Appendices

Appendix A

Davis Consulting Group Contaminated Land Experience

Davis Consulting Group Contaminated Land Experience

Glenn Davis is the director of Davis Consulting Group and has over 15 years post graduate experience working as an Environmental Scientist. Glenn has accumulated a significant volume of work experience in the contaminated land field undertaking preliminary site investigations (PSIs), detailed site investigations (DSIs) and remediation projects in New Zealand, Australia, Asia, the United Kingdom and Ireland. The following provides a summary of Glenn Davis's experience.

Davis Consulting Group (2007 – present): Principal Environmental Scientist – completed multiple preliminary and detailed site investigations in Otago and Southland predominantly for the land development industry. In addition to undertaking investigation and remedial work DCG advises the Southland Regional Council on contaminated land matters including the review of consultant reports and consent applications. Key projects DCG has undertaken include:

- Review of groundwater contamination associated with the former Invercargill gasworks site including the completion of a groundwater investigation and completion of an environmental risk assessment report to support a discharge consent application;
- Completion of site investigations on former landfills in Invercargill to consider the suitability of the sites for commercial/industrial development;
- Management of the removal of an underground fuel tank in Gore and subsequent groundwater investigation; and
- Completion of a number of detailed site investigations in the Te Anau area to consider the suitability of former farm land for residential development.

RPS Australia (2003 – 2006): Supervising Environmental Scientist managing multiple detailed site investigations in the land development industrial and operated as an environmental specialist for Chevron on Barrow Island monitoring and managing a number of large contaminated groundwater plumes.

URS Ireland (2001 – 2003): - Senior Environmental Scientist undertaking multiple PSIs and DSIs on services stations and train station throughout Ireland. Glenn was also involved in the design and operation of a number of large scale remediation projects, predominantly associated with the removal of hydrocarbon contaminated soil and recovery or hydrocarbons impacting groundwater.

ERM Australia (1998 – 2000) – Working as a project level environmental scientist Glenn completed in excess of 30 detailed site investigations and remedial projects on service stations, concrete batching plants, and transport depots.

Appendix B

Certificate of Title

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**413072**
Land Registration District	**Otago**
Date Issued	05 August 2008

Prior References

OT13A/734	OT15A/1076	OT17B/806
OT18B/1030	OT18B/991	OT18C/442

Estate	Fee Simple
Area	101.5914 hectares more or less
Legal Description	Lot 7 Deposited Plan 392663

Proprietors

Trojan Helmet Limited

Interests

Subject to a right to convey water in gross over part marked g-h DP 392663 to Arrow Irrigation Company Limited created by Transfer 828083 -21.4.1993 at 9.23 am

X14968 Irrigation Agreement (affects part formerly Section 105 Block VII Shotover SD)

Part formerly Section 105 Block VII Shotover Survey District is Subject to Section 8 Mining Act 1971

Part formerly Section 105 Block VII Shotover Survey District is Subject to Section 5 Coal Mines Act 1979

Subject to Part IV A Conservation Act 1987 (affects Part formerly part Section 102 Block VII Shotover Survey District - herein)

Subject to Section 11 Crown Minerals Act 1991 (affects Part formerly part Section 102 Block VII Shotover Survey District - herein)

X14880 Irrigation Agreement (affects part formerly Section 105 Block VII Shotover SD)

Subject to a right of way over part marked AD DP 392663 created by Transfer 746961.17 - 1.2.1990 at 9:51 am

Subject to a right to convey water over part marked aa-ab,ab-ac,ac-ad,ad-ae,ae-au DP 392663 and right to take & convey water over part marked A DP 392663 created by Transfer 749789 - 12.3.1990 at 9:29 am

Subject to a right to convey water over part marked aa-ab,ab-ac,ac-ad,ad-ae,af-ag,ag-ai,aj-i,i-ak,al-am,ae-af DP 392663,right to take & convey water over part marked A DP 392663 and right to store & convey water over part marked B DP 392663 created by Transfer 773822.1 - 27.2.1991 at 9:12 am

Appurtenant to part formerly part lot 1 DP 21438 are rights to convey water created by Transfer 773822.1 - 27.2.1991 at 9:12 am

Subject to a right to convey water over part marked aj-i,i-ak,al-am DP 392663 and right to store & convey water over part marked B DP 392663 created by Transfer 773822.2 - 27.2.1991 at 9:12 am

Subject to a right to convey water in gross over part marked k-l,m-n,v-w DP 392663 to The Arrow Irrigation Company Limited created by Transfer 825040 - 4.3.1993 at 9:30 am

Subject to a right to convey water in gross over part marked h-i,i-j,j-k DP 392663 to The Arrow Irrigation Company Limited created by Transfer 834732 - 23.7.1993 at 9:32 am

Subject to a right to convey water in gross over part marked o-p,q-y DP 392663 to Arrow Irrigation Company Limited created by Transfer 840451 - 13.10.1993 at 9:51 am

Appurtenant to part formerly CT OT17B/806 is a right to pump water,a right to convey electricity and rights to convey water created by Transfer 915672.3 - 6.9.1996 at 2:49 pm

The easements created by Transfer 915672.3 are subject to Section 243 (a) Resource Management Act 1991

Identifier **413072**

Appurtenant to part formerly CT OT17B/806 is a right to take water created by Transfer 953679.6 - 31.8.1998 at 10:56 am

The easements created by Transfer 953679.6 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Deed 964442.3 - 23.3.1999 at 12.55 pm (affects part formerly CT OT17B/806)

7898685.3 Surrender of the right of way marked A,B SO 23066 created by Transfer 746961.17 as to land in CTs OT15A/1076,OT15D/881,OT17B/806,OT18B/991,OT18C/442 - 5.8.2008 at 9:00 am

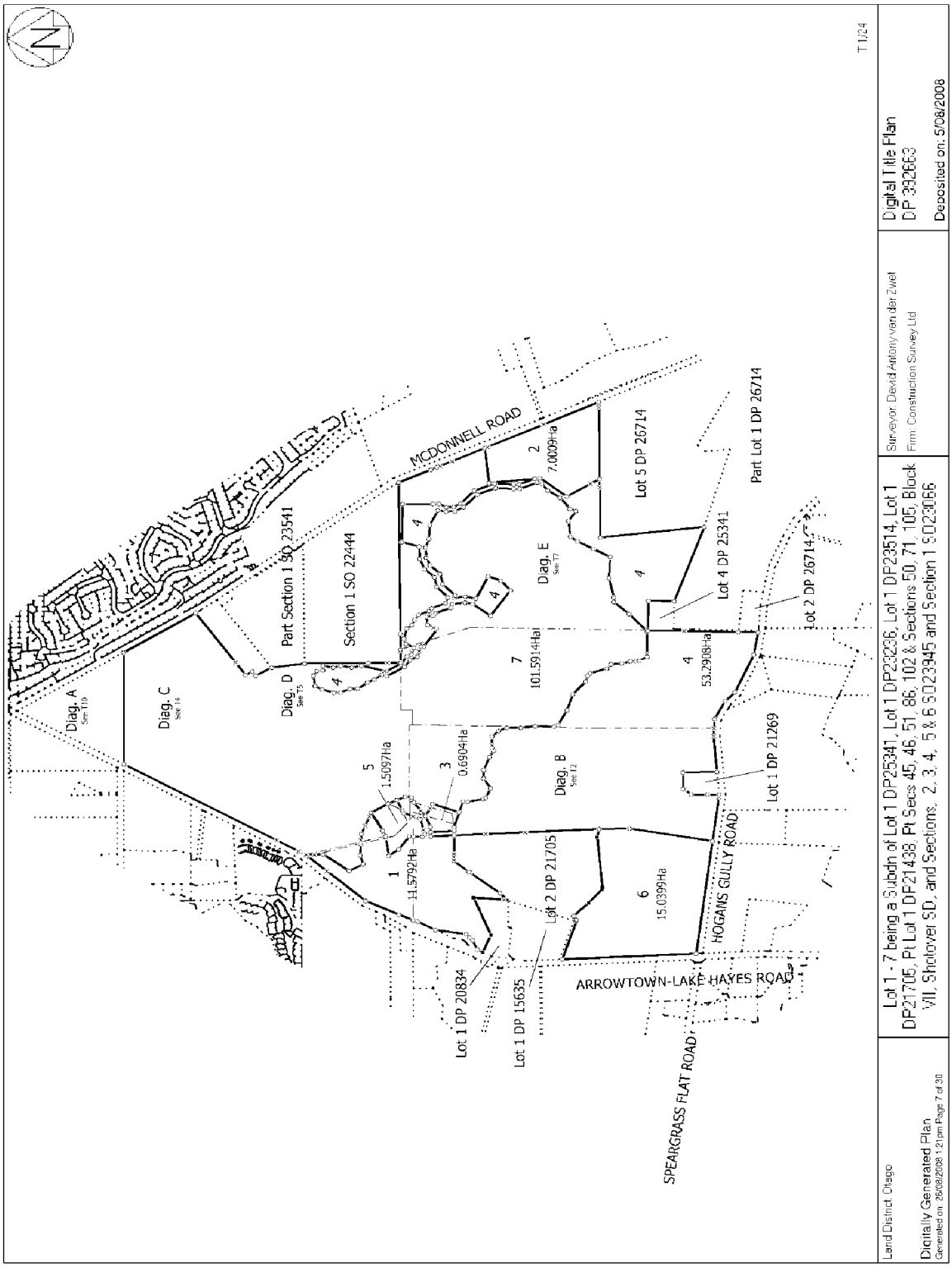
Subject to a right of way over part marked I,L DP 392663,right to convey telecommunications over part marked AB,AD,Q,AN DP 392663,right to convey electricity marked P,Q,R,AN DP 392663 and right to convey water marked AP,AQ,AR,AO,AN DP 392663 created by Easement Instrument 7898685.11 - 5.8.2008 at 9:00 am

The easements created by Easement Instrument 7898685.11 are subject to Section 243 (a) Resource Management Act 1991

8267348.1 Mortgage to Westpac New Zealand Limited - 28.8.2009 at 9:01 am

Subject to a right to convey electricity (in gross) over parts marked R, I, F, D, P, N, J, O & Q on DP 392663 and over parts marked A & B on DP 420440 and a right to transform electricity (in gross) over parts marked D, O & Q on DP 392663 and over part marked B on DP 420440 in favour of Aurora Energy Limited created by Easement Instrument 8735727.6 - 20.4.2011 at 2:52 pm

Subject to a right to convey water over part marked AQ on DP 392663 created by Easement Instrument 9136139.1 - 14.12.2012 at 1:49 pm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DP 392663
Deposited on: 5/08/2008
Surveyor: David Antony van der Zwet
Firm: Construction Survey Ltd
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Land District: Otago
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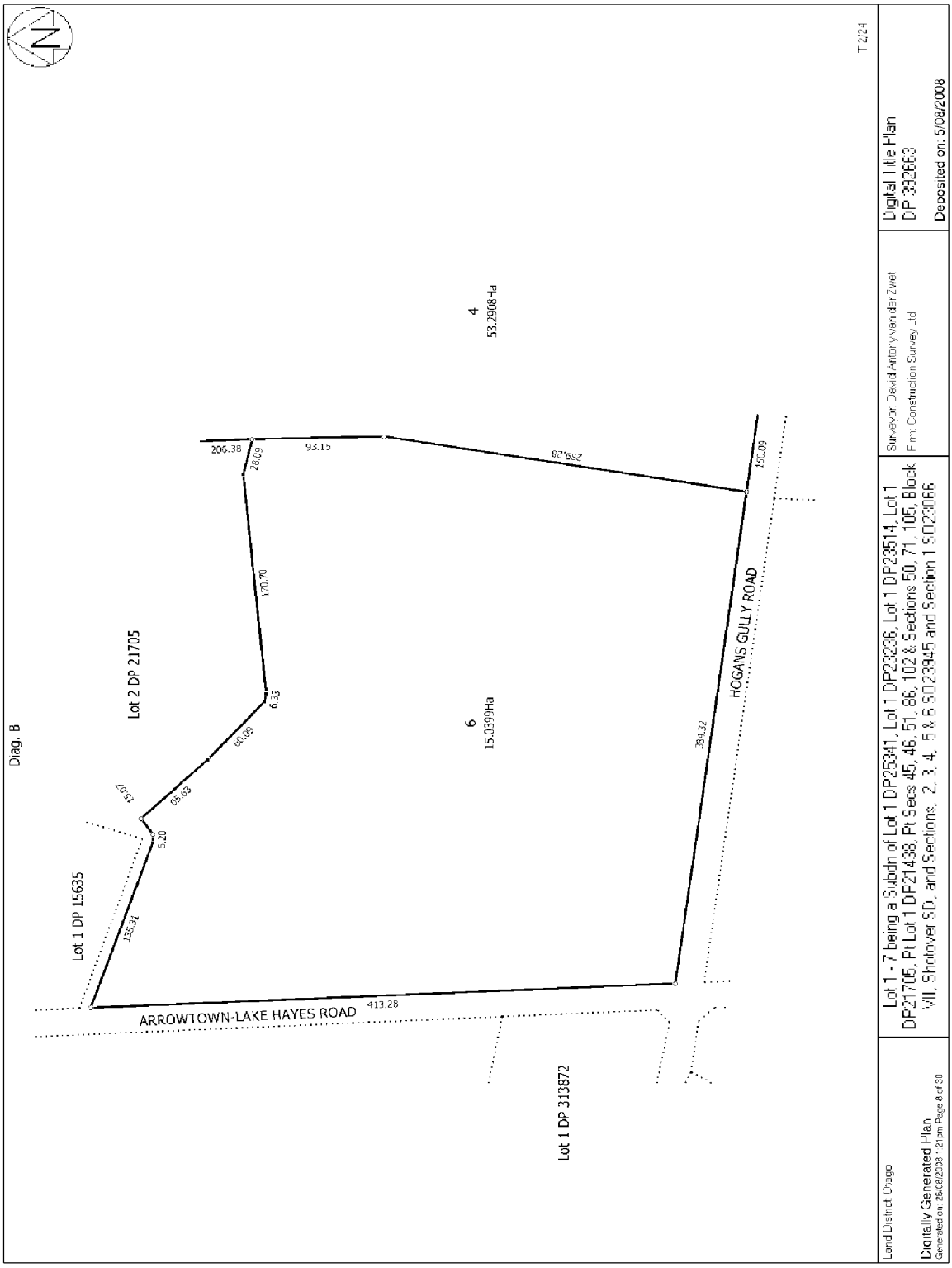
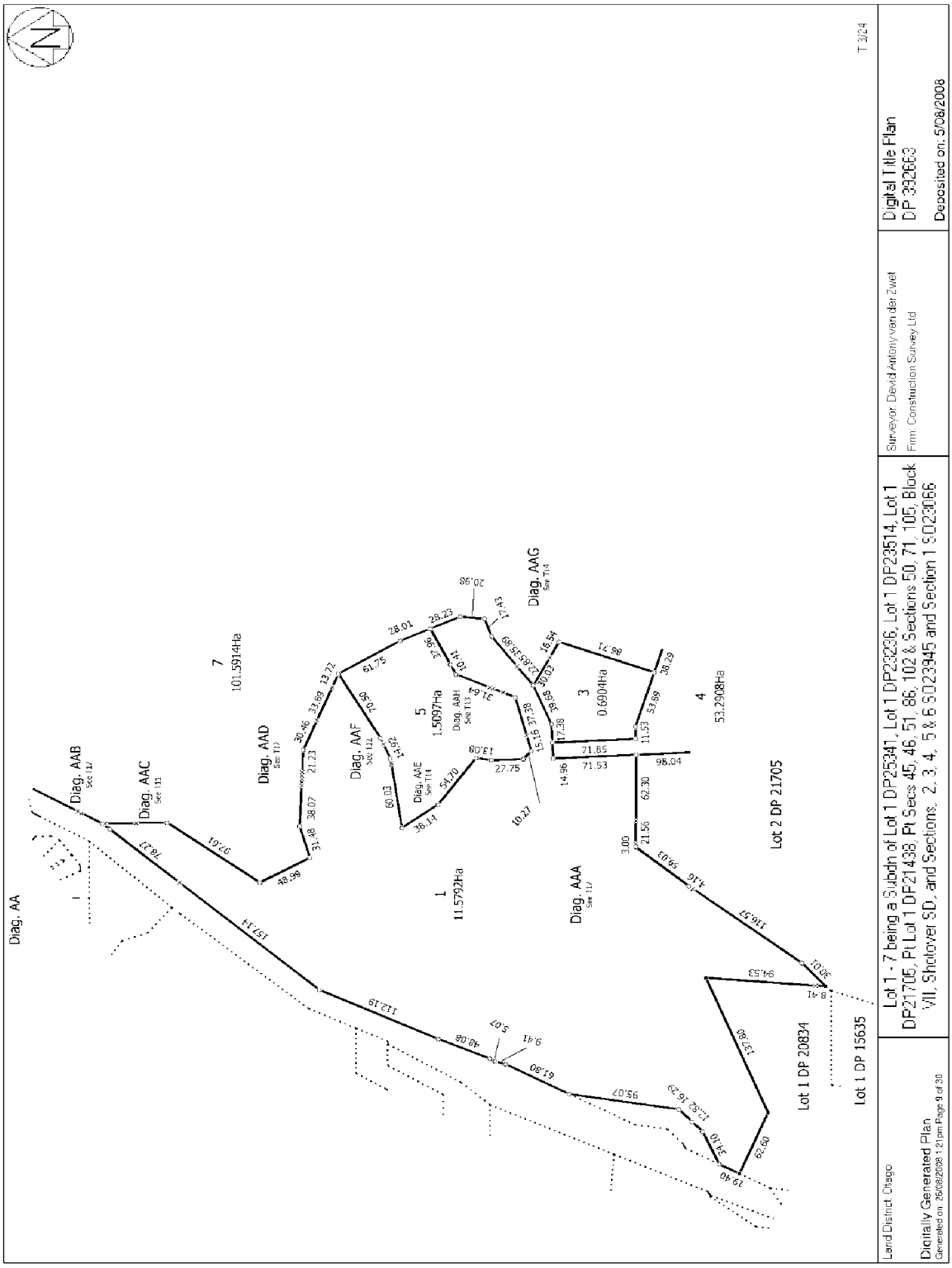
Generated on: 28/08/2008 1:21pm Page 7 of 30
MCDONNELL ROAD
Part Section 1 SO 23541
Section 1 SO 22444
Diag. A
Diag. C
Diag. D
Diag. E
Diag. B
Lot 5 DP 26714
Lot 4 DP 25341
Part Lot 1 DP 26714
Lot 2 DP 26714
Lot 1 DP 21269
Lot 2 DP 21705
Lot 1 DP 20834
Lot 1 DP 15635
HOGANS GULLY ROAD
ARROWTOWN-LAKE HAYES ROAD
SPEARGRASS FLAT ROAD
1 11.5792Ha
2 7.0009Ha
3 0.6904Ha
4 53.2908Ha
5 1.5097Ha
6 15.0399Ha
7 101.5914Ha

Identifier **413072**

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Diag. AAC
See T1
Diag. AAD
See T1
Diag. AAE
See T14
Diag. AAF
See T12
Diag. AAG
See T14
Diag. AAH
See T13
Diag. AAA
See T4/
1
11.5792Ha
3
0.6904Ha
4
53.2908Ha
5
1.5097Ha
7
101.5914Ha
Lot 2 DP 21705
Lot 1 DP 20834
Lot 1 DP 15635
T 3/24
Land District Otago
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Surveyor David Antony van der Zwet
Firm Construction Survey Ltd
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DP 392663
Deposited on: 5/08/2008

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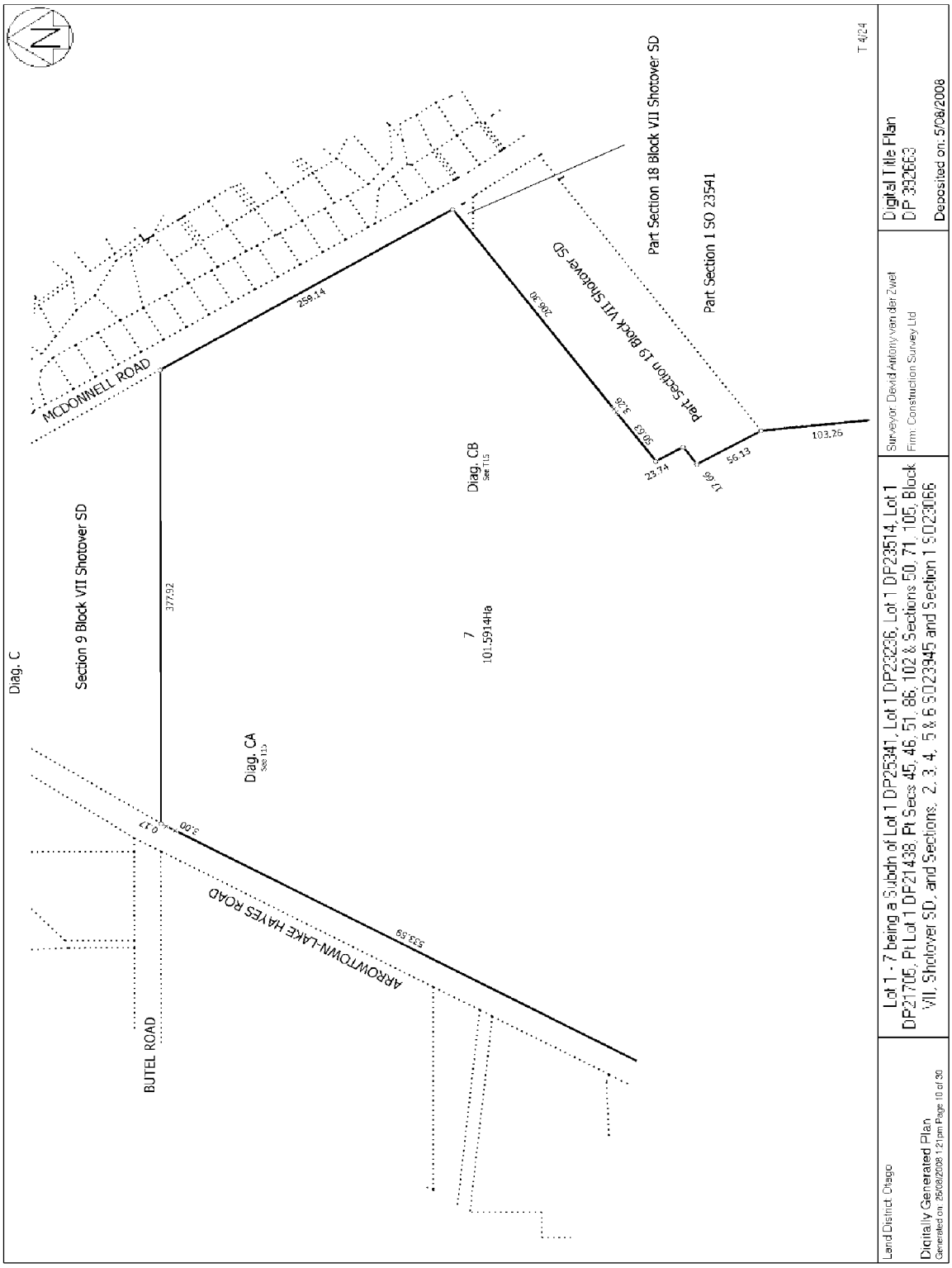

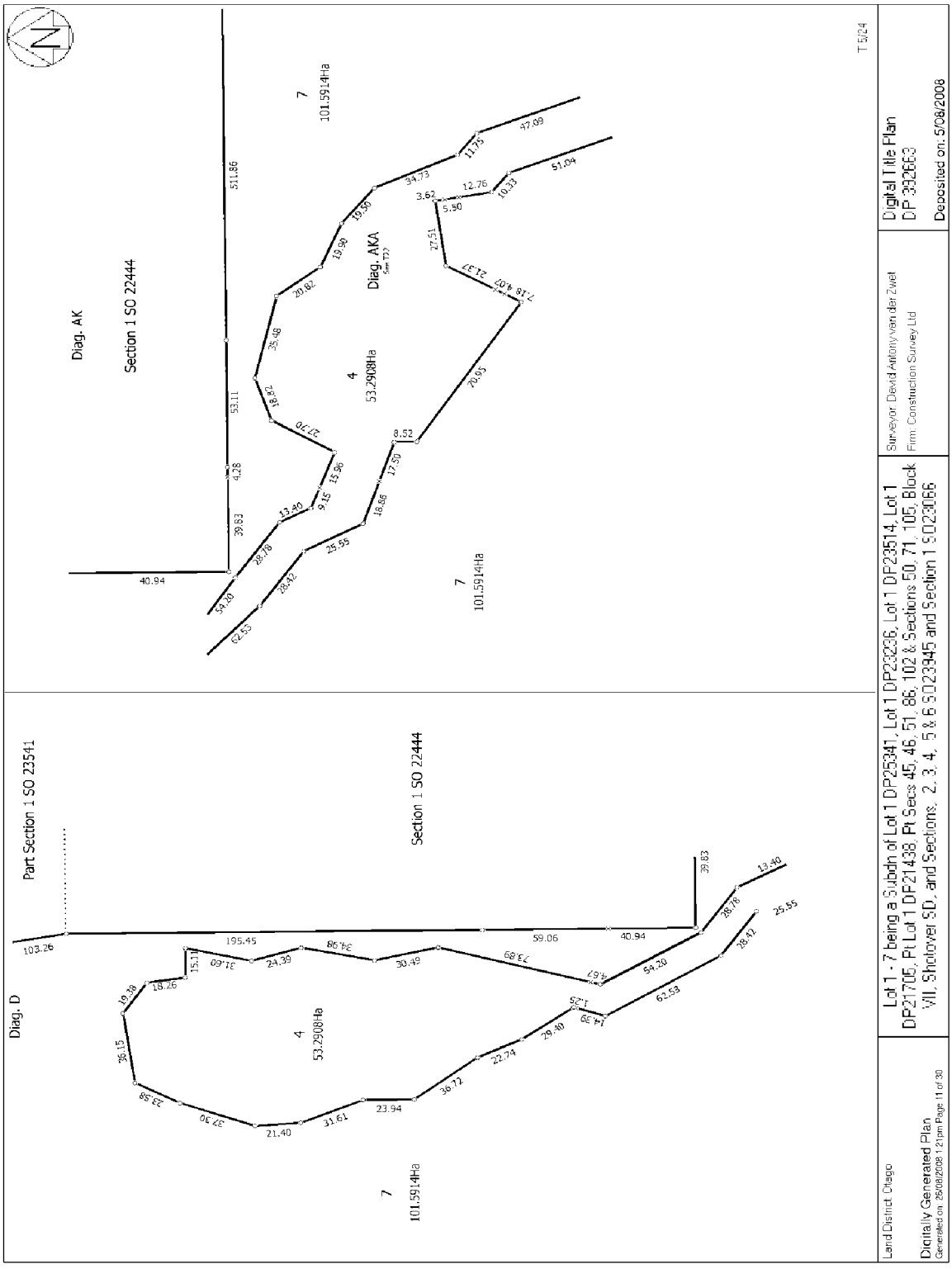
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Section 1 SO 22444
Diag. AKA
Diag. D
Part Section 1 SO 23541
Section 1 SO 22444
4
53.2908Ha
7
101.5914Ha
Digital Title Plan
DP 392663
Deposited on: 5/08/2008
Surveyor David Antony van der Zwet
Firm: Construction Survey Ltd
Land District: Otago
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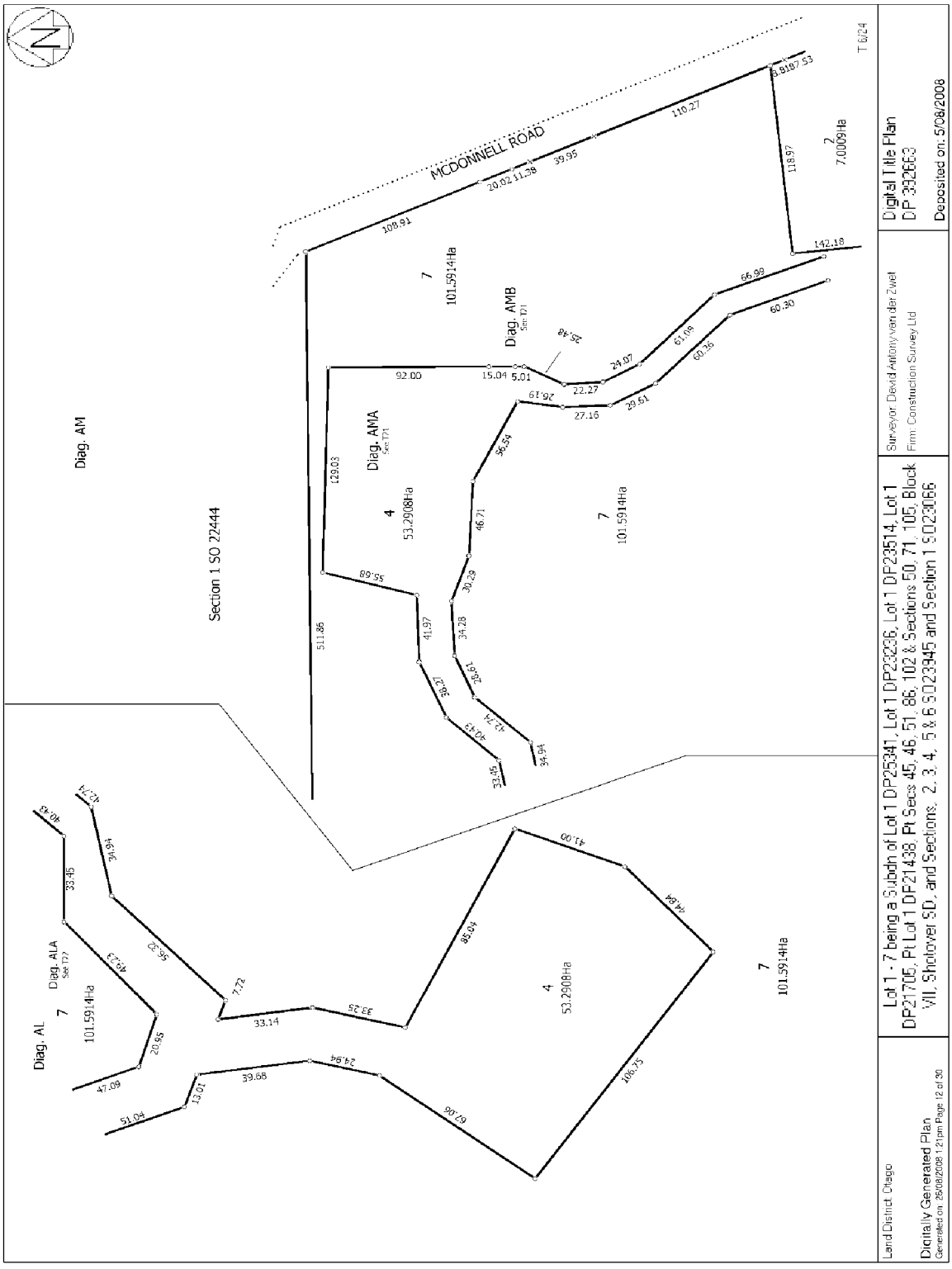
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Section 1 SO 22444
Diag. AMA
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Diag. AMB
See T21
Diag. ALA
See T21
Diag. AL
7
101.5914Ha
4
53.2908Ha
2
7.0009Ha
Digital Title Plan
DP 392663
Deposited on: 5/08/2008
Surveyor: David Antony van der Zwet
Firm: Construction Survey Ltd
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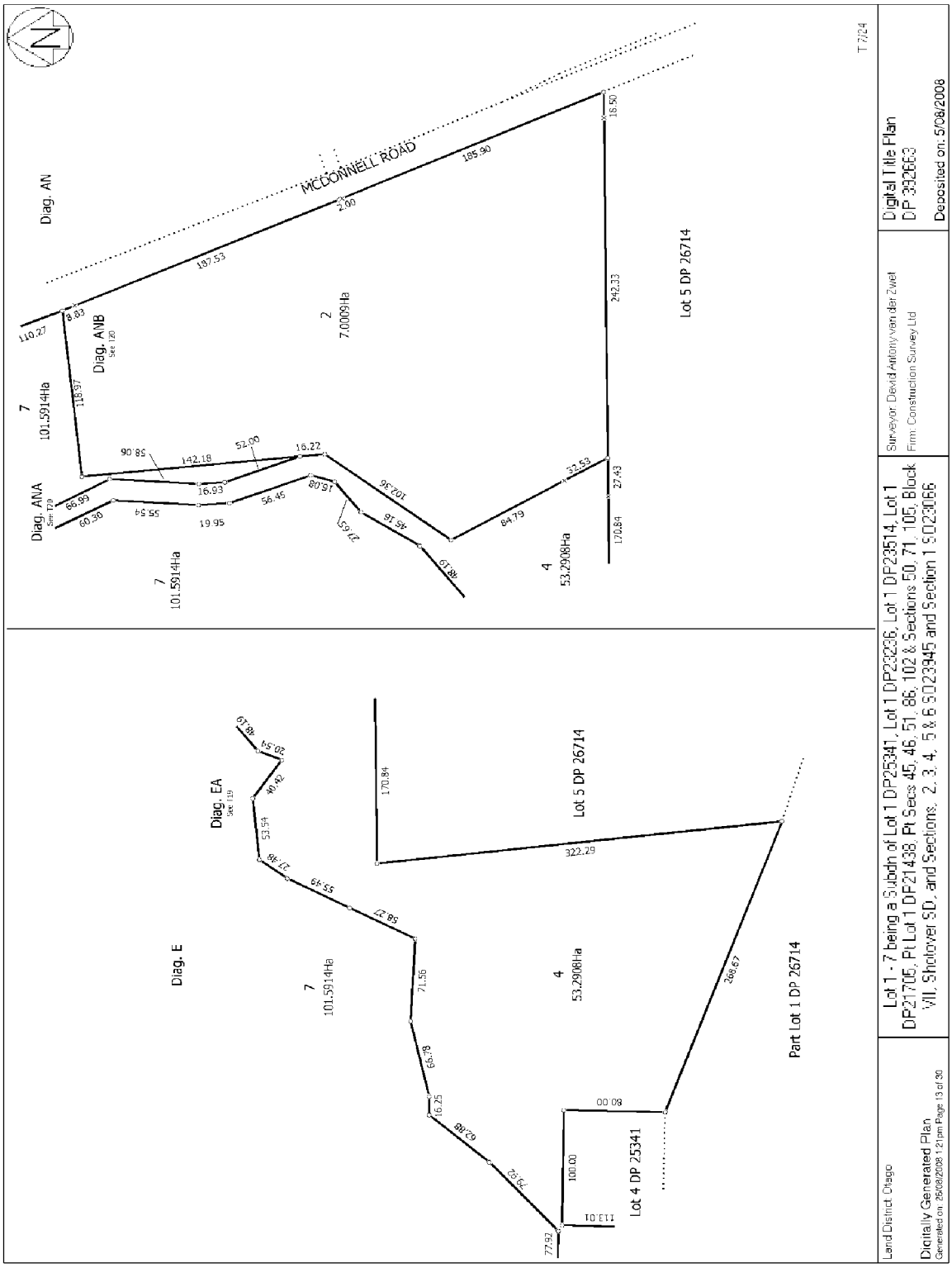

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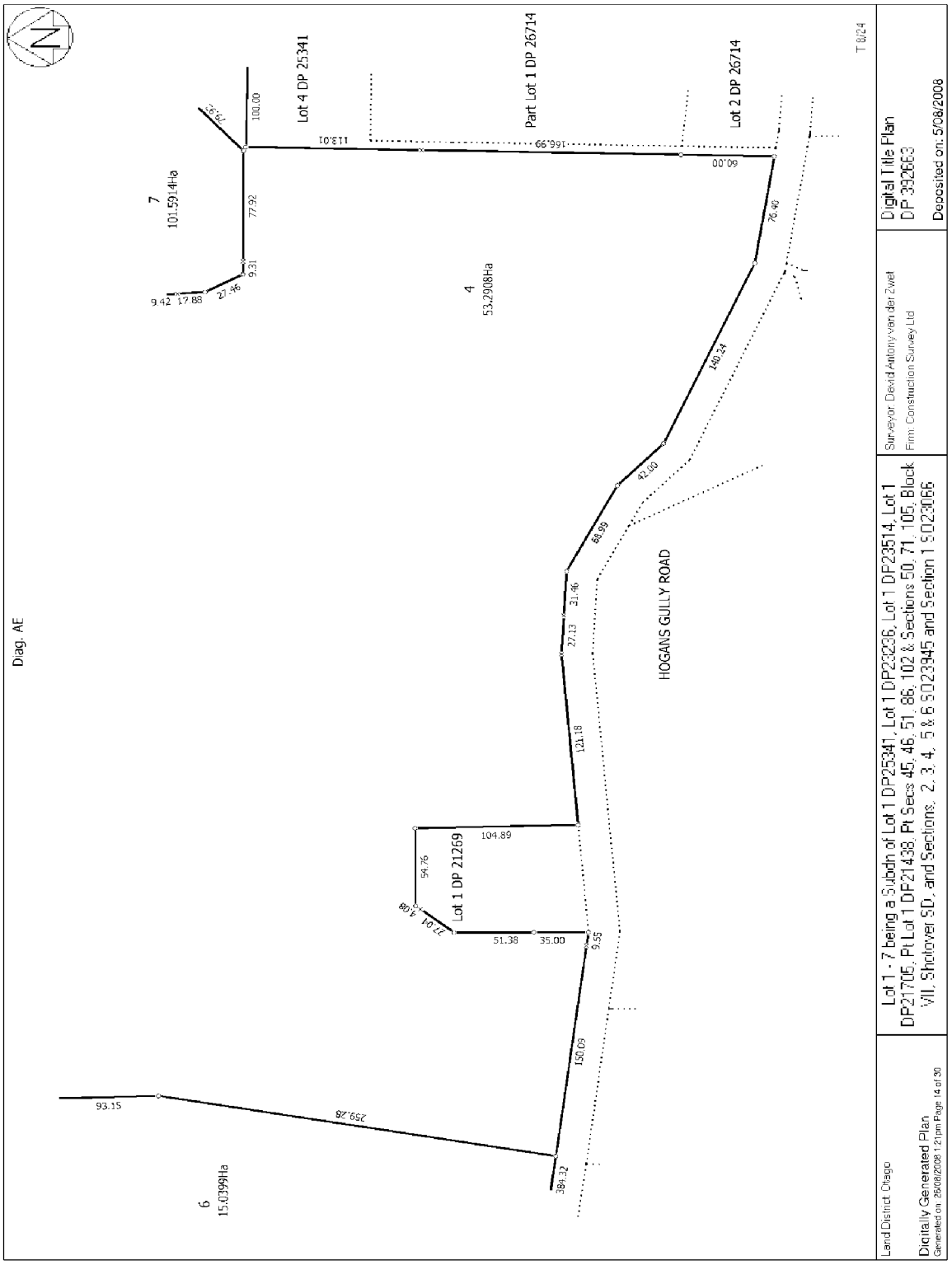

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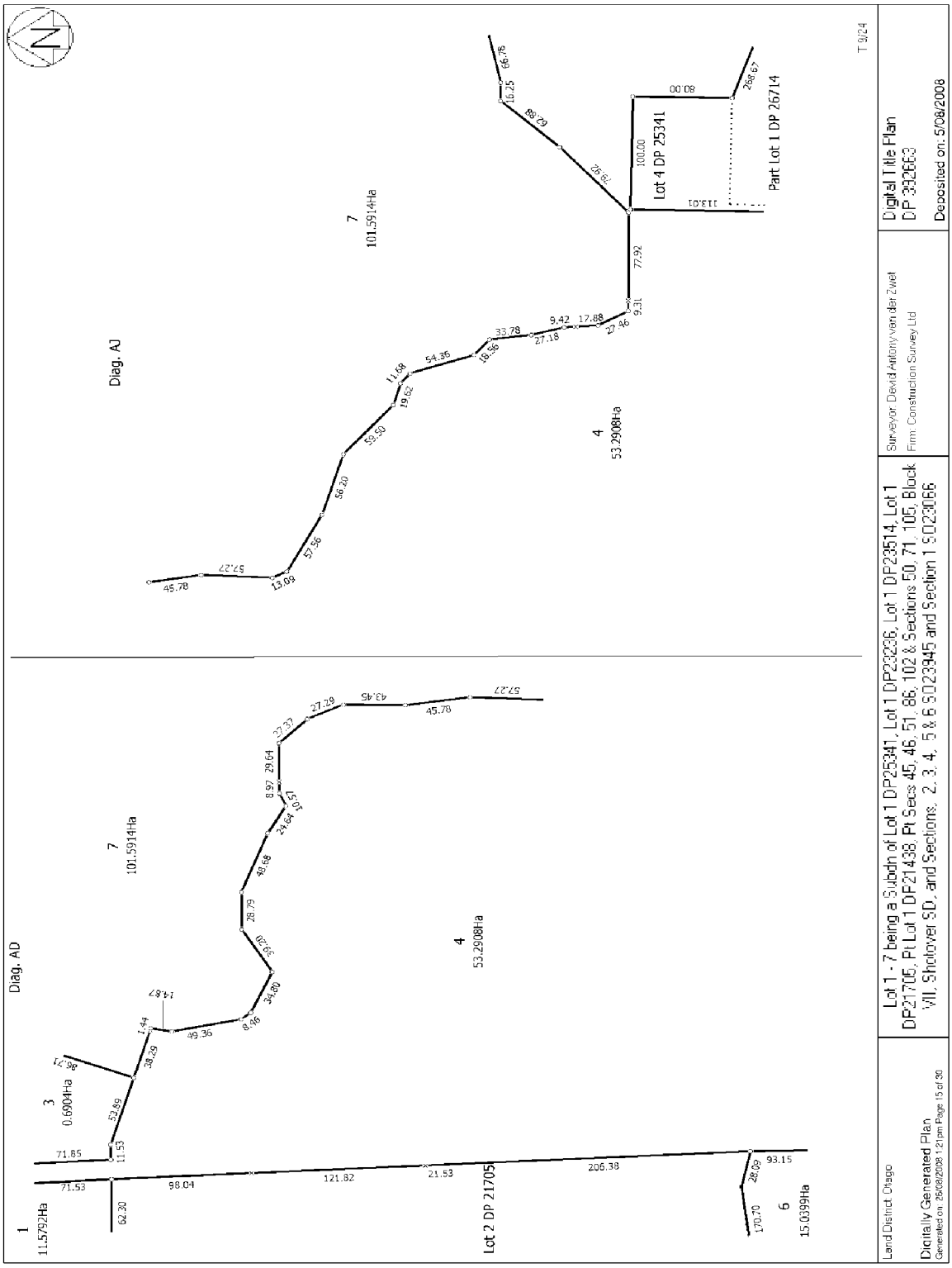

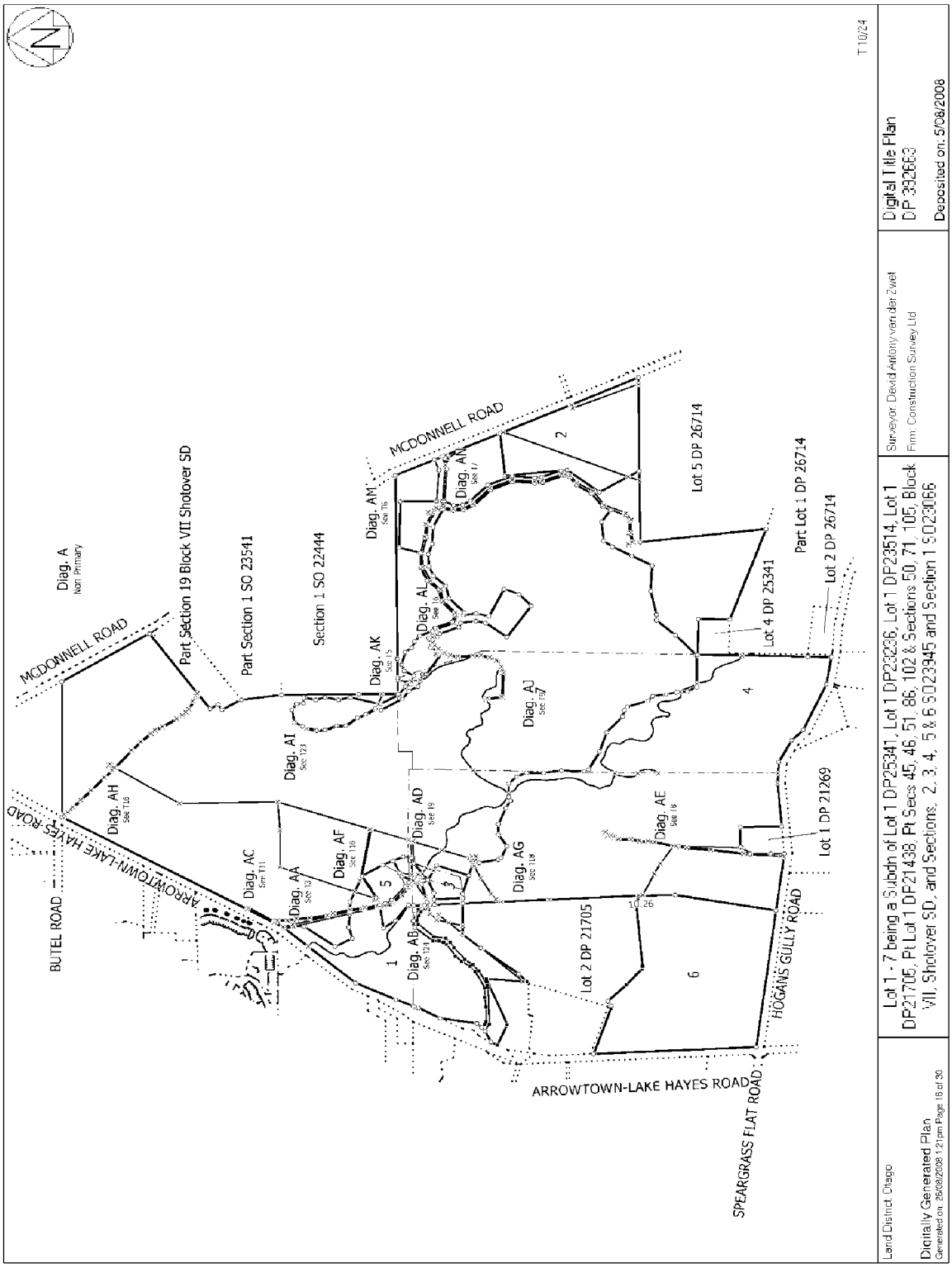
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Sec 15
Diag. AL
Sec 16
Diag. AI
Sec 123
Diag. AJ
Sec 17
Diag. AH
Sec T16
Diag. AC
Sec T11
Diag. AA
Sec 19
Diag. AF
Sec 116
Diag. AD
Sec 19
Diag. AG
Sec 118
Diag. AB
Sec 123
Diag. AE
Sec 18
BUTEL ROAD
ARROWTOWN-LAKE HAYES ROAD
Lot 5 DP 26714
Lot 4 DP 25341
Part Lot 1 DP 26714
Lot 2 DP 26714
Lot 1 DP 21269
Lot 2 DP 21705
HOGANS GULLY ROAD
SPEARGRASS FLAT ROAD
T 10/24
Land District Otago
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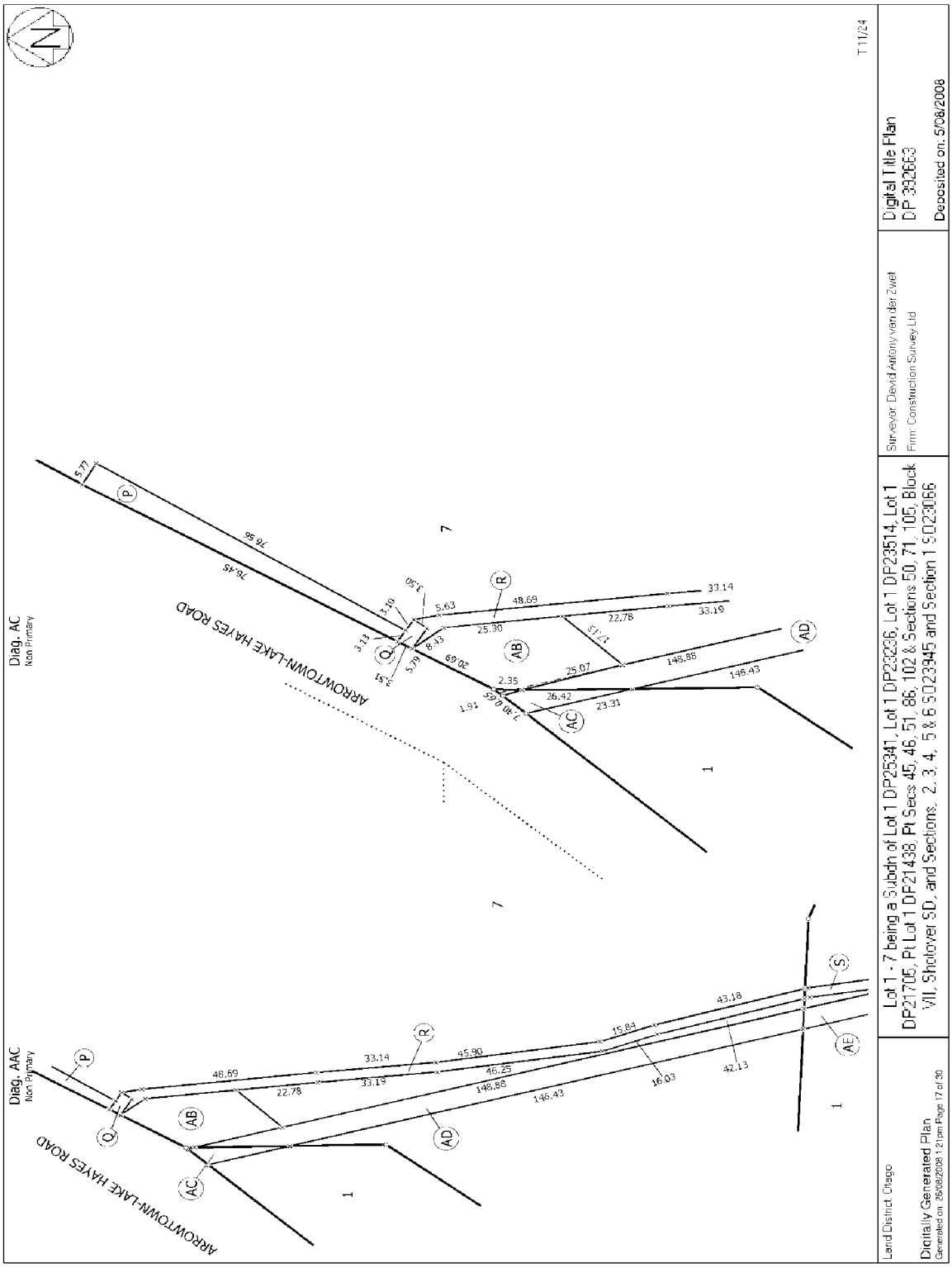

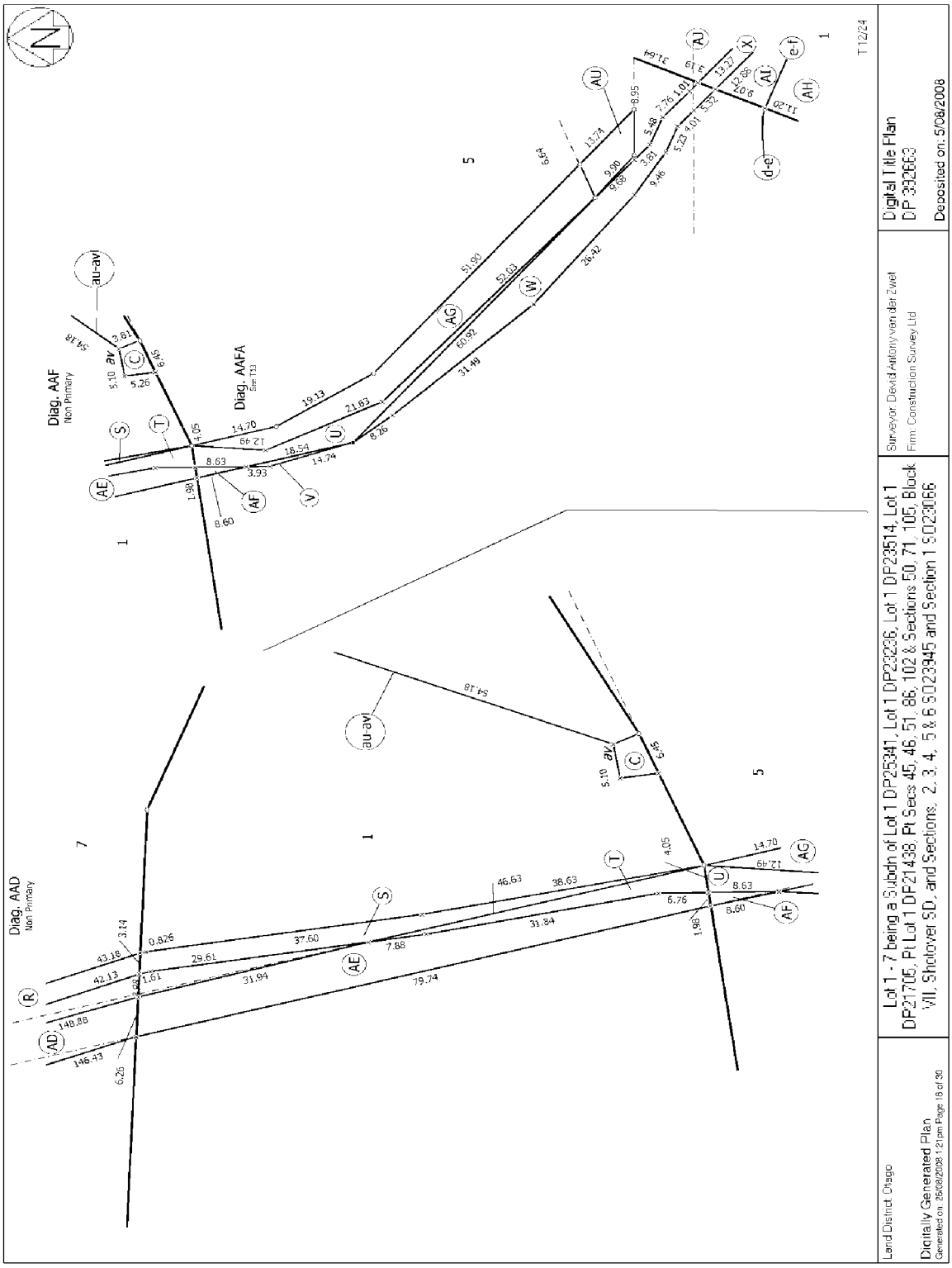
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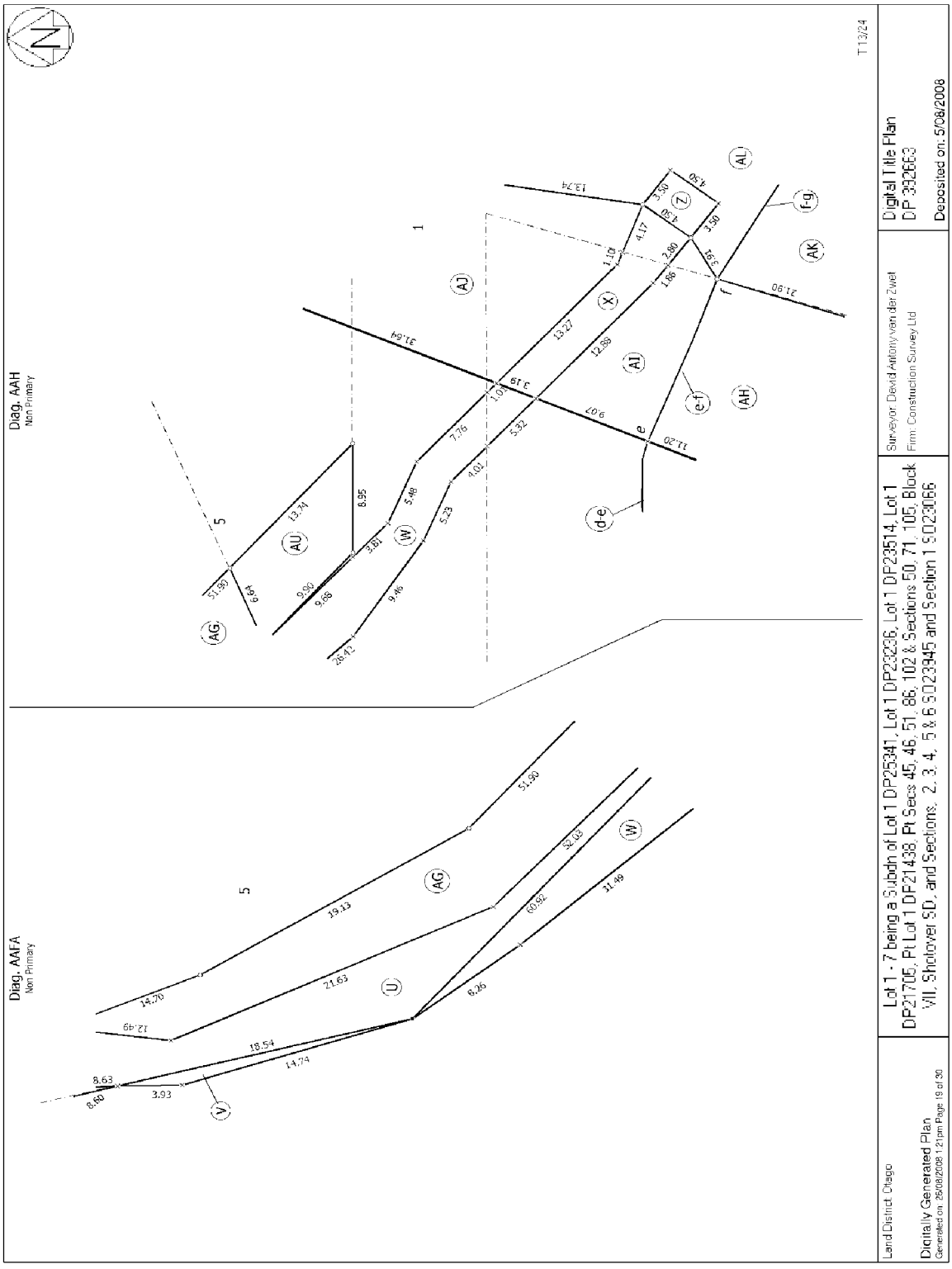
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Surveyor David Antony van der Zwet
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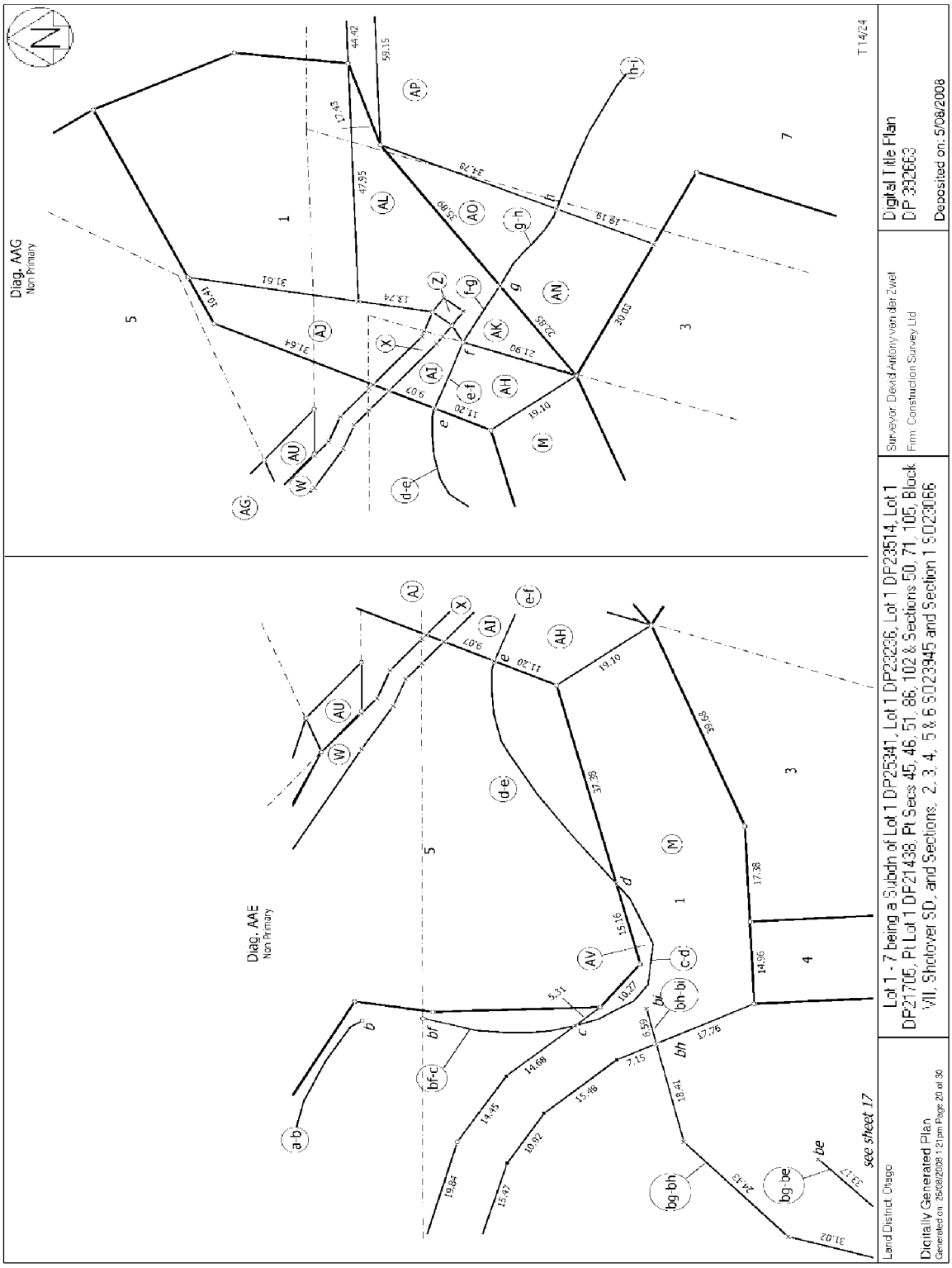

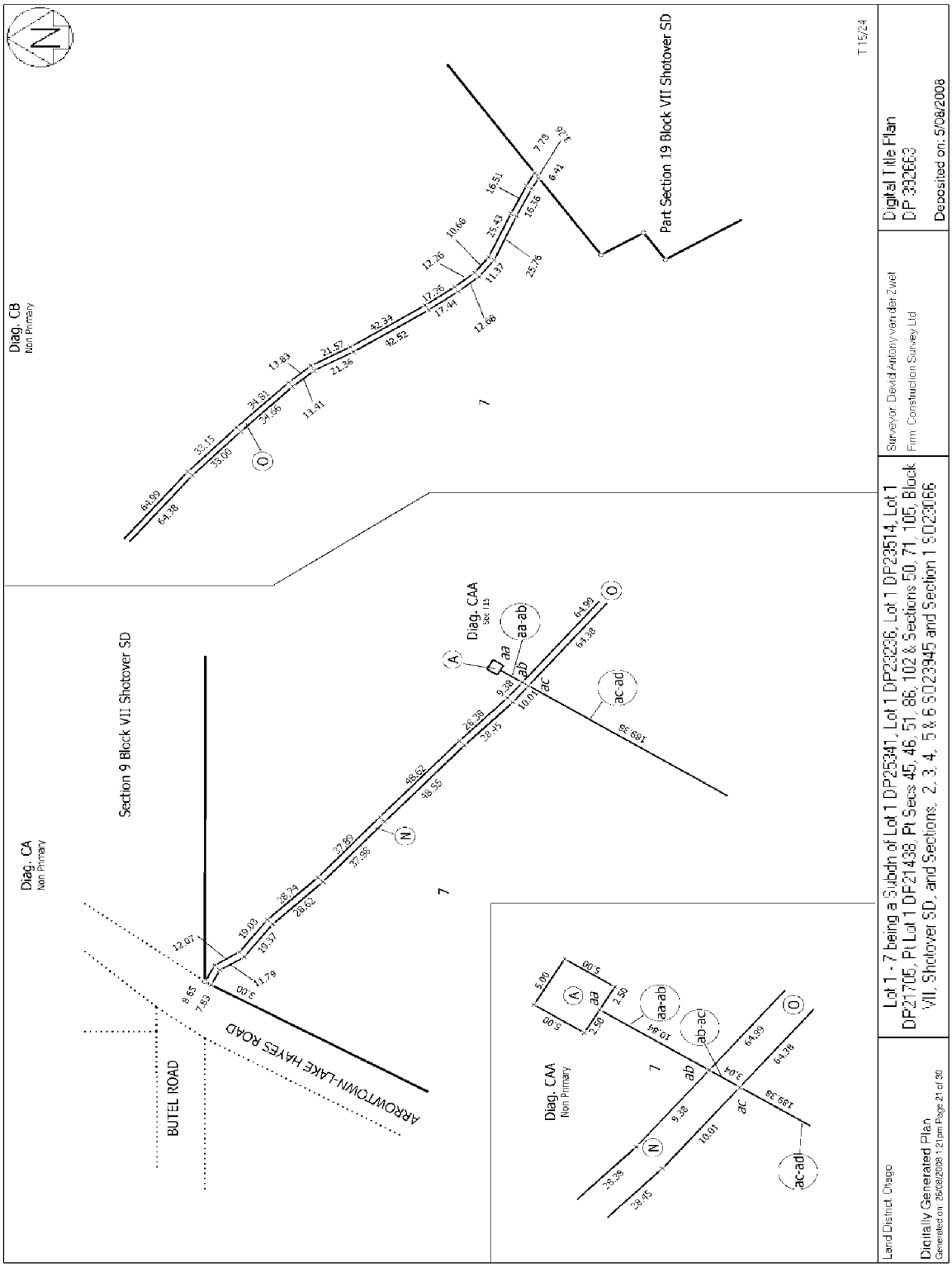
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Part Section 19 Block VII Shotover SD
T 15/24
Diag. CA
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Section 9 Block VII Shotover SD
Diag. CAA
Set 1b
BUTEL ROAD
ARROWTOWN-LAKE HAYES ROAD
Diag. CAA
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Digital Title Plan
DP 392663
Deposited on: 5/08/2008
Surveyor: David Antony van der Zwet
Firm: Construction Survey Ltd
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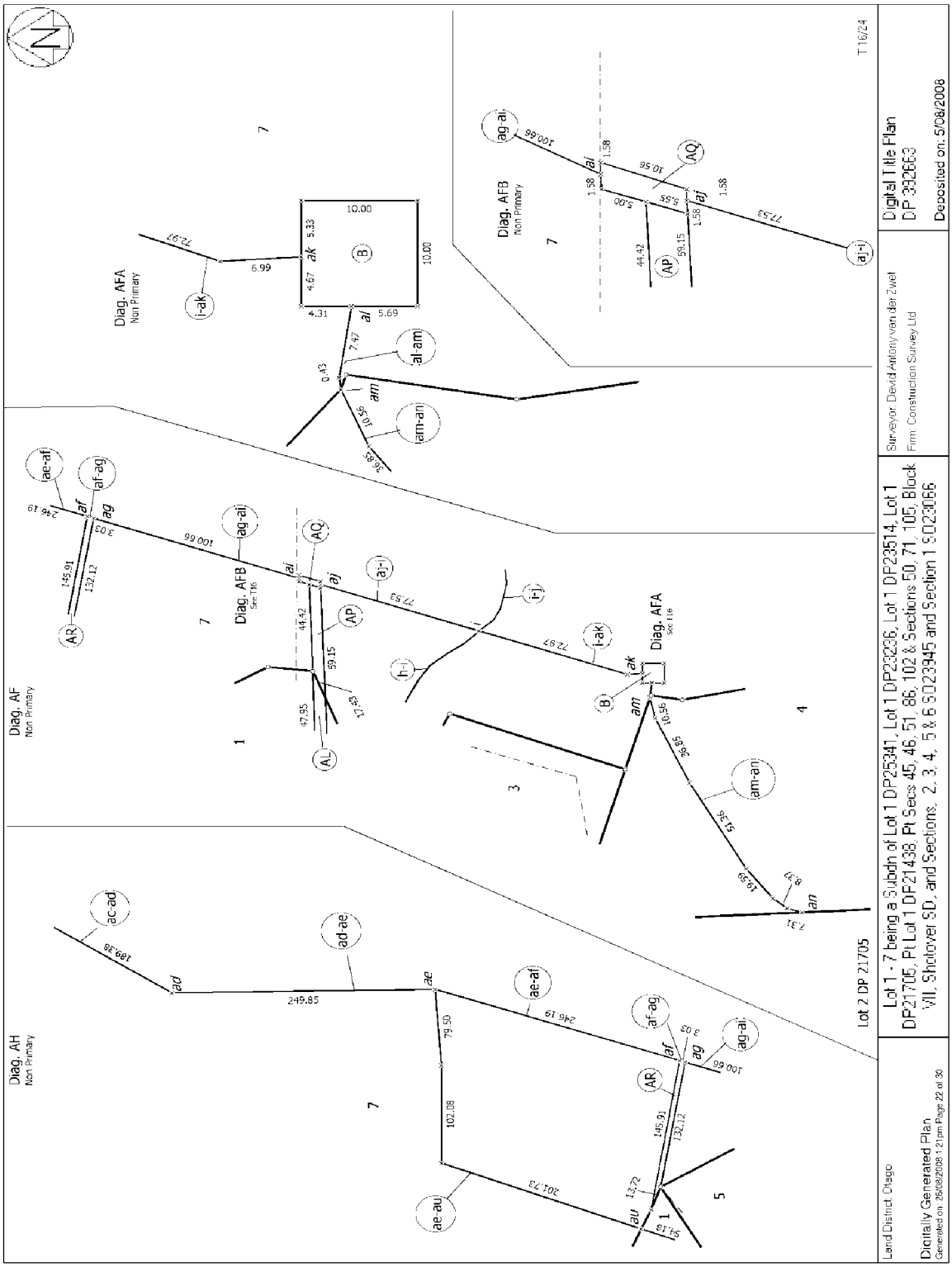

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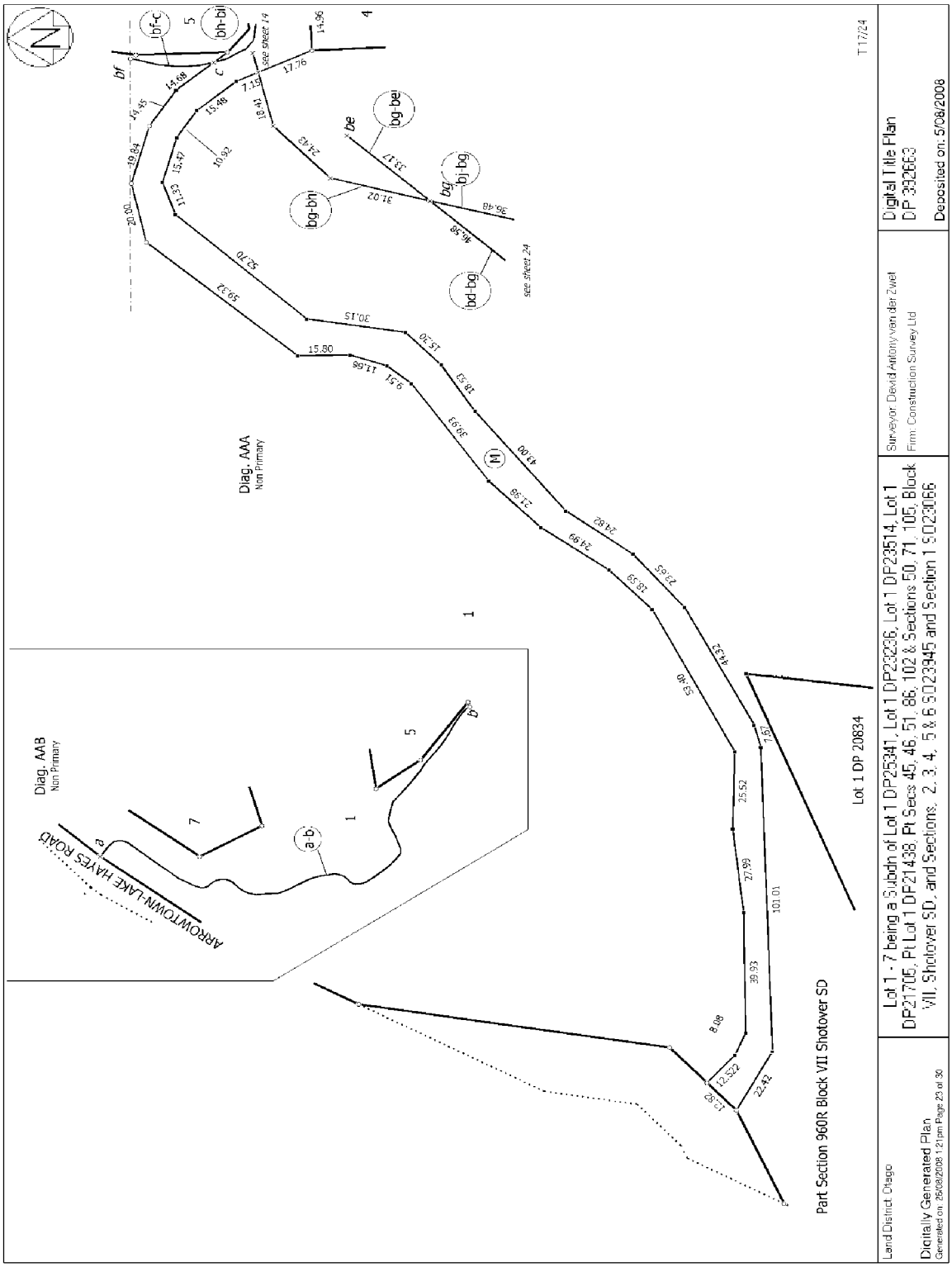

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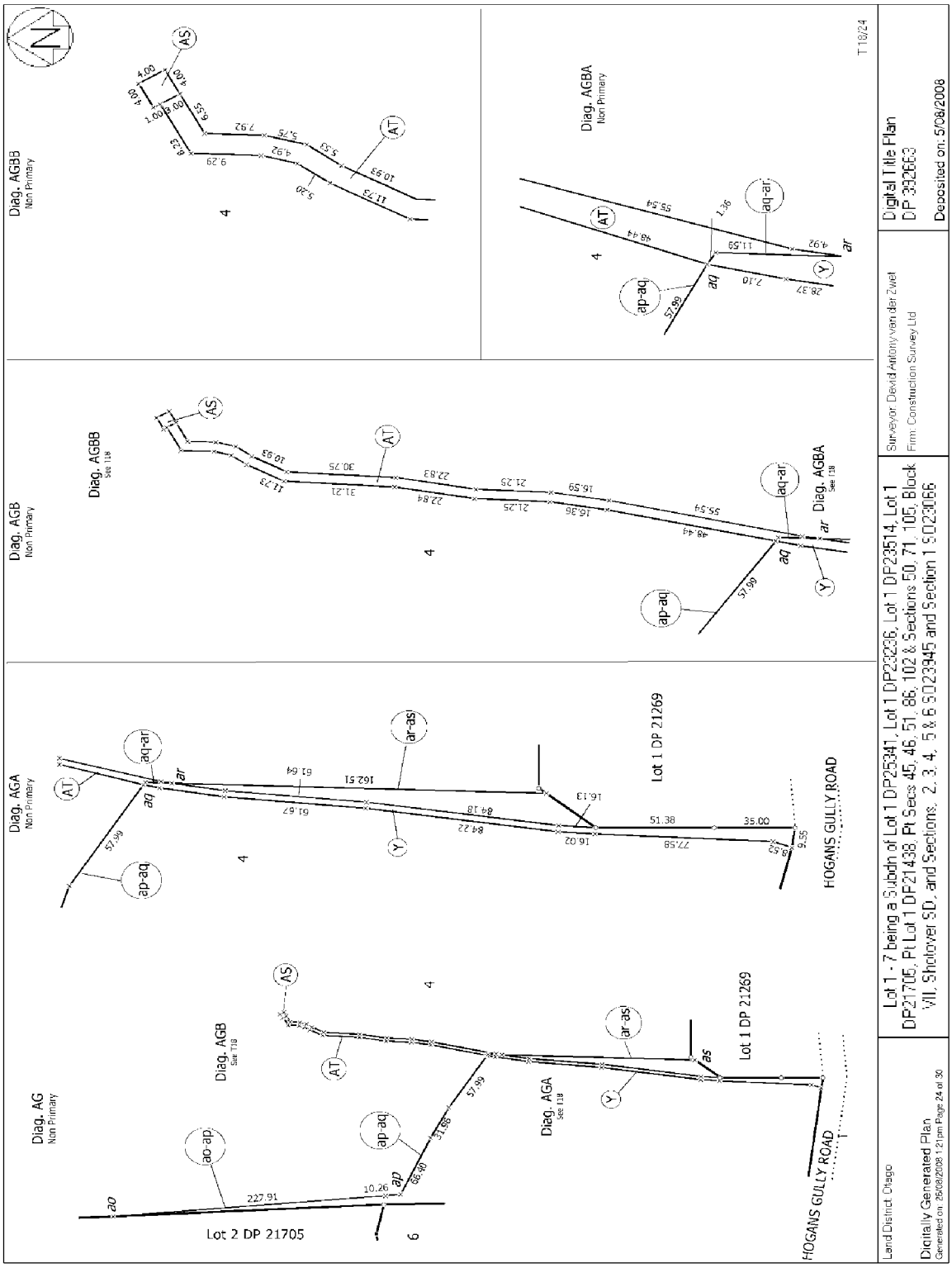

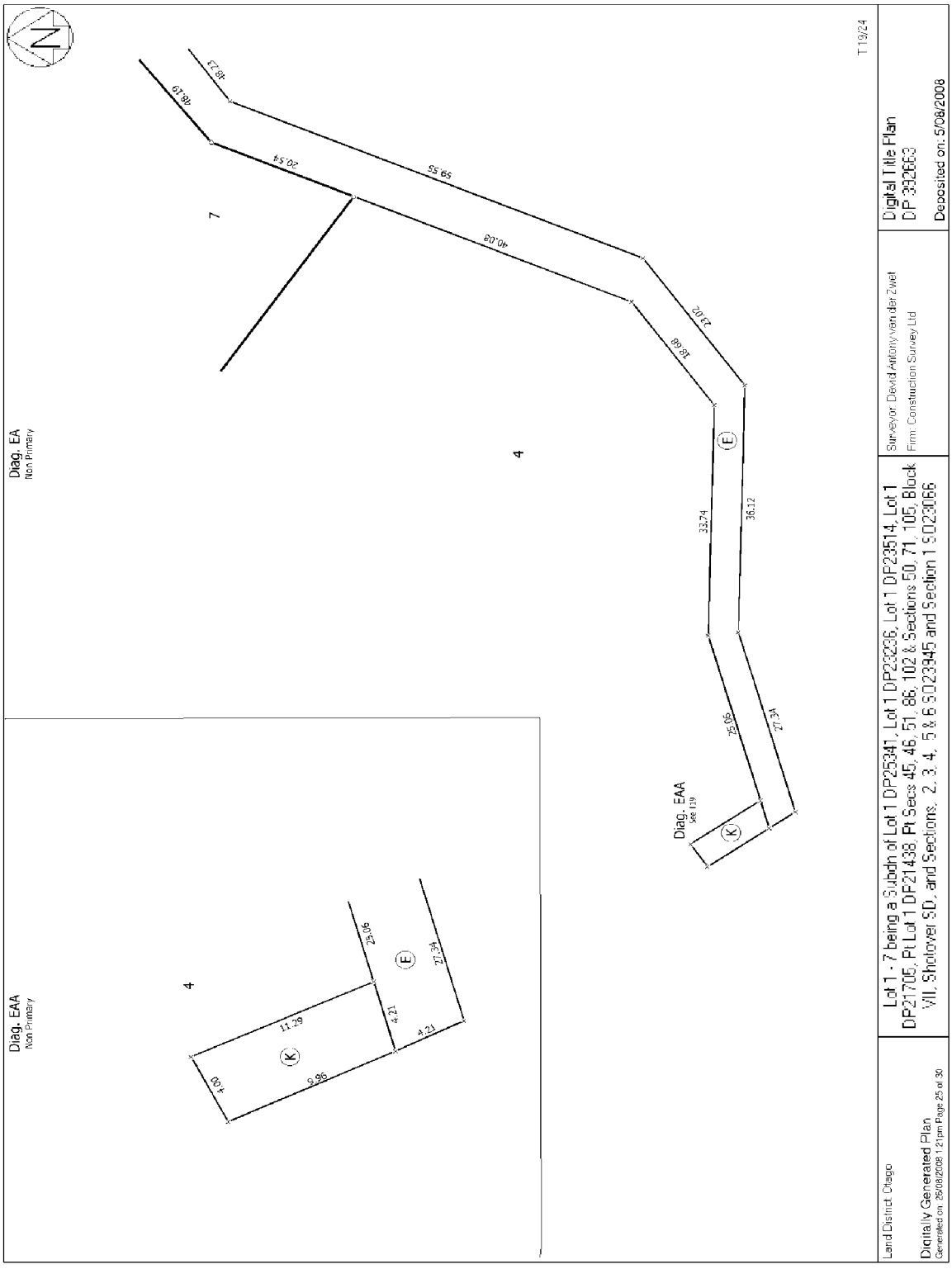
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Land District Otago
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Surveyor David Antony van der Zwet
Firm Construction Survey Ltd
Digital Title Plan
DP 392663
Deposited on: 5/08/2008

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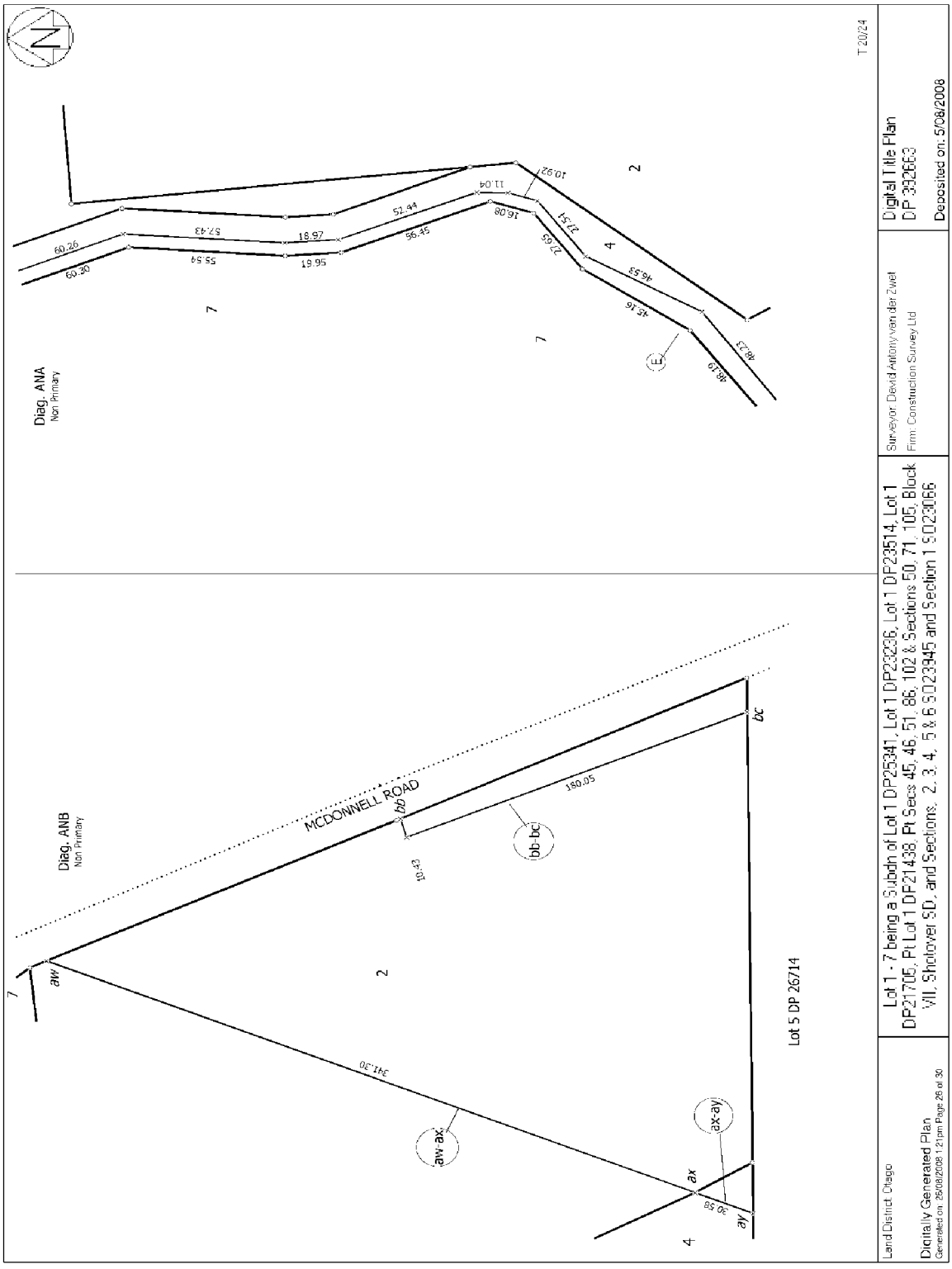

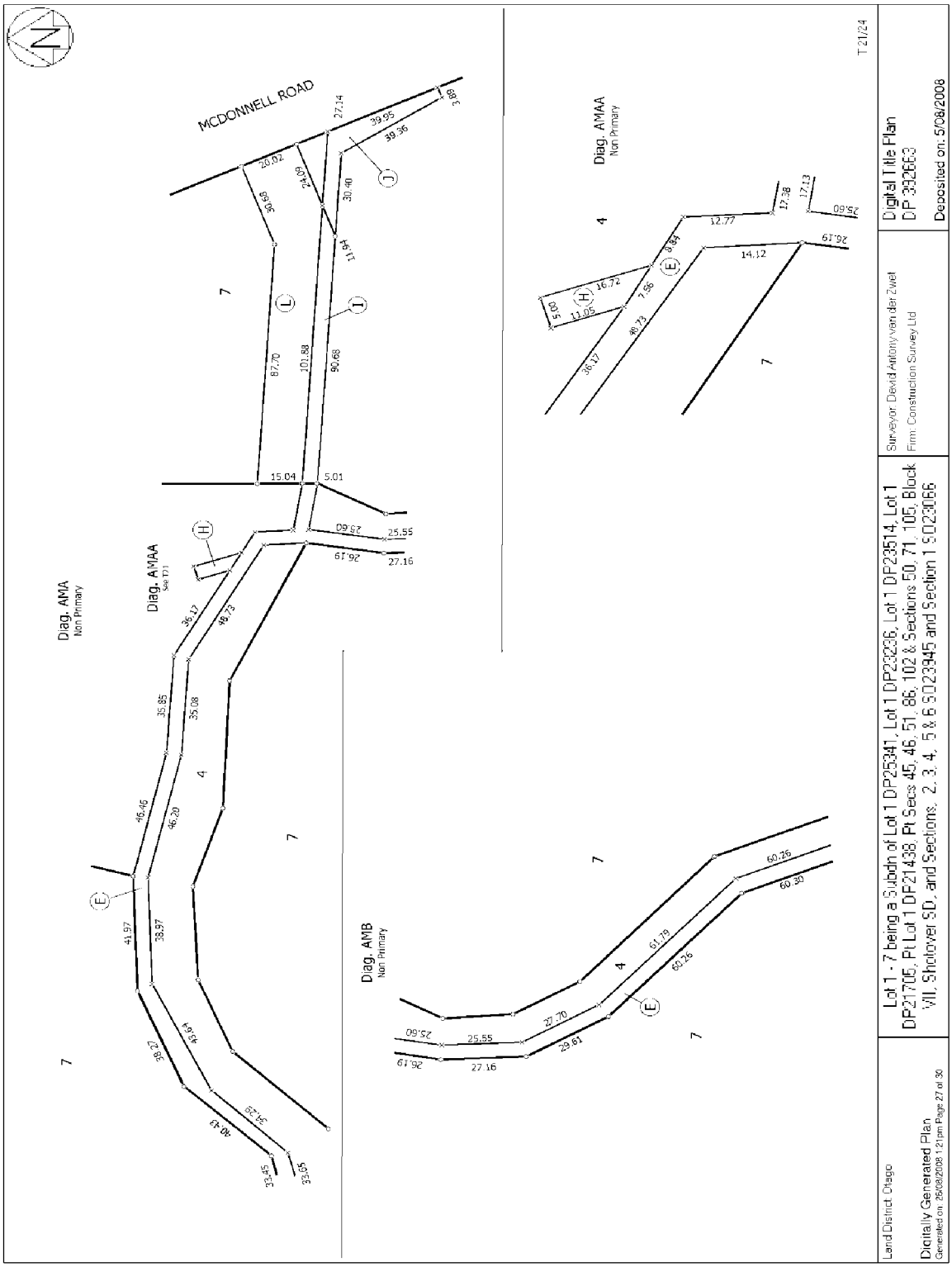
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Diag. AMB
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Land District Otago
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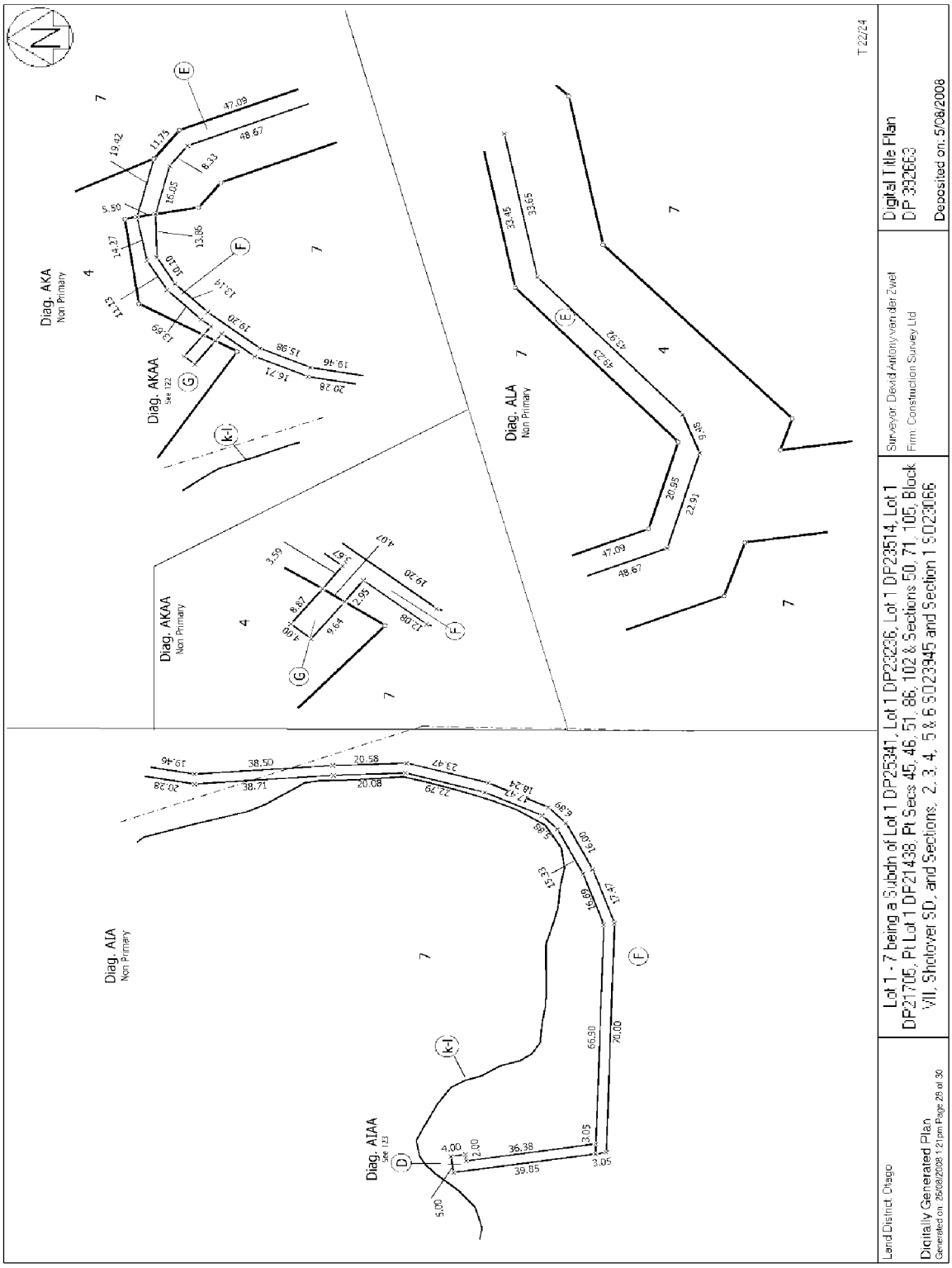
Surveyor David Antony van der Zwet
Firm Construction Survey Ltd
Digital Title Plan
DP 392663
Deposited on: 5/08/2008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See 123
T 22/24
Land District Otago
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Surveyor David Antony van der Zwet
Firm Construction Survey Ltd
Digital Title Plan
DP 392663
Deposited on: 5/08/2008

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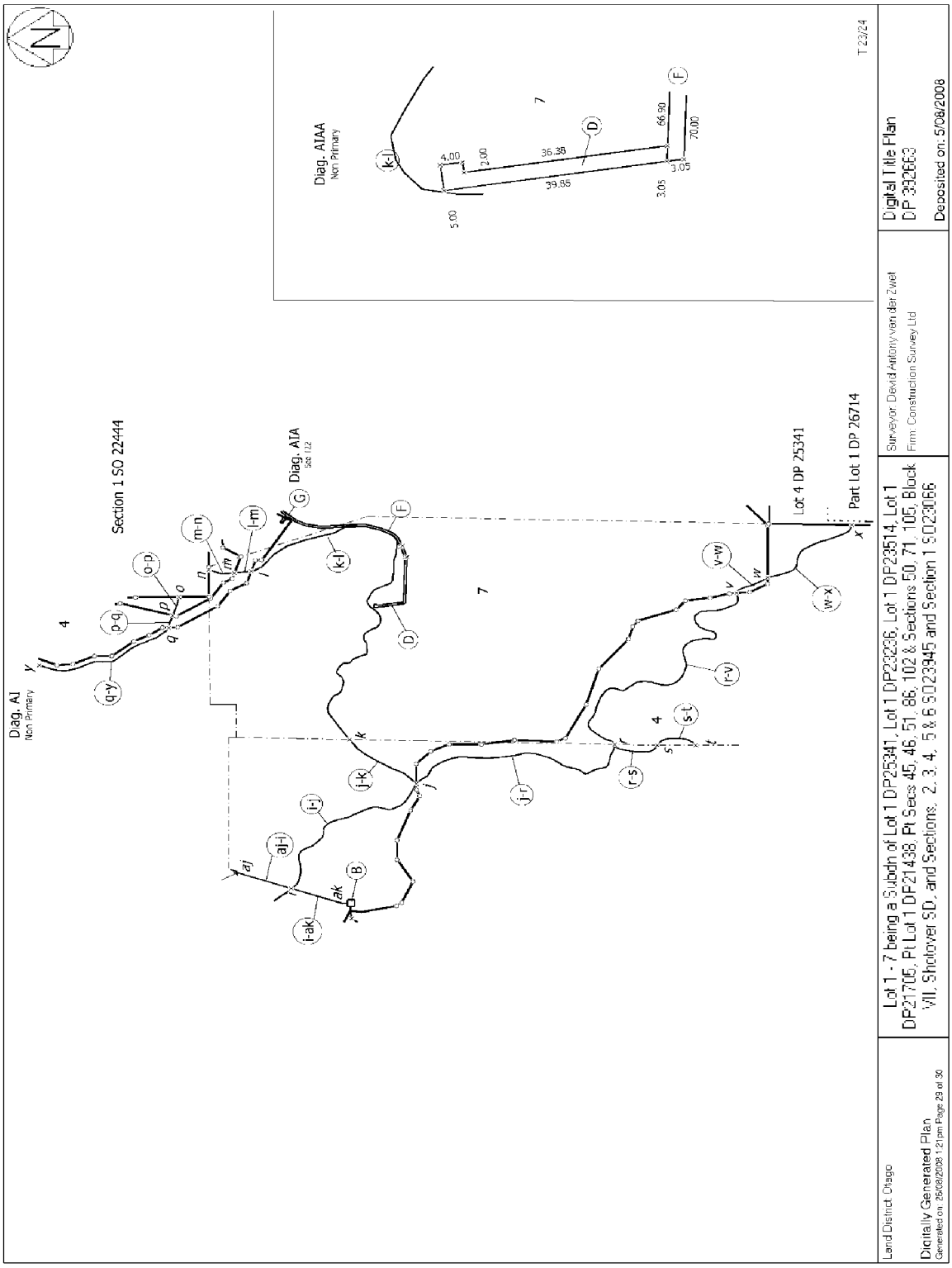

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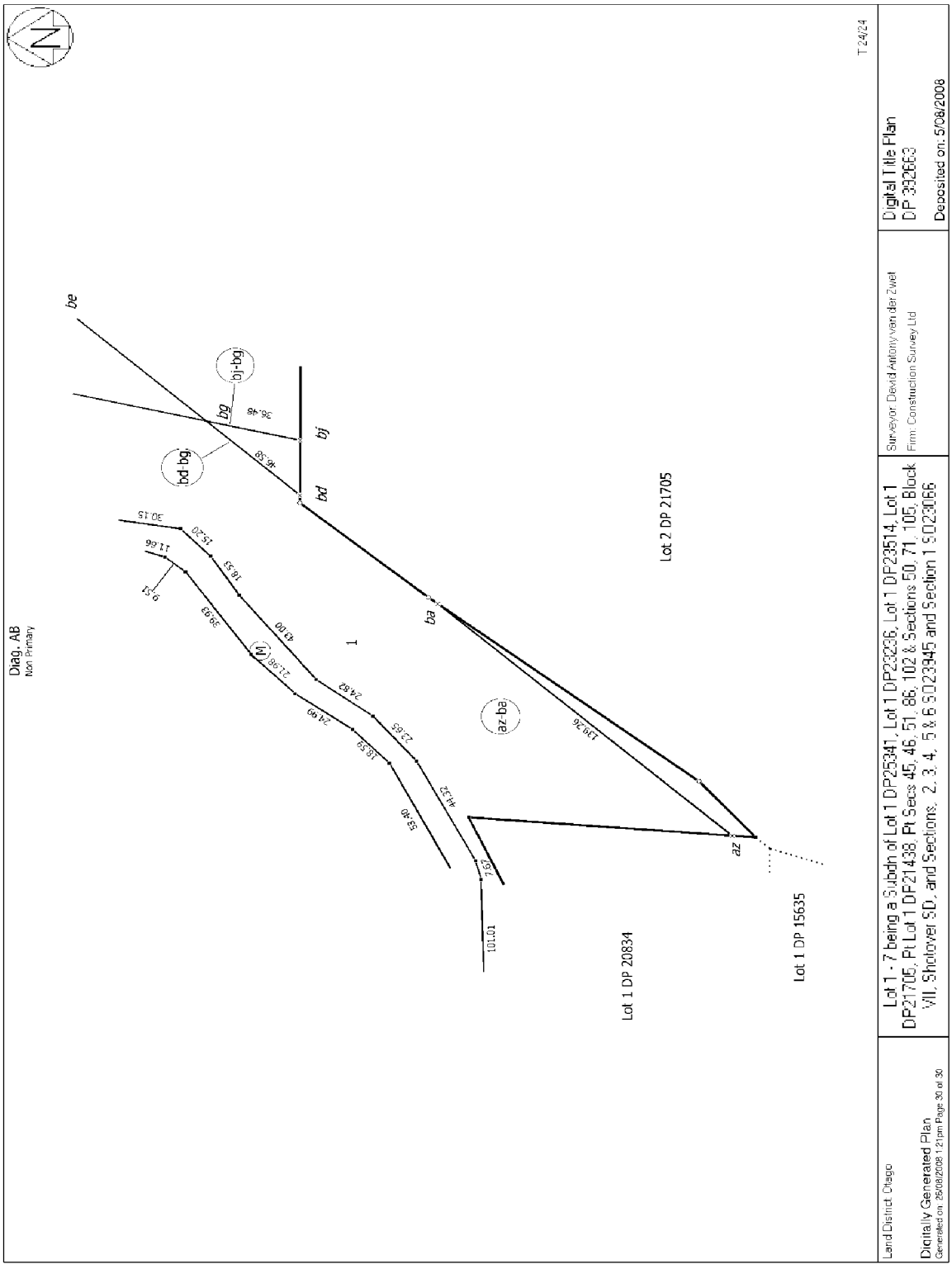

Appendix C

Soil Descriptions

SOIL PROFILE LOGS

PROJECT NUMBER: 15063 FIELD STAFF: Fiona R DATE: 6/10/2015
SITE NAME: The Hills Area B METHOD: Spade WEATHER: Fine and windy

Sample Location	Coordinates		Sample Depth (m)	Sample ID	Soil Lithology
1	-44.95849	168.83969	0-0.1	AB#1	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
2	-44.95781	168.83965	0-0.1	AB#2	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
3	-44.95719	168.83916	0-0.1	AB#3	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
4	-44.95679	168.83906	0-0.1	AB#4	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
5	-44.95779	168.8381	0-0.1	AB#5	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
6	-44.9585	168.83819	0-0.1	AB#6	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
7	-44.95592	168.83939	0-0.1	AB#7	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
8	-44.95623	168.83904	0-0.1	AB#8	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
9	-44.95581	168.83869	0-0.1	AB#9	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter
Battery	-44.95778	168.84066	0-0.1	AB-Battery	Greyish brown clayey SILT with some fine sand, fine gravels and organic matter

Appendix D

Bore Search Information

Land-use and Site Contamination Request - McDonnell Road / 37 Hogans Gully Road

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Appendix E

Laboratory Certificates and Chain of Custody

Hill Laboratories
BETTER TESTING BETTER RESULTS

R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Davis Consulting Group Limited	**Lab No:**	1485293 SPv1
Contact:	Fiona Rowley	**Date Registered:**	07-Oct-2015
	C/- Davis Consulting Group Limited	**Date Reported:**	19-Oct-2015
	PO Box 2450	**Quote No:**	
	Wakatipu	**Order No:**	
	QUEENSTOWN 9349	**Client Reference:**	The Hills Area A+B 15063
		Submitted By:	Fiona Rowley

Sample Type: Soil

Sample Name:		AA#2 (0.1) 06-Oct-2015 10:50 am	AA#4 (0.1) 06-Oct-2015 11:00 am	AA#5 (0.1) 06-Oct-2015 11:05 am	AA#8 (0.1) 06-Oct-2015 11:20 am	AA#11 (0.1) 06-Oct-2015 11:35 am
Lab Number:		1485293.2	1485293.4	1485293.5	1485293.8	1485293.11
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	-	9	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	-	0.17	-	-	-
Total Recoverable Chromium	mg/kg dry wt	-	9	-	-	-
Total Recoverable Copper	mg/kg dry wt	-	13	-	-	-
Total Recoverable Lead	mg/kg dry wt	-	16.2	-	-	-
Total Recoverable Nickel	mg/kg dry wt	-	8	-	-	-
Total Recoverable Zinc	mg/kg dry wt	-	53	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	0.138	-	0.150	0.073	0.043
2,4'-DDT	mg/kg dry wt	< 0.010	-	0.011	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	0.060	-	0.066	0.018	0.013
Dieldrin	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endrin aldehyde	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	-	< 0.010	< 0.010	< 0.010

ilac-MRA IANZ ACCREDITED LABORATORY

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

Sample Type: Soil						
Sample Name:		AA#14 (0.1) 06-Oct-2015 11:50 am	A Dup #1 06-Oct-2015 11:01 am	A Dup #2 06-Oct-2015 2:06 pm	AB#2 (0.1) 06-Oct-2015 1:45 pm	AB#5 (0.1) 06-Oct-2015 2:00 pm
Lab Number:		1485293.14	1485293.16	1485293.17	1485293.19	1485293.22
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	-	10	10	-	-
Total Recoverable Cadmium	mg/kg dry wt	-	0.15	0.15	-	-
Total Recoverable Chromium	mg/kg dry wt	-	9	10	-	-
Total Recoverable Copper	mg/kg dry wt	-	13	9	-	-
Total Recoverable Lead	mg/kg dry wt	-	16.6	18.2	-	-
Total Recoverable Nickel	mg/kg dry wt	-	8	8	-	-
Total Recoverable Zinc	mg/kg dry wt	-	55	45	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
2,4'-DDT	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Dieldrin	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endrin aldehyde	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	-	-	< 0.010	< 0.010

Sample Name:		AB#6 (0.1) 06-Oct-2015 2:05 pm	AB#7 (0.1) 06-Oct-2015 2:15 pm	AB#8 (0.1) 06-Oct-2015 2:20 pm	AB#9 (0.1) 06-Oct-2015 2:25 pm	AB-Battery 06-Oct-2015 2:10 pm
Lab Number:		1485293.23	1485293.24	1485293.25	1485293.26	1485293.27
Individual Tests						
Dry Matter	g/100g as rcvd	-	80	77	81	-
pH*	pH Units	-	-	-	-	5.2
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	10	-	-	-	12
Total Recoverable Cadmium	mg/kg dry wt	0.14	-	-	-	< 0.10
Total Recoverable Chromium	mg/kg dry wt	11	-	-	-	11
Total Recoverable Copper	mg/kg dry wt	9	-	-	-	10
Total Recoverable Lead	mg/kg dry wt	18.6	-	-	-	22
Total Recoverable Nickel	mg/kg dry wt	9	-	-	-	9
Total Recoverable Zinc	mg/kg dry wt	48	-	-	-	49
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Alachlor	mg/kg dry wt	-	< 0.006	< 0.006	< 0.006	-
Aldrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Atrazine	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-

Sample Type: Soil						
	Sample Name:	AB#6 (0.1) 06-Oct-2015 2:05 pm	AB#7 (0.1) 06-Oct-2015 2:15 pm	AB#8 (0.1) 06-Oct-2015 2:20 pm	AB#9 (0.1) 06-Oct-2015 2:25 pm	AB-Battery 06-Oct-2015 2:10 pm
	Lab Number:	1485293.23	1485293.24	1485293.25	1485293.26	1485293.27
Multiresidue Pesticides in Soil samples by GCMS						
Atrazine-desethyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Atrazine-desisopropyl	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Azaconazole	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Azinphos-methyl	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Benalaxyl	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Bendiocarb	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Benodanil	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
alpha-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
beta-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
delta-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Bifenthrin	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Bitertanol	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Bromacil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Bromophos-ethyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Bromopropylate	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Bupirimate	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Buprofezin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Butachlor	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Captafol	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Captan	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Carbaryl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Carbofenothion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Carbofuran	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Carboxin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
cis-Chlordane	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
trans-Chlordane	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Chlorfenvinphos	mg/kg dry wt	-	< 0.011	< 0.011	< 0.011	-
Chlorfluazuron	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Chlorothalonil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Chlorpropham	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Chlorpyrifos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Chlorpyrifos-methyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Chlortoluron	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Chlozolinate	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Coumaphos	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Cyanazine	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Cyfluthrin	mg/kg dry wt	-	< 0.009	< 0.010	< 0.009	-
Cyhalothrin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Cypermethrin	mg/kg dry wt	-	< 0.018	< 0.019	< 0.018	-
Cyproconazole	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Cyprodinil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
2,4'-DDD	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
4,4'-DDD	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
2,4'-DDE	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
4,4'-DDE	mg/kg dry wt	-	< 0.010	< 0.010	0.012	-
2,4'-DDT	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
4,4'-DDT	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Total DDT Isomers	mg/kg dry wt	-	< 0.06	< 0.06	< 0.06	-
Deltamethrin (including Tralomethrin)	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Demeton-S-methyl	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Diazinon	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-

Sample Type: Soil						
Sample Name:		AB#6 (0.1) 06-Oct-2015 2:05 pm	AB#7 (0.1) 06-Oct-2015 2:15 pm	AB#8 (0.1) 06-Oct-2015 2:20 pm	AB#9 (0.1) 06-Oct-2015 2:25 pm	AB-Battery 06-Oct-2015 2:10 pm
Lab Number:		1485293.23	1485293.24	1485293.25	1485293.26	1485293.27
Multiresidue Pesticides in Soil samples by GCMS						
Dichlobenil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Dichlofenthion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Dichlofluanid	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Dichloran	mg/kg dry wt	-	< 0.03	< 0.03	< 0.03	-
Dichlorvos	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Dicofol	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Dicrotophos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Dieldrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Difenoconazole	mg/kg dry wt	-	< 0.011	< 0.011	< 0.011	-
Dimethoate	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Dinocap	mg/kg dry wt	-	< 0.09	< 0.09	< 0.09	-
Diphenylamine	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Disulfoton	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Diuron	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Endosulfan I	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Endosulfan II	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Endosulfan sulphate	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Endrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Endrin aldehyde	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Endrin ketone	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
EPN	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Esfenvalerate	mg/kg dry wt	-	< 0.011	< 0.011	< 0.011	-
Ethion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Etrimfos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Famphur	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenamiphos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenarimol	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenitrothion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenpropathrin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenpropimorph	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fensulfothion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenthion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fenvalerate	mg/kg dry wt	-	< 0.011	< 0.011	< 0.011	-
Fluazifop-butyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fluometuron	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Flusilazole	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Fluvalinate	mg/kg dry wt	-	< 0.006	< 0.006	< 0.006	-
Folpet	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Furalaxyl	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Haloxyfop-methyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Heptachlor	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Heptachlor epoxide	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Hexachlorobenzene	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Hexaconazole	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Hexazinone	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Hexythiazox	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Imazalil	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Indoxacarb	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Iodofenphos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Isazophos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Isofenphos	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Kresoxim-methyl	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Leptophos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-

Sample Type: Soil						
Sample Name:		AB#6 (0.1) 06-Oct-2015 2:05 pm	AB#7 (0.1) 06-Oct-2015 2:15 pm	AB#8 (0.1) 06-Oct-2015 2:20 pm	AB#9 (0.1) 06-Oct-2015 2:25 pm	AB-Battery 06-Oct-2015 2:10 pm
Lab Number:		1485293.23	1485293.24	1485293.25	1485293.26	1485293.27
Multiresidue Pesticides in Soil samples by GCMS						
Linuron	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Malathion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Metalaxyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Methacrifos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Methamidophos	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Methidathion	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Methiocarb	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Methoxychlor	mg/kg dry wt	-	< 0.010	< 0.010	< 0.010	-
Metolachlor	mg/kg dry wt	-	< 0.006	< 0.006	< 0.006	-
Metribuzin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Mevinphos	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Molinate	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Myclobutanil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Naled	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Nitrofen	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Nitrothal-isopropyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Norflurazon	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Omethoate	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Oxadiazon	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Oxychlordane	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Oxyfluorfen	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Paclobutrazol	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Parathion-ethyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Parathion-methyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Penconazole	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pendimethalin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Permethrin	mg/kg dry wt	-	< 0.003	< 0.003	< 0.003	-
Phorate	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Phosmet	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Phosphamidon	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pirimicarb	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pirimiphos-methyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Prochloraz	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Procymidone	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Prometryn	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Propachlor	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Propanil	mg/kg dry wt	-	< 0.03	< 0.03	< 0.03	-
Propazine	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Propetamphos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Propham	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Propiconazole	mg/kg dry wt	-	< 0.006	< 0.006	< 0.006	-
Prothiofos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pyrazophos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pyrifenox	mg/kg dry wt	-	< 0.011	< 0.011	< 0.011	-
Pyrimethanil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Pyriproxyfen	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Quintozene	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Quizalofop-ethyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Simazine	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Simetryn	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Sulfentrazone	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Sulfotep	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Tebuconazole	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-

Sample Type: Soil						
Sample Name:		AB#6 (0.1) 06-Oct-2015 2:05 pm	AB#7 (0.1) 06-Oct-2015 2:15 pm	AB#8 (0.1) 06-Oct-2015 2:20 pm	AB#9 (0.1) 06-Oct-2015 2:25 pm	AB-Battery 06-Oct-2015 2:10 pm
Lab Number:		1485293.23	1485293.24	1485293.25	1485293.26	1485293.27
Multiresidue Pesticides in Soil samples by GCMS						
Tebufenpyrad	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Terbacil	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Terbufos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Terbumeton	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Terbuthylazine	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Terbuthylazine-desethyl	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Terbutryn	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Tetrachlorvinphos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Thiabendazole	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	-
Thiobencarb	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Thiometon	mg/kg dry wt	-	< 0.015	< 0.016	< 0.015	-
Tolylfluanid	mg/kg dry wt	-	< 0.004	< 0.004	< 0.004	-
Triadimefon	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Triazophos	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Trifluralin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-
Vinclozolin	mg/kg dry wt	-	< 0.008	< 0.008	< 0.008	-

Sample Name:		Composite of AA#1 (0.1) + AA#2 (0.1) + AA#3 (0.1)	Composite of AA#4 (0.1) + AA#5 (0.1) + AA#6 (0.1)	Composite of AA#7 (0.1) + AA#8 (0.1) + AA#9 (0.1)	Composite of AA#10 (0.1) + AA#11 (0.1) + AA#12 (0.1)	Composite of AA#13 (0.1) + AA#14 (0.1) + AA#15 (0.1)
Lab Number:		1485293.28	1485293.29	1485293.30	1485293.31	1485293.32
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	12	22	12	10	8
Total Recoverable Cadmium	mg/kg dry wt	0.17	0.22	0.14	0.13	0.20
Total Recoverable Chromium	mg/kg dry wt	13	13	10	11	11
Total Recoverable Copper	mg/kg dry wt	18	18	11	11	15
Total Recoverable Lead	mg/kg dry wt	18.2	21	14.8	12.7	12.5
Total Recoverable Nickel	mg/kg dry wt	14	14	10	10	11
Total Recoverable Zinc	mg/kg dry wt	71	74	51	55	58

Sample Name:		Composite of AB#1 (0.1) + AB#2 (0.1) + AB#3 (0.1)	Composte of AB#4 (0.1) + AB#5 (0.1) + AB#6 (0.1)	Composite of AB#7 (0.1) + AB#8 (0.1) + AB#9 (0.1)		
Lab Number:		1485293.33	1485293.34	1485293.35		
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	10	11	11	-	-
Total Recoverable Cadmium	mg/kg dry wt	0.11	0.13	0.11	-	-
Total Recoverable Chromium	mg/kg dry wt	10	11	9	-	-
Total Recoverable Copper	mg/kg dry wt	10	10	10	-	-
Total Recoverable Lead	mg/kg dry wt	18.2	19.2	17.7	-	-
Total Recoverable Nickel	mg/kg dry wt	9	9	8	-	-
Total Recoverable Zinc	mg/kg dry wt	45	54	44	-	-

Analyst's Comments

It has been noted that the method performance for Iprodione for ONOP analysis is not acceptable therefore we are unable to report this compound at this present time.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	4, 16-17, 23, 27-35
Soil Prep Dry & Sieve for Agriculture	Air dried at 35°C and sieved, <2mm fraction.	-	27

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	0.10 - 4 mg/kg dry wt	4, 16-17, 23, 27-35
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	0.003 - 0.06 mg/kg dry wt	24-26
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	0.010 - 0.04 mg/kg dry wt	2, 5, 8, 11, 14, 19, 22
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	24-26
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	4, 16-17, 23, 27-35
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	1-15, 18-26
pH*	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH.	0.1 pH Units	27

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This report must not be reproduced, except in full, without the written consent of the signatory.

Carole Rodgers-Carroll BA, NZCS
Client Services Manager - Environmental Division

Job No: 148 5293

Date Recv: 07-Oct-15 05:34

Received by: Jennifer Singlewood

3114852934

COMPOSITE SAMPLES		
Analysis	**ID**	**Date**
Heavy Metals Composite 1	AA#1(0.1)	6/10/2015
	AA#2(0.1)	
	AA#3(0.1)	
Heavy Metals Composite 2	AA#4(0.1)	
	AA#5(0.1)	
	AA#6(0.1)	
Heavy Metals Composite 3	AA#7(0.1)	
	AA#8(0.1)	
	AA#9(0.1)	
Heavy Metals Composite 4	AA#10(0.1)	
	AA#11(0.1)	
	AA#12(0.1)	
Heavy Metals Composite 5	AA#13(0.1)	
	AA#14(0.1)	
	AA#15(0.1)	
Heavy Metals Composite 6	AB#1(0.1)	
	AB#2(0.1)	
	AB#3(0.1)	
Heavy Metals Composite 7	AB#4(0.1)	
	AB#5(0.1)	
	AB#6(0.1)	
Heavy Metals Composite 8	AB#7(0.1)	
	AB#8(0.1)	
	AB#9(0.1)	

INDIVIDUAL SAMPLES		
Analysis	**ID**	**Date**
Heavy Metals and pH	AB-Battery	6/10/2015
Heavy Metals	ADUP#2	
Heavy Metals	ADUP#1	
OCP	AA#2(0.1)	
OCP	AA#5(0.1)	
OCP	AA#8(0.1)	
OCP	AA#11(0.1)	
OCP	AA#14(0.1)	
OCP	AB#2(0.1)	
OCP	AB#5(0.1)	
Heavy Metals	AA#4(0.1)	
Heavy Metals	AB#6(0.1)	
Multi residue pesticides	AB#7(0.1)	
Multi residue pesticides	AB#8(0.1)	
Multi residue pesticides	AB#9(0.1)	

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Job Information Summary

Client:	Davis Consulting Group Limited	**Lab No:**	1485293
Contact:	Fiona Rowley	**Date Registered:**	07-Oct-2015 12:56 pm
	C/- Davis Consulting Group Limited	**Priority:**	High
	PO Box 2450	**Quote No:**	
	Wakatipu	**Order No:**	
	QUEENSTOWN 9349	**Client Reference:**	The Hills Area A+B 15063
		Add. Client Ref:	
		Submitted By:	Fiona Rowley
		Charge To:	Davis Consulting Group Limited
		Target Date:	15-Oct-2015 4:30 pm

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	AA#1 (0.1) 06-Oct-2015 10:45 am	Soil	GSoil300	Composite Environmental Solid Samples
2	AA#2 (0.1) 06-Oct-2015 10:50 am	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
3	AA#3 (0.1) 06-Oct-2015 10:55 am	Soil	GSoil300	Composite Environmental Solid Samples
4	AA#4 (0.1) 06-Oct-2015 11:00 am	Soil	GSoil300	Composite Environmental Solid Samples; Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
5	AA#5 (0.1) 06-Oct-2015 11:05 am	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
6	AA#6 (0.1) 06-Oct-2015 11:10 am	Soil	GSoil300	Composite Environmental Solid Samples
7	AA#7 (0.1) 06-Oct-2015 11:15 am	Soil	GSoil300	Composite Environmental Solid Samples
8	AA#8 (0.1) 06-Oct-2015 11:20 am	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
9	AA#9 (0.1) 06-Oct-2015 11:25 am	Soil	GSoil300	Composite Environmental Solid Samples
10	AA#10 (0.1) 06-Oct-2015 11:30 am	Soil	GSoil300	Composite Environmental Solid Samples
11	AA#11 (0.1) 06-Oct-2015 11:35 am	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
12	AA#12 (0.1) 06-Oct-2015 11:40 am	Soil	GSoil300	Composite Environmental Solid Samples
13	AA#13 (0.1) 06-Oct-2015 11:45 am	Soil	GSoil300	Composite Environmental Solid Samples
14	AA#14 (0.1) 06-Oct-2015 11:50 am	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
15	AA#15 (0.1) 06-Oct-2015 11:55 am	Soil	GSoil300	Composite Environmental Solid Samples
16	A Dup #1 06-Oct-2015 11:01 am	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
17	A Dup #2 06-Oct-2015 2:06 pm	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
18	AB#1 (0.1) 06-Oct-2015 1:40 pm	Soil	GSoil300	Composite Environmental Solid Samples
19	AB#2 (0.1) 06-Oct-2015 1:45 pm	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
20	AB#3 (0.1) 06-Oct-2015 1:50 pm	Soil	GSoil300	Composite Environmental Solid Samples
21	AB#4 (0.1) 06-Oct-2015 1:55 pm	Soil	GSoil300	Composite Environmental Solid Samples
22	AB#5 (0.1) 06-Oct-2015 2:00 pm	Soil	GSoil300	Composite Environmental Solid Samples; Organochlorine Pesticides Screening in Soil
23	AB#6 (0.1) 06-Oct-2015 2:05 pm	Soil	GSoil300	Composite Environmental Solid Samples; Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
24	AB#7 (0.1) 06-Oct-2015 2:15 pm	Soil	GSoil300	Composite Environmental Solid Samples; Multiresidue Pesticides in Soil samples by GCMS
25	AB#8 (0.1) 06-Oct-2015 2:20 pm	Soil	GSoil300	Composite Environmental Solid Samples; Multiresidue Pesticides in Soil samples by GCMS
26	AB#9 (0.1) 06-Oct-2015 2:25 pm	Soil	GSoil300	Composite Environmental Solid Samples; Multiresidue Pesticides in Soil samples by GCMS
27	AB-Battery 06-Oct-2015 2:10 pm	Soil	GSoil300	pH; Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
28	Composite of AA#1 (0.1) + AA#2 (0.1) + AA#3 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
29	Composite of AA#4 (0.1) + AA#5 (0.1) + AA#6 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
30	Composite of AA#7 (0.1) + AA#8 (0.1) + AA#9 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
31	Composite of AA#10 (0.1) + AA#11 (0.1) + AA#12 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
32	Composite of AA#13 (0.1) + AA#14 (0.1) + AA#15 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
33	Composite of AB#1 (0.1) + AB#2 (0.1) + AB#3 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
34	Composte of AB#4 (0.1) + AB#5 (0.1) + AB#6 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn
35	Composite of AB#7 (0.1) + AB#8 (0.1) + AB#9 (0.1)	Soil	GSoil300	Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	4, 16-17, 23, 27-35
Soil Prep Dry & Sieve for Agriculture	Air dried at 35°C and sieved, <2mm fraction.	-	27
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	0.10 - 4 mg/kg dry wt	4, 16-17, 23, 27-35
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	0.003 - 0.06 mg/kg dry wt	24-26
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	0.010 - 0.04 mg/kg dry wt	2, 5, 8, 11, 14, 19, 22
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	24-26
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	4, 16-17, 23, 27-35
Composite Environmental Solid Samples	Individual sample fractions mixed together to form a composite fraction.	-	1-15, 18-26
pH	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH.	0.1 pH Units	27