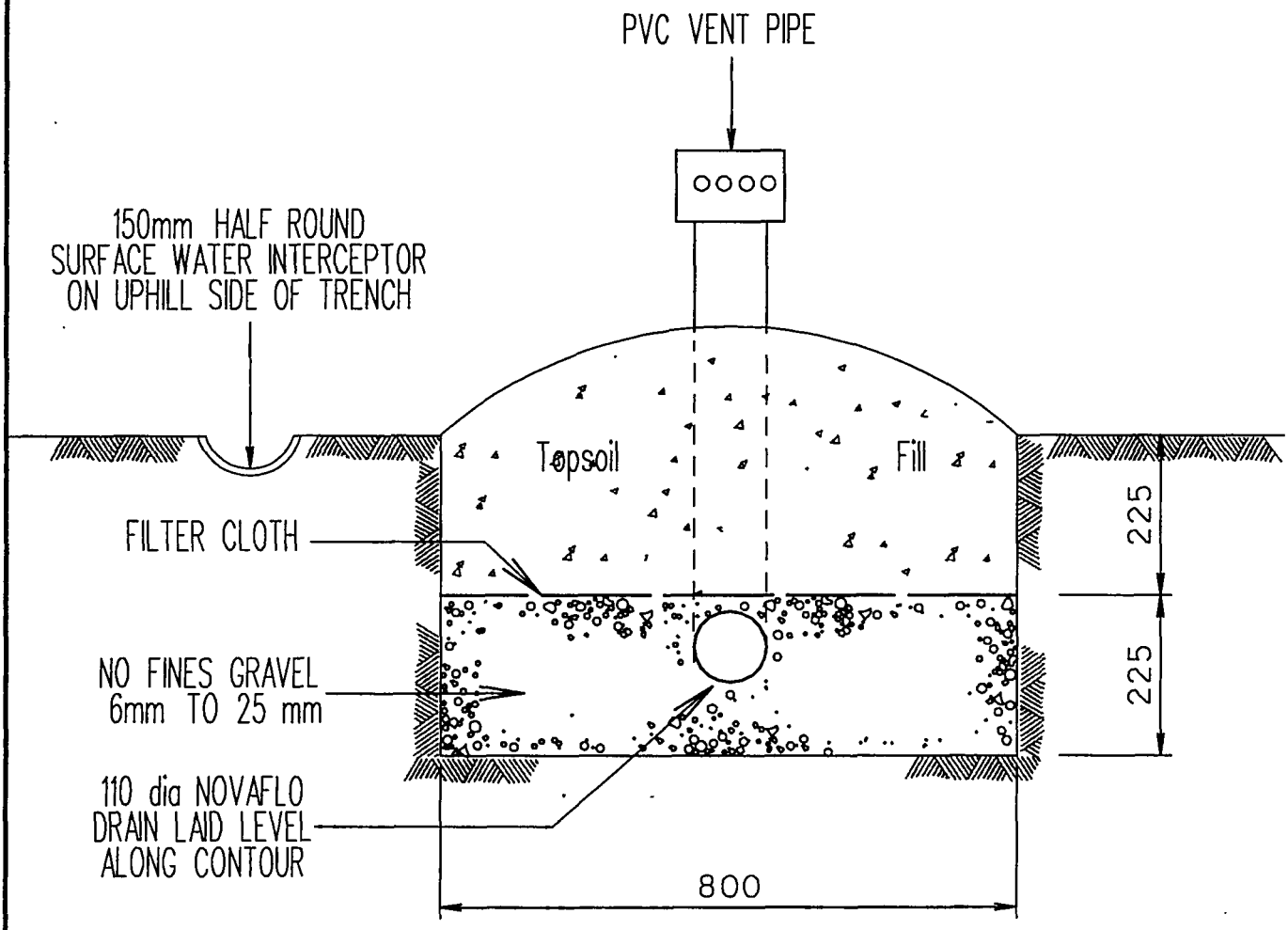
Design	LR
Drawn	JH
Checked	
Approved	
Date	18/11/2002

Job Title
MEHRTENS PROPERTY PENZANCE BAY

Drawing Title
EFFLUENT FIELD LAYOUT

Scale	Of Sheets
1:200	2
Job No 12050	Sheet 1

021236



RECEIVED
21 NOV 2002
MARLBOROUGH
DISTRICT COUNCIL

CAMERON GIBSON & WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

44 HALIFAX STREET
NELSON

PH 548-8259
FAX 546-8412

Design	LR
Drawn	JH
Checked	
Approved	
Date	NOVEMBER 2002

Title: CONVENTIONAL TRENCH DETAIL

Scale	Job No.	Sheet
1:10	12050	2

APPROXIMATELY 20m FROM BOUNDARY
TO NEIGHBOURS EFFLUENT FIELD

LOWARA DOC 3 SUBMERSIBLE PUMP
(OR SIMILAR APPROVED BY ENGINEER)

HUMES 5000L CONCRTETE
ECOTANK WITH BIOTUBE
FT0444 EFFLUENT FILTER
PRIOR TO PUMP CHAMBER

APPROXIMATELY 55m
FROM BOUNDARY
TO NEIGHBOURS
EFFLUENT FIELD

Ø 100 UPVC SEWER
MIN. GRADIENT 1:100

4 TRENCHES, EACH 28.2m X 0.8m
REFER DETAIL ON SHEET 2

Ø 32 LDPE PIPE

GATE
VALVE

AIR VENT

PROPOSED GARAGE

RECEIVED
21 NOV 2002
MARLBOROUGH
DISTRICT COUNCIL

APPROXIMATELY 40m FROM BOUNDARY
TO NEIGHBOURS EFFLUENT FIELD

APPROXIMATELY 40m FROM BOUNDARY
TO NEIGHBOURS EFFLUENT FIELD

APPROXIMATELY 40m FROM BOUNDARY
TO NEIGHBOURS EFFLUENT FIELD

Notes

(1)Verify all dimensions on site
(2)Do not scale from drawing
(3)Exact location of the septic tank and pipework to be determined on site
(4)The Novaflo and treatment surface of each trench is to be laid level
(5)The valves prior to each trench are to be adjusted to ensure even flow to each trench

ACENZ

021236

No	Date	Amendment	Drn	Chd	Apd
A	18/11	FOR APPROVAL	JH		

CAMERON GIBSON
& WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
PH. 548-8259 NELSON FAX 546 8412
EMAIL CGW.EXTRA.CO.NZ

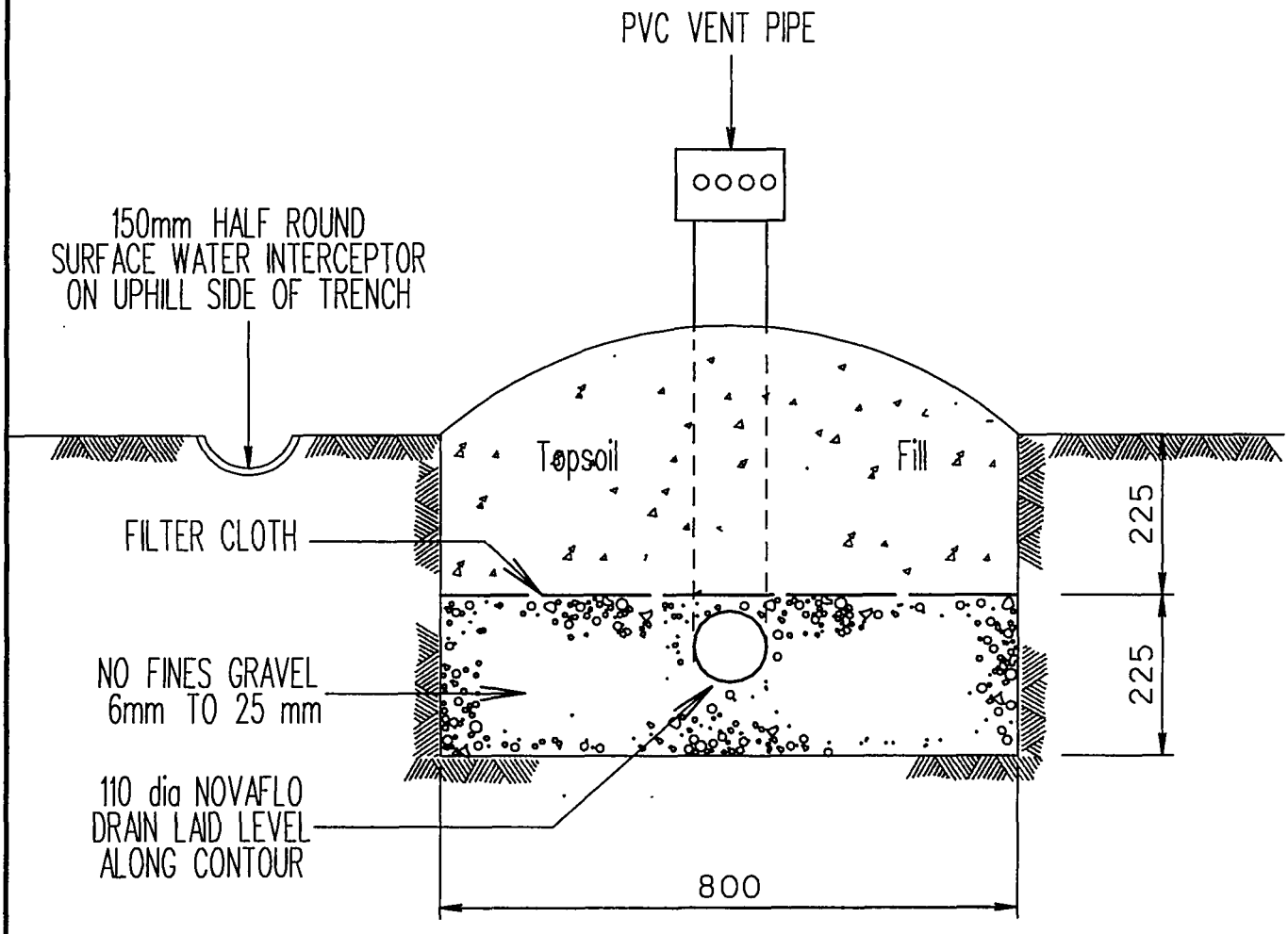
Design	LR
Drawn	JH
Checked	
Approved	
Date	18/11/2002

Job Title
MEHRTENS
PROPERTY
PENZANCE BAY

Drawing Title
EFFLUENT FIELD
LAYOUT

Scale	Of Sheets
1:200	2
Job No 12050	Sheet 1

021236



CAMERON GIBSON
& WELLS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

44 HALIFAX STREET
NELSON

PH 548-8259
FAX 546-8412

Design	LR
Drawn	JH
Checked	
Approved	
Date	NOVEMBER 2002

Title: CONVENTIONAL TRENCH DETAIL

Scale	Job No.	Sheet
1:10	12050	2