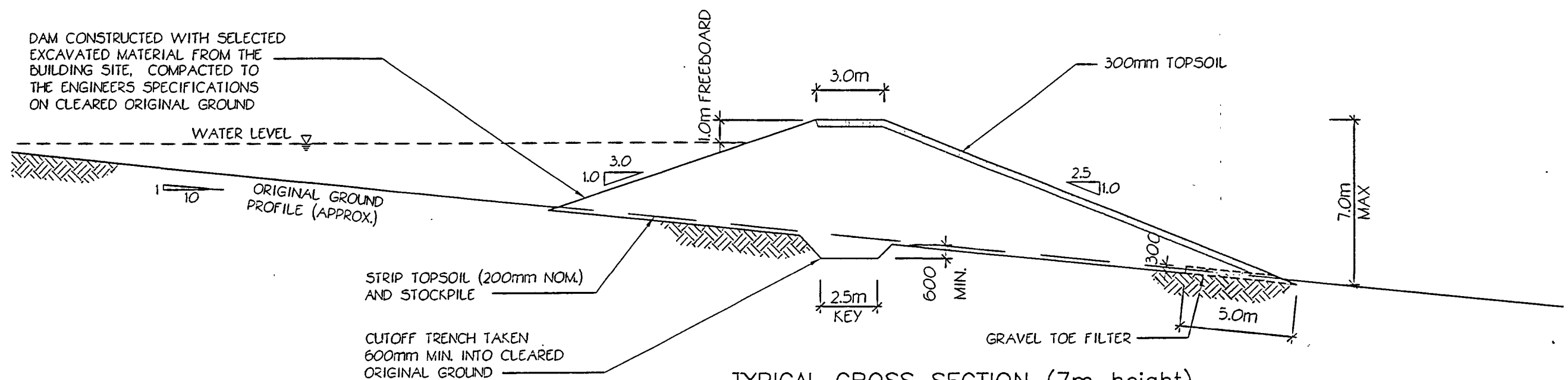


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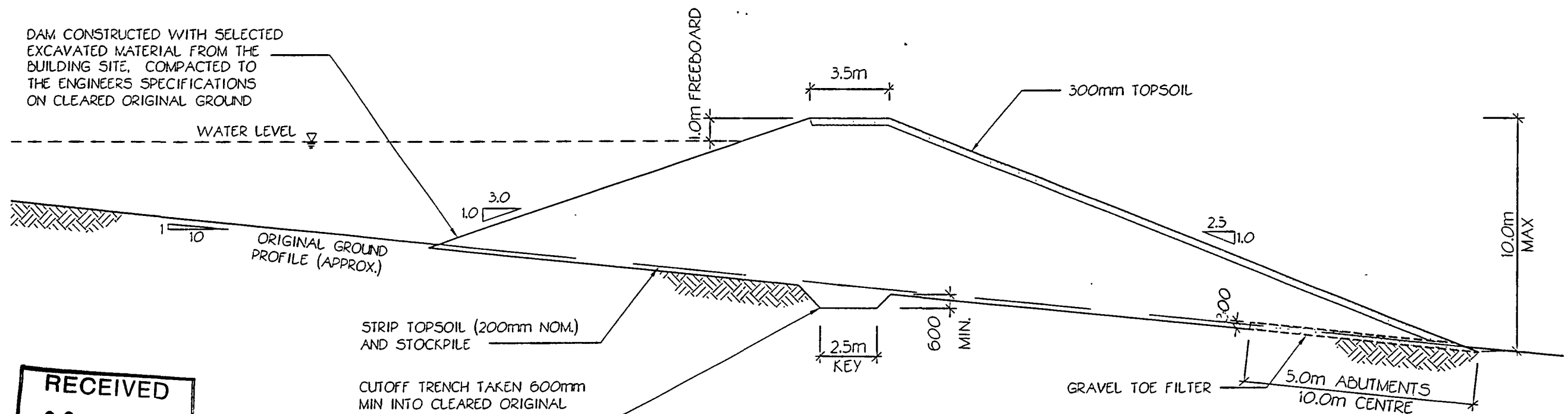


DAM CONSTRUCTED WITH SELECTED EXCAVATED MATERIAL FROM THE BUILDING SITE, COMPACTED TO THE ENGINEERS SPECIFICATIONS ON CLEARED ORIGINAL GROUND



TYPICAL CROSS SECTION (7m height)
1:200

DAM CONSTRUCTED WITH SELECTED EXCAVATED MATERIAL FROM THE BUILDING SITE, COMPACTED TO THE ENGINEERS SPECIFICATIONS ON CLEARED ORIGINAL GROUND



TYPICAL CROSS SECTION (10m height)
1:200

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CUTOFF TRENCH TAKEN 600mm MIN INTO CLEARED ORIGINAL GROUND AT ABUTMENTS, INCREASING TO 1.2m DEPTH WHERE THE CENTRELINE HEIGHT EXCEEDS 6.0m.

- D - GRAVEL FILL CHANGES - 19/04/01 - M.J.H.
- C - DAM HEIGHTS CHANGED - 27/03/01 - A.J.C.
- B - DAM HEIGHT INCREASED TO 10m - 22/01/01 - A.D.A.

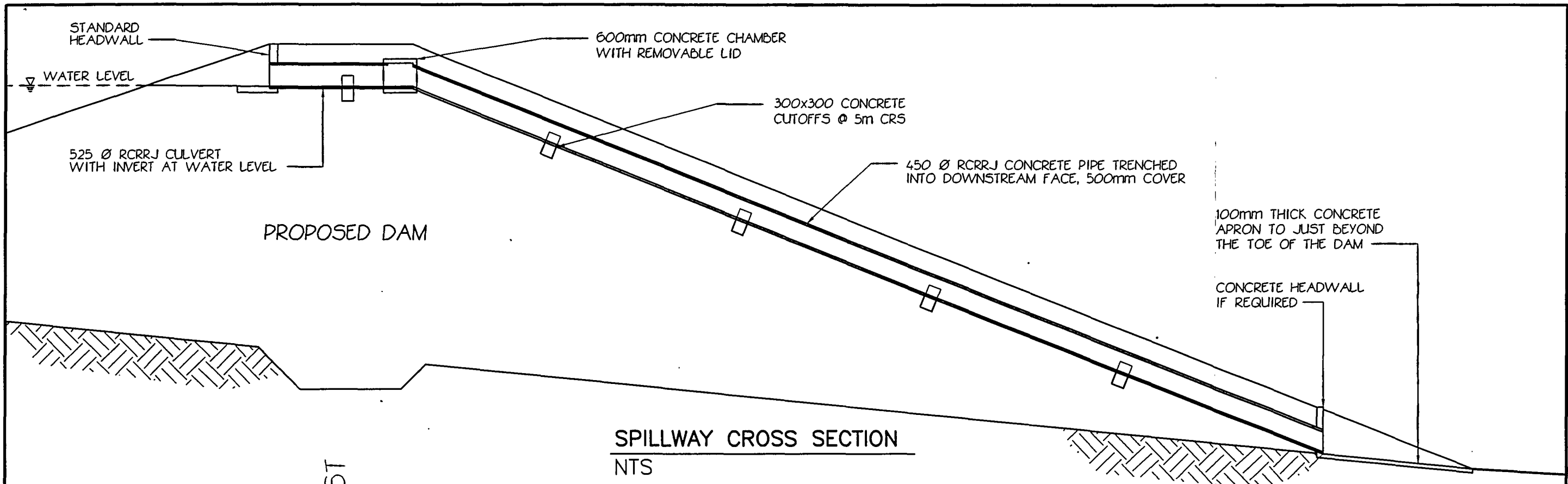
DavidsonPartnersLtd
Structural Engineering
Civil Engineering
Building Design
Project Management

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

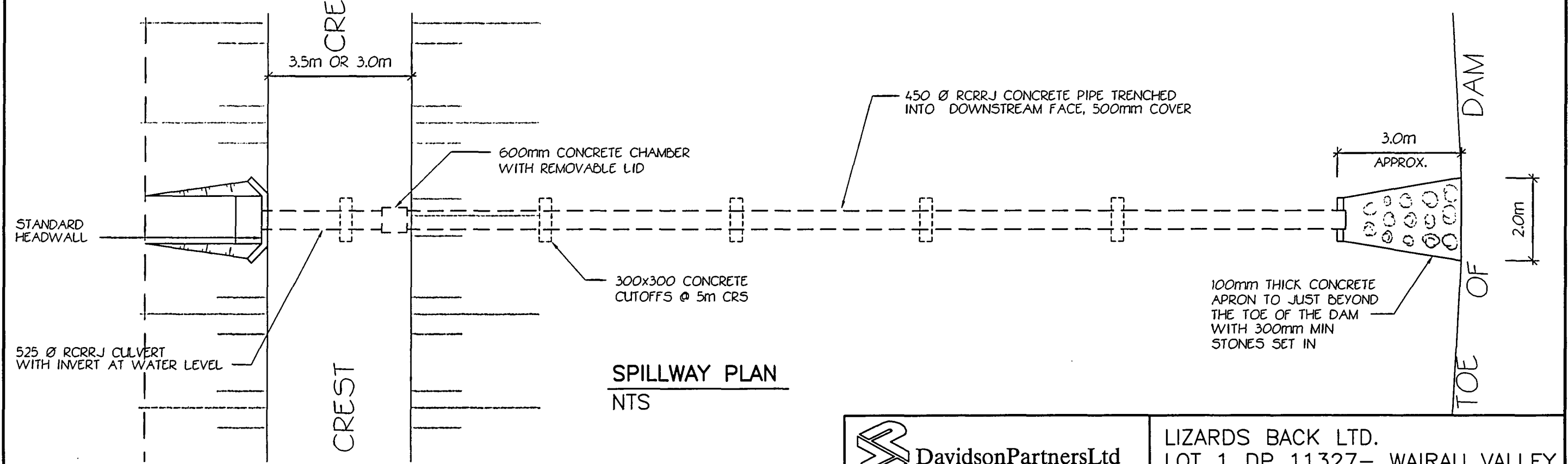
LIZARDS BACK LTD.
LOT 1 DP 11327- WAIRAU VALLEY
EARTH DAMS

typical cross section

DATE	ORIGINAL SIZE	DRAWING No.	SHEET	ISSUE
03/01	A3	6065	R3	D
DES R.W.D DR A.L.W CK [initials] CAD C:\ACAD\6065				



SPILLWAY CROSS SECTION
NTS



SPILLWAY PLAN
NTS

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100mm

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

LIZARDS BACK LTD.
LOT 1 DP 11327- WAIRAU VALLEY
EARTH DAMS

spillway details

DATE	ORIGINAL SIZE	DRAWING No.	SHEET	ISSUE
01/01	A3	6065	R4	B
DES R.W.D. DRN A.D.A. CK [Signature] CAD C:\ACAD\6065				

TO: Marlborough District Council

Attention: Dianne Shearer

Re: Lizards Back Dams Ref: 6065

- | | |
|---|---|
| <input type="checkbox"/> For your information | <input type="checkbox"/> For your signature |
| <input checked="" type="checkbox"/> As requested | <input type="checkbox"/> Returned with thanks |
| <input type="checkbox"/> Requesting your comments | <input type="checkbox"/> Please supply |
| <input type="checkbox"/> For your approval | <input type="checkbox"/> With Compliments |

Producer Statement - Design and
Construction Monitoring Schedule
for this project.

Thankyou for your prompt action.

Kind Regards

Ross Davis

Signed:

Ross Davis

RECEIVED
Date: 3 / 5 / 2001

- 4 MAY 2001

Davidson Partners Ltd MARLBOROUGH
DISTRICT COUNCIL

Structural Engineering
Civil Engineering
Building Design
Project Management

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

Delivered

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PRODUCER STATEMENT - DESIGN

(Guidance notes on the use of this form are printed on the reverse side)

ALL WORK DESIGNED BY THE ENGINEER
SHALL BE SUPERVISED BY THE
ENGINEER AND ON COMPLETION OF
THE WORK THE ENGINEER IS TO SUPPLY
COUNCIL WITH A CONSTRUCTION
REVIEW.

ISSUED BY: R W Davis
(Suitably qualified Design Professional)

TO: Marlborough District Council

IN RESPECT OF: Construction of three earthfill dams 7.0-10.0 metres in height
(Description of Building Work)

AT: Lot 1 D.P. 11327, State Highway No. 63, Wairau Valley
(Address)

Davidson Partners Ltd has been engaged by Lizards Back Ltd to provide
(Design Firm)
Design and Construction Monitoring services for the construction work.
(Extent of Engagement)

The work is described on Davidson Partners Ltd, plans numbered 6065 sheets R1 issue 'D', R3 issue 'D' and R4 issue 'B'.

Features of the design to be noted are:

1. Appropriate design and investigation procedures have been carried out in general accordance with the New Zealand Society on Large Dams 'New Zealand Dam Safety Guidelines', including the receipt of specialist geotechnical advice.
2. Reference documents have also included:
 - (i) 'Design of Small EarthDams and Reservoirs', Technical Manual No. 3, Water Resources Commission, New South Wales.
 - (ii) 'Design of Small Dams', United States Department of the Interior, Bureau of Reclamation.
3. The dams are to be placed in a small gully with intermittent flows. The catchment size is 10 hectares. A total of approximately 4,000 m³ of runoff will be stored. Construction will be with selected clayey gravel fill from an adjacent ridge with a more pervious filter for the control of seepage at the downstream toe.
4. A 1 in 50 year flow of 260 litres per second has been used for overflow design. A defined overflow path is to be formed at one abutment of each dam due to the potential for blockage in the piped primary overflow system.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000, I BELIEVE ON REASONABLE GROUNDS that subject to:

- (i) all proprietary products meeting the performance specification requirements, the drawings, specifications, and other documents according to which the work is proposed to be constructed, the proposed work will provide robust earthfill storages.

R W Davis
(Signature suitably qualified Design Professional)

Date 3 May 2001

B.E. (Nat Res) Hons.
(Professional Qualifications)

ERB/~~CEB~~ Reg No. 210886

P.O. Box 256, Blenheim
(Address)

Member ACENZ

IPENZ NZIA



DavidsonPartnersLtd

Structural Engineering
Civil Engineering
Building Design
Project Management

Practising in association with Ayson and Partners, Registered Surveyors

Our Ref: 6065

3 May 2001

CONSTRUCTION MONITORING SCHEDULE

OWNER: Lizards Back Ltd
PROJECT: Dams
LOCATION: State Highway No. 63, Wairau Valley

Inspections Proposed	Number
1. Confirm topsoil stripping and key excavation.	1
2. Inspection of initial fill placement.	1
3. Inspection of toe drains before covering.	1
4. Inspection of completed dams before topsoiling.	1
5. Inspection of outlets before backfilling.	1
6. Final Inspection.	1

Notes

1. A Producer Statement - PS4 - Construction Review covering work included in our Producer Statement - PS1 - Design will be issued to the Territorial Authority at the completion of the work.
2. The Builder/Contractor is to keep the Engineer informed of progress and in particular of the dates that the work will be ready for the inspections above to be made. At least 24 hours notice shall be given to the Engineer.
3. Additional inspections may well be required to satisfy ourselves that the work is in accordance with the documentation or if rework needs to be undertaken.

DAVIDSON PARTNERS LTD

R.W. Davis

RWD:JEN
Davidson Ayson House, 4 Nelson Street,
P.O. Box 256, Blenheim, New Zealand
Telephone 03 578 7029 Fax 03 578 7028
Email: davidson.partners@xtra.co.nz

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





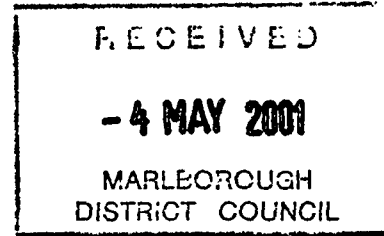
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Our Ref: 6065

3 May 2001



CONSTRUCTION MONITORING SCHEDULE

OWNER: Lizards Back Ltd
PROJECT: Dams
LOCATION: State Highway No. 63, Wairau Valley

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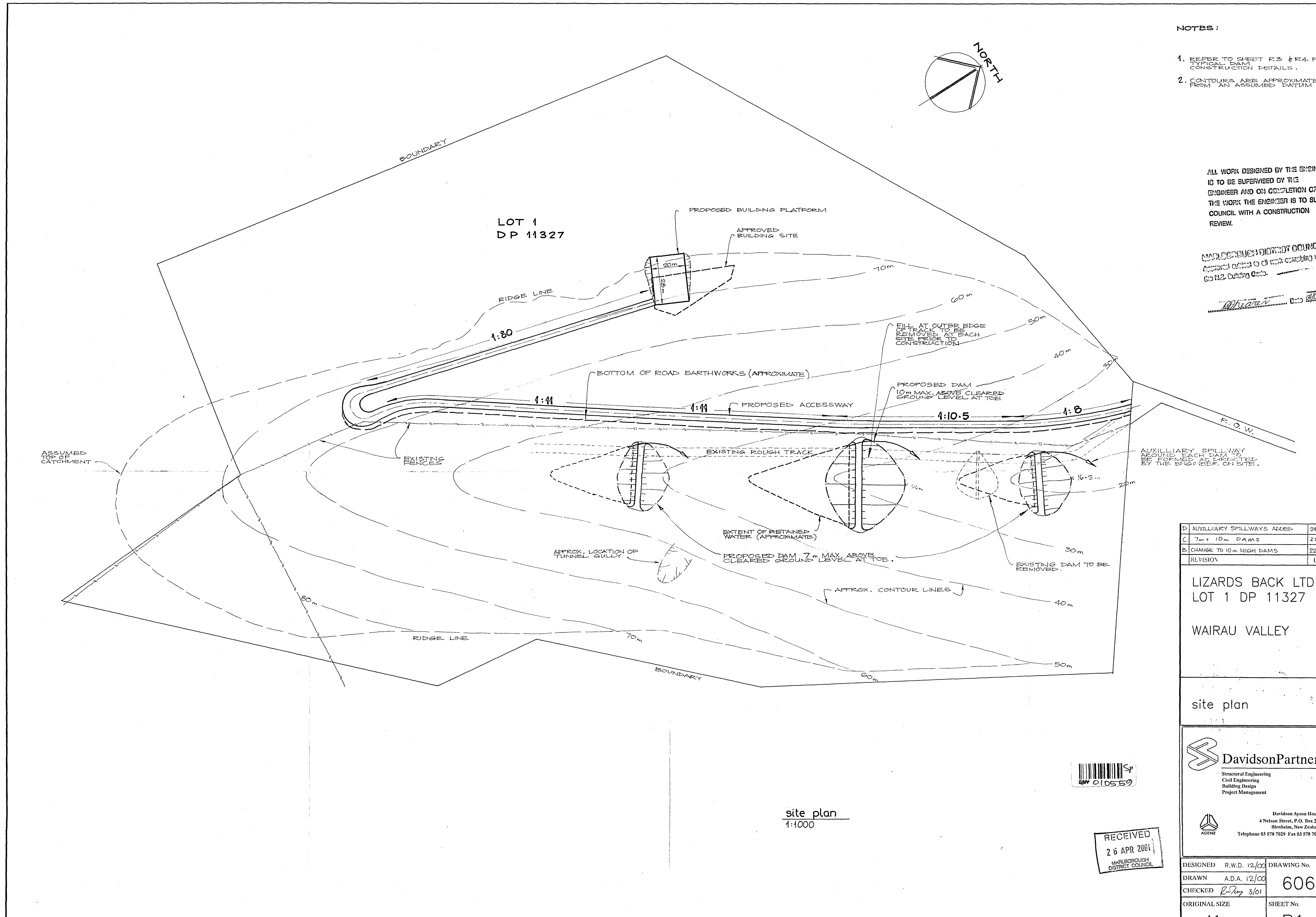
NOTES:

1. REFER TO SHEET R3 & R4 FOR TYPICAL DAM CONSTRUCTION DETAILS.
2. CONTOURS ARE APPROXIMATE FROM AN ASSUMED DATUM.

ALL WORK DESIGNED BY THE ENGINEER IS TO BE SUPERVISED BY THE ENGINEER AND ON COMPLETION OF THE WORK THE ENGINEER IS TO SUPPLY THE COUNCIL WITH A CONSTRUCTION REVIEW.

MARLBOROUGH DISTRICT COUNCIL
Approved subject to all work complying with the R.C. Building Code.

[Signature] 24/04/01



D	AUXILIARY SPILLWAYS ADDED	24/4/01	TA
C	7m + 10m DAMS	27/03/01	AJC
B	CHANGE TO 10m HIGH DAMS	22/01/01	TA
	REVISION	DATE	BY

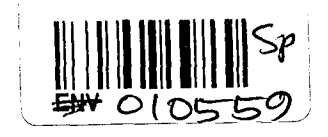
LIZARDS BACK LTD.
LOT 1 DP 11327

WAIRAU VALLEY

site plan

DavidsonPartnersLtd
Structural Engineering
Civil Engineering
Building Design
Project Management

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



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site plan
1:1000

DESIGNED	R.W.D. 12/00	DRAWING No.	
DRAWN	A.D.A. 12/00	6065	
CHECKED	R.W.D. 3/01		
ORIGINAL SIZE	A1	SHEET No.	ISSUE
		R1	D
CAD			