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12 Feb. 15

Ayrburn Farm Developments Ltd
C/- Winton Partners
P O Box 105526
AUCKLAND 1143

Via email: andrew.cavill@wintonpartners.com.au

Dear Andrew,

AYRBURN FARM DEVELOPMENT – PRELIMINARY INFRASTRUCTURE ASSESSMENT

Introduction

Further to your instruction we have vetted the proposed concept plan consisting of 150 dwellings in context of existing Council related three waters infrastructure. We have examined the site topography and the QLDC GIS and we provide the following comments:

Wastewater

It appears that all of the site can drain with gravity to the existing QLDC reticulation in Speargrass Flat Road. This is part of the Lake Hayes Scheme. To do this however would require an easement from QLDC to lay a new gravity main (150mmØ should be sufficient) through the existing esplanade reserve adjoining Mill Creek. I have highlighted this on the attached plan. Without obtaining an easement, a Pump station would be needed to pump the effluent to a connection point in the existing reticulation within public legal road.

The following summaries that expected demands generated by the proposed development.

No of residential units:	150.
Average dry weather flow:	300 l / person / day.
Dry weather diurnal peak factor:	2.5.
Infiltration factor:	2.
Occupancy:	3.5 person / du.

Dry weather average daily flow: 158 m³ / day.

Peak hour flow: 9.11 l / sec.

The existing reticulation that is proposed to be connected to in Speargrass Flat Road is 150mmØ. Similarly the downstream network to the QLDC pump station at the north end of Lake Hayes is 150mmØ. Empirically, a 150Ø pipe will be sufficient for about 200 dwellings. Therefore some of the downstream gravity network may need some modelling to confirm whether or not upgrades are required. Furthermore, the capacity of the existing pump station and associated reticulation all the way to the Shotover Waste Water Treatment plant would need assessed.



Water Supply

Similarly, water supply would need modelled to determine pipe sizing, and levels of service for domestic and fire fighting demands. There would however be sufficient pressure from the QLDC system (Bendemeer reservoir ~ Elevation 430m – Site Elevation ~ 360m) for domestic and fire fighting supply. Supply issues in the Lake Hayes catchment appear to have been mitigated for the time being with the construction of the Shotover Country system. This however may be a short term fix given the potential rate of development in this water scheme catchment.

The following summaries that expected demands generated by the proposed development.

No of residential units:	150.
Average daily demand:	700 l / person / day.
Occupancy:	3.0 person / du.
Peak hour demand:	4.0.

<i>Average Daily demand:</i>	<i>315.0 m³ / day.</i>
<i>Peak hour demand:</i>	<i>14.6 l / sec.</i>

New water reticulation would likely need to have ring in the layout. A connection through the existing unformed legal road to the west and back down the esplanade reserve with the foul sewer line would facilitate this. At this stage we would anticipate 150mmØ mains to be sufficient.

Stormwater

Stormwater would ultimately discharge to Hayes Creek. The status of the discharge activity would need to be confirmed under the Regional Water Plan. At this stage however we anticipate consent from the ORC would be needed. To obtain discharge consent storm water treatment and possibly attenuation may be required. Water quality discharging to Lake Hayes would be an important consideration in the storm water design for the development. Equally, attenuation may be needed to mitigate against any potential downstream flooding risk.

Summary

From a 3 waters infrastructure point of view, the land appears to be relatively simply serviced by extending the adjoining QLDC Lake Hayes infrastructure.

Any effects on the existing QLDC infrastructure of this development will need to be mitigated by the imposition of head works fees (Development Contributions).

In the Lake Hayes catchment for 150 dwellings you could expect contributions of \$411,450 for water and \$1,008,000 for waste waster under the current policy.

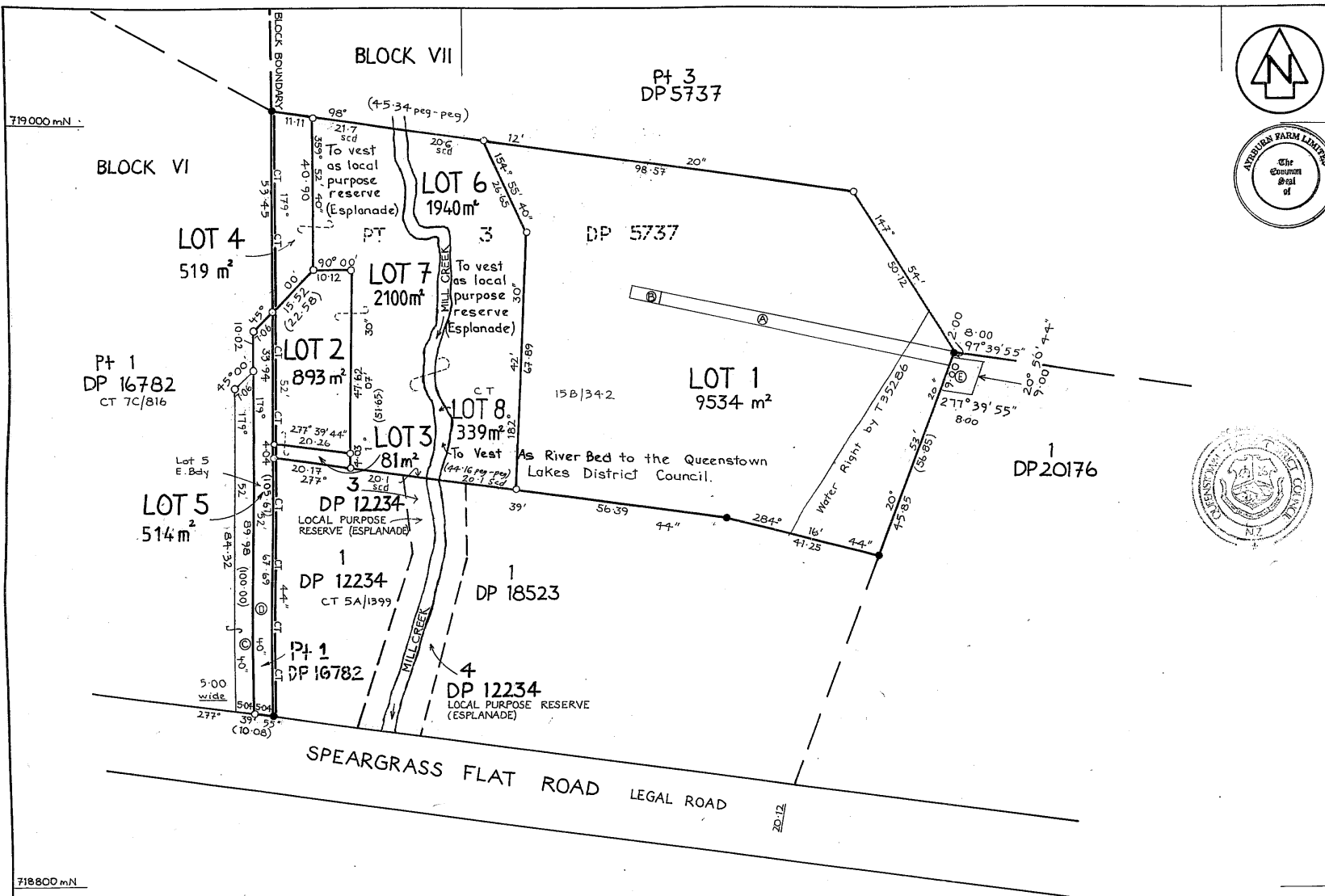
An alternative is for the developer to fund the necessary upgrades and the cost of completing the work offset against the cash contributions. Such work would need to be designed in conjunction with QLDC and if required included in a capital works program. Submission on the Annual Plan process may be required to ensure that appropriate funding is available for upgrades if needed.

Yours faithfully
CLARK FORTUNE MCDONALD & ASSOCIATES

A handwritten signature in black ink, appearing to be 'CH' followed by a long horizontal stroke.

Chris Hansen
SURVEY MANAGER

p. 03 441 6079
e. chansen@cfma.co.nz



Approvals
 G I DENNISON
 C B DENNISON
 ATABURN FARM LTD.
 REGISTERED OWNERS
 SPEARGRASS FLAT
 PROPERTIES LTD.
 COMMON SEAL OF THE COUNCIL

Approved pursuant to section 223 of the Resource Management Act 1991 on the 21st day of March 1994 subject to:
 1) the granting or reserving of the easements set out in the Memorandum hereon;
 2) the granting of the following amalgamation conditions.

(a) That Lot 4 hereon be transferred to the owner of Lot 1 DP 16782 (CT 7C/816) and that one certificate of title be issued to include both parcels.
 (b) That Lot 3 hereon be transferred to the owner of Lot 1 DP 12234 (CT 5A/1399) and that one certificate of title be issued to include both parcels.
 (c) That Lots 2 and 5 hereon (legal access) be held in the same ownership as Lot 1 hereon and one certificate of title be issued in accordance herewith. (LRR 838538)

The Common Seal of the Queenstown-Lakes District Council is affixed hereto in the presence of:
 Mayor
 General Manager

Approved pursuant to Section 224(c) of the Resource Management Act 1991 I hereby certify that all the conditions of the subdivision consent have been complied with to the satisfaction of the Queenstown-Lakes District Council dated this 21st day of March 1994.
 General Manager

Total Area 1.5920 ha

Comprised in CT 15B/12+2(Pt) and CT 7C/816 (Pt)

PETER ROBERT RITCHIE
 Registered Surveyor and holder of an annual practicing certificate for who may act as a registered surveyor pursuant to section 25 of the Survey Act 1988 hereby certify that this plan has been made from surveys executed by me or under my directions, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof.
 Dated at QUEENSTOWN this 19th day of APRIL 1994. Signature P. Ritchie

Field Book p. Traverse Book p. Reference Plans Examined Correct Correct

Approved as to Survey
 30/4/94
 Acting Chief Surveyor

Deposited this 20th day of March 1995

Asst. District Land Registrar

File Received Instructions 22/4/94 DP 23930

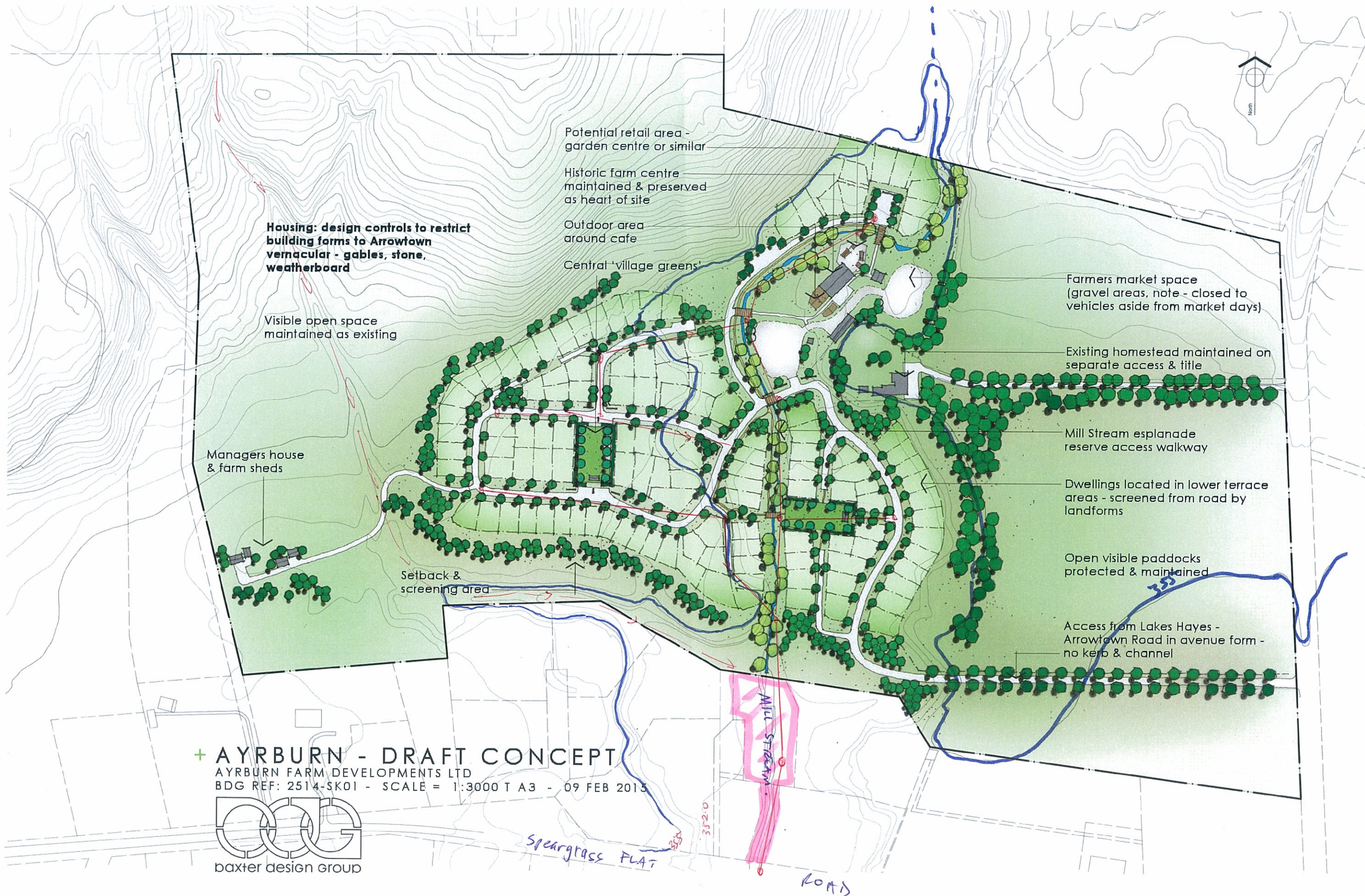
SCHEDULE OF EXISTING SUBJECT EASEMENTS				
PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT	TRANSFER NO.
Right to convey water	Pt Lot 3 DP 5137	A	Lot 1 DP 20176	758973
Right to pump and convey water	Pt Lot 3 DP 5137	B	Lot 1 DP 20176	

MEMORANDUM OF EASMENTS				NEW CT ALLOCATED	
PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT	LOTS 1,2&5 hereon	CT 16A/336
RIGHT OF WAY	Pt Lot 1 DP 16782	C	Lots 1,2,5 hereon	LOT 3 hereon & CT 5A/1399	CT 16A/335
	Lot 5 hereon	D	Pt Lot 1 DP 16782	LOT 4 hereon & Bal CT 7C/816	CT 16A/336
	Lot 1 DP 20176	E	Lot 1 hereon	LOT 6	CT 16A/337
RIGHT TO CONVEY & STORE WATER	Lot 1 DP 20176	E	Lot 1 hereon	LOT 7	CT 16A/338

LAND DISTRICT OTAGO
 SURVEY BLK. & DIST. VI & VII Shotover SD.
 NZMS 261 SHT F 41 RECORD MAP No 889

LOTS 1-8 BEING A SUBDIVISION OF PT LOT 3 DP 5737 AND LOT 1 DP 16782

TERRITORIAL AUTHORITY QUEENSTOWN-LAKES DISTRICT
 Surveyed by CLARK FORTUNE McDONALD & ASSOCIATES
 Scale 1:750 Date JAN 1994



+ AYRBURN - DRAFT CONCEPT
AYRBURN FARM DEVELOPMENTS LTD
BDG REF: 2514-SK01 - SCALE = 1:3000 T A3 - 09 FEB 2015



baxter design group



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