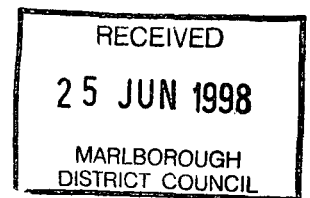




# Davidson Partners Ltd



Structural Engineering  
Civil Engineering  
Building Design  
Project Management

Practising in association with Ayson and Partners, Registered Surveyors

**Our Ref: 6128**

24 June 1998

Marlborough District Council  
P O Box 443  
**BLLENHEIM**

**ATTENTION:** Mr M Taylor

**re: D'URVILLE ISLAND WILDERNESS RESORT - CAFETERIA AND BAR  
NEW RESOURCE CONSENT**

We understand that Darryl French of the D'Urville Island Wilderness Resort has recently submitted a Resource Consent for the construction of a new cafeteria and bar.

He has requested that we change the orientation of the effluent disposal field in order to create extra distance from the watercourse on the neighbouring property to the east from the disposal field. Although we had no concerns from an engineering point of view, this will mitigate the concerns raised by the owner of this neighbouring property.

Please find enclosed three copies of plan number 6128 sheet C2 issue 'B' for your records.

**DAVIDSON PARTNERS LTD**

**W L McGlynn**

LM:BMM

Encl

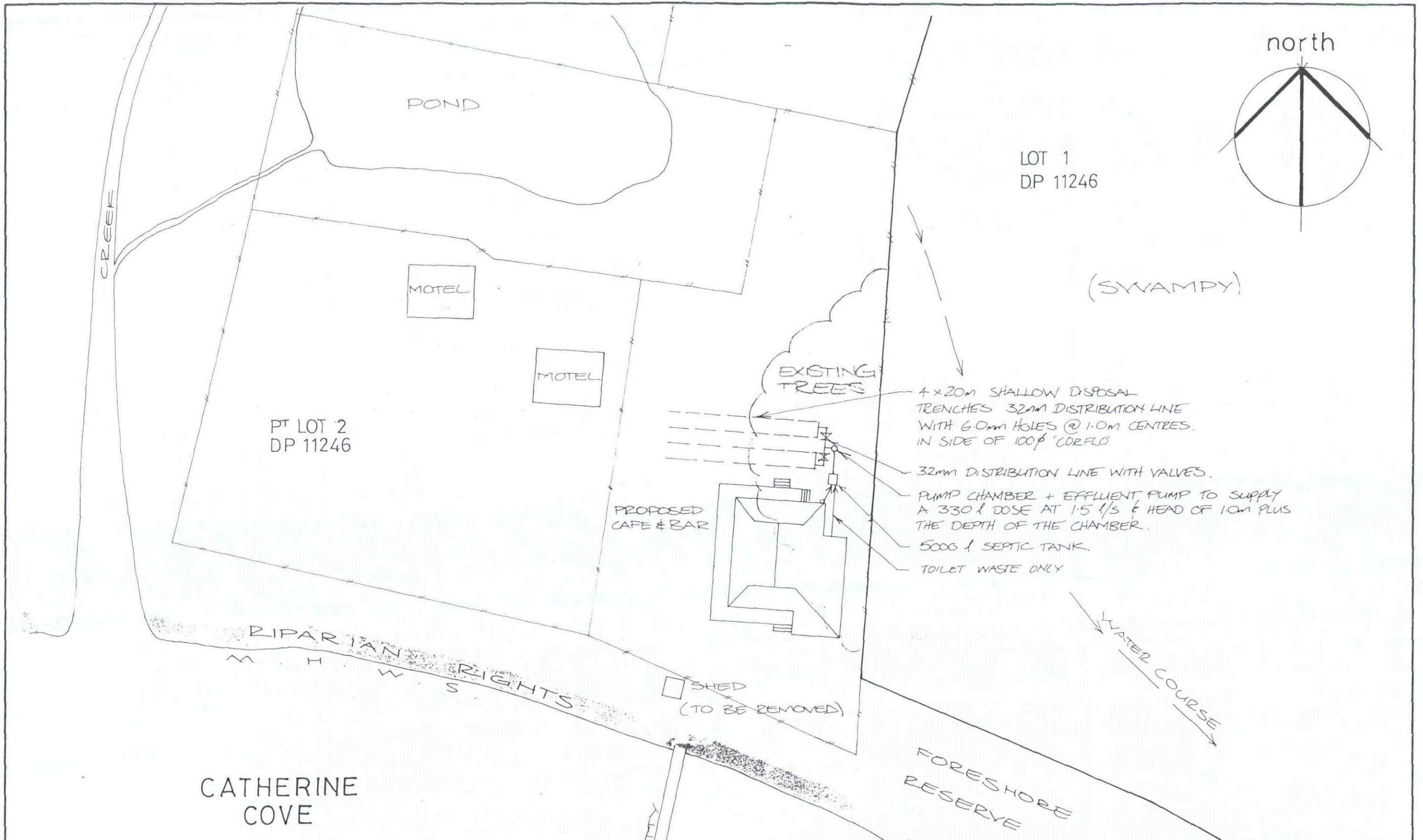
**COPY TO:** D'Urville Island Wilderness Resort  
Catherine Cove  
D'Urville Island  
Rural Bag 1211  
**RAI VALLEY**

**ATTENTION:** Mr D French



Davidson Ayson House  
4 Nelson Street, P.O. Box 256  
Blenheim, New Zealand  
Telephone 03 578 7029 Fax 03 578 7028

Principals  
Ron Melton, BE, M.IPENZ, REGD  
Stephen Sheat, BE, M.IPENZ, REGD  
Leigh McGlynn, BE, M.IPENZ, REGD



LOT 1  
DP 11246

(SWAMPY)

PT LOT 2  
DP 11246

- 4 x 20m SHALLOW DISPOSAL TRENCHES 32mm DISTRIBUTION LINE WITH 6.0mm HOLES @ 1.0m CENTRES. IN SIDE OF 100' 'CORFLO'
- 32mm DISTRIBUTION LINE WITH VALVES.
- PUMP CHAMBER + EFFLUENT PUMP TO SUPPLY A 330 l DOSE AT 1.5 1/3 l/s & HEAD OF 1.0m PLUS THE DEPTH OF THE CHAMBER.
- 5000 l SEPTIC TANK.
- TOILET WASTE ONLY

CATHERINE COVE

plan  
1:500

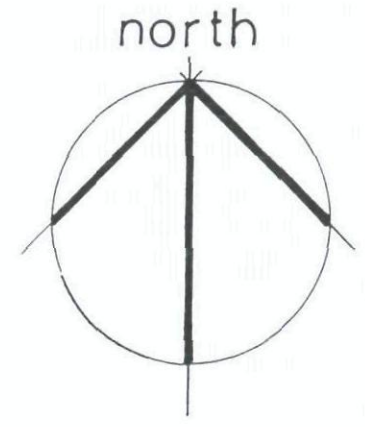
**DavidsonPartnersLtd**  
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D'URVILLE IS. WILDERNESS RESORT  
 PT LOT 2 DP 11246  
 D'URVILLE ISLAND  
 effluent disposal plan

DATE 6/98	SCALES 1:500	DRAWING No. 6128	SHEET C 2	ISSUE B
DES: LM	DRN: BG	CK: MW	CAD	

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LOT 1  
DP 11246

(SWAMPY)

CREEK

POND

MOTEL

MOTEL

PT LOT 2  
DP 11246

EXISTING  
TREES

4 x 20m SHALLOW DISPOSAL  
TRENCHES 32mm DISTRIBUTION LINE  
WITH 6.0mm HOLES @ 1.0m CENTRES.  
IN SIDE OF 100' CORFLO

32mm DISTRIBUTION LINE WITH VALVES.

PUMP CHAMBER + EFFLUENT PUMP TO SUPPLY  
A 330 l DOSE AT 1.5 l/s @ HEAD OF 10m PLUS  
THE DEPTH OF THE CHAMBER.

5000 l SEPTIC TANK.

TOILET WASTE ONLY

PROPOSED  
CAFE & BAR

SHED  
(TO BE REMOVED)

WATER COURSE

RIPARIAN RIGHTS  
M H W S

FORESHORE  
RESERVE

CATHERINE  
COVE

JETTY

plan  
1:500



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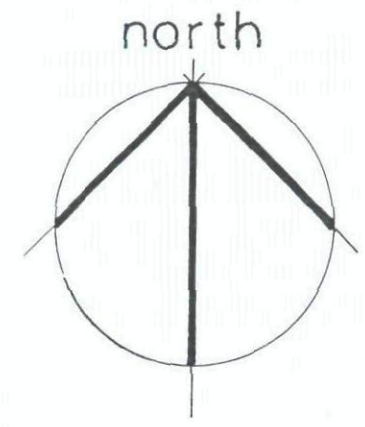
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Blenheim, New Zealand  
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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND

effluent disposal plan

DATE	SCALES	DRAWING No.	SHEET	ISSUE
6/98	1:500	6128	C2	B
DES LM	DRN BG	CK WW	CAD	



LOT 1  
DP 11246

(SWAMPY)

CREEK

POND

MOTEL

MOTEL

PT LOT 2  
DP 11246

EXISTING  
TREES

4 x 20m SHALLOW DISPOSAL  
TRENCHES 32mm DISTRIBUTION LINE  
WITH 6.0mm HOLES @ 1.0m CENTRES.  
IN SIDE OF 100' CORFLO

32mm DISTRIBUTION LINE WITH VALVES.

PUMP CHAMBER + EFFLUENT PUMP TO SUPPLY  
A 330 l DOSE AT 1.5 l/s @ HEAD OF 10m PLUS  
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TOILET WASTE ONLY

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WATER COURSE

RIPARIAN RIGHTS  
M H W S

CATHERINE  
COVE

FORESHORE  
RESERVE

plan  
1:500

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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND

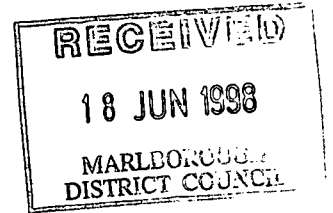
effluent disposal plan

DATE	SCALES	DRAWING No.	SHEET	ISSUE
6/98	1:500	6128	C2	B
DES LM	DRN BG	CK WW	CAD	



**Our Ref: 6128**

10 June 1998



**D'URVILLE ISLAND WILDERNESS RESORT  
EFFLUENT TREATMENT DISPOSAL  
PT LOT 2 D.P. 11246  
CATHERINE COVE, D'URVILLE ISLAND**

**1. GENERAL:**

Our brief was to investigate and recommend a suitable effluent treatment and disposal system for the proposed cafe and bar development on the above property.

There is also proposed to be a shower available for use by boaties, kayakers, etc.

A site investigation was undertaken by this office in accordance with the Draft AS/NZS 1547 "On Site Domestic Wastewater Management" and the Auckland Regional Council's Technical Publication No. 58.

**2. FIELD ASSESSMENT:**

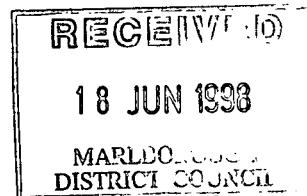
Date of visit.	25 May 1998
Site exposure - to sun.	Medium
- to wind.	High
Depth of topsoil.	300 mm
Soil description.	Silty Gravels
Pedal content.	n/a
Performance of existing trench systems nearby.	Good
Estimated soil category.	1

/...



REF: 6128

Nearest water bodies -	Creek	- 10 metres
	Pond	- 30 metres
	Sea	- 45 metres
Runoff to be controlled.	No	
Groundwater to be controlled.	No	
Any stability considerations.	No	
Depth to water table.	Not found	
Vegetation cover	- existing.	Trees/grass
	- proposed.	Trees/grass
Recent weather conditions.	Dry	



**3. DISPOSAL:**

**3.1 Location of Disposal Field**

The disposal field has been located away from existing buildings in an area which has good exposure to the sun and prevailing wind. We consider that the area shown on plan number 6128 sheet C2 is suitable for the disposal of pretreated effluent to the ground, even though the disposal field is within 30 metres of the creek and pond. The discharge will not impact upon either of these waterbodies because the effluent would be expected to drain quickly away into the ground due to the good soakage and that flatness of the land means that no significant sideways movement of effluent would be anticipated. Also, recent research carried out by the University of Auckland indicates that bacteria is removed over relatively short distances from the discharge points (trenches), being less than one metre soil depth.

**3.2 Method of Disposal**

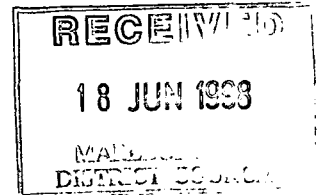
The excellent soakage of the soil at this site allows the use of shallow trench disposal. The trenches are to be flood loaded using a pump to ensure an even distribution of effluent, which should also aid long term reliability of the system. The pressure pipe will be embedded within the disposal pipe to further ensure even distribution.

The trenches should be dosed in pairs with each dose being approximately 330 litres in volume, and the loaded trenches changed regularly (perhaps every month) with shorter cycles when an influx of people is expected.

**3.3 Trench Design**

Estimated long term acceptance rate (LTAR).	30 mm per day
Number of diners.	30
Wastewater allowance.	30 litres per diner

REF: 6128



Estimated total wastewater flow (including shower). 1000 litres per day  
Total trench length. 80 metres

**4. TREATMENT:**

Septic tank treated effluent is suitable for trench disposal, and the quality of this effluent is significantly improved by the use of an effluent filter on its outlet. Hence, we recommend the installation of a 5,000 litre standard septic tank and Zabel A300 effluent filter (or equivalent) as the treatment system.

A Skellerup Rotomould septic tank could be chosen due to its portability, but any approved tank will be suitable.

Due to the large proportion of kitchen type waste that would be expected to arise from a cafe and bar establishment, we recommend that the wastewater from the kitchen pass through a grease trap before entering the septic tank. It should be constructed in accordance with G13/AS2 of the Building Code.

**5. SUMMARY:**

We propose that the effluent treatment and disposal system consist of the following:

- (a) A 5,000 litre septic tank (Skellerup Rotomould or other approved septic tank).
- (b) A Zabel A300 effluent filter (or equivalent) on the outlet of the septic tank.
- (c) A 150 litre capacity grease trap in accordance with G13/AS2 of the Building Code.
- (d) A pump chamber with submersible effluent pump to provide a dose of 330 litres at a rate of 1.5 litres per second and pressure head of 1.0 metres plus the depth of the chamber.
- (e) A 32 mm diameter distribution line with valves to isolate each pair of trenches, and 6.0 mm holes at 1.0 metre spacings where within the 100 mm diameter Corflo of each trench.
- (f) Four 20 metre long shallow disposal trenches with a reserve area for further trenches.

The above is described on plan number 6015 sheets C1 to C3 attached.

**DAVIDSON PARTNERS LTD**

A handwritten signature in black ink, appearing to read "W L McGlynn".

**W L McGlynn**

RWD:BMM

## 4.0 GREASE TRAPS

### 4.1 Grease trap requirements

4.1.1 Grease traps shall be provided for any waste pipe serving a sink(s) where the foul water discharges to a soak pit.

4.1.2 In buildings other than Housing, grease traps shall be provided where waste water is likely to convey grease.

### 4.2 Capacity

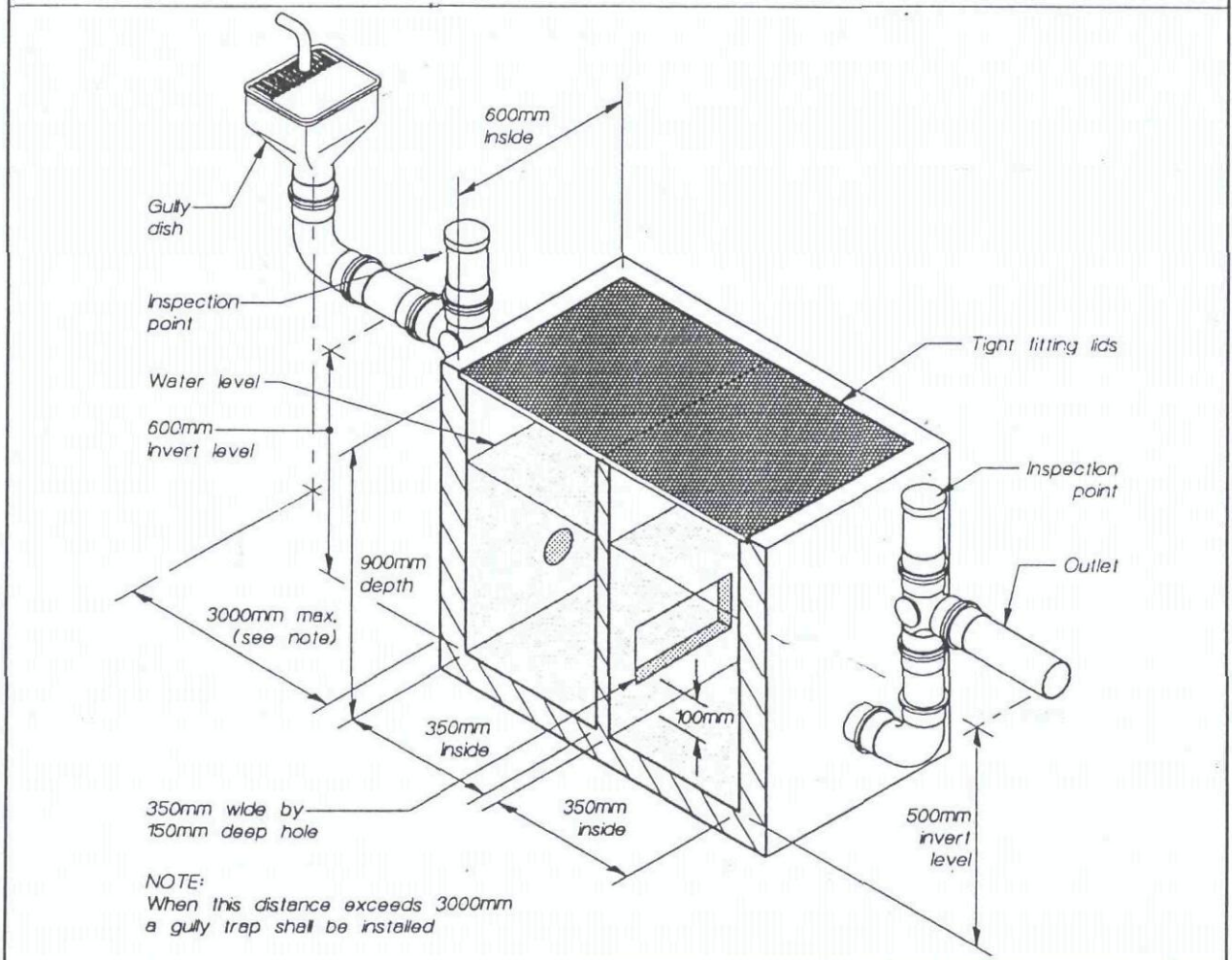
4.2.1 The capacity of a grease trap shall be at least twice the capacity of all sanitary fixtures and sanitary appliances discharging to it, and in no case less than 100 litres.

4.2.2 For restaurants, the capacity shall be at least 5 litres for each person for whom seating is provided, and in no case less than that required by Paragraph 4.2.1.

### 4.3 Construction

4.3.1 Grease traps located outside a building, shall be constructed as shown in Figure 3.

Figure 3: Details of grease traps - up to 150 litres capacity  
Paragraph 4.3.1



Amd 1  
Sept '93

Amd 1  
Sept '93

Amd 1  
Sept '93





18 JUN 1998  
MARTIN COOPER  
DISTRICT COURT

LOT 1  
DP 11246

(SWAMPY)

CREEK

POND

MOTEL

MOTEL

PT LOT 2  
DP 11246

GREASE TRAP  
FOR GREY  
WATER ONLY

PROPOSED  
CAFE & BAR

EXISTING  
TREES

4 x 20m SHALLOW DISPOSAL  
TRENCHES 32mm DISTRIBUTION LINE  
WITH 6.0mm HOLES @ 1.0m CENTRES.  
IN SIDE OF 100 $\phi$  'CORFLO'

32mm DISTRIBUTION LINE WITH VALVES.

PUMP CHAMBER + EFFLUENT PUMP TO SUPPLY  
A 330 l DOSE AT 1.5 l/s @ HEAD OF 10m PLUS  
THE DEPTH OF THE CHAMBER.

5000 l SEPTIC TANK

TOILET WASTE ONLY

SHED  
(TO BE REMOVED)

WATER COURSE

CATHERINE  
COVE

RIPARIAN  
M H W S  
RIGHTS

FORESHORE  
RESERVE

JETTY

plan  
1:500

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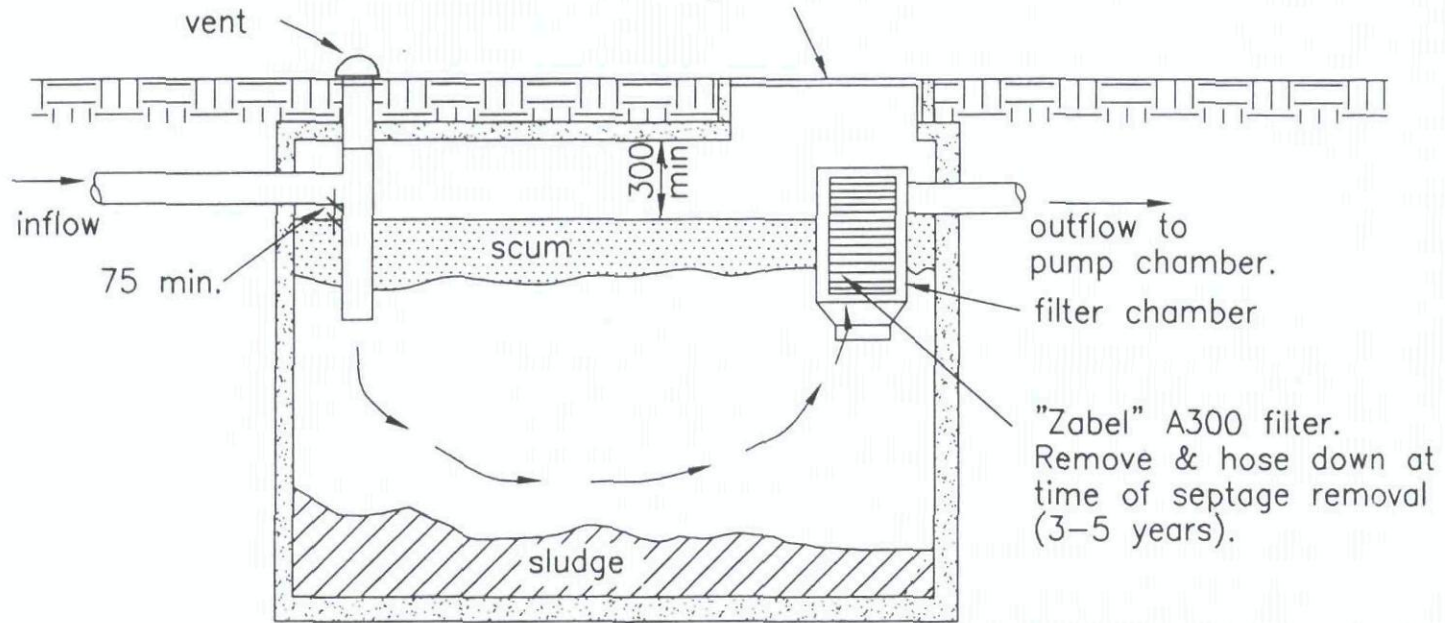
D'URVILLE IS. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND

effluent disposal plan

DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	1:500	6128	C2	A
DES: LM	DRN: BG	CK: MW	CAD	

18 JUN 1998  
 PROJECT  
 8981

450 diameter min. lid to ground level.  
 (600 diameter min. if opening is only  
 access to tank).  
 Position over filter for easy maintenance.



**typical cross section**

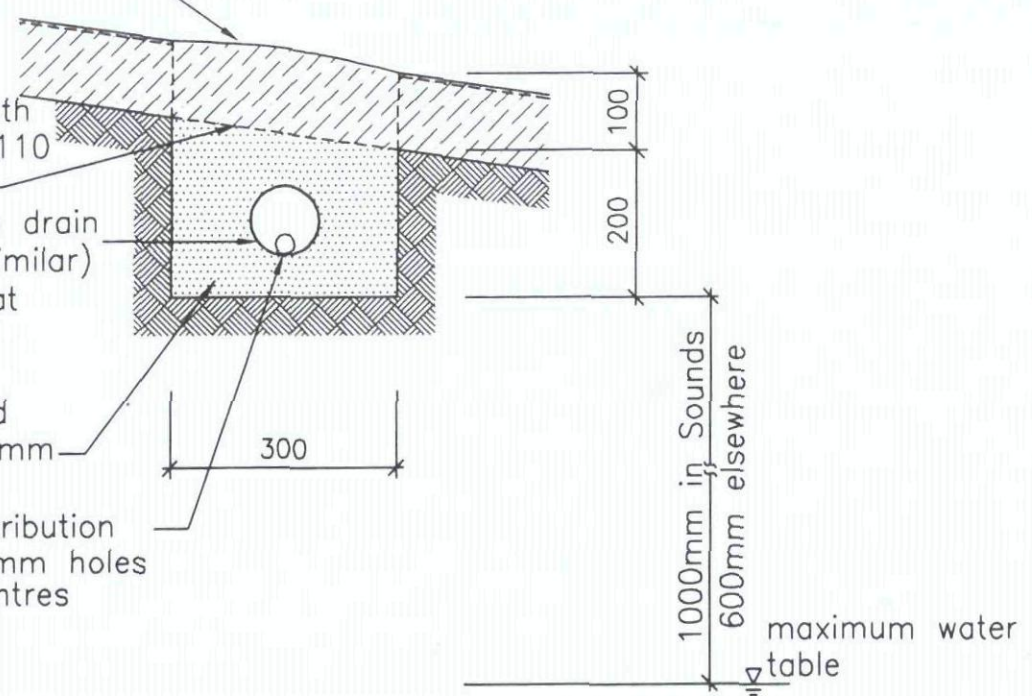
1:25

standard septic tank  
 (min. 5000 litre). Refer  
 NZS 4610 "Household Septic Tank  
 Systems" for details.

topsoil backfill,  
 slightly mounded  
 and grassed

Geotextile cloth  
 (eg. Geotex 110  
 Twill.)  
 90mm  $\phi$  min drain  
 ("Corflo or similar")  
 to be laid flat

clean crushed  
 metal 20-40mm  
 32mm  $\phi$  distribution  
 line with 6.0mm holes  
 at 1.0 m centres



**shallow disposal trench**

1:10

**Suggested Operation and Maintenance  
 Septic Tank**

1. The inflowing household sewage should not contain anything other than human waste and toilet paper, and food material such as may go down a kitchen sink drain. Garbage grinders are not recommended, although they need not be forbidden. More frequent de-sludging of the septic tank may be needed if a garbage grinder is used.  
 Normal use in the house of soaps, detergents, bleaches, plumbing fixture cleaners, drain cleaners and disinfectants will not harm the functioning of the septic tank or the soil absorption system.
2. Prohibited discharges to the septic tank include:-  
 Oil/grease from e.g. a deep fryer.  
 Stormwater and any drainage other than sewage generated in the house.  
 Petrol, oil and other flammable/explosive substances.  
 Household, garden, garage, and workshop chemicals (e.g. pesticides paint cleaners, photographic chemicals, motor oil and trade waste).  
 Disposable nappies and sanitary napkins.
3. Septic tanks need to be pumped (septage removed when the scum layer comes to within 75mm of the bottom of the outlet tee or when sludge and scum have accumulated to the extent that the clear space (between scum and sludge) has a volume less than 1000 litres). Septage removal may need to be done as often as every three years but at no longer than five year intervals.

**"Zabel" A300 filter**

1. The septic tank should be pumped prior to removal of the filter to prevent any solids from escaping to the trenches when the cartridge is removed.
2. The Zabel filter shall be cleaned at the same time as normal septic tank servicing (3-5 years).
3. Remove the disc cartridge and rinse off with a garden hose, being careful to rinse all septage material back into the tank. It is not necessary that the discs be cleaned "spotless". The biomass growing on the filter aids in the pre-treatment process and should be left in the discs.



Structural Engineering  
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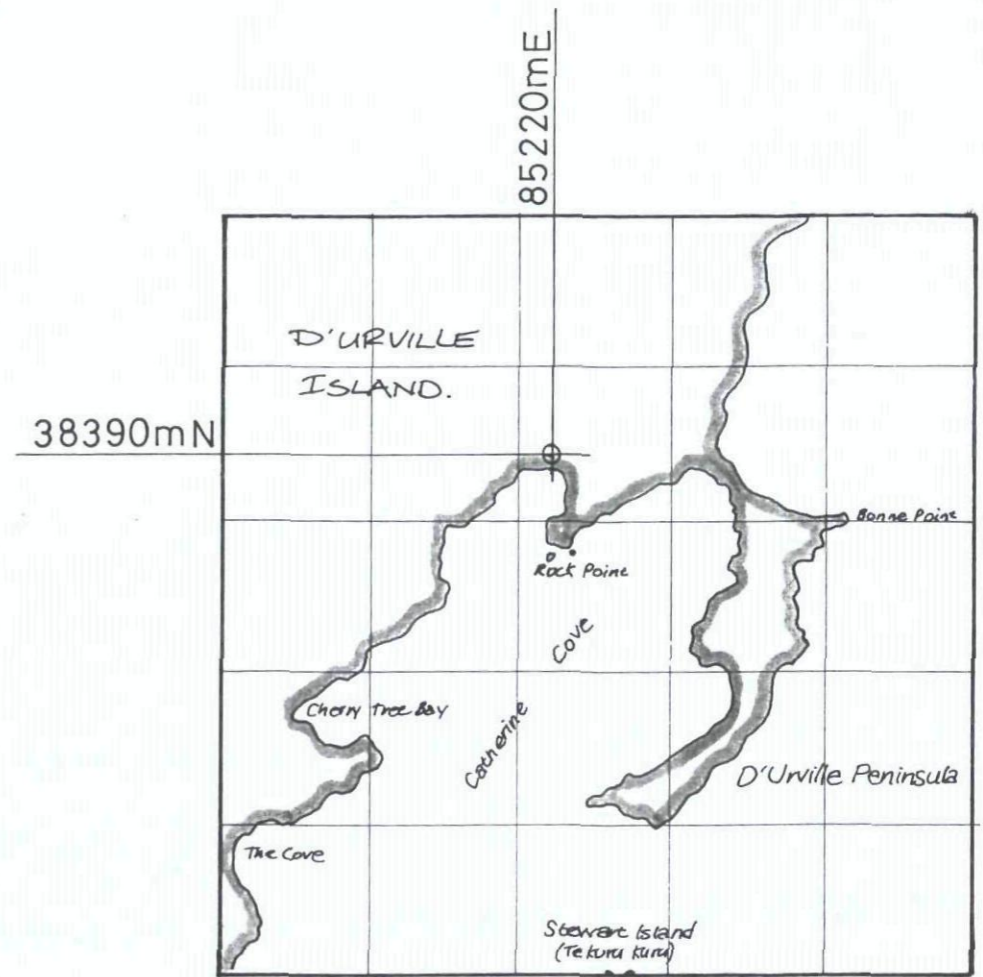
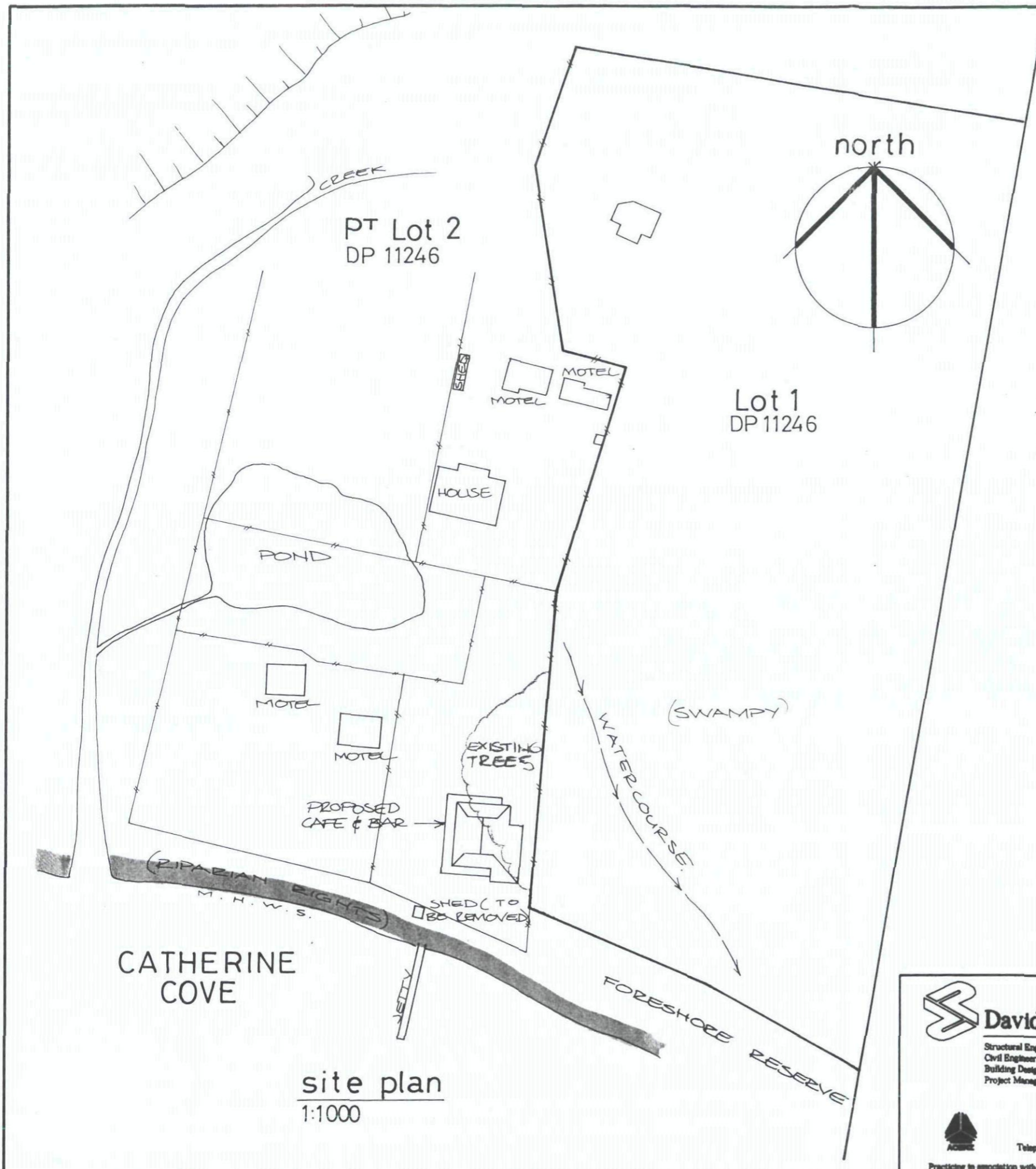
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D'URVILLE Is. WILDERNESS RESORT  
 PT LOT 2 DP 11246  
 D'URVILLE ISLAND

effluent disposal field  
 typical septic tank details

DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C3	A
DES R.D.	DRN B.G.	CK [Signature]	CAD C:\ACLTWIN\6128DWG\6128	

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locality plan NZMS 260/P26  
1:50000

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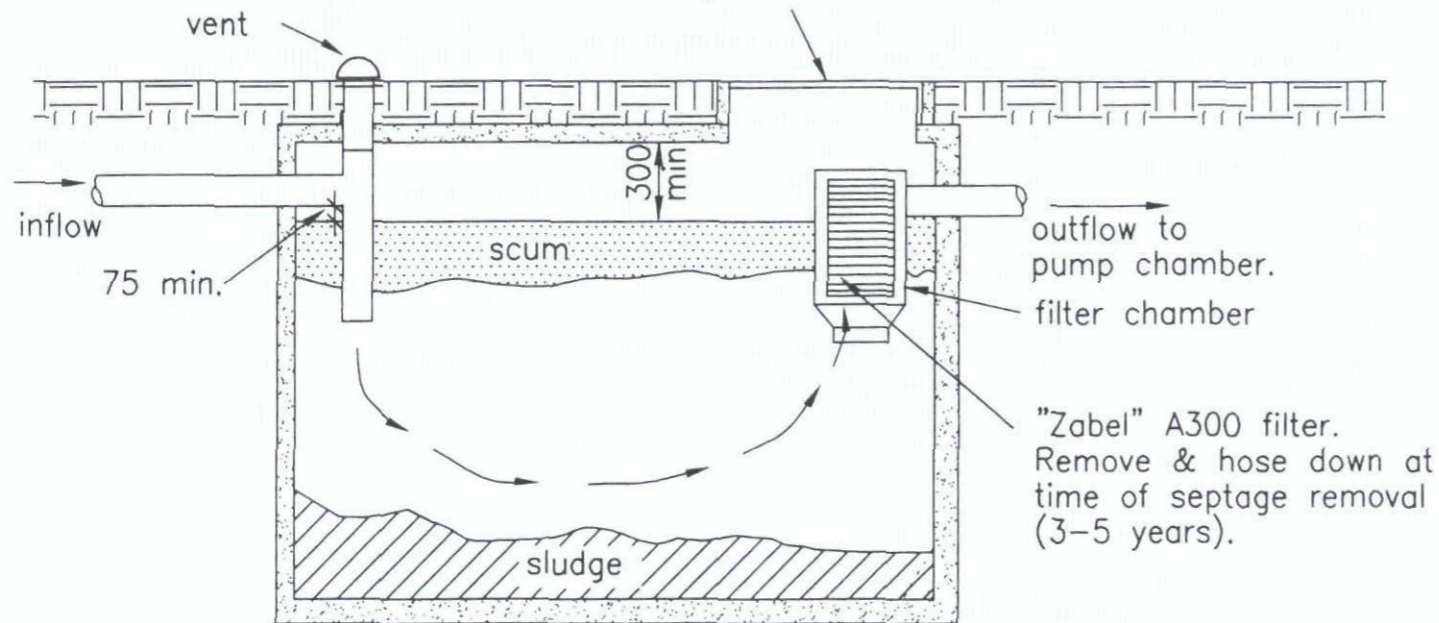
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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
DURVILLE ISLAND

site and locality plans

DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C1	A
DES LM	DRN EG	CR WW	CAD	

450 diameter min. lid to ground level.  
(600 diameter min. if opening is only  
access to tank).  
Position over filter for easy maintenance.



### typical cross section

1:25

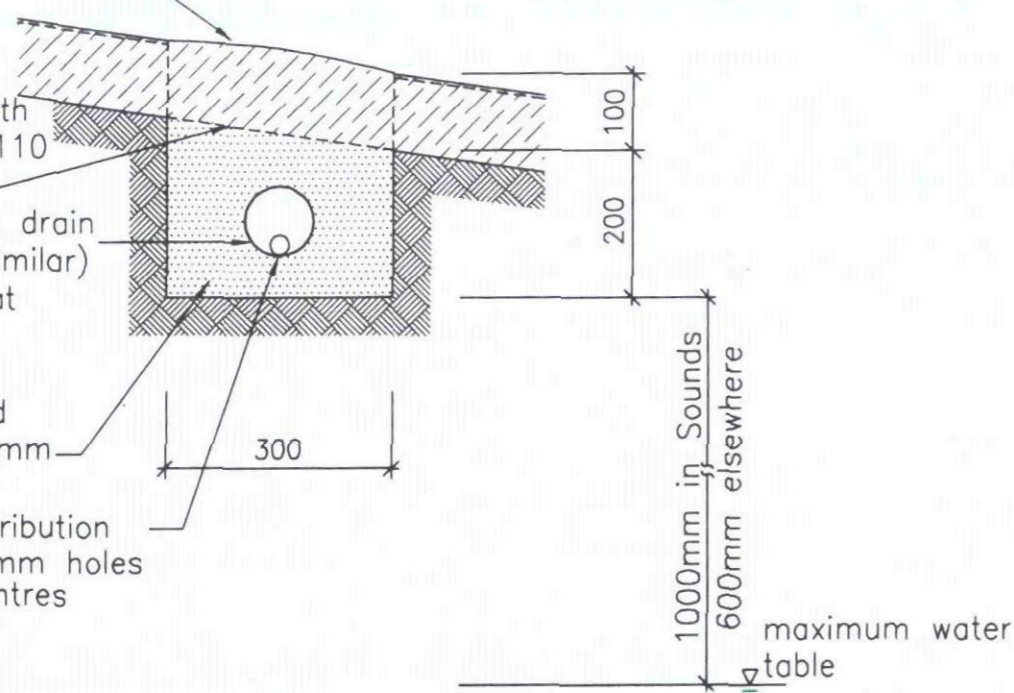
standard septic tank  
(min. 5000 litre). Refer  
NZS 4610 "Household Septic Tank  
Systems" for details.

topsoil backfill,  
slightly mounded  
and grassed

Geotextile cloth  
(eg. Geotex 110  
Twill.)  
90mm  $\phi$  min drain  
("Corflo or similar")  
to be laid flat

clean crushed  
metal 20-40mm

32mm  $\phi$  distribution  
line with 6.0mm holes  
at 1.0 m centres



### shallow disposal trench

1:10

## Suggested Operation and Maintenance Septic Tank

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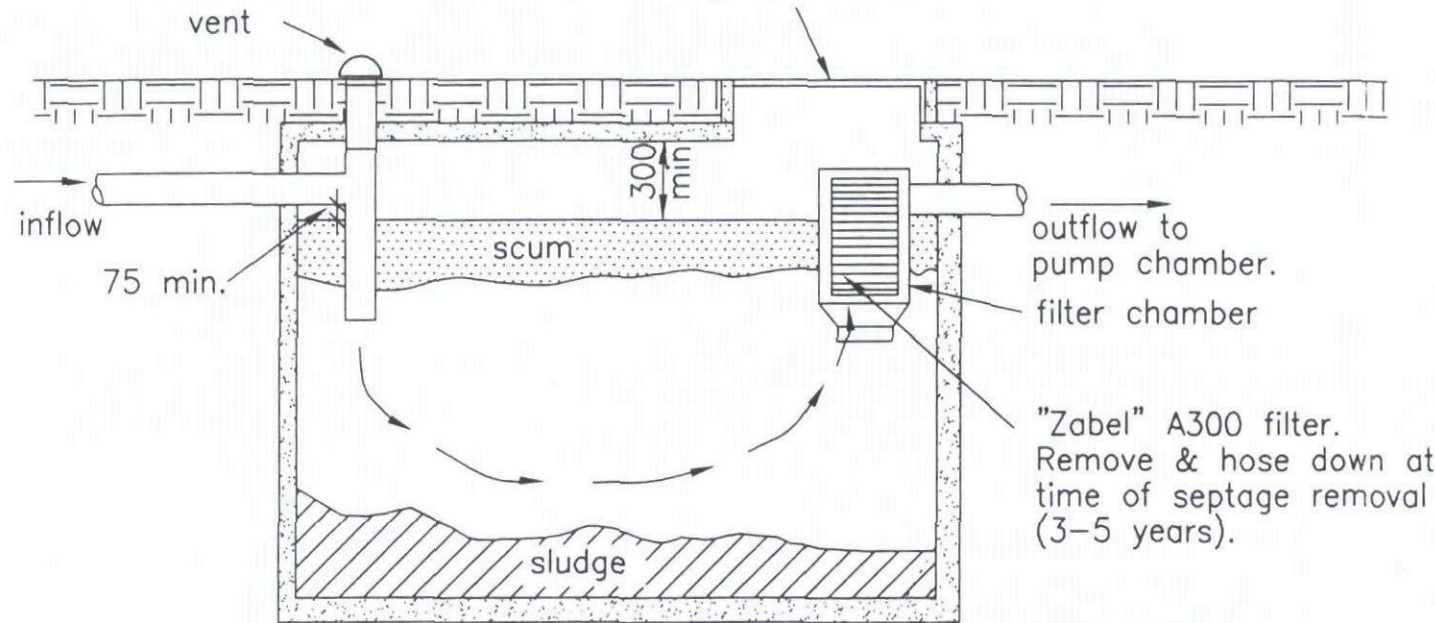
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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND

effluent disposal field  
typical septic tank details

DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C3	A
DES R.D.	DRN B.G.	CK W.M.	CAD C:\ACLTWIN\6128DWG\6128	

450 diameter min. lid to ground level.  
(600 diameter min. if opening is only  
access to tank).  
Position over filter for easy maintenance.



typical cross section

1:25

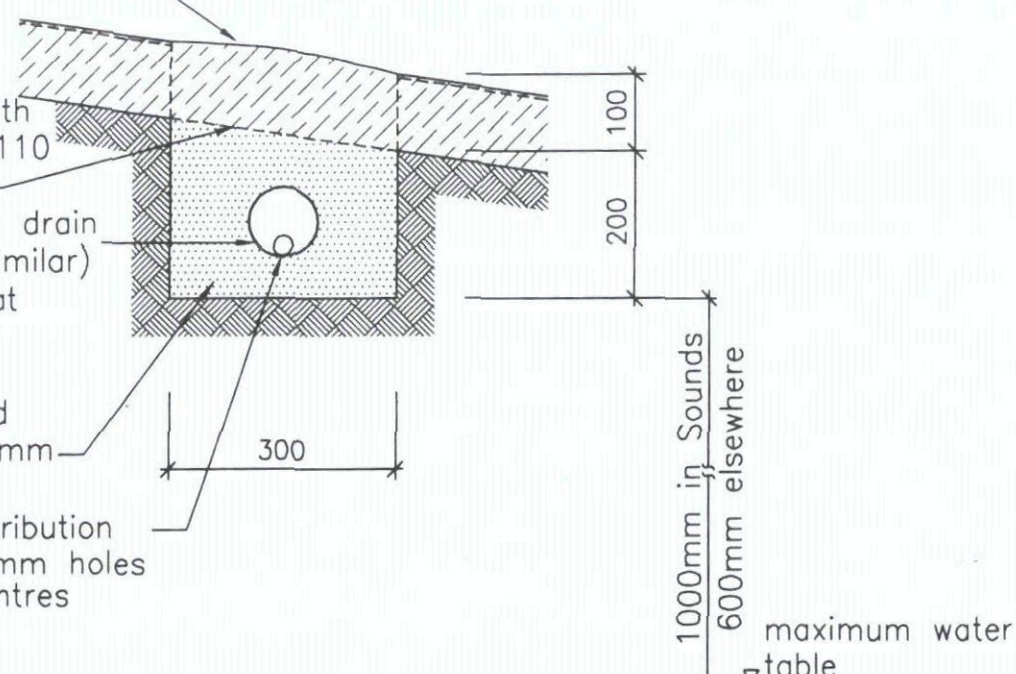
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shallow disposal trench

1:10

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Civil Engineering  
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Project Management

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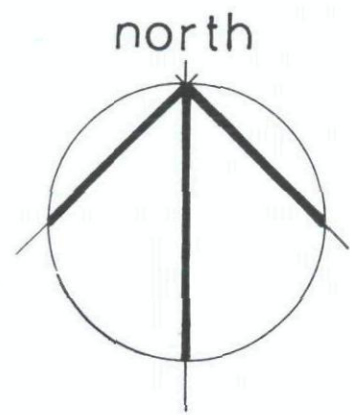
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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND

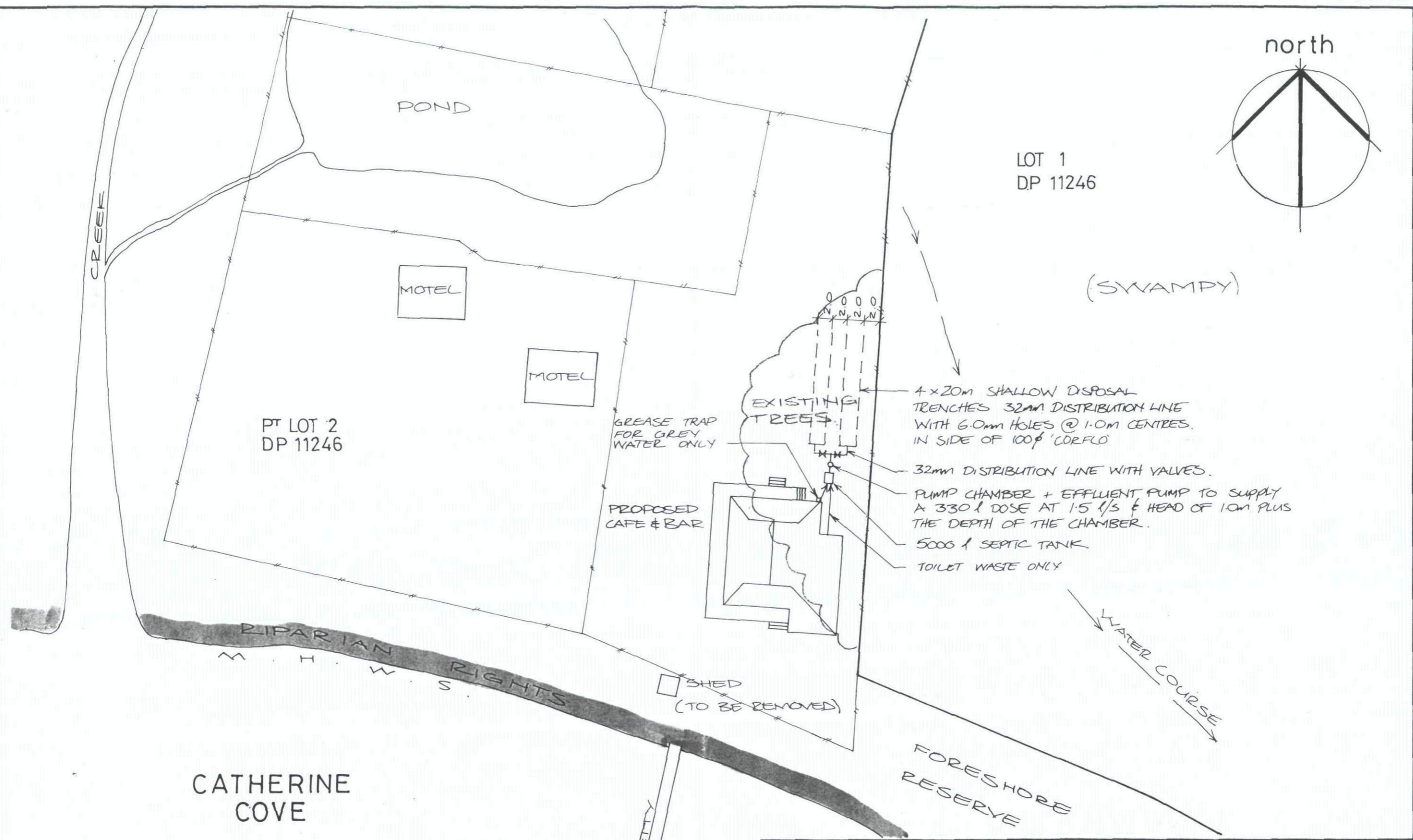
effluent disposal field  
typical septic tank details

DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C3	A
DES R.D.	DRN B.G.	CK J.W.	CAD C:\ACLTWIN\6128DWG\6128	



LOT 1  
DP 11246

(SWAMPY)



PT LOT 2  
DP 11246

CATHERINE  
COVE

plan  
1:500

RECEIVED  
18 JUN 1993  
MARLBOROUGH DISTRICT COUNCIL

**DavidsonPartnersLtd**  
Structural Engineering  
Civil Engineering  
Building Design  
Project Management

Davidson Ayson House  
4 Nelson Street, P.O. Box 256  
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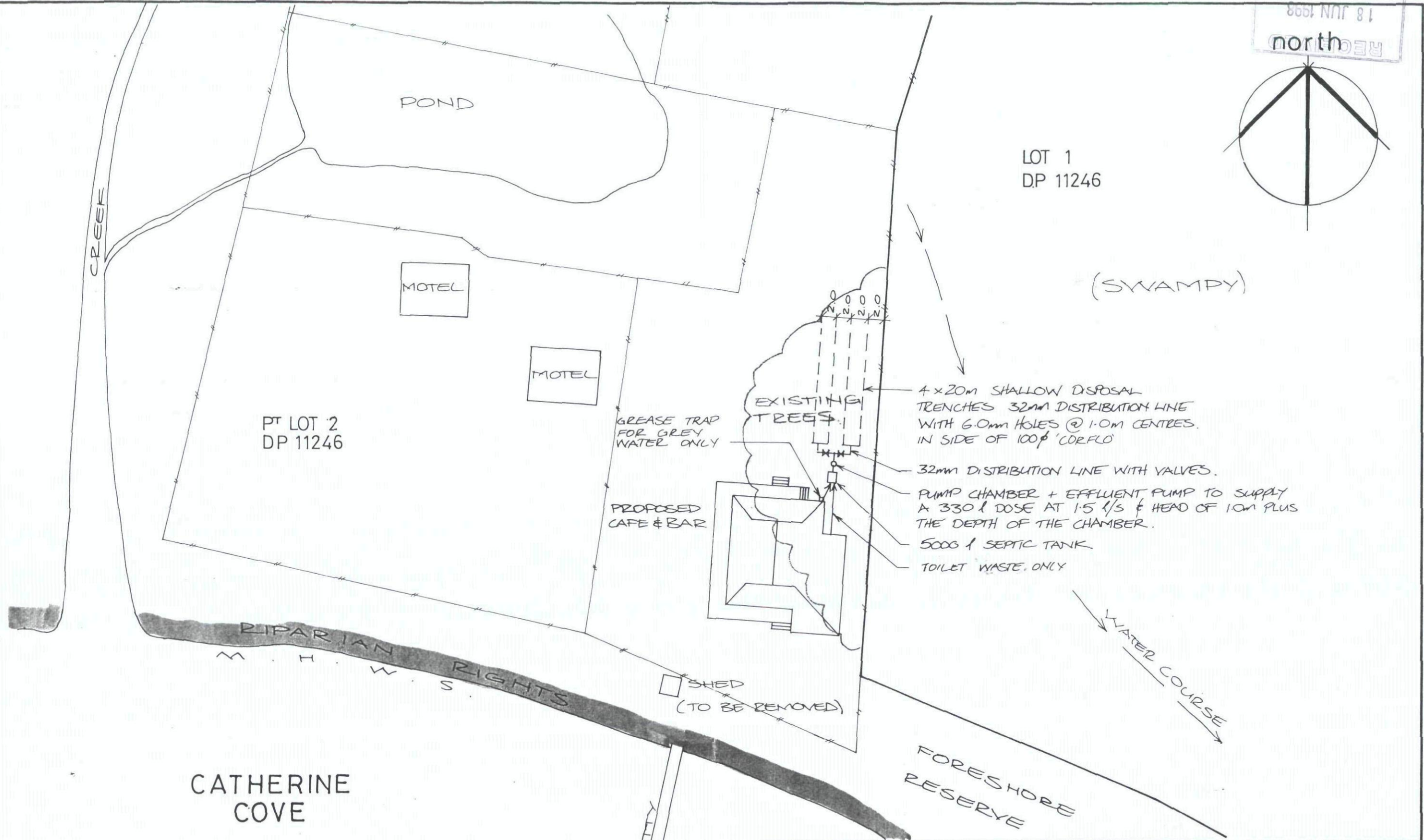
D'URVILLE Is. WILDERNESS RESORT PT LOT 2 DP 11246 D'URVILLE ISLAND				
effluent disposal plan				
DATE	SCALES	DRAWING No.	SHEET	ISSUE
6/98	1:500	6128	C 2	A
DES. LM	DRN. BG	CK. MW	CAD	

RECORDED  
18 JUN 1998  
north



LOT 1  
DP 11246

(SWAMPY)



- 4x20m SHALLOW DISPOSAL TRENCHES 32mm DISTRIBUTION LINE WITH 6.0mm HOLES @ 1.0m CENTRES. IN SIDE OF 100φ 'CORFLO'
- 32mm DISTRIBUTION LINE WITH VALVES.
- PUMP CHAMBER + EFFLUENT PUMP TO SUPPLY A 330 l DOSE AT 1.5 l/s & HEAD OF 1.0m PLUS THE DEPTH OF THE CHAMBER.
- 5000 l SEPTIC TANK
- TOILET WASTE, ONLY

PT LOT 2  
DP 11246

CATHERINE COVE

RIPARIAN RIGHTS  
M H W S

plan  
1:500

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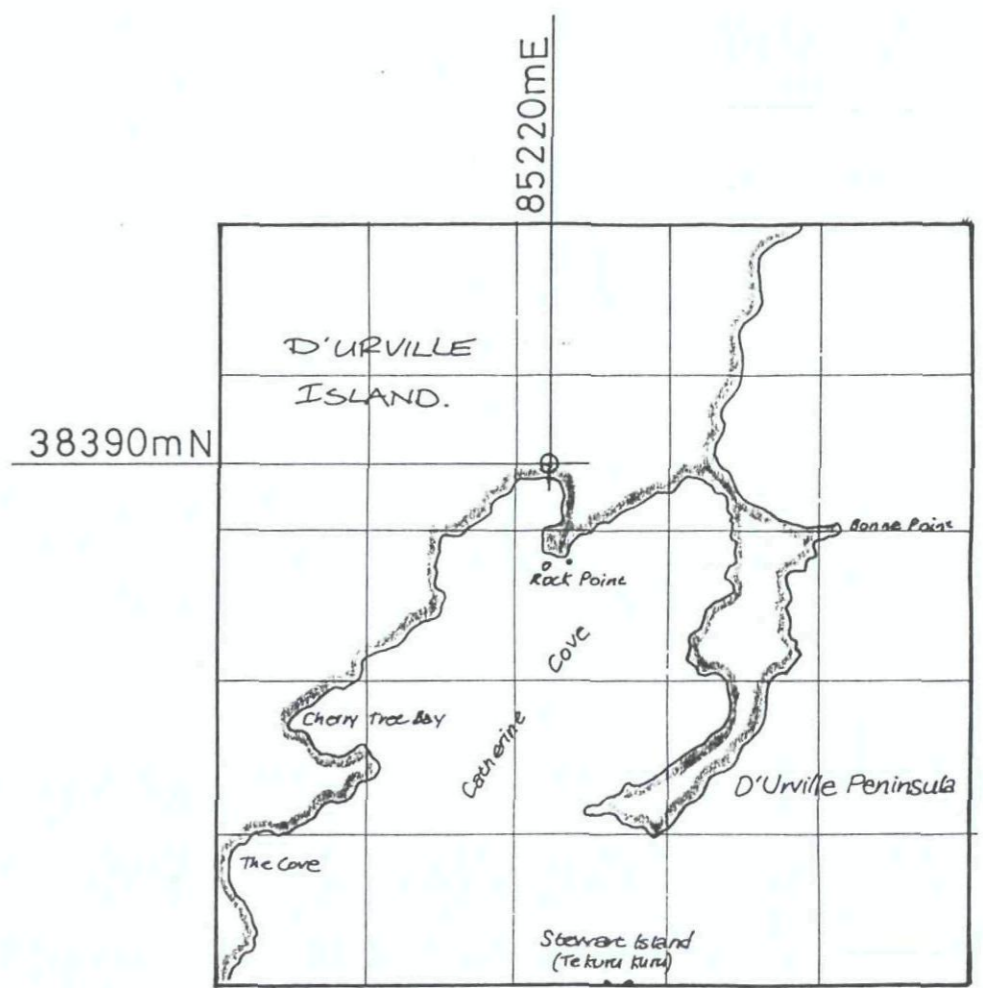
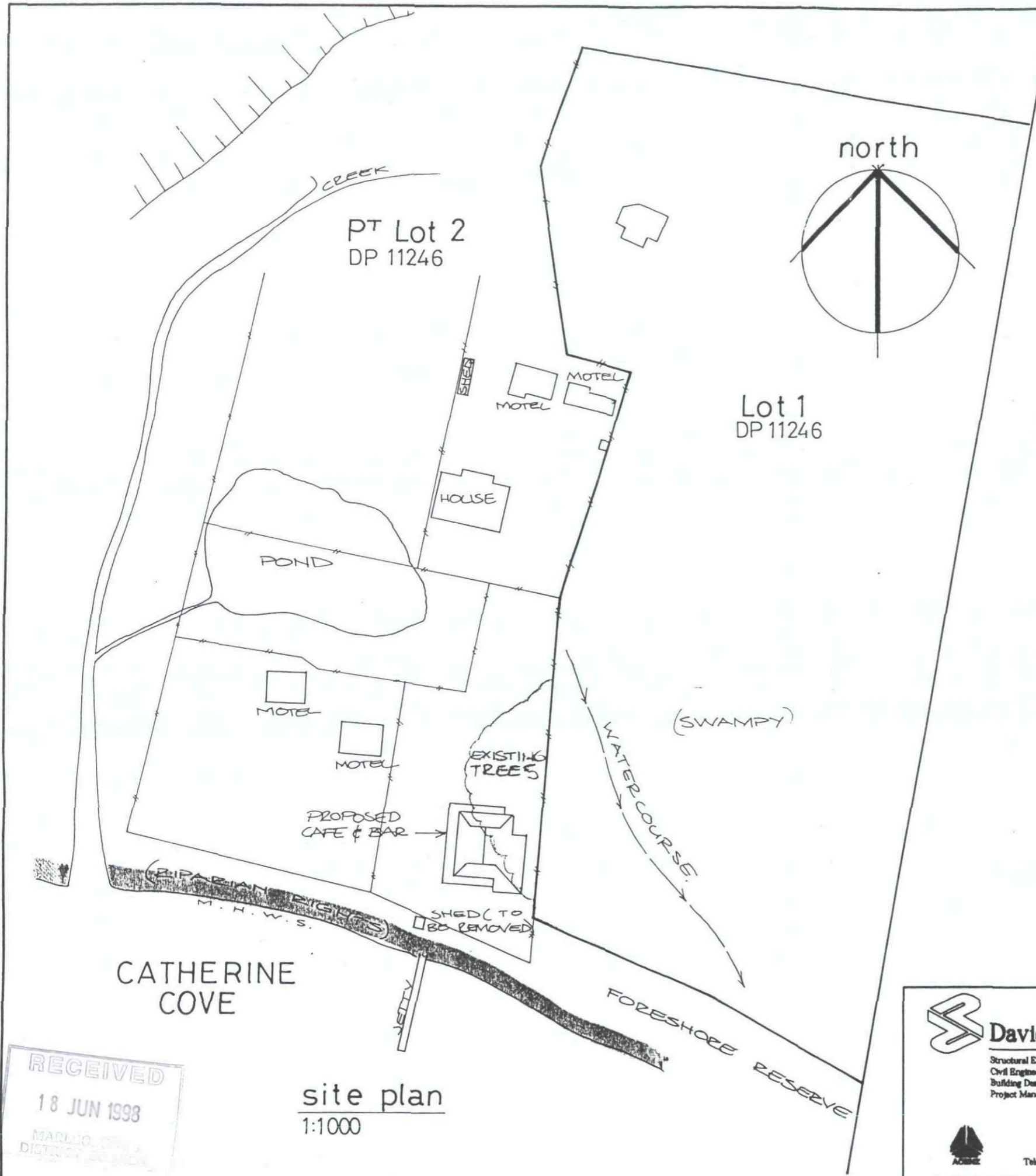
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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
D'URVILLE ISLAND


effluent disposal plan

DATE	SCALES	DRAWING No.	SHEET	ISSUE
6/98	1:500	6128	C 2	A
DES: LM	DRN: BG	CK: WJ	CAD	



locality plan NZMS 260/P26  
1:50000

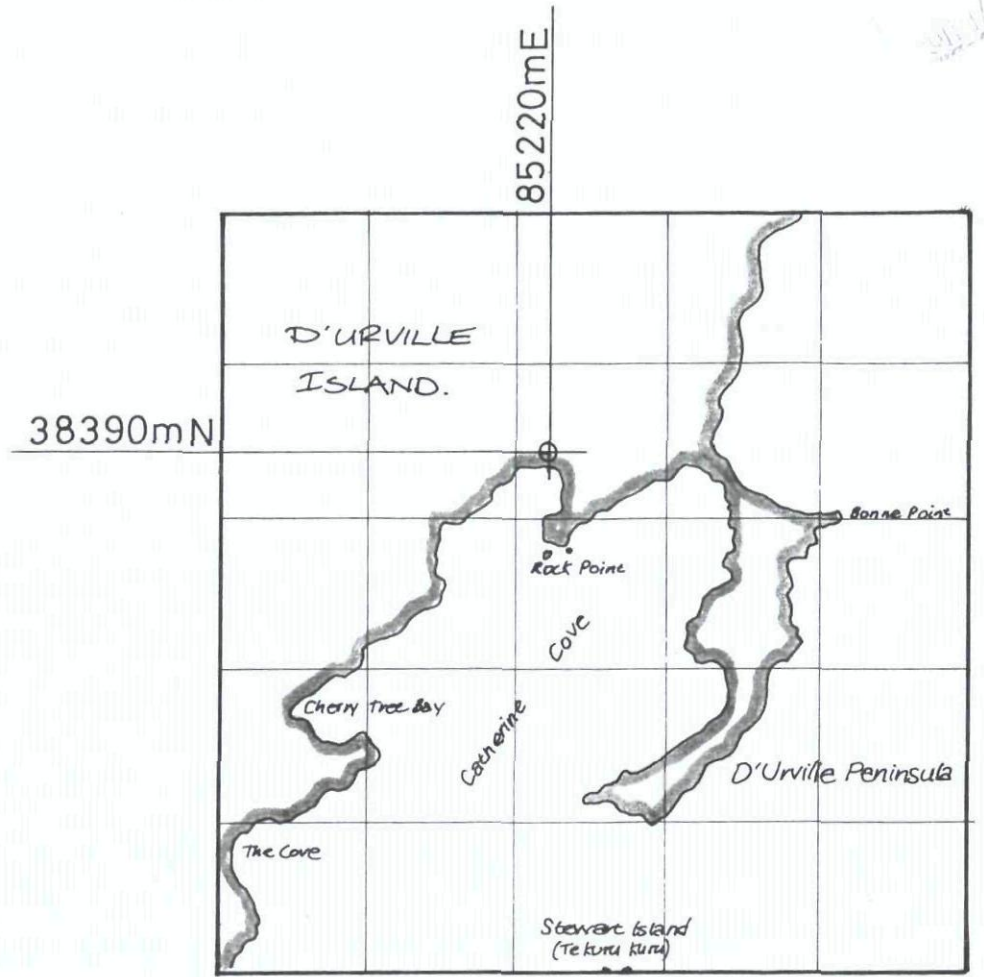
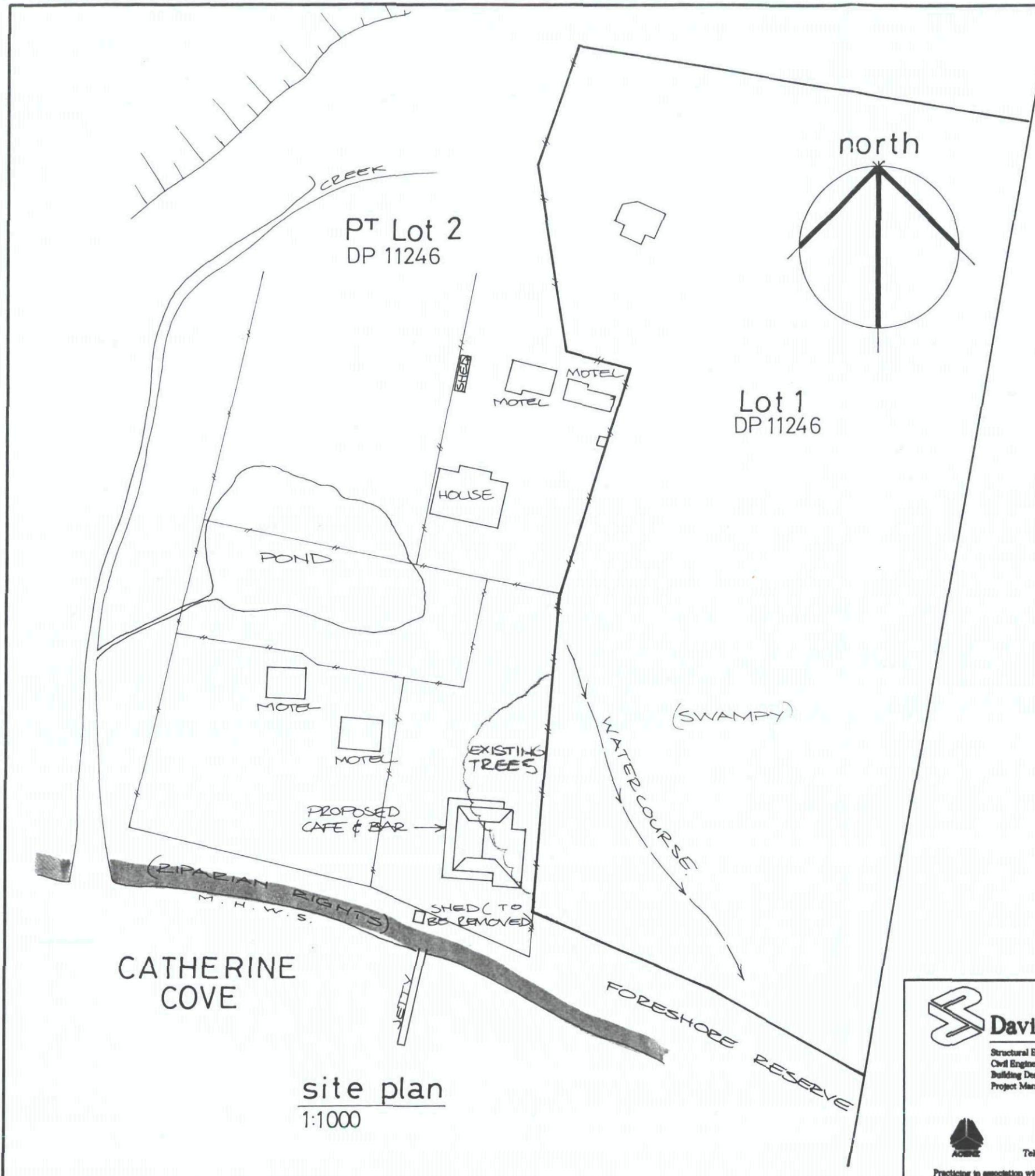
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 <b>DavidsonPartnersLtd</b> Structural Engineering Civil Engineering Building Design Project Management		<b>D'URVILLE Is. WILDERNESS RESORT</b> <b>PT LOT 2 DP 11246</b> <b>DURVILLE ISLAND</b>		
		site and locality plans		
DATE	SCALE	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C1	A
DES LM	DRN BG	CK WW	CAD	

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MARTIN DISTRICT



locality plan NZMS 260/P26  
1:50000

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D'URVILLE Is. WILDERNESS RESORT  
PT LOT 2 DP 11246  
DURVILLE ISLAND

site and locality plans

DATE	SCALES	DRAWING No.	SHEET	ISSUE
6/98	As shown	6128	C1	A
DES LM	DRY BG	OR WW	CAD	