

SANDERS, LANE & PAGE LTD

CONSULTING
CIVIL &
STRUCTURAL
ENGINEERS

282 TRAFALGAR ST
NELSON
PHONE/FAX 03 5482189
Our Ref:5648

19 October 1995

Mr Richard Holmden
28 Moncrieff Avenue
Nelson

COPY

Dear Richard

RE:SECTION AT WILLOW BAY

I inspected the section you are interested in on Tuesday 17th October and set out my observations as follows:

The general layout and attractiveness of the site is known to you.

The access track from the road is gently graded and established to slightly overgrown. Low excavated banks on the top side of the access appear stable and are generally dry. The bush has healed over any excavation scarring and every effort should be made to preserve the grown over surfaces. The general slope of the land on which the access lies is gentle and provided you do not increase erosion potential I do not think stormwater off the access is likely to be a significant problem in future.

The obvious building site is the existing clearing at the end of the access which appears to have been a camp site at least for many years. This site is well clear of the stream gully to the south and set back from the foreshore. Development of this site involves minimal loss of large trees and building on this site would mean you would gain more clearance from windthrown trees than elsewhere on the site. Foundations in the cleared area would not pose any unusual difficulties with the essentials being to get down to solid bearing and pipe roof/yard water well clear of the building platform.

I went down the foot track to the foreshore and looked at the low cliffs at the high water line. The spur or headland shows a depth of overburden above rock of some 2m or so with this being subject to erosion in storms which causes undermining and eventual loss of trees close to the clifftop. This is a fact of

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subject to erosion in storms which causes undermining and eventual loss of trees close to the cliff top. This is a fact of life and these banks will continue to erode and contribute debris to the inter tidal area - the erosion is not rapid and I would not suggest you have to provide any protection works as a priority although treated pole type retaining walls are used on more highly developed sites to control this effect. The pleasing feature of the foreshore exposure is the disposition of the underlying rock which dips back into the hill which is very reassuring compared to many sites I have seen in the Sounds where the rock lies almost parallel to the hill slope forming a slip plane. This rock disposition is evident in road cuttings above the site again suggesting good overall stability.

The gully to the south runs down from the road culvert above and is in a deep well bushed gully over its last stages of descent to the sea. The road culvert is only a 450mm pipe which I imagine could overflow and spill water across the road in major storms - generally the gully can take any amount of water but I note that a blockage in the watercourse immediately downstream of the road culvert could spill backed up water out onto the access track - not a high probability of this but it would pay to check the water course from time to time and clear any debris which could lead to blockages. The road and culvert are the best protection you could have to avoid blockages.

In major recent storms the road has slumped away in many places but typically on the seaward side of left hand [heading north] bends where fill of doubtful base and compaction slumps away when very wet. The cure is often those railway iron/timber walls you see everywhere. The bend where your stream is culverted under the road shows signs of recent metalling and sealing suggesting loss of shape due to slumping and the next bend towards Willow Bay has a railway iron retaining structure - in your case road slumping does not threaten the likely house site area.

Overall I think this is a very attractive site with the slip/flood risk much lower than many sites I have seen along this stretch of road. Development will have its share of cost which you should be aware of but I list some:

1) Power - typically you need a feed from a high tension line which will cost you several thousand dollars [roughly \$1500 for a transformer plus allow \$20/m for cabling plus trench costs - not hard to spend \$5000 all-up but get a quote from Marlborough Electric]

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2) Water - the creek is the obvious source and there is a polythene line from above the road culvert. Stream water into a supply tank is the usual solution and you either take your chances with the giardia or invest \$1000-\$2000 in filters and steriliser gear.

3) Septic Tank Effluent - Good soakage will be hard to get on your site but given the amount of bush it would not be hard to have a pumped irrigation system which provided intermittent watering to ferns/nikaus etc which thrive on the water and nutrients - you need a holding tank below your septic tank so you only pump fluids and this tank has a float operated pump.

4) MDC - you should check that the site is buildable with MDC before proceeding towards purchase and requesting a LIM or PIM [land or project Information Memorandum] from them is recommended.

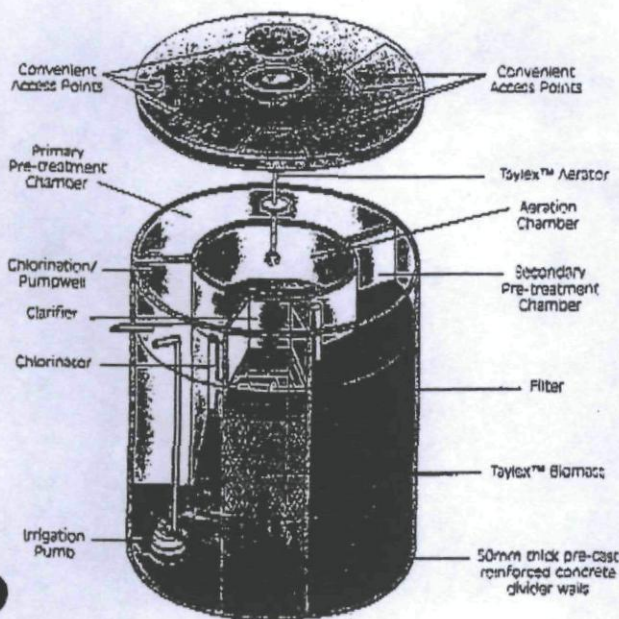
Yours faithfully

W.J.Page
Sanders Lane & Page Ltd

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How it will work for you...

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Applications

- **NEW HOMES** – it's all so simple:
 One Tank.
 One Hole.
 One Connection.
 Which means easier installation through lower costs in both plumbing and excavation – and the system is discretely hidden in your garden.

This combined with a holding capacity 30% larger than our nearest rival means the Taylex Clearwater™ 90 Compact is the most efficient, cost effective and easily maintained sewage treatment plant available.

- **EXISTING HOMES** – it couldn't be simpler to convert your existing septic system to a strong, safe and reliable Taylex Clearwater™ 90 Compact system. No more grease traps, odours or unwanted sludge either. Just Clearwater for your garden.
- **COMMERCIAL BUILDINGS** – whether it's for Caravan Parks, Service Stations, Holiday Resorts, Hotels, Motels or whatever, there is a Taylex Clearwater™ Commercial System that is right for you. They have the largest capacity and will be designed to suit your needs. Their strong, all concrete construction will cater for the most demanding situations safely, reliably, efficiently and cost effectively.

Specifications

Primary Pre-treatment Chamber	2,033 Lt
Secondary Pre-treatment Chamber	1,017 Lt
Aeration Chamber	2,500 Lt
Clarifier	800 Lt
Chlorination/Pumpwell	750 Lt
TOTAL Operating Capacity	7,100 Lt
TOTAL Holding Capacity	9,320 Lt
Control Panel	
Solid State Circuitry – Fully Programmable.	
Includes alarm Isolator and overload protection	
Aerator	
125 Watts	
Tank Construction	
All Concrete	
Tank Dimensions	
Height	2300mm
Inlet invert	1830mm
Diameter	2450mm
Weight	6 tonnes

Consistent with our policy of product improvement, we reserve the right to alter specifications without notice.

WARRANTY

10 year warranty on pre-cast concrete tanks.
 24 months full warranty on mechanical and electrical components. Electronic circuitry issued with letter of acceptance from Electrical Supply Authority.

FIELD SERVICE REPORT

Professional on-site field servicing and maintenance together with the latest in testing equipment ensures a consistent standard of reclaimed water being discharged from your system.

RENEWABLE SERVICE CONTRACTS

These are available from and carried out by licensed, factory-trained local distributors. They are located in your area and have a reputation for reliable, speedy service.

About Taylex™

Taylex™ has been manufacturing quality Sewage Treatment Plants for over 20 years. All of our tanks are of full concrete construction and all components have been specifically designed for optimum performance to provide you with years of trouble free service and a solution to your waste water needs.

Authorised user of Quality Assurance Certification AS1546 Licence No. 1537
 Taylex Queensland Pty Ltd A.C.N. 054 304 817.

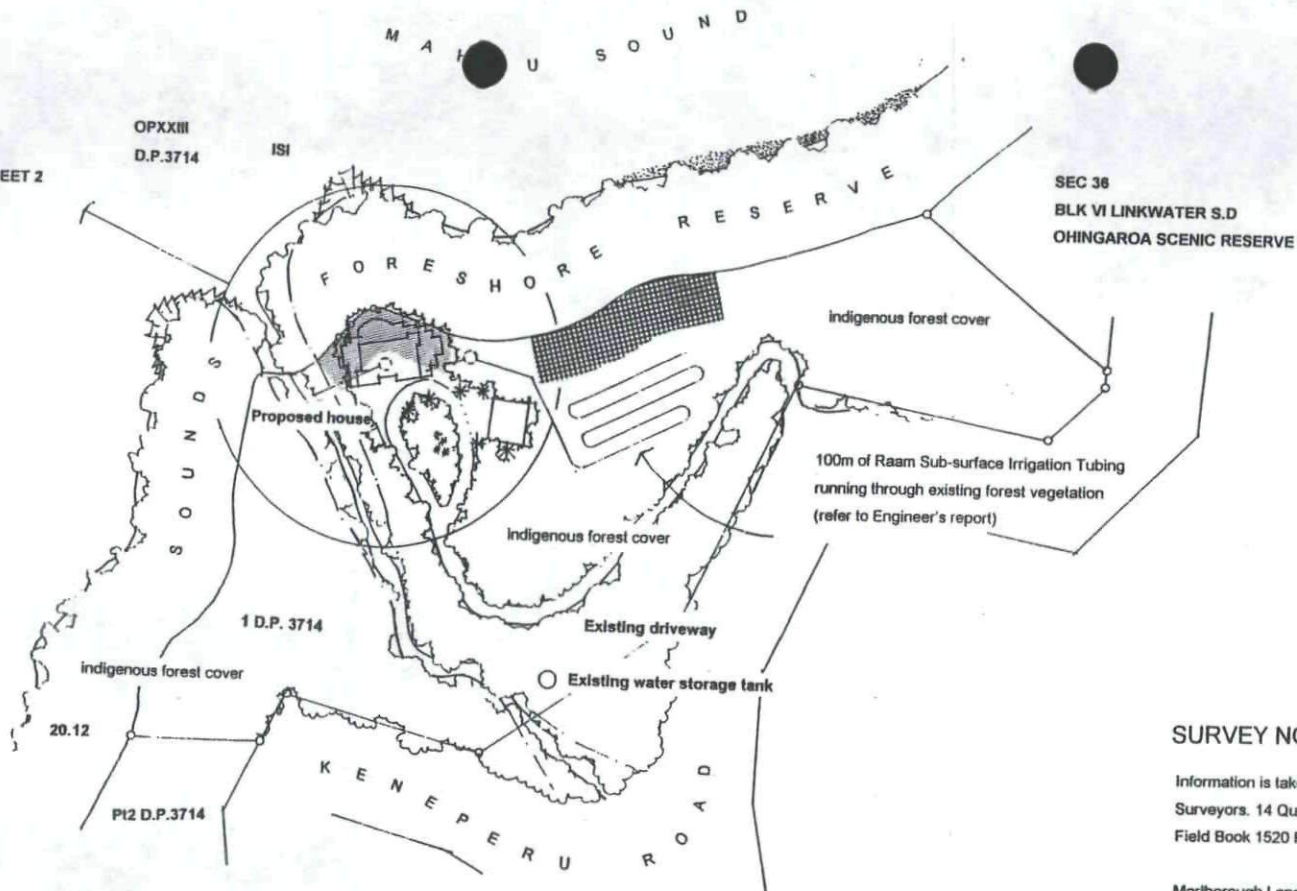
AUTHORISED DISTRIBUTOR:

OASIS CLEARWATER SYSTEMS LTD
ENVIRONMENTAL ENGINEERS
 Clearwater Sewage Treatment Systems
PUMPING & IRRIGATION ENGINEERS
 P.O. Box 8268, Riccarton Ph. (03) 364-8080



QUEENSLAND Taylex Queensland Pty Ltd A.C.N. 054 304 817
 14 Activity Crescent Ernest Queensland 4214
 Telephone: (07) 5571 3122 Facsimile: (07) 5571 5133
 VICTORIA Taylex Sales Pty Ltd A.C.N. 005 020 333
 Lot 3 Highlands Road Seymour Victoria 3660
 PO Box 595 Seymour Victoria 3661
 Telephone: (03) 5799 0650 Facsimile: (03) 5799 0651

SEE DETAIL - SHEET 2






SURVEY NOTES

Information is taken from plan prepared by Gilbert, Haynes & Associates, Registered Surveyors, 14 Queen Street - Blenheim.
 Field Book 1520 PG15, March 1997

Marlborough Land District
 Marlborough District Council

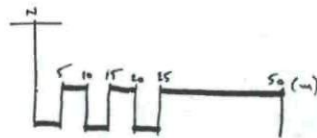
LEGEND

-  8M YARD
-  COMBINED BUFFER OF 30M FROM COASTAL WATER
-  NIKAU PALMS AND VEGETATION NOT TO BE DAMAGED

SITE PLAN

R. HOLMDEN, KENEPERU ROAD, MAHAU SOUND
 APPLICATION FOR RESOURCE CONSENT

SCALE: 1:750
 DATE: 23 NOVEMBER 1998
 DRAWN: T.C

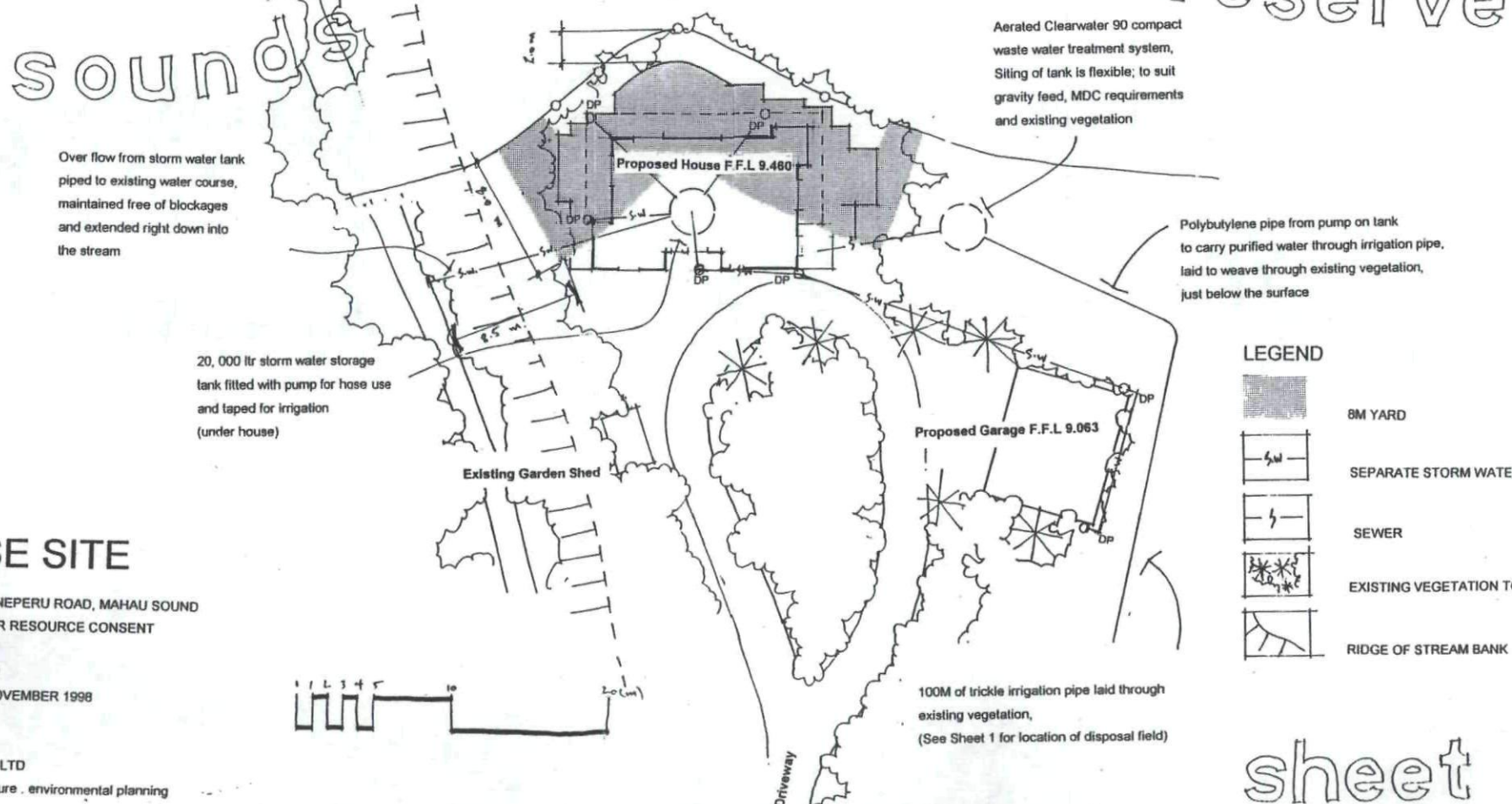


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sheet



Mahaui Sound foreshore reserve



Over flow from storm water tank piped to existing water course, maintained free of blockages and extended right down into the stream

Aerated Clearwater 90 compact waste water treatment system, Siting of tank is flexible; to suit gravity feed, MDC requirements and existing vegetation






Polybutylene pipe from pump on tank to carry purified water through irrigation pipe, laid to weave through existing vegetation, just below the surface

20,000 ltr storm water storage tank fitted with pump for hose use and taped for irrigation (under house)

Proposed Garage F.F.L 9.063

Existing Garden Shed

LEGEND

-  8M YARD
-  SEPARATE STORM WATER
-  SEWER
-  EXISTING VEGETATION TO BE KEPT
-  RIDGE OF STREAM BANK

100M of trickle irrigation pipe laid through existing vegetation, (See Sheet 1 for location of disposal field)

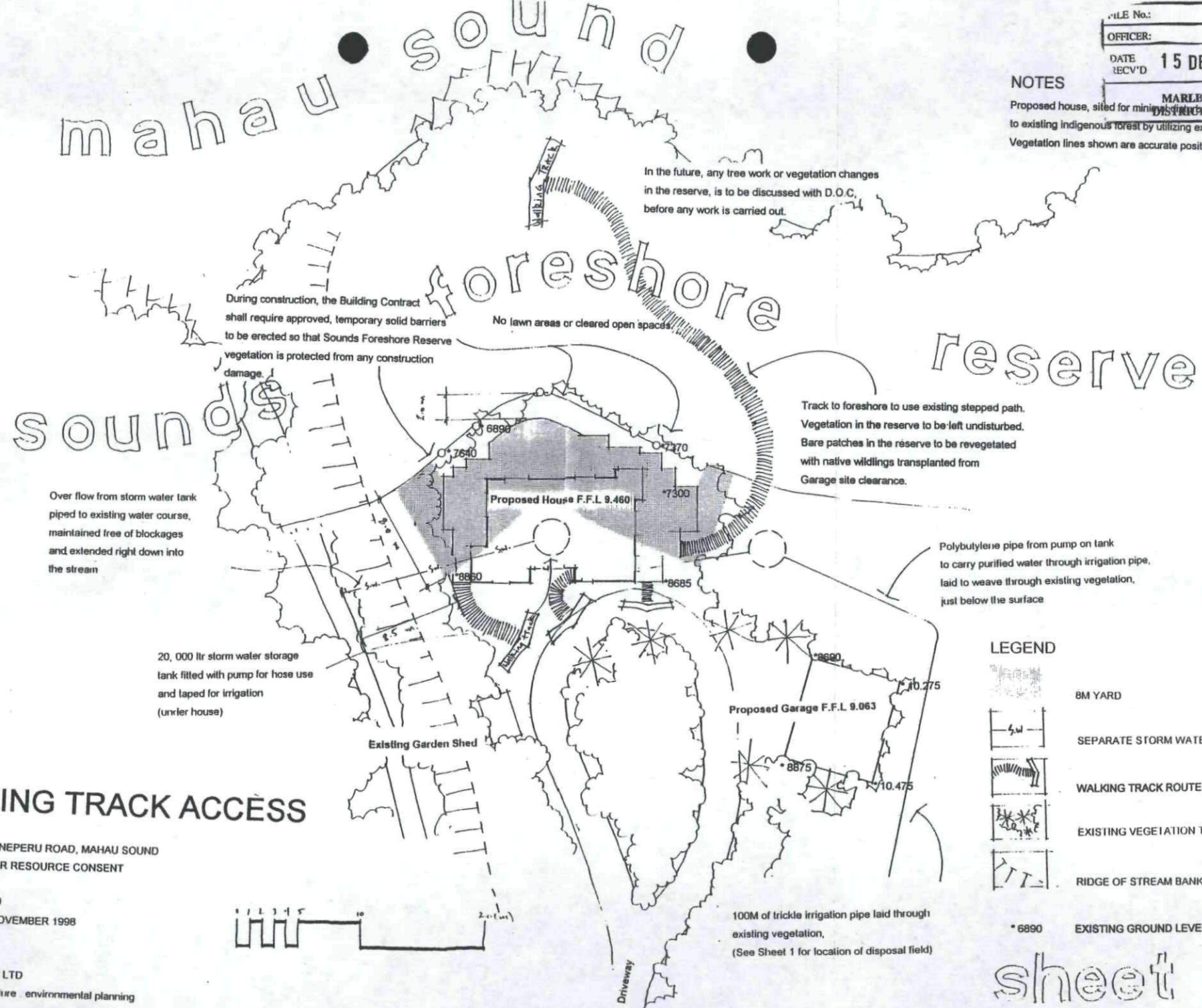
HOUSE SITE

R. HOLMDEN, KENERU ROAD, MAHAUI SOUND
 APPLICATION FOR RESOURCE CONSENT

SCALE: 1:200
 DATE: 23 NOVEMBER 1998
 DRAWN: T.C

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NOTES
 Proposed house, sited for minimum disturbance to existing indigenous forest by utilizing existing cleared site. Vegetation lines shown are accurate position of forest edge.



In the future, any tree work or vegetation changes in the reserve, is to be discussed with D.O.C, before any work is carried out.

During construction, the Building Contract shall require approved, temporary solid barriers to be erected so that Sounds Foreshore Reserve vegetation is protected from any construction damage.

No lawn areas or cleared open spaces.

Track to foreshore to use existing stepped path. Vegetation in the reserve to be left undisturbed. Bare patches in the reserve to be revegetated with native wildlings transplanted from Garage site clearance.

Over flow from storm water tank piped to existing water course, maintained free of blockages and extended right down into the stream

Polybutylene pipe from pump on tank to carry purified water through irrigation pipe, laid to weave through existing vegetation, just below the surface

20,000 ltr storm water storage tank fitted with pump for hose use and taped for irrigation (under house)

Proposed Garage F.F.L 9.063

WALKING TRACK ACCESS

R. HOLMDEN, KENERPERU ROAD, MAHAU SOUND
 APPLICATION FOR RESOURCE CONSENT

SCALE: 1:200
 DATE: 23 NOVEMBER 1998
 DRAWN: T.C

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- LEGEND
- BM YARD
 - SEPARATE STORM WATER
 - WALKING TRACK ROUTES
 - EXISTING VEGETATION TO BE KEPT
 - RIDGE OF STREAM BANK
 - * 6890 EXISTING GROUND LEVELS

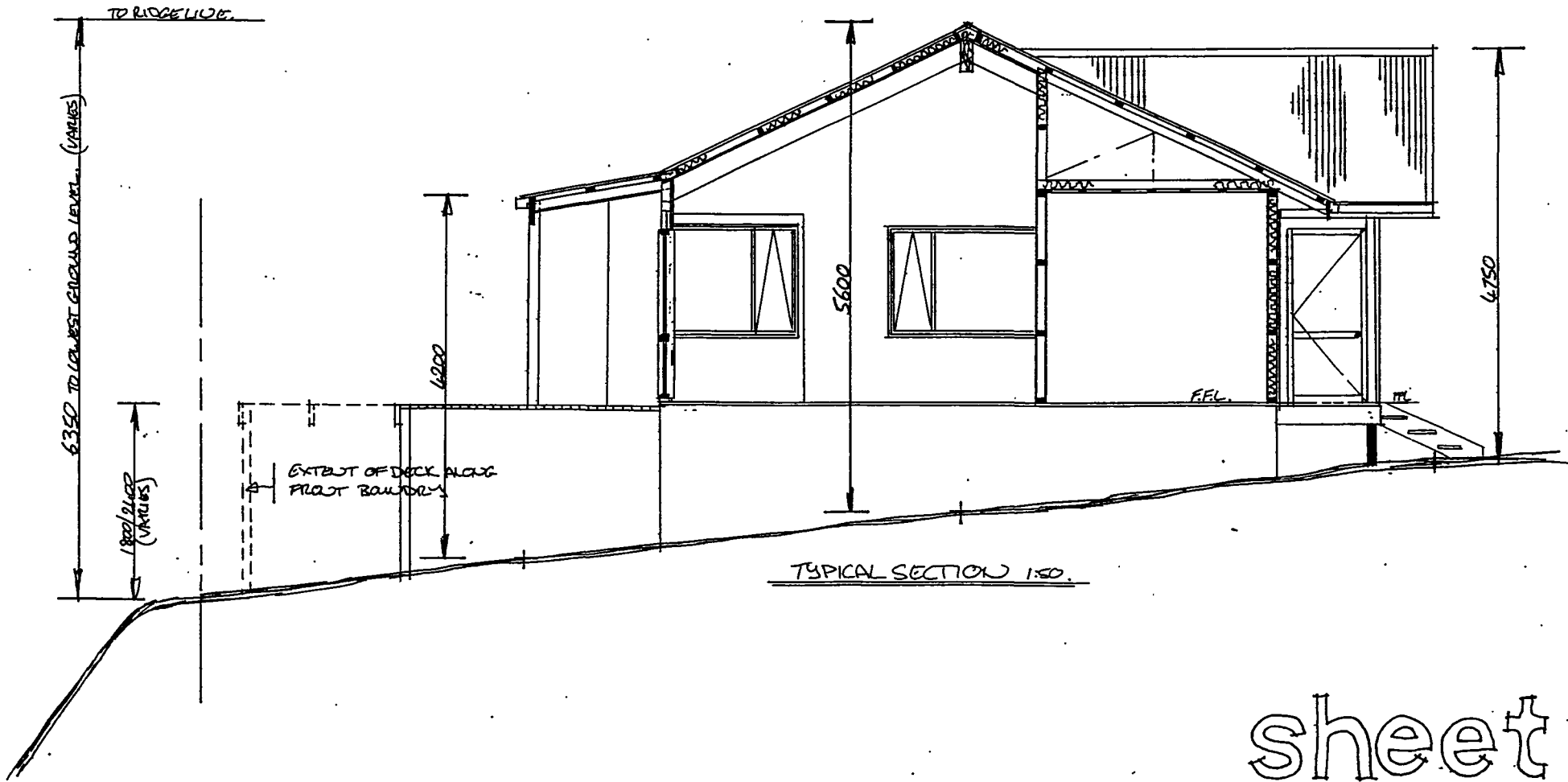


TRUBET HOLDINGS LTD
75 Gladstone Road, P.O. Box 3231
Richmond, Nelson
Ph (03) 544 5669 Fax (03) 544 4750

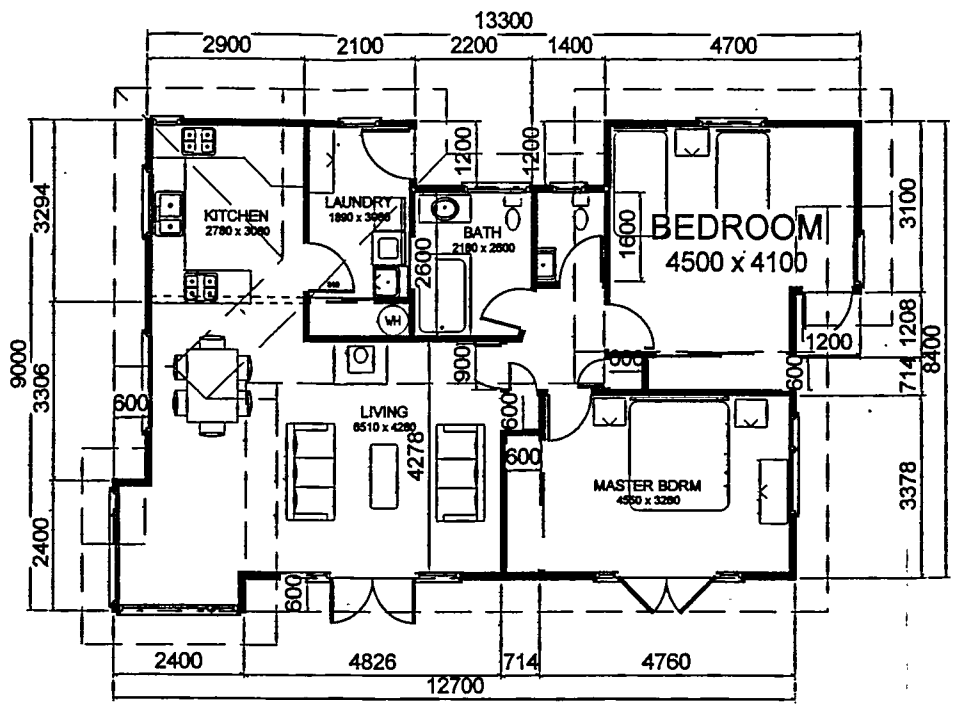
HOLMEN HOUSE
MAHAU SOUND

OCT 98
SCALE 1:50

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LIVING AREA
 104.57 sq m

sheet

