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GEOTECHNICAL REPORT ON RESIDENTIAL DEVELOPMENT OF HILL AREAS ON LOT 1 AND 2, BEING PROPOSED SUBDIVISION OF LOT 15 DP 3675, WITHER ROAD EXTENSION, BLENHEIM

Prepared for:

Poswillo Family Trust and Ayson & Partners Ltd

Date: March 2002

Reference: 1351

Prepared by: Dr Mark Yetton, Geotech Consulting Ltd

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GEOLOGICAL & ENGINEERING SERVICES

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EXECUTIVE SUMMARY

We have carried out a geotechnical assessment of Lot 1 and 2 of the proposed subdivision of Lot 15, DP 3675, Wither Road Extension, Blenheim.
The proposal is to subdivide the east side of a moderately sloping north trending spur of the lower Wither Hills into 2 new large lots averaging around 4000 m^2.

Examination of natural exposures and our experience of adjacent sites in the general area have provided data on the geology and subsoils. Based on our work we conclude that suitable stable house sites exist on both of the new lots. We have also provided general recommendations with respect to foundation systems, access, stormwater interception, sewerage disposal and subsequent section development.

If our various recommendations are followed (in conjunction with the necessary site specific engineering at the building consent stage) then **in our opinion the house sites on these lots are unlikely to be subject to the active processes defined in the Resource Management and Building Acts such as erosion, avulsion, alluvion, falling debris, subsidence, inundation or slippage. Furthermore the proposed development is unlikely to accelerate, worsen or generate these processes.**

1. INTRODUCTION

We have been commissioned by Ayson Partners Ltd, on behalf of the Poswillo Family Trust, to undertake a geotechnical assessment of the building sites on the hill areas of this proposed subdivision to ensure that residential development of the land is feasible.

The subdivision is located at the south side of the Wairau Valley, off Wither Road Extension (GR P28/911627) and it is approximately 3km from the centre of Blenheim. The two sections in this proposed subdivision form part of the hill toe slopes of the Wither Hills.

This assessment has the following objectives:

- To investigate and confirm the geotechnical suitability of at least one house site within each of Lots 1 &2, being proposed subdivision of Lot 15 DP 3675.

- To comment on appropriate foundation methods, stormwater disposal, service trench back-filling, and access requirements for the subdivision.

- To provide future owners with guidelines about the development of sections with loess rich soils.

We have:

- Undertaken detailed site walkovers and site engineering geological mapping
- Examined relevant aerial photographs to check of possible signs of instability (landslides) and other mass movement processes.
- Constructed cross-sections to determine slope angles and appropriate set back distances from areas of potential future erosion

- Reviewed a programme of laboratory testing that we have previously undertaken on land with the same geology immediately adjacent to the Poswillo Family Trust property. This laboratory work was undertaken to determine the erodibility of the loess soils in this area and the most appropriate method of chemical stabilisation.

2. GEOMORPHOLOGY AND GEOLOGICAL SETTING

The proposed new lots are located on the east and central area of a north projecting spur end on the lower toe slopes of the Wither Hills. They are elevated up to 60m above the general level of the Wairau River valley. We attach Plan 9608/2A by Ayson Partners Ltd of the site.

All the sloping ground has a northern and eastern aspect that makes it relatively sunny and dry. Slope angles are moderate, and average around 20 degrees with a range from 5 to 25 degrees.

These hill slopes are relatively old in comparison to the Wairau Valley and have been in existence for at least the last 15,000 years. The area has a low annual rainfall and high sunshine hours that combine to produce frequently dry soil conditions. This dry climate, in conjunction recent grazing land-use, has resulted in a limited vegetation cover of short grass.

Natural exposures and our previous knowledge of the adjacent land have helped to determine the geology of the site. The surficial geology is relatively simple. Organic topsoil overlies a thin cover of a mixture of loess soil and gravel. The loess material consists of yellow brown clayey silt (with some minor sand). While some of this may have accumulated in-situ in some parts of the site as windblown silt, most of it appears to have washed down from higher areas of slope and been mixed with rounded river gravel clasts derived from the deeper soils. This mixture can be classified as loess - gravel colluvium.
The loess - gravel colluvium thickness is likely to vary from 500 mm to 1200mm Below the loess is a sandy silty gravel which is generally coarser. This is very old river gravel that is now substantially elevated above the modern Wairau River, the ancestor of which probably once deposited it.

This gravel accumulated on river floodplains that were also receiving a lot of windblown silt and fine sand (loess) and more limited water transported coarse

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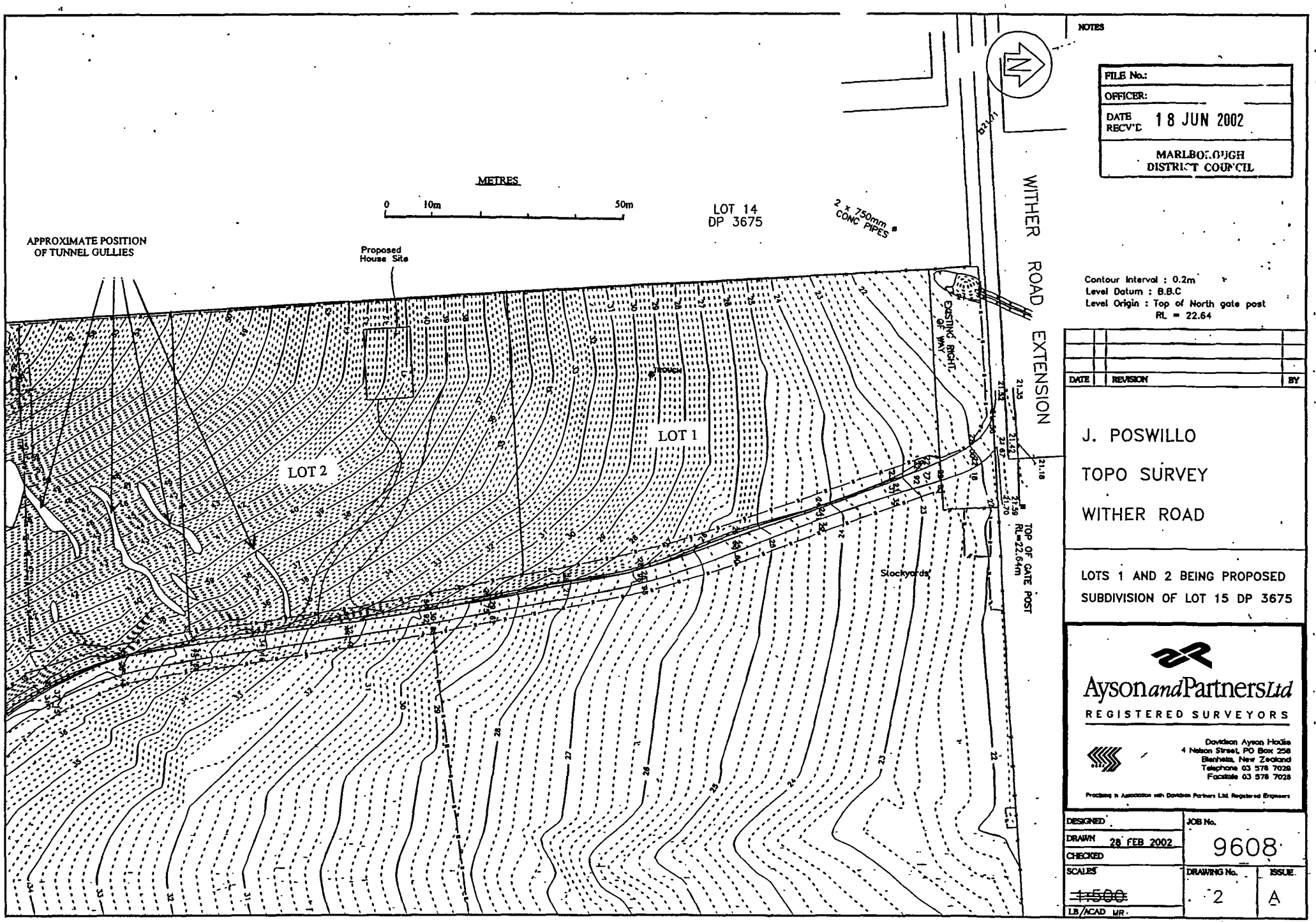


NOTES

FILE No.:	
OFFICER:	
DATE RECV'D	18 JUN 2002
MARLBOROUGH DISTRICT COUNCIL	

Contour Interval : 0.2m
Level Datum : B.B.C
Level Origin : Top of North gate post
RL = 22.64

DATE	REVISION	BY

J. POSWILLO

TOPO SURVEY

WITHER ROAD

LOTS 1 AND 2 BEING PROPOSED SUBDIVISION OF LOT 15 DP 3675

Ayson and Partners Ltd
REGISTERED SURVEYORS
Dowdson Ayson Hodge
4 Nelson Street, PO Box 258
Blenheim, New Zealand
Telephone 03 578 7029
Facsimile 03 578 7028
Practising in Association with Dowdson Partners Ltd Registered Engineers

DESIGNED	JOB No.	
DRAWN 28 FEB 2002	9608	
CHECKED		
SCALES 1:500	DRAWING No. 2	ISSUE A
LB/ACAD MR		

MR Pll 9500*.512

sand. The resulting mixture is silt rich gravel in which the gravel clasts are sometimes entirely surrounded by silt (matrix supported), but more often the silt and sand fills the interstices. These deeper gravels are Late Miocene and Early Pliocene in age and accumulated approximately 5 – 10 million years ago.

3. ACTIVE NATURAL PROCESSES

Active natural processes do not significantly affect the site. There are no known active faults through the site, and although the earthquake shaking from rupture on active faults in general area may affect the lots, they are no more at risk from this than other locations in the Blenhiem area.

The lots are sufficiently elevated to have no significant flood risk from streams and rivers in the general area. The only processes potentially relevant to this site are mass movement (landslides) and erosion and we consider each separately below:

Mass Movement

There is no geomorphic evidence of past landslides having affected these two lots. In our opinion future mass movement is unlikely provided correct current building practice is adopted and the recommendations outlined in this report are followed.

Erosion

One of the characteristics of loess rich soils is a tendency to erode easily. This is understandable in view of the fine grain size and in this respect loess is typical of any silt. However there are also certain physio - chemical processes associated with the clay minerals present in loess (e.g. dispersion) which can aggravate this tendency. Parts of the Wither Hills have been known for their extensive erosion since the 1940's when the first research was undertaken to try to understand and minimise this (Gibb, 1945).

In particular the Wither Hill soils along SH1 appear to be the most erodible and show extensive subsurface tunnel erosion. This develops as runoff enters

cracks in the topsoil and upper soil horizons, which then become enlarged to small tunnels in the deeper more erodible soil materials.

These tunnels may exist without any surface expression for many years but frequently with time the overlying topsoil starts to sag, forming a shallow gully around 1m deep and 2 -3m wide. This "sag gully" will frequently develop local collapses of the upper soil layers down into the underlying tunnel, thereby concentrating more runoff in the tunnel, and with time a deep open gully (a "tunnel gully") can result.

Tunnel erosion can lead to local ground subsidence affecting any structure or service that relies on the tunnelled area for support. For example a house could suffer local damage to a corner of the foundation, or an area of road surface collapse. Services that are buried in trenches, such as water or sewer, are vulnerable to tunnel erosion, either from natural tunnels intercepted by the trench, or through infiltration of surface water and erosion of the backfill.

However, generally tunnel erosion damage is a small-scale local hazard and the consequences are not as serious for structures as the consequences of landslides, flood, or inundation. In some ways it is better described as a potential nuisance as opposed to a significant natural hazard.

The tunnel erosion at Wither Hills was described as early as 1945 by Gibb (1945), and later in greater detail by Laffan & Cutler (1977). Many of the ideas developed by these early investigations of the Wither Hill erosion were later used on Banks Peninsula in controlling tunnel erosion (Yetton, 1986; Yetton, 1990).

The hill slopes in these two lots have only a small area at the south end of Lot 2 that is significantly affected by tunnel erosion, and this area is not severely affected.

Potential erosion problems in Lot 2 can be mitigated by:

- Building in the general location indicated as suitable on the site plan.
- Adopting the foundation style outlined in the next section
- Controlling surface water
- Protecting exposed soil surfaces with topsoil, mulch and planting.
- Utilising cement or lime stabilising agents where natural soils are being reused as trench backfill or fill. Based on the laboratory testing of soils adjacent to this site we recommend that cement be added to the soils used in service trenches etc this is discussed in more detail in section 5 below.
- As much as possible encouraging the new growth of shrubs and trees which tend to regulate the soil moisture extremes and bind the soil.

4. HOUSE SITING AND HOUSE FOUNDATIONS

House siting

Lot 1

In our opinion it is possible to site a house anywhere in Lot 1. While a registered engineer will still be required to design the foundations, retaining walls and access there is no need for further specialist geotechnical input. It is particularly important that all foundations are inspected prior to placing steel or pouring concrete to check for adequate bearing capacity and possible erosion tunnels that have no current surface expression.

Lot 2

In the site plan we show a recommended building area on Lot 2.
If an owner wishes to build outside of the area recommended, then this still may be feasible, however there may be additional construction expense. The involvement of a specialist geotechnical engineer or engineering geologist is recommended at the building consent design stage.

Foundations – general comments for both lots

We strongly recommend that masonry foundation systems be adopted that are constructed on a cut bench and employing a concrete slab and integral rear retaining wall. This system offers the following advantages in this site setting:

- Positive interception of any tunnels or voids which may exist hidden within the shallow subsoils

- It provides the ability to inspect the foundation subsoils prior to pouring the concrete slab to ensure the materials are strong and as expected

- This type of foundation efficiently transfers of most of the house foundation loads to the relatively strong deeper gravels.

The fill excavated from the house site should not simply be pushed out in front of the house area. If filling is required somewhere on the site then the area to be filled must be stripped of topsoil and benched prior filling. The fill should also be properly compacted and preferably retained along the downhill face. Surface water likely to enter the fill should be intercepted and diverted and silt-laden runoff from the fill intercepted. All large fills should be supervised by a qualified civil engineer.

House retaining walls should have drainage systems that include a high-grade filter cloth (e.g. Bidim U14 or higher), that extends over the cut face and fully encloses the wall backfill. The slotted drain coil down at slab level should be half bedded in concrete that extends all the way from the rear of the slab to the base of the cut. This is to ensure that water does not flow back out of the slotted drain coil, and down into the subgrade, thereby creating erosion under the slab.

Based on the materials it is reasonable to initially assume standard foundations with a bearing capacity in excess of 100Kpa. However, this assumption with respect to bearing capacity will need to be *confirmed by inspection* (and possibly by testing) at the individual house building consent stage by the engineer responsible for the foundation design when the excavations and footings are exposed.

We provide in Appendix 1 a guideline for the new owners of these lots that explains the behaviour of loess rich soils and outlines methods that can ensure trouble free residential development.

One outcome of sensible development on a block such as this is the growth of trees and shrubs in gardens etc which will help reduce the seasonal soil shrinkage and the rates of water runoff. As a result of this new planting the residential development is likely to make this area less vulnerable to erosion than the current grazing land use.

5. SEWERAGE TREATMENT AND DISPOSAL

Both lots will require individual sewerage treatment and disposal systems. We recommend the new generation treatment systems such as the Clearwater system. These treat the effluent to a level whereby it can be discharged from drip disposal pipes directly to planted areas.

This is the obvious way to encourage the growth of trees and shrubs through the dry summer period. Our previous experience with loess soils in the Christchurch area suggests that effluent does not erode loess soils anywhere near as much as rainwater.

This has been demonstrated in pinhole erosion tests of the same soil samples using both clean water and effluent from the Christchurch City treatment ponds. The result is backed up by the complete absence of cases of tunnel erosion developing from septic tank disposal trenches on the Port Hills and Banks Peninsula. For example if these trenches were being used for disposal of roof stormwater we would expect significant problems of this type. We suspect this is due to the presence of colloidal organic material, the high proportion of calcium ions, and the modified P_H of the effluent in comparison to rainwater. We expect this same effect in the loess soils of the Blenheim area.

We have not shown particular areas for effluent disposal in either lot. In Lot 1 this will be controlled to some extent by the preferred house location and access direction that is finally adopted. In Lot 2 the optimum location of the effluent disposal field should be one of the design responsibilities of the geotechnical engineer or engineering geologist that will be involved at the building consent design stage.

6. ACCESS AND SERVICES

Access

Because of moderate grades and easy site access there is no difficult roading work involved in this subdivision. We expect the loess and gravel subgrade will provide excellent bearing capacity for normal road loads providing the formation is kept in cut ground as much as possible. If filling is required then we suggest consideration should be given to importing "river run" fill, rather than attempting to recompact large volumes of the silt and gravel rich natural soils. The excavations to sub grade should be inspected during construction to ensure no areas of significant fill or soft ground are encountered.

In general we recommend retaining all cuts higher than 600mm. In these materials the most cost effective walls are likely to be poured in-situ concrete (dyed concrete may be preferred), timber crib, or gabion gravity walls. Full filter systems utilising a high standard of filter cloth will be required.

Where cuts are less than 600mm we suggest they either be retained (generally the best option) or else battered back at no steeper than 1 in 2, and then covered in topsoil and grassed. We do not consider surface cut-off drains will be required above the retained cuts but if any significant battered cuts are planned, then these should have lined surface water interception drains along the top.

Lined open channels should also be provided at the toe of any cut or fill slopes, at the edge of any sealed areas, and at any other locations where concentrated runoff will result from the development. The section owners should also adopt this type of careful surface water control in the progressive section development once they live on site.

Piped stormwater systems will be required to collect stormwater runoff from all sealed surfaces and open channels and these can be taken down to the channel along the access road at the bottom of the slope.
We recommend that all excavations for house foundations and access should be timed as much as possible so as to prevent a delay between cutting and construction or formation. If this cannot be arranged then the cut and fill surfaces should be covered as soon as possible in a fines rich blinding layer at sufficient grade as an interim protection to prevent ponding and infiltration of rainfall and runoff. This cover should extend into the watertables as well, because these may otherwise be vulnerable to rapid scour.

Control of silt in runoff may be required during earthworks utilising temporary silt traps to keep as much silt as possible out of the lower area.

Underground Services (trenches for water, sewer, power, and telephone)

All services should be kept wherever possible in the same trench. This will reduce soil disturbance and reduce costs for the cement - stabilised backfilling. The best alignment for a main services trench may be along the crest of the spur close to west boundary. This alignment could be utilised for stormwater from the house roofs and parking areas, phone and power, and water supply.

Trench depth should be the minimum required for local bylaws (but preferably less than 600mm). We enclose in Appendix 2 a simple example of a diagrammatic trench backfill specification. The excavated trench and the backfilling procedure should be supervised and inspected by a registered engineer or geotechnical specialist. We recommend concrete water stops in the service trenches at 50m intervals wherever trench grades exceed 15 degrees, and for the steeper sections exceeding 15 degrees we suggest intervals of 25m. This means erosion of the backfill by either leaking mains or sewer, or natural water from tunnel gullies, cannot continue for more than this distance without the waterstop forcing the flow to the surface where it will be noticed.

7. STORMWATER DISPOSAL

There will be stormwater that is collected from hard stands, driveways and the roof of each of the houses. This will need to be piped to the base of the slope and disposed of either into the stormwater system at the northwest of Lot 1 adjacent to the Wither Road Extension (refer site plan) or else to existing channel along the access road that runs around the base of the slope on the east side of the spur.

Normal care will be required to ensure that there no leaks in the various pipe systems and that if sealed flexible drain coil is used, then this is buried in the topsoil layer to protect it against long term damage from Uv light. When left on the surface this type of pipe becomes brittle with age and can easily be cracked and start to leak.

8. CONCLUSIONS

The residential development of Lot 1 and 2, being proposed subdivision of Lot 15, DP 3675 is feasible from a geotechnical perspective. Each of the two new lots includes one or more suitable building sites that are currently stable and are free of significant erosion.

In our professional opinion, if new houses are constructed on these recommended building sites in accordance with the Building Act 1991, then future problems with either erosion or instability are unlikely subject to:

- The adoption of the recommendations contained in this report regarding the utilisation of a concrete slab and masonry basement foundation system with integral rear retaining walls

- Subsequent adoption by the future owners of the general guidelines for section development in loess hill soils outlined in this report and the attached Appendix 1.

Signed: _____

Dr Mark Yetton for Geotech Consulting Ltd

Dated: 16/3/02

9. REFERENCES

Gibb, H.S. (1945) Tunnel Gully Erosion on the Wither Hills, Marlborough. NZ Journal of Science & Technology, Vol. 27, pp135 - 146

Goldwater, S; Elder, D.E.; Bell, D.H.; Yetton, M.D. (1990): Effect of groundwater on the strength of loess soils. Proceedings of the Groundwater and Seepage Symposium, Auckland, New Zealand. IPENZ Proc. of Tech. Gps Vol. 16, No. 1(G).

Laffan, M.D. & Cutler, E.J.B. (1977) Mechanism of tunnel gully erosion in the Wither hill soils from loessial drift and comparison with other loessial soils in the South Island. NZ Journal of Science, Vol. 20, pp 279- 289.

Yetton, M.D. (1990) Subsurface Erosion & Seepage in Banks Peninsula Loess. Proceedings of the NZ Geomechanics Society, Volume 16, Issue 1(G).

Yetton, M.D. (1986) Investigation and Remedial Methods of Subsurface Erosion Control in Banks Peninsula Loess. Msc (Hons) Eng. Geol. Thesis, University of Canterbury.

Yetton, M.D. & Bell, D.H. (1992) Suggested Revision of the Pinhole Test Erosion Classes. Proc. sixth Australian - New Zealand Conf. on Soil Mechanics. p 392 -395.

APPENDIX 1

Living on Loess Soils

Guidelines to future owners for the sensible development of your section.

Do not let the guidelines and warnings outlined below make you feel insecure about living on loess rich soils. In many ways they are preferable to soft swampy or alluvial soils, and it is very difficult to find elevated ground in the South Island with the warmth and excellent views that this offers, without loess as the subsoil.

Introduction

Loess soil is yellow brown silt with minor amounts of clay and sand. The name is derived from the Swiss German word for "loose" and reflects the relatively soft type of loess found in Europe. New Zealand loess is much more dense and hard, especially when it is dry.

It was formed in the glacial advances of the Pleistocene period from wind blown greywacke rock flour originally ground by ice. It has generally travelled many tens of kilometres from its source in the upper Wairau Valley on the westerly wind. Most loess formation ended around 10,000 years ago.

Loess can be a very good foundation material provided care is taken during site development and house construction. Because it was fine grained enough to be blown long distances it can be even more easily carried away by flowing water.

This can occur whenever loess is fully saturated, and the very strong capillary bonding action of the pore water in the dry soil is lost.

Guidelines

There are several basic rules to follow:

1) Avoid cutting through the dark brown topsoil layer over the loess soil as much as possible. This topsoil naturally protects the loess from the action of running water. It follows that anything that increases the topsoil depth or helps bind the topsoil together is beneficial. Therefore mulches and a thick vegetation cover are sensible, particularly in steeper areas.

   If flat areas are required for lawns and gardens it is often better to achieve this by filling with soils other than loess, rather than by cutting into the loess and underlying gravel and exposing it. Remember all large fills should be designed and engineered. Excess loess and gravel from basement excavations etc should not be simply be pushed forward of the excavation and left to self-compact. In this condition the soils will take many years to consolidate and settle and can create a lot of unnecessary silt contaminated runoff in the interim. With proper design, and possibly retention of the fill at the front face, loess and gravel can be compacted and used to create more flat ground if required. However, in many cases it is more practical to remove the excavated material from the site and carry out filling operations with imported clean gravel. Consult your local engineer.

2) If cuts are made which expose the loess and gravel then either protect this exposed soil with a retaining wall, or flatten the slope back to an angle approximately 2 horizontal to 1 vertical, and cover with topsoil and mulch. Pinning the mulch with plastic mesh and wire pins and then planting through this can work well to get the growth started.

3) Collect all surface runoff as much as possible from hard stands such as drives and paths and pipe this to the stormwater.

4) Incorporate filter cloth in any significant retaining wall. This is particularly important for major walls supporting basements etc. Filter cloth will stop the loess soil and gravel matrix from sapping away in the drain water and leaving cavities or blocking drains. Your structural engineer may not already be familiar with drain detailing in loess soils but Davidson Partners can provide a typical detail as an example. The actual design will vary from house to house.

5) Poorly backfilled service trenches can easily become conduits for water seepage along the service lines and it is very important these are backfilled and compacted thoroughly. The best backfill is the original loess soil from the trench mixed thoroughly with around 5% by volume of portland cement or builders lime (hydrated lime). This should be made slightly damp and then compacted in 100mm layers with a trench compactor (or for small jobs with the end of a heavy section of wood). With time the cement or lime will stabilise and harden the loess (cure times are normally between 7 and 30 days) and will make it much more erosion resistant.

6) Houses will normally have a specific soil test to check foundation conditions but in general foundations should extent at least 400mm below the base of the topsoil. This is normally a total depth around 600mm and should ensure the foundation is on the strongest and most erosion resistant material within the loess subsoil.

7) Tunnel erosion is a feature of loess soils in some locations. These tunnels develop naturally as rainwater becomes channelled in deep soil cracks after excessive drying of the loess subsoil. The cracks can enlarge at depth and form tunnels under the surface soil layers. Most tunnels are small (less than

500mm diameter) but they can lead to surface subsidence and gullying (so called "tunnel gullies").

A dense vegetation cover has a shading and soil moisture buffering effect that reduces the chances of new tunnels developing. It can also help screen existing tunnel gullies from view and will make the roofs of existing tunnels stronger and less likely to collapse. Other options to deal with existing tunnel gullies include:

- For gardens or less important areas, stuff the collapse holes (and tunnel where accessible) with straw or hay mixed with topsoil, and then plant in this mixture. The straw helps filter the silt in the tunnel water and provides an initial anchor for the plants that will help hold the soil around the tunnel and screen the feature from view. Some limited watering may be required in summer.

- In important locations, such as under drives or structures, the tunnels can be either grouted or overexcavated and backfilled. However in these locations it is recommended that the tunnels be inspected first by suitably qualified engineer or geologist, who has experience in tunnel gully remediation, and the need for interception drainage etc be evaluated.

Never allow outside taps to leak or drip continuously and avoid excessive or continuos watering in the same locations. A moving spray is a better water source than discharge from a hose or tap at one particular location but be realistic about this. It would still take many months of continuous watering to start an entirely new erosion tunnel (though less time to enlarge an existing one).

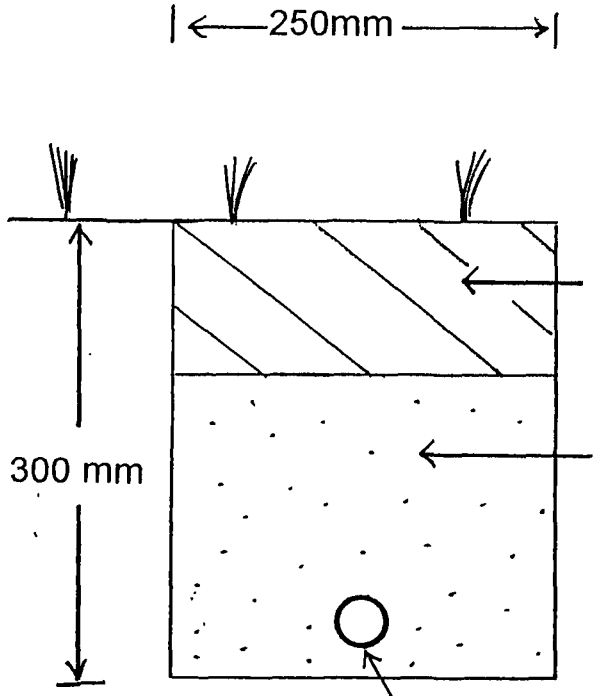
8) Ideally swimming pools and/or water tanks in loess soils should have a leak collection drainage system underneath them. These will require an engineers design and detailing.

Please Note:

These guidelines have been prepared by Dr Mark Yetton (Geotech Consulting Ltd, Christchurch) and Ron Melton and Leigh McGlynn (Davidson Partners Ltd, Blenheim) as a general guide for section owners building new houses and developing sections on loess soils. Every hill property is slightly different, and this guideline does not constitute or replace a formal engineers specification for any specific lot for Building Consent purposes.

APPENDIX 2

Diagram showing stabilised backfilling for service trench in loess soils



Replace original topsoil in upper 100mm of the trench and seed with brown fescue or similar

Lime stabilised loess soil. Mix excavated loess (i.e. "clay") with 5% by volume of hydrated lime (Builders lime). Moisten slightly, mix again thoroughly, and compact as 2 layers with a trench compactor ("whacker") suitable for a 250mm wide trench.

Alkathene or similar water supply pipe rated for the appropriate pressure.

N.B. Provide 100mm thick concrete water stops every 50m for the full trench width and depth where the trench grades exceed 1 in 10.

WATER SUPPLY PIPE TRENCH BACKFILL DETAIL FOR THE PROPOSED THOMPSON SUBDIVISION, LIGHTHOUSE RD, AKAROA	**GEOTECH CONSULTING LTD** *Geologists & Engineers*	10/01/02
		Fig 1303/2

9512

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**MB2A/822**
Land Registration District	**Marlborough**
Date Issued	17 September 1970

FILE No.:	
OFFICER:	
DATE RECV'D	18 JUN 2002
MARLBOROUGH DISTRICT COUNCIL	

Prior References
MB32/39

Estate	Fee Simple
Area	8.1491 hectares more or less
Legal Description	Lot 15 Deposited Plan 3675

Original Proprietors
John Coleman Poswillo and Susan Margaret Poswillo

Interests

64942 Easement Certificate specifying the following easements - 21.9.1971 at 10.45 am

Type	Servient Tenement	Easement Area	Dominant Tenement	Statutory Restriction
Right of way	Lot 8 Deposited Plan 3675 - CT MB2A/815	Yellow DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 10 Deposited Plan 3675 - CT MB2A/817	Blue DP 3675	Lot 15 Deposited Plan 3675 - herein	

76269 Easement Certificate specifying the following easements - 27.6.1974 at 10.44 am

Type	Servient Tenement	Easement Area	Dominant Tenement	Statutory Restriction
Right of way	Lot 10 Deposited Plan 3675 - CT MB2A/817	Yellow DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 11 Deposited Plan 3675 - CT MB2A/818	Blue DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 12 Deposited Plan 3675 - CT MB2A/819	Yellow DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 13 Deposited Plan 3675 - CT MB2A/820	Yellow DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 14 Deposited Plan 3675 - CT MB2A/821	Yellow DP 3675	Lot 15 Deposited Plan 3675 - herein	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 10 Deposited Plan 3675	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 11 Deposited Plan 3675	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 12 Deposited Plan 3675	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 13 Deposited Plan 3675	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 14 Deposited Plan 3675	
Right of way	Lot 15 Deposited Plan 3675 - herein	Blue DP 3675	Lot 16 Deposited Plan 3675	

Identifier **MB2A/822**

Right of way	Lot 16 Deposited Plan 3675	Blue DP 3675	Lot 15 Deposited Plan 3675 - herein

196119.3 Mortgage to The National Bank of New Zealand Limited - 2.3.1998 at 10.17 am

5157744.21 Partial surrender of the Right of way easement specified in Easement Certificate 64942 - 20.2.2002 at 9:00 am

References
Prior C/T. 32/39

Transfer No.
N/C. Order No. 61228

Land and Deeds 69

No. 2A/822

REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 17th day of September one thousand nine hundred and seventy under the seal of the District Land Registrar of the Land Registration District of MARLBOROUGH

WITNESSETH that COLIN DOUGLAS DUNGEY of Blenheim, Farmer

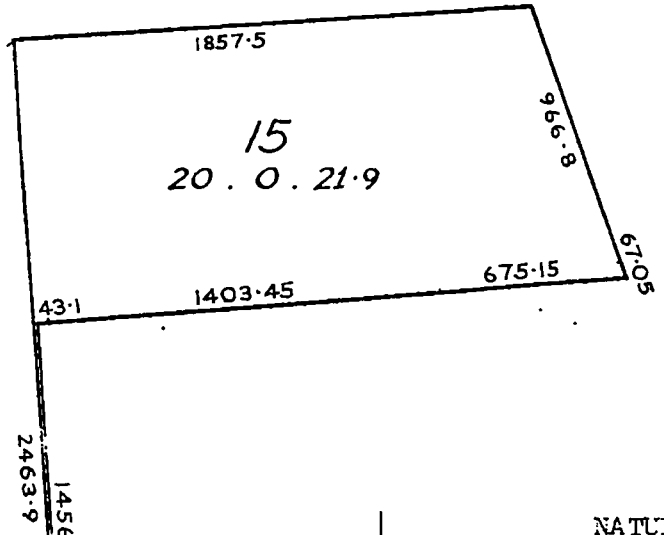
is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 20 acres and 21.9 perches more or less situated in Block IV Taylor Pass Survey District being part Sections 40 and 42 Wairau Registration District and being also Lot 15 on Deposited Plan 3675.

METRIC AREA IS 8.1491 ha

DISTRICT LAND REGISTRAR

Assistant Land Registrar.

Blk IV Taylor Pass S.D.



Scale: 1 inch = 6 chains

Subject to :-

1. 56221 Mortgage to Clifford Stephen Roussel 31.8.1969 at 10.47a.m.

2. 56568 Mortgage to The Public Trustee 12.9.1969 at 11.06a.m.

A.L.R.

Variation of Mortgage 56221 - 16.9.1971 at 11.06a.m.

A.L.R.

64942 Easement Certificate specifying intended easements on D.P.3675 : -

NATURE	SERVIENT TENEMENT	DOMINANT TENEMENT
R.O.W.	8(yellow) 2A/815 10(blue) 2A/817	15(herein)

- 21.9.1971 at 10.45a.m. ~~(Subject to Mortgage 64942)~~.

A.L.R.

No. 2A/822

- Over -

77991 Caveat (69387) [illegible] Mary Swain -1[illegible].1972 [illegible]

A.L.R.

ENTERED IN ERROR Transfer 72274 to Colin Douglas Dungey of Blenheim, farmer as to a 9/10th share and Norma May Dungey his wife as to a 1/10th share as tenants in common in the said shares. 7/6/1973 at 11.23 o'c.

A.L.R.

78244 Mortgage 72275 to Paterson Bremner Swain Securities Limited.-7.6.1973 at 11.24 o'c. Caveator of Caveat 69387 consenting. DISCHARGED 3 Jul 12 PM

A.L.R.

76269 Easement Certificate affecting Lots on Plan 7675.

NATURE	SERVIENT	DOMINANT
Right of Way	Lot 10 (2A/817) coloured yellow	Lot 15 (herein)
R.O.W.	Lot 11 (2A/818) blue	"
"	Lot 12 (2A/819) yellow	"
R.O.W.	Lot 13 (2A/820) yellow	"
R.O.W.	Lot 14 (2A/821) yellow	"
"	Lot 15 Blue	Lots 10-14&16. (2A/823)
R.O.W.	Lot 16 blue	Lot 15

-27.6.1974 at 10.44 o'c.
(with consent of caveator under caveat 69387)

A.L.R.

77840 Transfer to Dympne Mary Swain of Blenheim, widow.-Produced 8.11.1974 at 10.50o'c. and entered 22.11.1974 at 11.17 o'c.

A.L.R.

122901 Transfer to Stephen Howard of Blenheim, Pilot and Susan Rosemary Jackson of Blenheim, Clerk as tenants in common in equal shares.- 21.12.1984 at 2.20o'c

A.L.R.

122902 Mortgage to Dympne Mary Swain.- 21.12.1984 at 2.20o'c

DISCHARGED 10 1 1987

A.L.R.

132074.1 Notice of marriage of Susan Rosemary Jackson abovenamed to Stephen Howard abovenamed .-1.9.1986 at 1.50o'c

A.L.R.

132074.2 Mortgage to Westpac Banking Corporation.-1.9.1986 at 1.50o'c

DISCHARGED 10 8 1987

A.L.R.

137075.3 Transfer to Richard David Hubert and Anne Elizabeth Hubert both of Blenheim, both Supermarket Proprietors.-10.8.1987 at 12.00o'c

A.L.R.

191805.1 CAVEAT BY JOHN COLEMAN POSWILLO AND SUSAN MARGARET POSWILLO 17.7.1997 AT 11.23

Withdrawn 2.3.1998

for DLR

196119.2 Transfer to John Coleman Poswillo and Susan Margaret Poswillo

196119.3 Mortgage to The National Bank of New Zealand Limited

all 2.3.1998 at 10.17

for DLR

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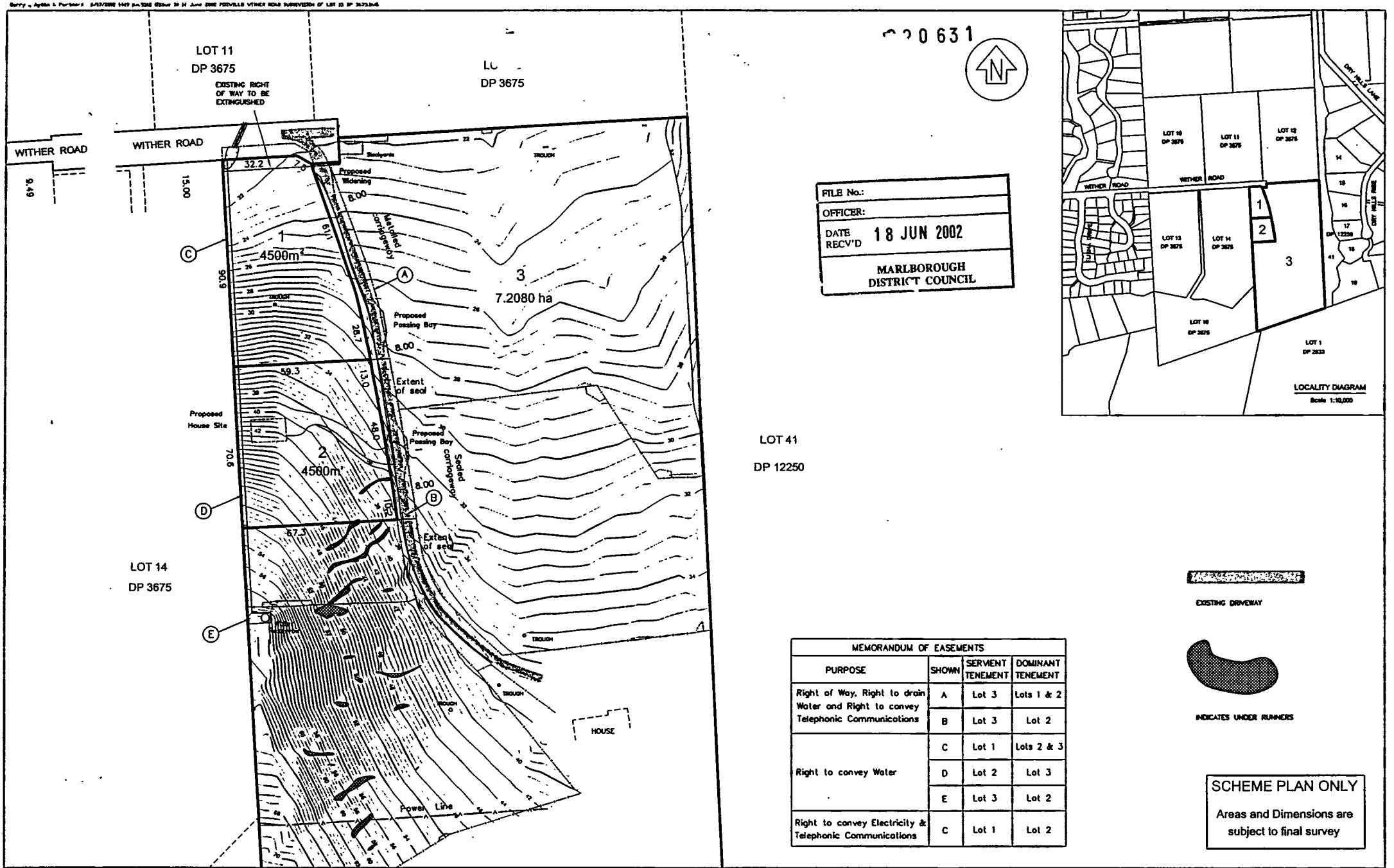
MARLBOROUGH DISTRICT COUNCIL



MEMORANDUM OF EASEMENTS			
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	B	Lot 3	Lot 2
Right to convey Water	C	Lot 1	Lots 2 & 3
	D	Lot 2	Lot 3
	E	Lot 3	Lot 2
Right to convey Electricity & Telephonic Communications	C	Lot 1	Lot 2

SCHEME PLAN ONLY

Areas and Dimensions are subject to final survey

Ayson and Partners Ltd
REGISTERED SURVEYORS
Consultants in Surveying, Resource Management, Subdivision and Land Development

Davidson Ayson House
4 Nelson Street, P.O. Box 256
Blenheim, New Zealand
Ph 03 578 7029, Fax 03 578 7028
Email: ayson.and.partners@xtra.co.nz

LOTS 1, 2 AND 3 BEING PROPOSED SUBDIVISION OF LOT 15 DP 3675 WITHER ROAD EXTENSION, BLENHEIM

COMPRISED IN : CT 2A/822

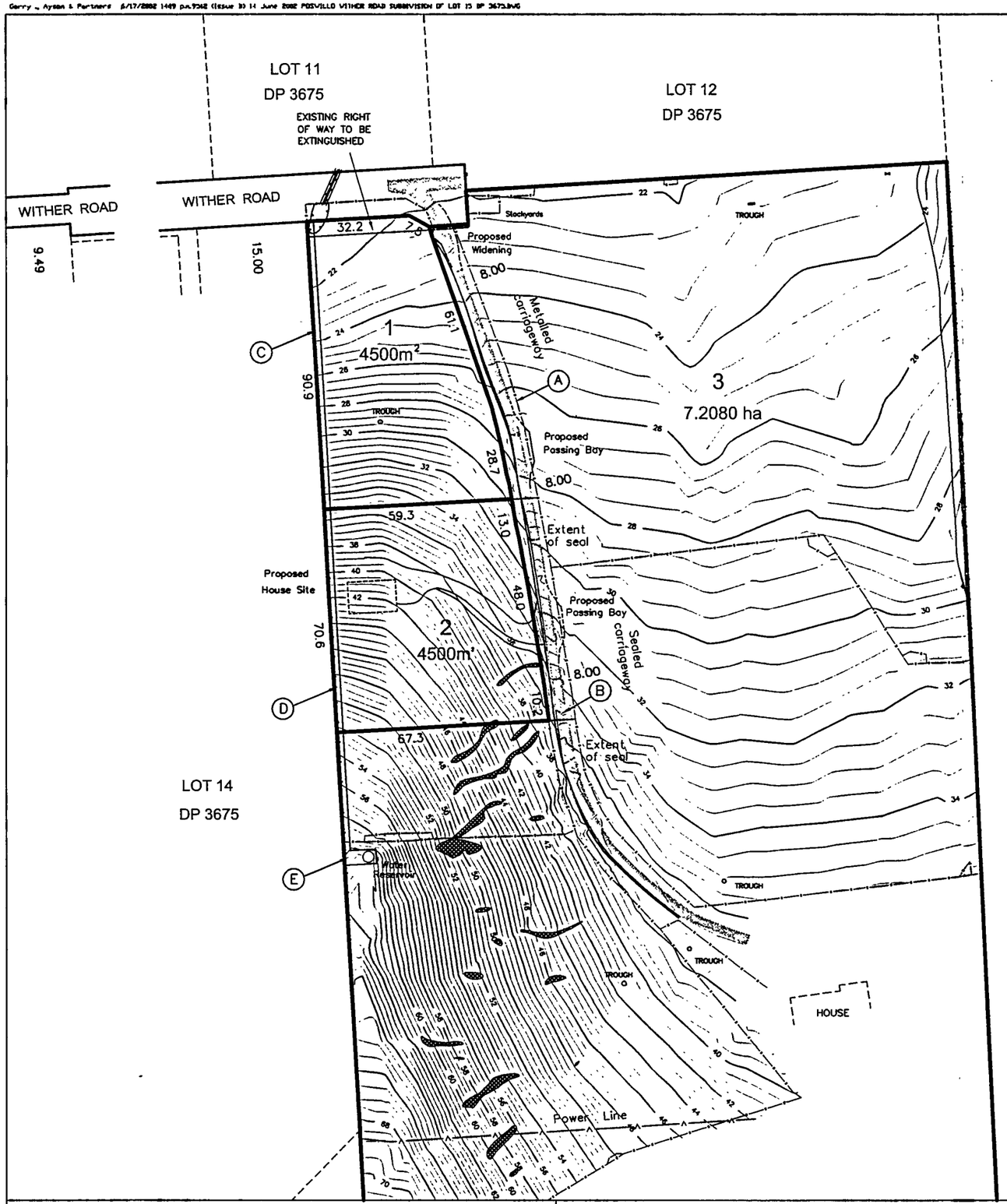
APPLICANTS : AUCHRIACHAN TRUST

SCALES	JOB NUMBER
1:1500	9512

DATE	SHEET	ISSUE
14 June 2002	1	B

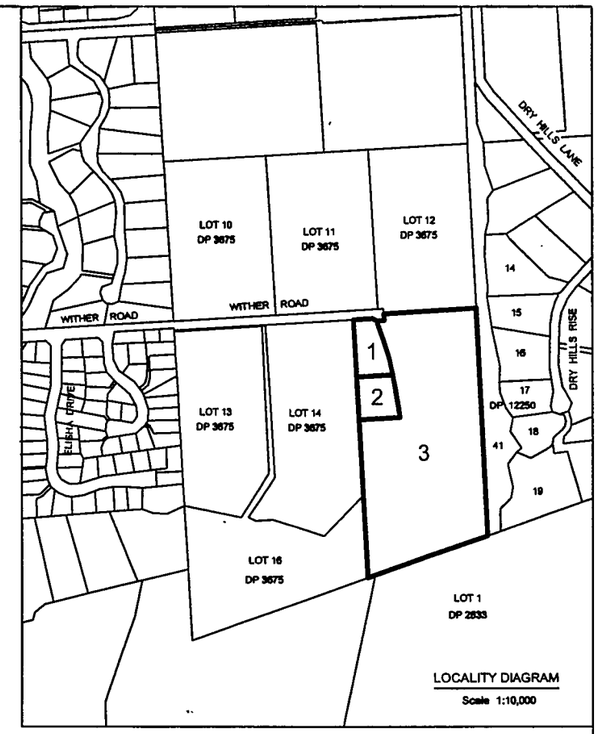
LB CHECK

020631



LOT 41

DP 12250



LOCALITY DIAGRAM
Scale 1:10,000

FILE No.:
OFFICER:
DATE RECV'D 18 JUN 2002
MARLBOROUGH DISTRICT COUNCIL

EXISTING DRIVEWAY

INDICATES UNDER RUNNERS

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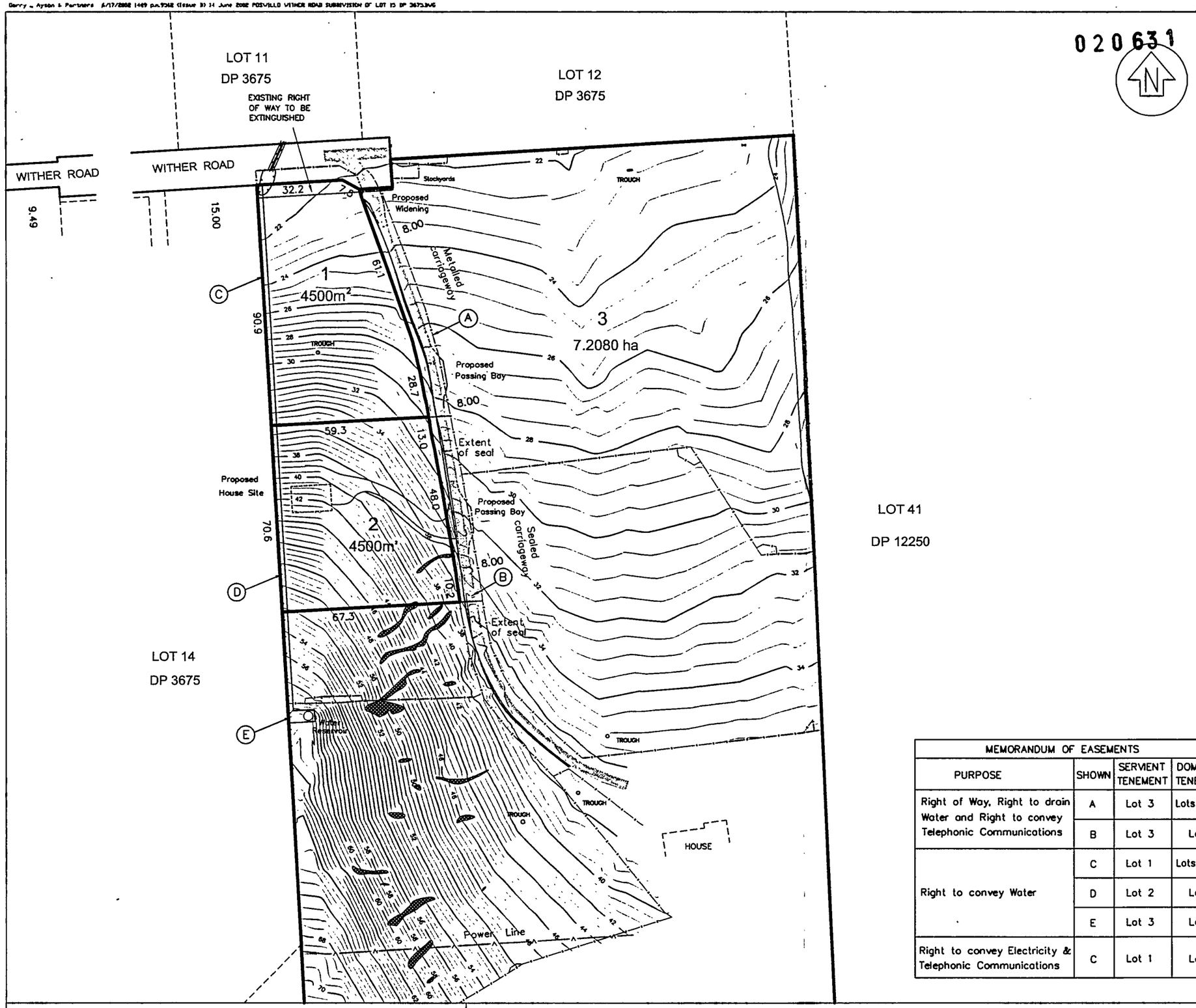
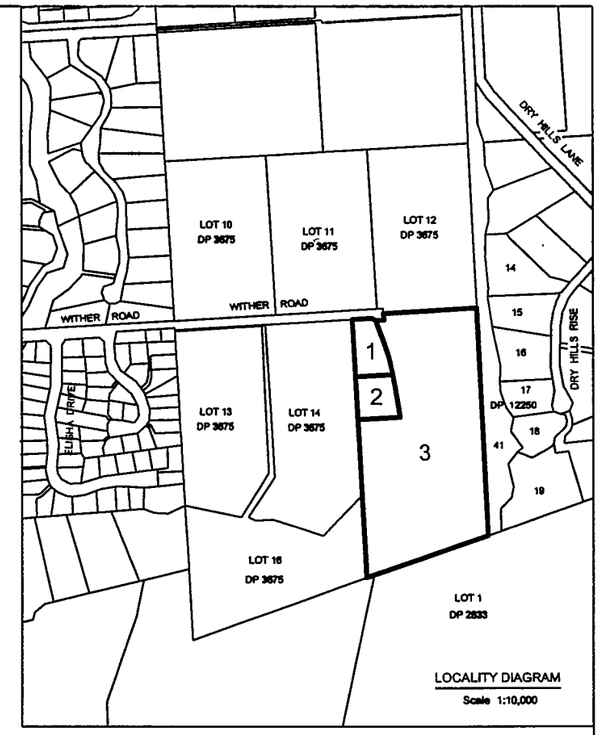
1:1500	9512
DATE 14 June 2002	SHEET 1 / ISSUE B
LB / CHECK	

020631





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DATE: 14 June 2002	SHEET: 1
LB / CHECK	ISSUE: B

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LOT 11
DP 3675

LOT 12
DP 3675

EXISTING RIGHT OF WAY TO BE EXTINGUISHED

WITHER ROAD

WITHER ROAD

9.49

15.00

32.2

Proposed Widening

8.00

Metalled carriageway

Stockyards

TROUGH

1
4500m²

90.9

61.1

C

A

3
7.2080 ha

TROUGH

Proposed Passing Bay

8.00

28.7

59.3

13.0

Extent of seal

Proposed House Site

70.6

48.0

2
4500m²

Proposed Passing Bay

Sealed carriageway

8.00

B

D

10.2

67.3

Extent of seal

LOT 14
DP 3675

E

Water Reservoir

TROUGH

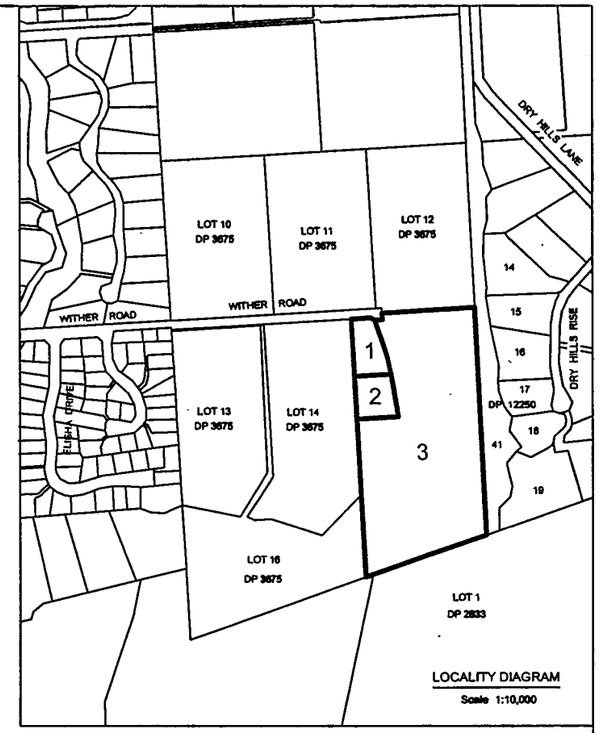
TROUGH

TROUGH

HOUSE

Power Line

LOT 41
DP 12250



LOCALITY DIAGRAM
Scale 1:10,000

FILE No.:	
OFFICER:	
DATE RECV'D	18 JUN 2002
MARLBOROUGH DISTRICT COUNCIL	

EXISTING DRIVEWAY

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020631

NOTES

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METRES

0 10m 50m

APPROXIMATE POSITION OF TUNNEL GULLIES

Proposed House Site

LOT 14 DP 3675

2 x 750mm ø CONC PIPES

WITHER ROAD EXTENSION

EXISTING RIGHT OF WAY

TROUGH

LOT 1

LOT 2

Stockyards

TOP OF GATE POST RL=22.64m

Contour Interval : 0.2m
Level Datum : B.B.C
Level Origin : Top of North gate post
RL = 22.64

DATE		REVISION	BY

J. POSWILLO

TOPO SURVEY

WITHER ROAD

LOTS 1 AND 2 BEING PROPOSED SUBDIVISION OF LOT 15 DP 3675

Ayson and Partners Ltd
REGISTERED SURVEYORS

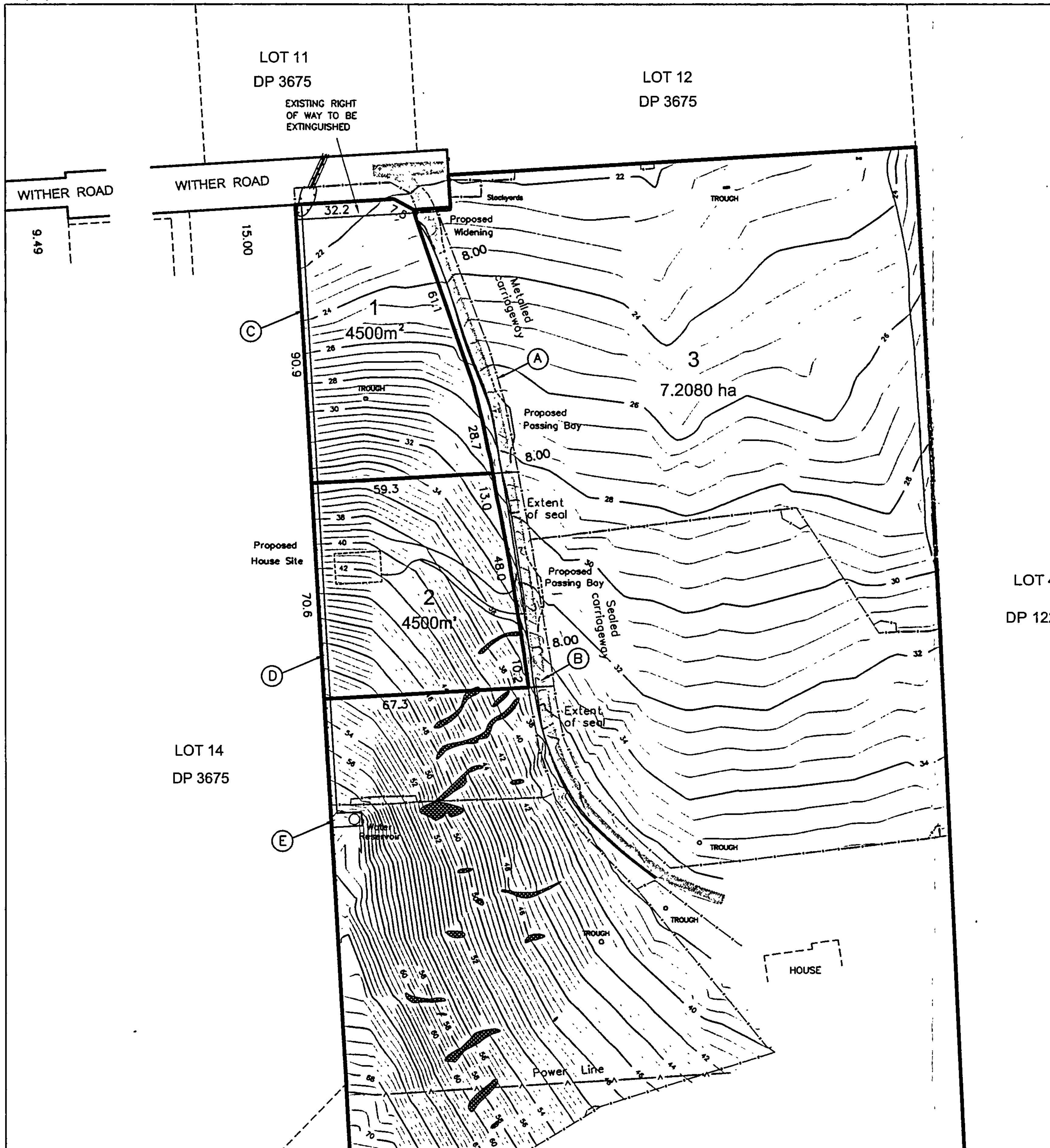
Davidson Ayson House
4 Nelson Street, PO Box 256
Blenheim, New Zealand
Telephone 03 578 7029
Facsimile 03 578 7028

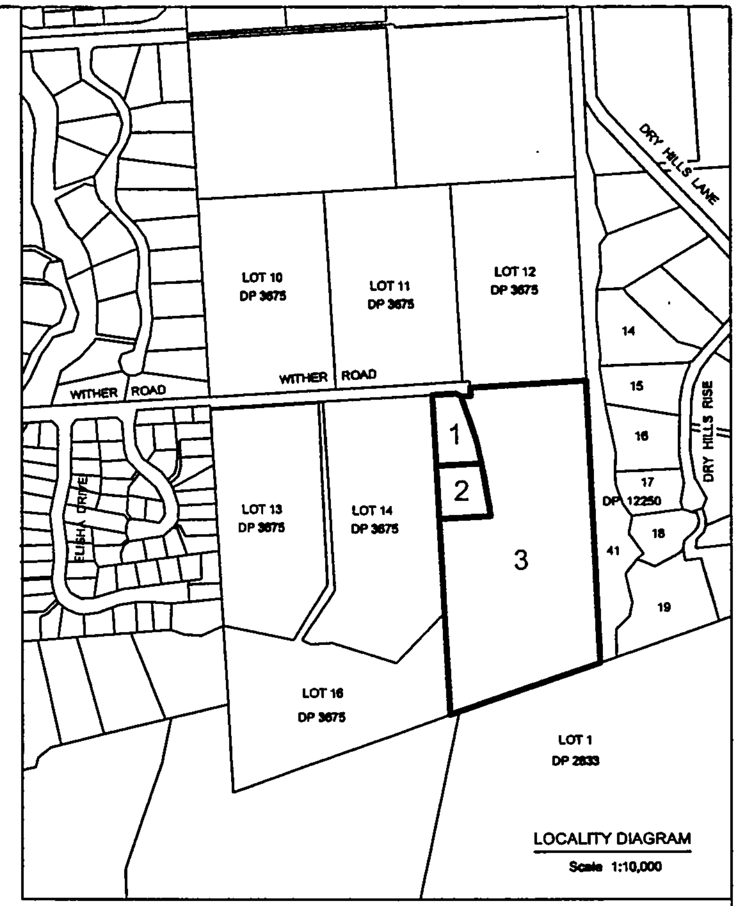
Practising in Association with Davidson Partners Ltd, Registered Engineers

DESIGNED	JOB No.	
DRAWN 28 FEB 2002	9608	
CHECKED		
SCALES ~~1:500~~	DRAWING No. 2	ISSUE A
LB/ACAD MR		

MR PII 9500*.512

020631





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