ENVELOPE ENGINEERING
LAND
STRUCTURE
MANAGE

INFRASTRUCTURE REPORT

Te Tuhi Estate

DOCUMENT CONTROL RECORD

CLIENT	Te Tuhi Estate Ltd
PROJECT	Te Tuhi Estate
PROJECT NO.	1671-01
DOCUMENT TYPE	Infrastructure Report, R001v1-1671-01
DATE ISSUED	10th August 2023
ADDRESS FOR SERVICE	Envelope Engineering Limited Level 1, 65 Cuba Street, Te Aro, Wellington
CONTACT	Alan Blyde, Director alan@envelope-eng.co.nz +64 21 390 304

ISSUE AND REVISION RECORD

DATE OF ISSUE	10th August 2023
STATUS	Final
ORIGINATOR	Andrew Jackson – Director, Civil
REVIEWED	Paul James – Senior Civil Designer Alan Blyde – Director
APPROVED FOR ISSUE	Alan Blyde – Director

CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 THE SITE

The development site is located at 287 Whakaroa Road, Taupo. The site is legally described as:

- LOT 1 DP 378264 (COMPRISED IN RT 313610) 102.4510 Ha .
- LOT 2 DP 408156 (COMPRISED IN RT 428971) 120.6110 Ha.
- LOT 4 DP 408156 (COMPRISED IN RT 428971) 121.1545 Ha.

The total site size is approximately 344.6ha in size.

The site is currently undeveloped farmland.

The proposed development will include 112 rural-residential lifestyle lots. These range in size but are generally 2000m^2 to 5000m^2. There is also one luxury lodge site, lot 600, proposed to accommodate a lodge/reception venue including a restaurant, 20 one-bedroom suites, and 9 chalet style accommodation units.

There will also be private roads, utility lots (water and wastewater), a facility lot (lot 402, with equestrian facilities), and a balance lot.

The site has existing road access from Whakaroa Rd.

Figure 1 below shows the location of the development site along with the surrounding roads, properties, and Lake Taupo.

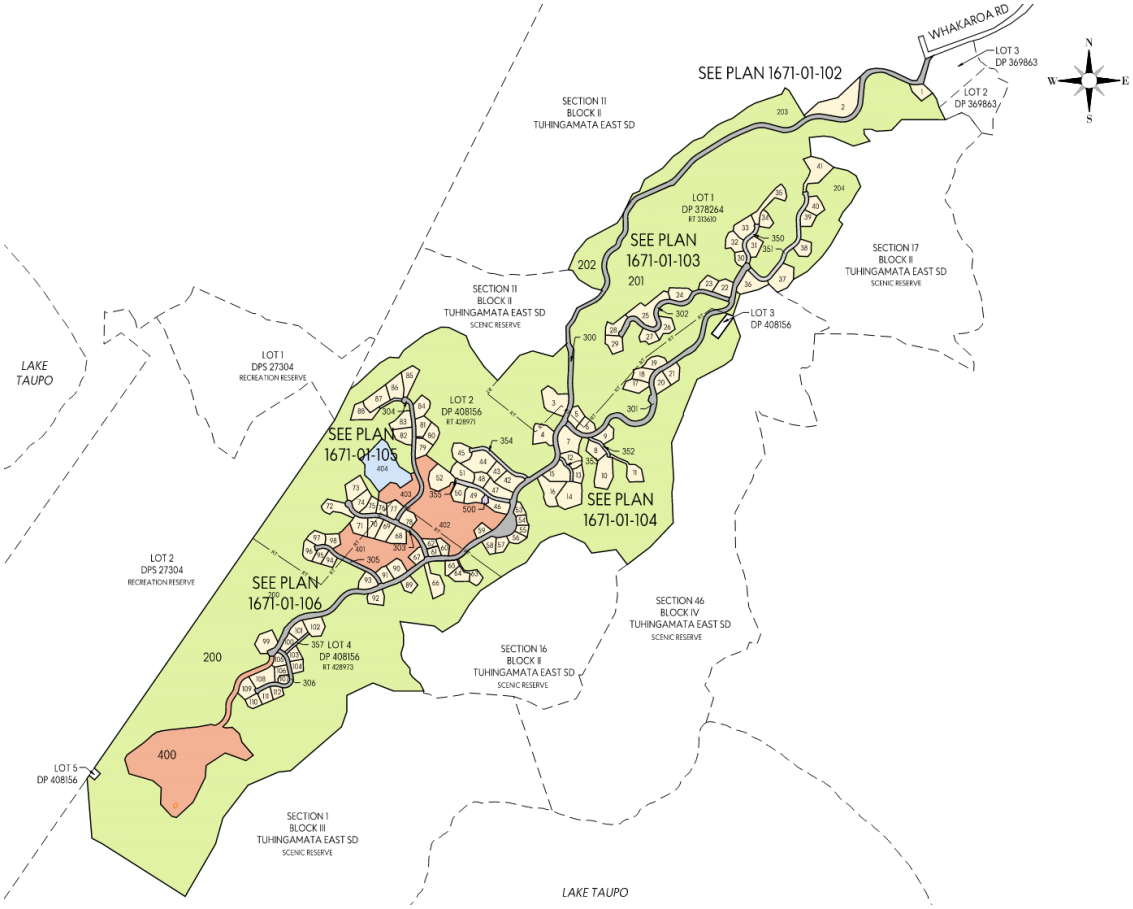


Figure 1: Locality Plan

1.2 TOPOGRAPHY & ORIENTATION

The site has undulating slopes throughout the site. The land is generally steeper (and more elevated) towards the Eastern part of the site.

1.3 EXISTING LAND USE

The site has previously been used for agricultural purposes and landform is typically unmodified.

1.4 PROPOSED DEVELOPMENT

The proposed development will create:

- 112 Residential Lots.
- 1 Lodge development Lot (Lot 401)
- Private Roads (Lots 300-306, 350-357).
- 1 Wastewater Lot (Lot 404).
- 1 Water Supply Lot (Lot 500).
- 3 Facility Lots (Lots 401, 402, 403).
- 1 Balance Lot (Lot 200).

This report assesses the feasibility of the earthworks, roading, storm water, wastewater drainage, water supply, and other associated infrastructure required to cater for the proposed development.

2.0 EARTHWORKS

2.1 GENERAL DESCRIPTION

Earthworks are required to facilitate this development, and these are shown on our 200 series plans. Landform modification has been kept to a minimum and is generally only proposed to enable construction of the access road. Some further earthworks are proposed to provide building platforms on the vacant lots. We propose that, where required, the building platform earthworks are carried out at the same time as road earthworks in order to minimise the overall duration of earthworks.

2.1.1 Geotechnical Investigations

Core50 have been engaged to carry out a series of geotechnical investigations across the site as well as a review of previously published information. This is summarised in detail within their report.

A comprehensive active fault line investigation was previously carried out by Earthtech in 2005. The findings from this investigation have also been recently updated by Core50. The proposed building platforms have been positioned in accordance with the recommendations by Core50.

2.1.2 Erosion and Sediment Control

Erosion and sediment control plans will be prepared in accordance with Waikato Regional Council (WRC) guidance document “Erosion and sediment control: guidelines for soil disturbing activities, TR 2009/02”.

2.1.3 Environmental Engineering

We have liaised with the previous owner of the site and current farm manager. Both have advised that the three land holdings that comprise the proposed development site have been utilised as a grazing resource as a part of a larger farming operation involving other nearby farms. The site has not been run as a ‘standalone’ farm. Both parties have stated that fuel and pesticides have not been stored on the site. Notwithstanding these statements, we propose that a Preliminary Site

Investigation (PSI) be prepared by a suitably qualified practitioner to support any future resource consent applications associated with the proposed development.

3.0 ROADS AND ACCESS

3.1 GENERAL DESCRIPTION

Our 300 series plans detail the proposed roading for Stage 1. A separate Traffic Impact Assessment (TIA) report is provided which describes the road layout in more detail.

The access to the development is via Whakaroa Road. Proposed road designs are dependent on traffic volumes and largely follow the code of practice requirements with respect to longitudinal grades and carriageway widths, the proposed design is as follows:

- Road 1 – Generally 6.7m wide road but, due to existing vegetation and steep topography sections of this road are proposed to be 5.5m wide.
- Road 2 – 6.7m wide road
- Road 3 – 6.0m wide road
- Road 4 – 6.0m wide road
- Road 5 – 6.0m wide road
- Road 6 – 4.0m wide lane
- Road 7 – 6.0m wide road
- Road 8 – 6.7m wide road
- Road 9 – 6.0m wide road
- Road 10 – 6.0m wide road
- Road 11 – 6.0m wide road
- Road 12 – 4.0m wide lane
- Road 13 – 6.0m wide road

All roads within the property are proposed to remain private. A preliminary design speed of 50kph has been selected for all roads within the development.

Pavement design will typically follow the provisions of NZS 4404, and the Taupo District Council (TDC) Code of Practice for Development of Land, 2009.

3.2 UPGRADES TO WHAKAROA ROAD

The TIA recommended two upgrade works to Whakaroa Rd, namely:

- Widening the road to 6.7m between Mapara Rd and the site entrance where the current width is less than this.
- Upgrade the intersection with Mapara Rd to provide additional road width as well as adding signage, road marking and lighting.

We have carried out preliminary survey and design to confirm that there is sufficient room to upgrade the intersection as recommended. The topographical survey has indicated that there is enough area available for this and therefore we propose to carry out the recommended upgrades.

We have also surveyed the three isolated locations where the width narrows to between 4.3m to 5.7m. We can confirm that there is sufficient room to widen the road in these locations within the current road reserve land. We note that some of the reduction in width appears to be due to deferred maintenance such as unrepaired edge breaks and vegetation growth within the sealed width. We propose to widen the road to be at least 5.5m wide through these cuttings and would like to discuss the outstanding maintenance with Council to ensure the full sealed width is available. A 5.5m seal width, complemented by appropriate road signage will enable two-way traffic. We have carried out sufficient investigations to be certain that the proposed widening is possible within the

existing legal road width and propose that the detailed design of this should be carried out to support a future application for Engineering Approval.

4.0 WASTEWATER

4.1 GENERAL

There is no existing wastewater infrastructure on the site, and no public wastewater infrastructure available within the vicinity of the site.

We have considered individual in-site systems and consider that these would be most suitable for Lots 1 and 2, as these lots are reasonably remote from the other lots.

Accordingly, for Lots 1 and 2 we propose individual 'advanced wastewater system' meeting Regional Council requirements.

The proposed sizes of these lots are:

Lot 1 - 5070m^2

Lot 2 – 17153m^2

Both lot sizes are greater than the 5000m2 referred to in WRC guidance for meeting the permitted criteria for on-site wastewater discharge.

For the remaining residential lots, we have considered individual on-site systems and also a combined community treatment device. We believe that both would be viable but have elected for a community device for reasons of economies of scale, control of the location, quality of discharge, and the ability to ensure required ongoing maintenance is carried out.

4.2 COMBINED ON-SITE WASTEWATER TREATMENT

Due to the sensitive downstream environment, a high quality of treatment is proposed. Other than for Lots 1 and 2, we are proposing a communal treatment system with a recirculating packed bed reactor. Key advantages of this system are flexibility to accommodate varying inflows, high quality effluent, and simple maintenance requirements. This system includes two to three stages of treatment, within each lot solids are removed in the primary treatment processor. The liquid is conveyed to the communal second treatment device, following which it is run through an ultraviolet disinfection unit. Finally, it is discharged via an effluent field adjacent to the treatment area. A schematic of the primary system is shown in figure 2 below:

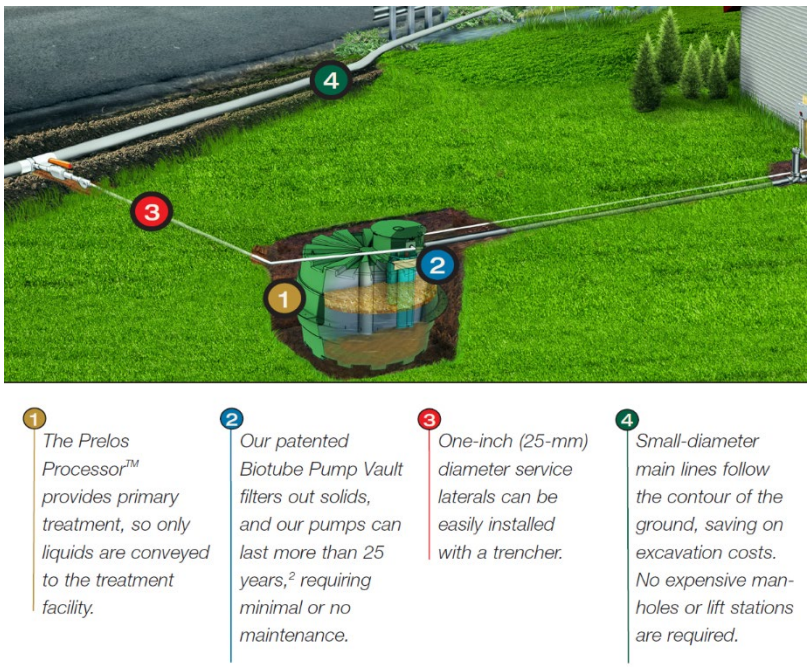


Figure 2: On-site primary treatment and connection to collector

An image showing a typical secondary treatment device is shown in Figure 3 below:

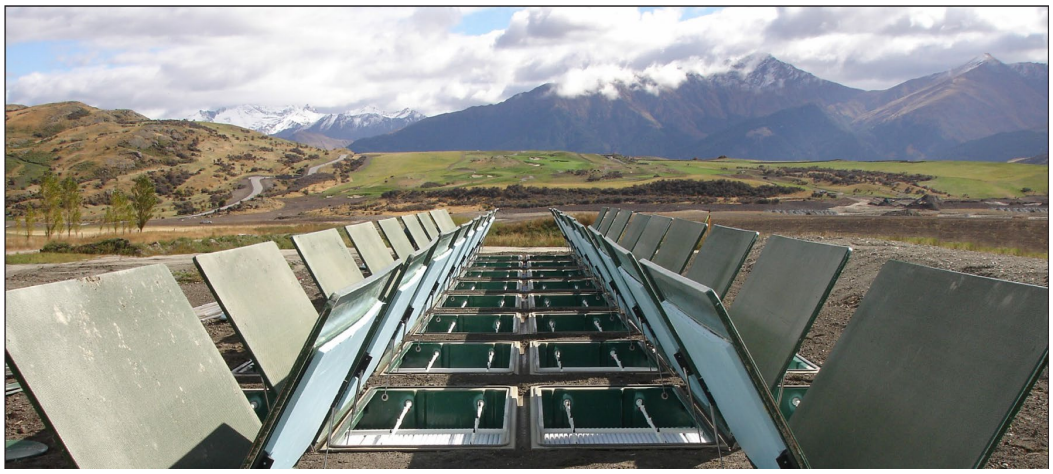


Figure 3: Secondary treatment (recirculating packed bed reactor)

The proposed Innoflow system is modular and can be installed in stages. The tertiary (ultraviolet) unit is not always required and will be confirmed at detailed design stage. A typical arrangement for this size development would include the following components:

4.2.1 Proposed System Components

The preliminary design componentry to provide advanced treatment including Nitrogen removal to 12mg/litre level includes the following:

At each lot Septic Tank:

- (125 x 4,000 L Prelos Processor Tanks). Tanks includes (1) 750mm x 450mm riser & lid, inlet junction, pump, effluent filter, floats, and control panel.

  Reticulation:

- Liquid Only Sewer, typically a 63OD PE100 reticulated main, which has the advantage of being suitably sealed against stormwater infiltration.

Treatment Plant:

- 2 x 55 m³ Pre-Anoxic Tanks: Includes 2 x PVC access risers & lids, and 1 x PF100552 filtrate return pump and associated fittings.
- 2 x 55 m³ Recirculation Tanks: Includes 2 x PVC access risers & lids, 1 x flow inducer tower, 2 x PF501512 recirculation pumps and associated fittings, 3-float switch assembly, MM4-FRP splitter valve and all internal plumbing & connection to tanks.
- 1 x AX1200 AdvanTex Packed Bed Reactors (12 x AX100 Pods): including all underdrain plumbing connections, activated carbon vent fan.
- 1 x Carbon Dosing System: Including 200 L drum or 1000 L IBC container, dosing pump, and all pipework and controls.
- 1 x Alkalinity Dosing System: Including skid mounted dry chemical feed hopper, auger and reductor, controls and all associated pipework and control fittings.
- Remote Telemetry (TCOM) Control Panel: Includes panel with various functions including remote monitoring capability, electronic logging of effluent flows, pump run times and alarm logs with audible and visual alarm features.
- Tertiary Treatment (tbc): ultraviolet Disinfection Unit: Includes wall mounted pressure UV unit for tertiary treatment of effluent.

4.2.2 Disposal Field

Following treatment, the effluent will be pumped to land disposal using a dripper line system, at a soakage rate of no more than 5mm per day.

A suitable site has been identified within Lot 404. Disposal areas would typically be suitably vegetated to allow for evapotranspiration and further nitrogen removal.

The disposal field has been located to be clear of stormwater outfalls to avoid contamination of runoff, and to ensure additional soil treatment of effluent prior to any potential mixing occurring. The low infiltration rate compared to the significantly higher rates expected for stormwater should also ensure low potential for contamination of groundwater. Final size and location of the disposal area will be defined with the developed final design.

4.3 NITROGEN ALLOWANCE

The property has a recent Overseer Reference Dataset report (2022) that confirms the pre-development nitrogen allowance. As stated in the report the current total nitrogen discharge allowance (TAND) is 4337 kgN/yr.

This will be significantly reduced as a result of the proposed development.

Based on 138 (112 dwellings plus an allowance to approximate the discharge from the lodge complex) equivalent dwellings the typical discharge based on an advanced treatment system (at 3.5kgN/yr/dwelling) is 483kgN/yr.

A significant proportion of the site is proposed to be retired from active pastoral use as a result of the development. These areas will be landscaped and protected with covenants. Retirement of these areas results in a reduction of nitrogen of 10kgN/yr/ha (13KgN for pastoral less 3kgN for planted).

Some 268.7 hectares are proposed to be retired from pastoral use, this represents a reduction of 2687kgN/yr.

The net result of the development, based on the calculations above, is expected to be a reduction of 2204kgN/year. This is a significant reduction, which should be expected to result in long-term reductions to downstream nitrogen levels.

5.0 STORMWATER

5.1 GENERAL

We have applied best practice water sensitive design principles to inform our stormwater design. Our general design principles for stormwater are to:

- Minimise changes to hydrology of the site.
- Avoid concentration of stormwater and to discharge any collected stormwater as close to the point where it is concentrated as possible.

5.2 ROAD STORMWATER

5.2.1 General

Where road grades are less than 8%, roadside grass swales are proposed to provide stormwater treatment and convey stormwater. Collection of this stormwater will be via sumps placed at regular intervals with discharge into gullies below the road. Specific design will be carried out to ensure that the velocity and volume of stormwater does not result in erosion or scour within the gullies. Where required, outlet discharge devices will be constructed to reduce flow velocities and revert the discharge into the sheet type form that exists in the sites current form. Additionally, proposed re-vegetation will reduce the future risk of erosion within the gullies.

Culverts will be installed where required to allow stormwater overland flowpaths to be maintained under the formed roadway.

Where roads are steeper than 8%, we will generally propose that kerbing is used to convey the stormwater to sumps for discharge into gullies. This is to prevent scour within the land adjacent to the road.

5.3 BUILDING STORMWATER

Potable water supply is described in Section 6 of this report, as discussed we are generally not proposing that collected rainwater be used due to the availability of a piped supply.

Some dwellings may incorporate some collection of rainwater for non-potable uses such as landscaping. However, regardless of this, the individual dwellings stormwater will be designed to discharge stormwater from a 10% AEP rain event. We anticipate that most lots will achieve this either via soakpits or, where the topography of the lot allows, by direct discharge to a gully.

5.4 STORMWATER MANAGEMENT

Two primary methodologies are proposed to mitigate any potential negative effects of the proposed site development. Additional methodologies may be identified and utilised at the detailed design stage.

5.4.1 Roadside Swales

Swales provide water quality treatment and also convey the stormwater to an appropriate discharge point. Swales will be utilised adjacent to the road where the longitudinal road gradient is less than 8%. Where the gradient is between 5% and 8% check dams will be used to control water velocity. For these roads no kerbing is proposed, allowing dispersed lateral inflow to the swale from the road surface.

5.4.2 Bush Re-Vegetation

Stormwater runoff typically increases as a result of the increased impervious areas associated with land development. The site is mostly in pasture at present, impervious surfaces associated with buildings and roads will have higher runoff rate than the pasture. Re-vegetation of the pasture has the opposite effect with lower stormwater runoff rates from bush/forest when compared to pasture. At a catchment level, converting some land from pasture to bush/forest can offset the change from

pasture to imperviousness. The ratio required to offset can vary from 3:1 to 5:1; 4:1 is often taken as an average value for large sites such as this, i.e. 4 hectares of bush/forest can offset the increased stormwater runoff from 1 hectare of new impervious surfacing.

Detailed information on the likely impervious surfacing is not available at this time. To allow a high-level assessment to be undertaken at this preliminary stage we have made a very conservative allowance of 500m^2 per lot (and also assuming no water collection for re-use) with an additional 5000m^2 for the lodge complex and 1500m^2 for the equestrian centre, this equates to 6.3 hectares of impervious surface. In addition, there is approximately 6.7 hectares of proposed road surfacing resulting in a total of 13 hectares of new impervious surfacing.

As noted in Section 4.3, some 268.7 hectares are planned to be re-vegetated as a part of the development. The proposed area of re-vegetation is more than 20 times the area of new impervious surfacing. This means that there will be a net reduction in stormwater runoff volume associated with the development.

Re-vegetation also has a water quality function helping to improve the water quality to the downstream receiving environment.

5.5 GROUND CONDITIONS

As noted in the geotechnical report, the ground is generally permeable, with a low groundwater level and is therefore generally suitable for stormwater discharge by soakage. Soakage devices must be located away from any stated geotechnical setbacks or other identified geotechnical hazards.

5.6 EXTREME WEATHER EVENTS

We have considered the flood risk to the site during large rain events and are satisfied that, as designed, there is no risk of flooding during a 1% AEP event. Existing overland flow paths will be retained to be available in the event of an extreme event.

6.0 WATER RETICULATION

6.1 EXISTING WATER SUPPLY

There is an existing public rural supply main on the site that extends through to Whakaroa Rd. We understand that the site has an existing allowance of 66,800 litres per day (0.77l/s). There is also a private bore supply on the property that has been tested at 14,000 litres per hour (3.89l/s) over a period of 12 hours without significant change in groundwater level.

6.2 WATER DEMAND

6.2.1 Residential Dwellings

For design purposes we have assumed that each dwelling will need a water supply of 1600 litres per day per dwellings, as stated in the TDC code of practice.

6.2.2 Lodge Complex

We have conservatively considered the 9 chalet units as being equivalent to 9 houses. So, at 1600 litres per house, this is 14,400 litres of potable water per day for the chalets.

For the restaurant, we have estimated a water usage based on Watercare guidance of 15 litres per m^2 per day. So, for the 803m^2 restaurant this equates to a daily water demand of 12,000 litres per day. In addition, we have considered the 20 hotel rooms as equivalent to 14 standard houses. The total daily water demand for the hotel and restaurant is 34,400 litres per day.

6.3 PROPOSED WATER SUPPLY

The proposed water design is shown on our 500 series plans. This shows the general arrangement and the proposed realignment of the existing water pipework. We are proposing that this be realigned to follow the route of the new road, this will improve access for any future maintenance.

6.3.1 Public Water Supply

TDC have advised that the existing public supply is sufficient to provide a trickle supply (1600 litres/day) to 39 properties. We propose that this be allocated to Lot 1, Lot 2, and Lots 5 to 41. Due to the elevation of some of these properties additional storage and pumps are required to service some of these lots. A preliminary location for this has been identified on the plans. Storage of at least 24 hours is recommended to be provided for each dwelling. The storage requirement will partly depend on building size and would therefore be finalised at building consent stage. Additional storage of roof collected rainwater may be provided to provide additional water for non-potable uses such as landscaping irrigation. Non-potable supplies should be kept separate from potable water.

6.3.2 Private Bore Supply

As noted above the existing private bore has been tested and can supply enough water for the remaining 73 houses and lodge complex. This would require 143,700 litres per day or 1.66l/s against a tested flow rate of 3.89l/s.

We propose to utilise this supply on a trickle feed basis, similar to the public supply.

Some treatment of the water is required, and this would be provided at the point of extraction.

Storage of at least 24 hours is recommended to be provided for each dwelling. The storage requirement will partly depend on building size and would therefore be finalised at building consent stage. Additional storage of roof collected rainwater may be provided to provide additional water for non-potable uses such as landscaping irrigation. Non-potable supplies should be kept separate from potable water.

6.3.3 Roof collection

Stormwater from new roof can be collected and stored for use as either potable water or for non-potable uses such as landscaping. The lots are of ample size to accommodate a larger tank if required.

6.4 FIRE-FIGHTING WATER SUPPLY

The proposed residential lots are all larger than 2000m^2 and/or further than 30m from other dwellings. The TDC code of practice does not require that lots of this size have a firefighting water supply meeting the requirements of SNZ PAS 4509:2008. However, we have considered whether the proposed water supply could meet this standard.

We do not believe that either of the proposed water networks would meet the SNZ PAS 4509:2008 requirements for reticulated water supply.

Therefore, for preliminary design purposes, we have considered the required water storage for non-reticulated supply. These are as follows:

- FW1 (house with sprinkler) – 7,000l
- FW2 (house without sprinkler, other structures with sprinkler) – 45,000l
- FW3 (other buildings with less than medium fire load, less than 400m^2 fire cell) – 180,000l

To minimise storage requirements, we prefer that all residential dwellings be constructed with a complying sprinkler system, these would therefore require 7,000l storage.

Similarly for the lodge, subject to detailed design and assessment, we believe with a sprinkler system this is likely to require 45,000l storage.

Depending on detailed design the equestrian centre may also require a sprinkler system along with a small amount of potable water storage. At this stage we would assume 60,000 litres of storage for the equestrian centre.

6.5 TOTAL ON-SITE STORAGE REQUIREMENT

6.5.1 Residential Dwellings

Each dwelling will require at least 1 days potable water storage, 1600 litres, and 7,000 litres of fire-fighting storage. It is possible to provide a combined storage system as long as the fire-fighting water supply is always retained. For example, a 10,000-litre tank could be utilised, fed at a rate of 1600 litres/day, this would give some additional flexibility to the dwelling to cover periods of slightly higher water usage. The pump system would need to be designed so that at least 7,000 litres is retained in the tank at all times. If roof-collected water is proposed as the sole source of potable water, then a larger tank will be required. In this case, the storage requirement is likely to be in the range of 30-50,000 litres.

6.5.2 Lodge

Storage of at least 34,400 litres for potable use and 45,000 for firefighting is required. This could be provided by 3x 30,000 litre tanks which would provide a total of 90,000 litres.

6.5.3 Equestrian Centre

As noted above, at this stage we allowance be made for 60,000 litres for this part of the site.

6.6 WATER SUMMARY

Based on the above we conclude that there are a variety of feasible options available to provide a supply of potable water to the proposed development. If necessary, the site could be solely self-sufficient through use of roof collection either on its own or in combination with the existing bore. However, as there is an existing public supply and private bore our design preference is to utilise these resources to meet the supply requirements of the development.

7.0 UTILITY SERVICES

7.1 POWER

There is existing power infrastructure within the site. Unison Networks Ltd have previously advised that they are able to service the proposed development.

7.2 TELECOMMUNICATION

We have initiated discussions with Chorus regarding providing fibre telecommunications to the development. Fibre services are available nearby the site, and we understand this network can be extended onto the site to service the development. Additionally, a mobile service could be utilised throughout the property. On this basis we believe the development can be adequately serviced from a telecommunications perspective.

8.0 CONCLUSIONS

Based on the above summary of our assessments, we conclude that there are no **Infrastructure Servicing** related issues which should affect the ability of the development proposal to be implemented.

9.0 LIMITATIONS

9.1 GENERAL

This report is for the use of Te Tuhi Estate Ltd and should not be used or relied upon by any other person or entity or for any other project.

This report has been prepared for the project described to us and its extent is limited to the scope of work agreed between the client and Envelope Engineering Limited. No responsibility is accepted by Envelope Engineering Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

APPENDICES

APPENDIX 1
APPLICATION DRAWINGS

APPENDIX 2
CERTIFICATES OF TITLE

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **313610**
Land Registration District **South Auckland**
Date Issued 11 July 2007

Prior References
283449

Estate Fee Simple
Area 102.4510 hectares more or less
Legal Description Lot 1 Deposited Plan 378264
Registered Owners
Michael John Phillips and Christine Anne Phillips

Interests

Subject to Section 11 Crown Minerals Act 1991

Subject to Part IV A Conservation Act 1987

H804440 Land Improvement Agreement pursuant to Section 30A Soil Conservation and Rivers Control Act 1941 - 27.6.1988 at 11.17 am

7457514.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 11.7.2007 at 9:00 am

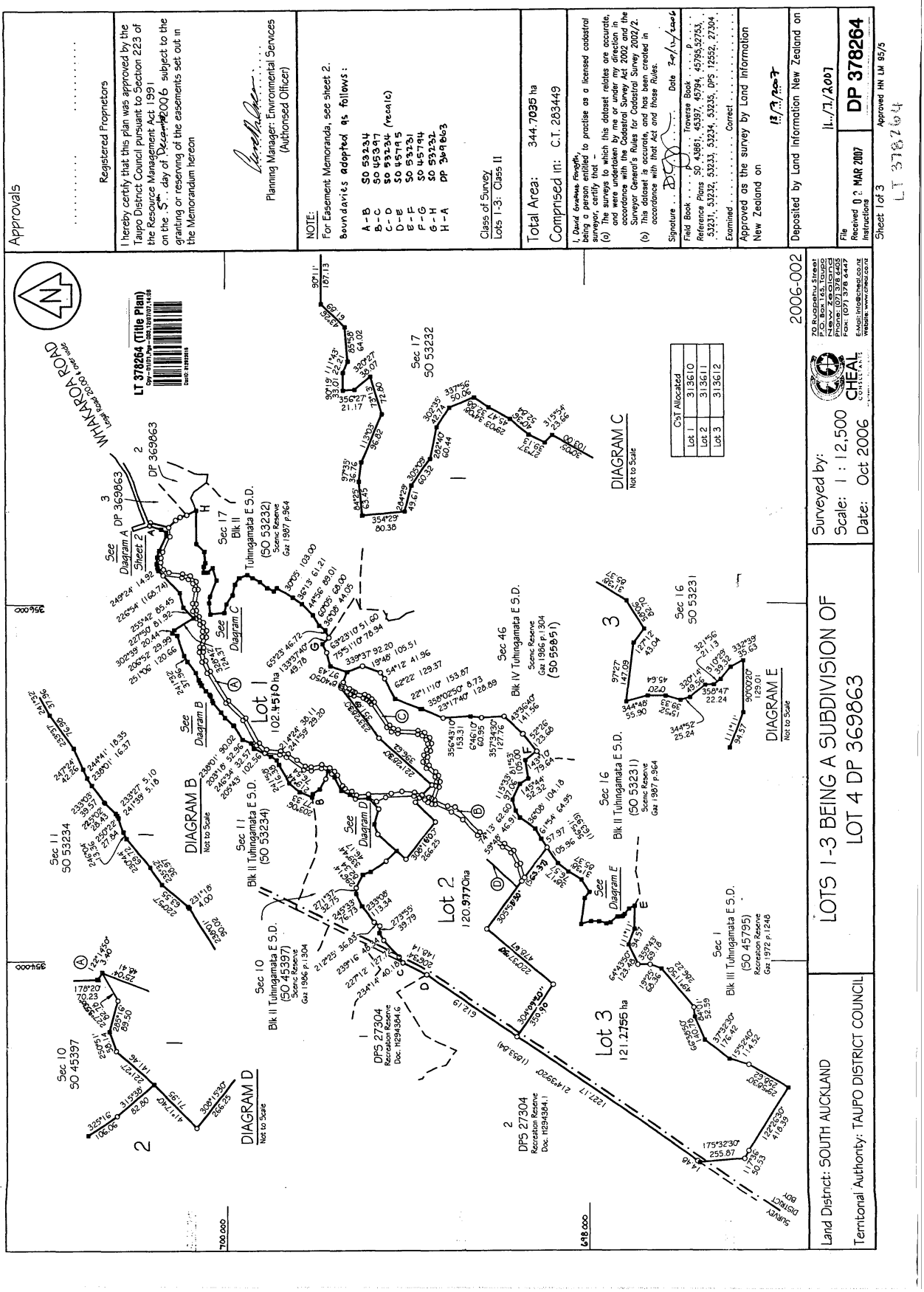
Subject to a right of way and a right to convey, water, electricity and telecommunications over part marked A on 378264 created by Easement Instrument 7457514.4 - 11.7.2007 at 9:00 am

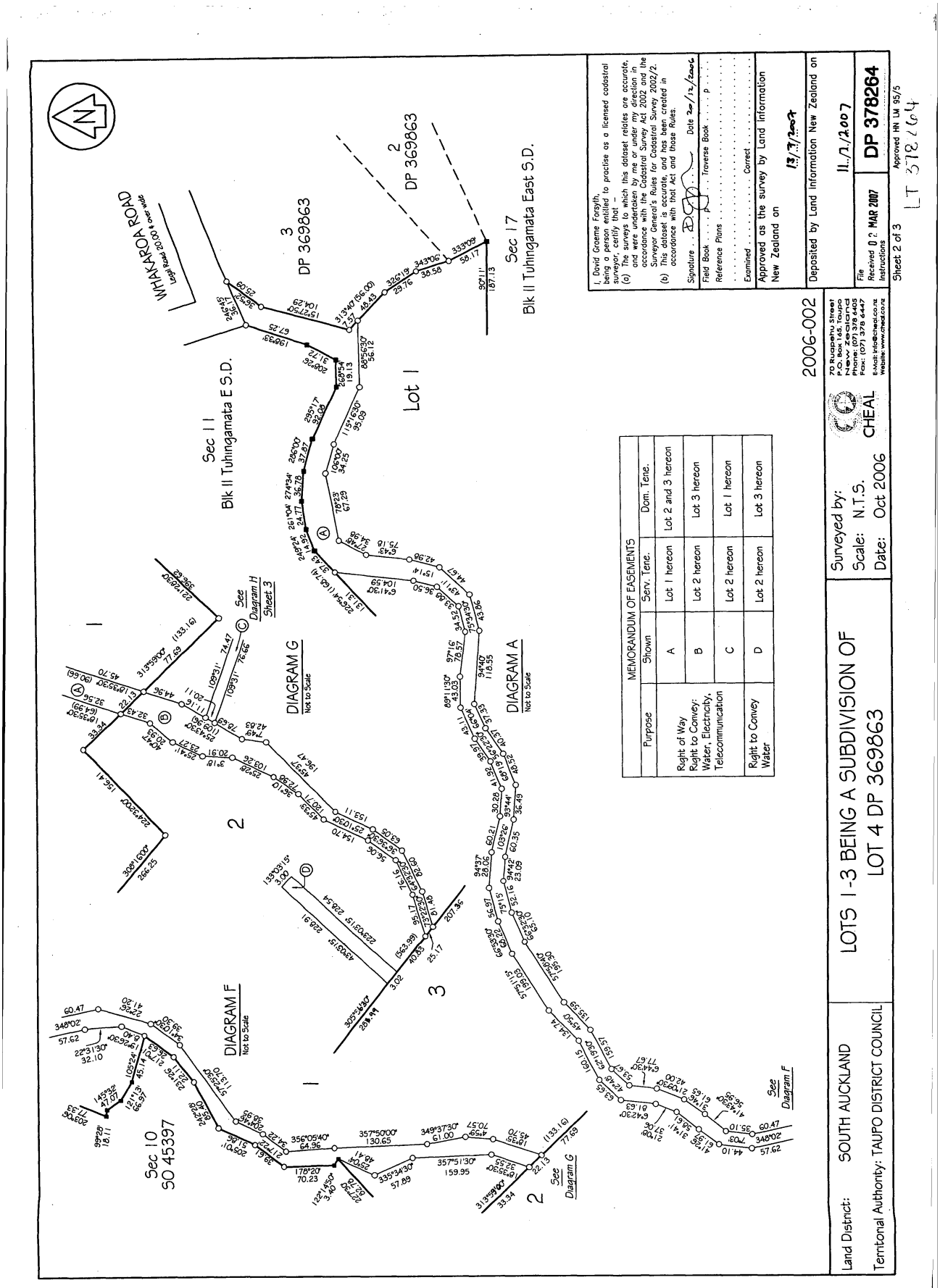
Appurtenant hereto is a right of way and a right to convey, water, electricity and telecommunications created by Easement Instrument 7457514.4 - 11.7.2007 at 9:00 am

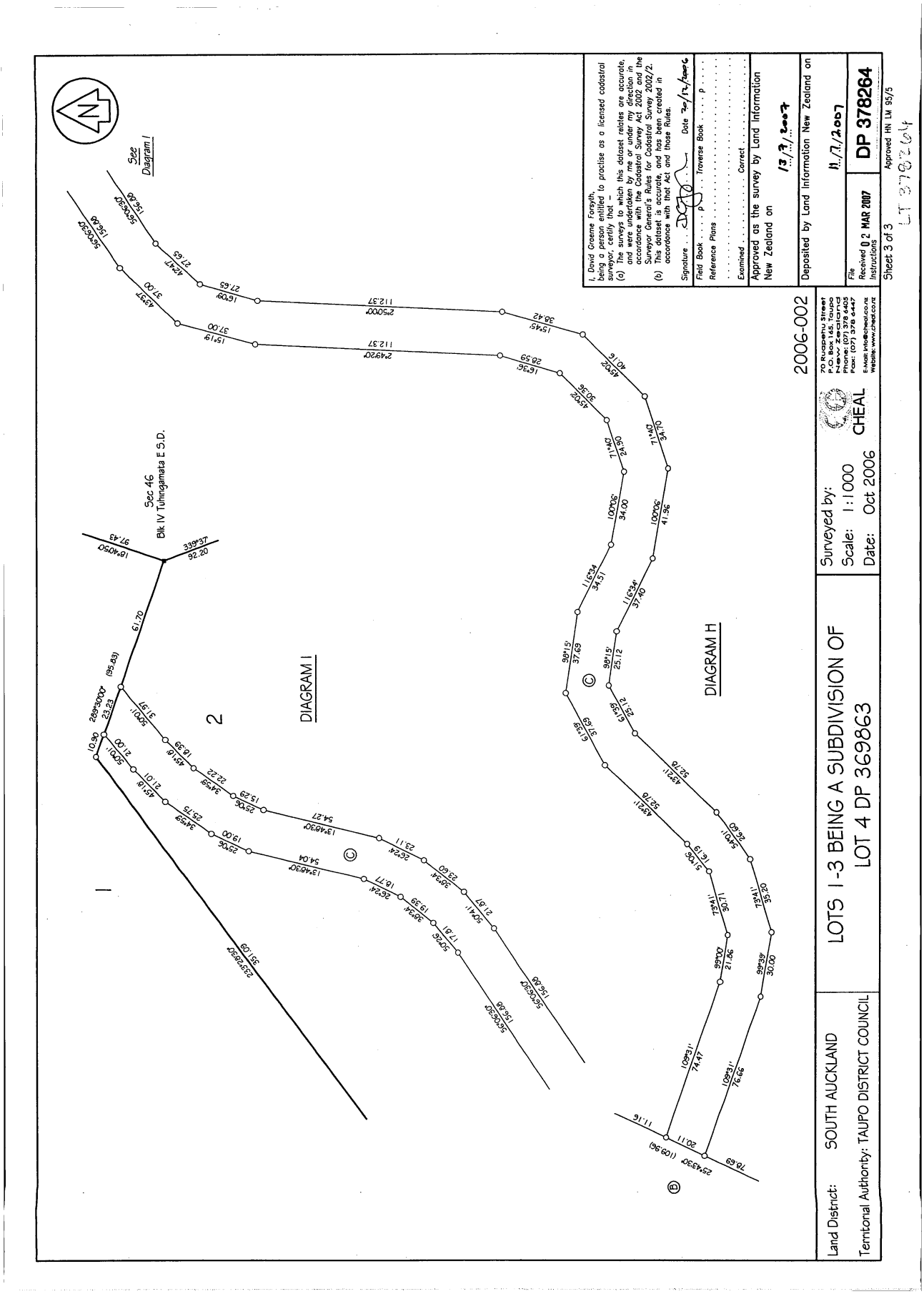
The easements created by Easement Instrument 7457514.4 are subject to Section 243 (a) Resource Management Act 1991

Appurtenant hereto is a right of way and a right to convey water, electricity, telecommunications and electronic data and a right to transmit telecommunications and computer media created by Easement Instrument 8017715.2 - 4.12.2008 at 9:00 am

10705132.3 Mortgage to Rabobank New Zealand Limited - 28.2.2017 at 1:43 pm


Approvals
Registered Proprietors
I hereby certify that this plan was approved by the Taupo District Council pursuant to Section 223 of the Resource Management Act 1991 on the 5th day of December 2006 subject to the granting or reserving of the easements set out in the Memorandum hereon
Planning Manager: Environmental Services (Authorised Officer)
NOTE:
For Easement Memoranda, see sheet 2.
Boundaries adopted as follows:
A-B SO 53234
B-C SO 45397
C-D SO 53234 (record)
D-E SO 45745
E-F SO 53231
F-G SO 45794
G-H SO 53232
H-A DP 369863
Class of Survey
Lots 1-3: Class II
Total Area: 344.7035 ha
Comprised in: C.T. 263449
I, David Graeme Forsyth, being a person entitled to practise as a licensed cadastral surveyor, certify that -
(a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor-General's Rules for Cadastral Survey 2002/2; and
(b) This dataset is accurate and has been created in accordance with that Act and those Rules.
Signature ... Date 20/12/2006
Field Book ... Traverse Book ...
Reference Plans SO 45861, 45397, 45794, 45795, 52753, 53231, 53232, 53233, 53234, 53235, DPS 12552, 27304
Examined ... Correct ...
Approved as the survey by Land Information New Zealand on 13/3/2007
Deposited by Land Information New Zealand on 11./1./2007
File Received 02 MAR 2007 Instructions
DP 378264
Sheet 1 of 3
Approved HN LM 85/5
LT 378264
LT 378264 (Title Plan)
Land District: SOUTH AUCKLAND
Territorial Authority: TAUPO DISTRICT COUNCIL
LOTS 1-3 BEING A SUBDIVISION OF LOT 4 DP 369863
Surveyed by:
Scale: 1 : 12,500
Date: Oct 2006
2006-002
70 Ruapehu Street
P.O. Box 145, Taupo
Phone: (07) 378 6405
Fax: (07) 378 6447
E-Mail: info@cheal.co.nz
Website: www.cheal.co.nz
CHEAL CONSULTANTS
DIAGRAM A Not to Scale
DIAGRAM B Not to Scale
DIAGRAM C Not to Scale
DIAGRAM D Not to Scale
DIAGRAM E Not to Scale
Lot 1 102.4510ha
Lot 2 120.9770ha
Lot 3 121.2755 ha
CST Allocated
Lot 1 313610
Lot 2 313611
Lot 3 313612
WHAKAROA ROAD
Sec 10 SO 45397
Sec 11 SO 53234
Sec 17 Blk II Tuhingamata E S.D. (SO 53232) Scenic Reserve Gaz 1987 p.964
Sec 11 Blk II Tuhingamata E S.D. (SO 53234)
Sec 10 Blk II Tuhingamata E S.D. (SO 45397) Scenic Reserve Gaz 1986 p.1304
Sec 46 Blk IV Tuhingamata E S.D. Scenic Reserve Gaz 1986 p.1304 (SO 55851)
Sec 16 Blk II Tuhingamata E S.D. (SO 53231) Scenic Reserve Gaz 1987 p.964
Sec 16 SO 53231
Sec 1 Blk III Tuhingamata E S.D. (SO 45795) Recreation Reserve Gaz 1972 p.1248
DPS 27304 Recreation Reserve Doc. H294384.6
DPS 27304 Recreation Reserve Doc. H294384.1
DP 369863
SURVEY DISTRICT BDY


WHAKAROA ROAD
Legal Road
Sec 11
Blk II Tuhingamata E S.D.
Sec 17
Blk II Tuhingamata East S.D.
Lot 1
3
DP 369863
2
DP 369863
Sec 10
SO 45397
DIAGRAM F
Not to Scale
DIAGRAM G
Not to Scale
DIAGRAM A
Not to Scale
See Diagram H Sheet 3
See Diagram G
See Diagram F
MEMORANDUM OF EASEMENTS
Purpose | Shown | Serv. Tene. | Dom. Tene.
Right of Way, Right to Convey: Water, Electricity, Telecommunication | A | Lot 1 hereon | Lot 2 and 3 hereon
B | Lot 2 hereon | Lot 3 hereon
C | Lot 2 hereon | Lot 1 hereon
Right to Convey Water | D | Lot 2 hereon | Lot 3 hereon
I, David Graeme Forsyth, being a person entitled to practise as a licensed cadastral surveyor, certify that:
(a) The survey to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor General's Rules for Cadastral Survey 2002/2.
(b) This dataset is accurate, and has been created in accordance with that Act and those Rules.
Signature . . Date 20/12/2006
Field Book . . . . Traverse Book . . . . p . . . .
Reference Plans . . . . .
. . . . . .
Examined . . . . . Correct . . . . . .
Approved as the survey by Land Information New Zealand on
13/3/2007
Deposited by Land Information New Zealand on
11/1/2007
File
Received D.? MAR 2007
Instructions
DP 378264
Sheet 2 of 3
Approved HN LM 95/5
LT 378/64
2006-002
70 Ruapehu Street
P.O. Box 148, Taupo
Phone: (07) 378 6405
Fax: (07) 378 6447
E-Mail: info@cheal.co.nz
Website: www.cheal.co.nz
CHEAL
Surveyed by:
Scale: N.T.S.
Date: Oct 2006
LOTS 1-3 BEING A SUBDIVISION OF LOT 4 DP 369863
Land District: SOUTH AUCKLAND
Territorial Authority: TAUPO DISTRICT COUNCIL


LOTS 1-3 BEING A SUBDIVISION OF LOT 4 DP 369863
Land District: SOUTH AUCKLAND
Territorial Authority: TAUPO DISTRICT COUNCIL
Surveyed by: CHEAL
Scale: 1:1000
Date: Oct 2006
2006-002
DIAGRAM I
DIAGRAM H
Sec 46 Blk IV Tuhingamata E S.D.
See Diagram 1
I, David Graeme Forsyth, being a person entitled to practise as a licensed cadastral surveyor, certify that –
(a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor General's Rules for Cadastral Survey 2002/2.
(b) This dataset is accurate, and has been created in accordance with that Act and those Rules.
Signature . . . Date 30/12/2006
Field Book . . . . P . . . Traverse Book . . . . P . . . .
Reference Plans . . . . . .
Examined . . . . . Correct . . . . . .
Approved as the survey by Land Information New Zealand on 13/3/2007
Deposited by Land Information New Zealand on 11/7/2007
File
Received 02 MAR 2007
Instructions
DP 378264
Sheet 3 of 3
Approved HN LM 95/5
LT 378264

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **428971**

Land Registration District **South Auckland**

Date Issued 04 December 2008

Prior References
313611

Estate Fee Simple

Area 120.6110 hectares more or less

Legal Description Lot 2 Deposited Plan 408156

Registered Owners

Michael John Phillips and Christine Anne Phillips

Interests

Subject to Section 11 Crown Minerals Act 1991

Subject to Part IV A Conservation Act 1987

H804440 Land Improvement Agreement pursuant to Section 30A Soil Conservation and Rivers Control Act 1941 - 27.6.1988 at 11.17 am

7457514.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 11.7.2007 at 9:00 am

Subject to a right of way and a right to convey, water, electricity and telecommunications over parts marked B, C & P and a right to convey water over part marked D all on 408156 created by Easement Instrument 7457514.4 - 11.7.2007 at 9:00 am

Appurtenant hereto is a right of way and a right to convey, water, electricity and telecommunications created by Easement Instrument 7457514.4 - 11.7.2007 at 9:00 am

The easements created by Easement Instrument 7457514.4 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right of way over parts marked C, I, J, K, L, M, N & P and a right to convey water, electricity, telecommunications and electronic data and a right to transmit telecommunications and computer media over part marked P all on DP 408156 created by Easement Instrument 8017715.2 - 4.12.2008 at 9:00 am

Subject to a right of way over parts marked B, C, F, G, H, I, J, K, L, M, N & P on DP 408156 created by Easement Instrument 8017715.3 - 4.12.2008 at 9:00 am

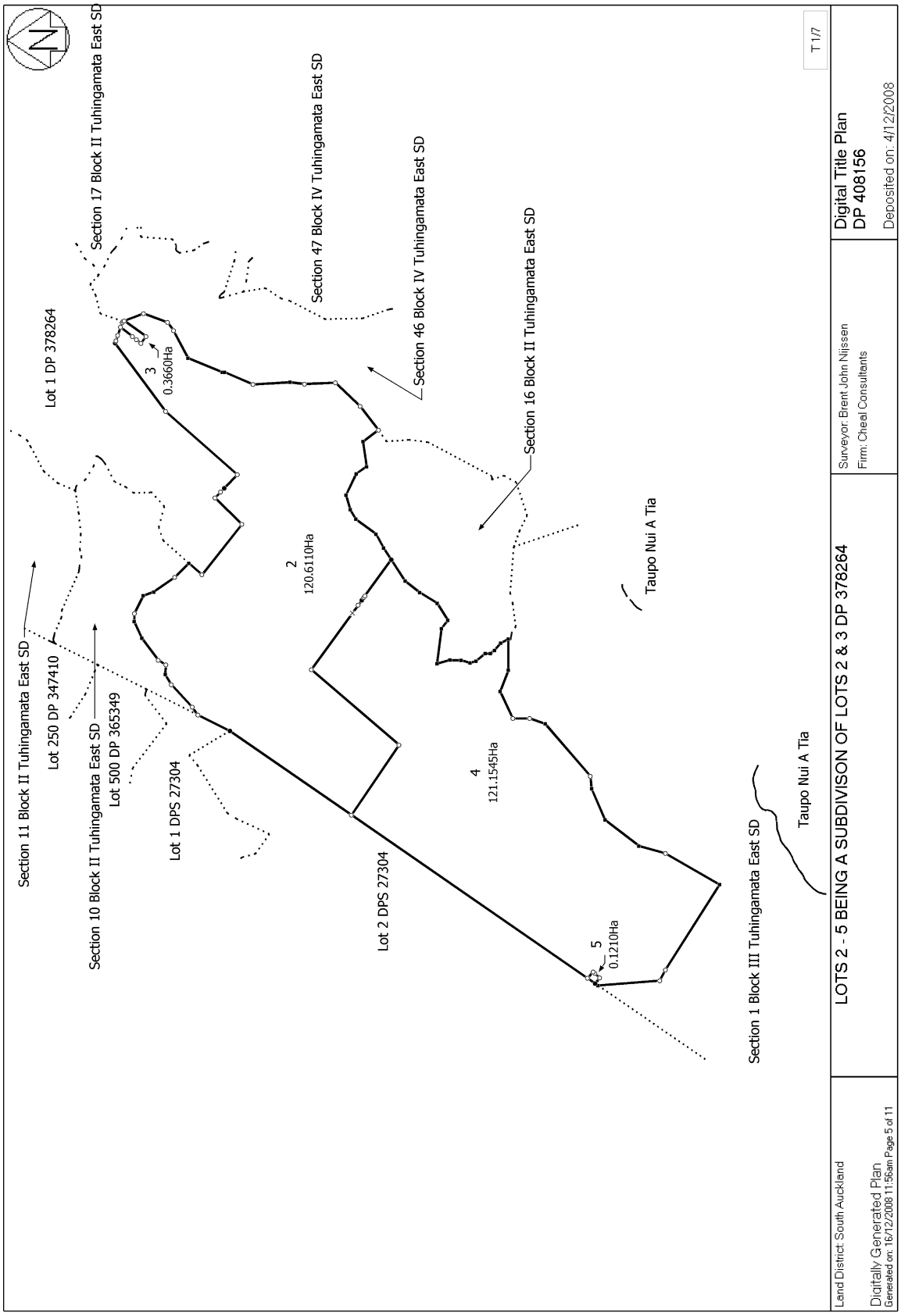
The easements created by Easement Instrument 8017715.3 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Deed 8096888.4 - 13.3.2009 at 3:32 pm

Land Covenant in Deed 8110767.4 - 21.5.2009 at 1:30 pm

Land Covenant in Deed 8111193.4 - 21.5.2009 at 2:05 pm

10705132.3 Mortgage to Rabobank New Zealand Limited - 28.2.2017 at 1:43 pm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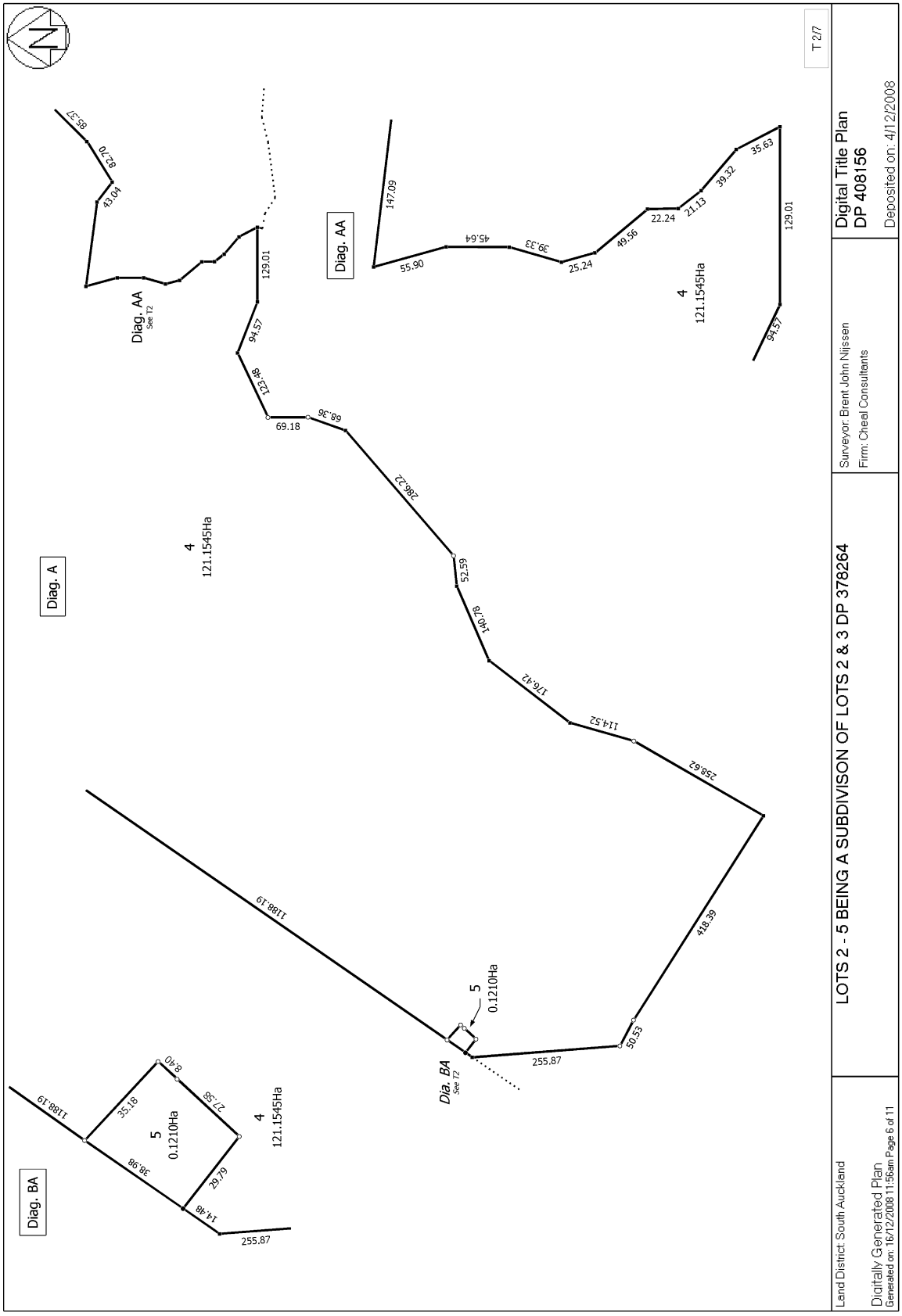
Lot 250 DP 347410
Section 10 Block II Tuhingamata East SD
Lot 500 DP 365349
Lot 1 DPS 27304
Lot 1 DP 378264
Section 17 Block II Tuhingamata East SD
Section 47 Block IV Tuhingamata East SD
Section 46 Block IV Tuhingamata East SD
Section 16 Block II Tuhingamata East SD
Taupo Nui A Tia
Lot 2 DPS 27304
Section 1 Block III Tuhingamata East SD
Taupo Nui A Tia
3
0.3660Ha
2
120.6110Ha
4
121.1545Ha
5
0.1210Ha
T 1/7
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 5 of 11
Surveyor: Brent John Nijssen
Firm: Cheal Consultants
Digital Title Plan
DP 408156
Deposited on: 4/12/2008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T 2/7
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52.59
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418.39
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255.87
Dia. BA
See T2
1188.19
5
0.1210Ha
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121.1545Ha
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Diag. AA
147.09
55.90
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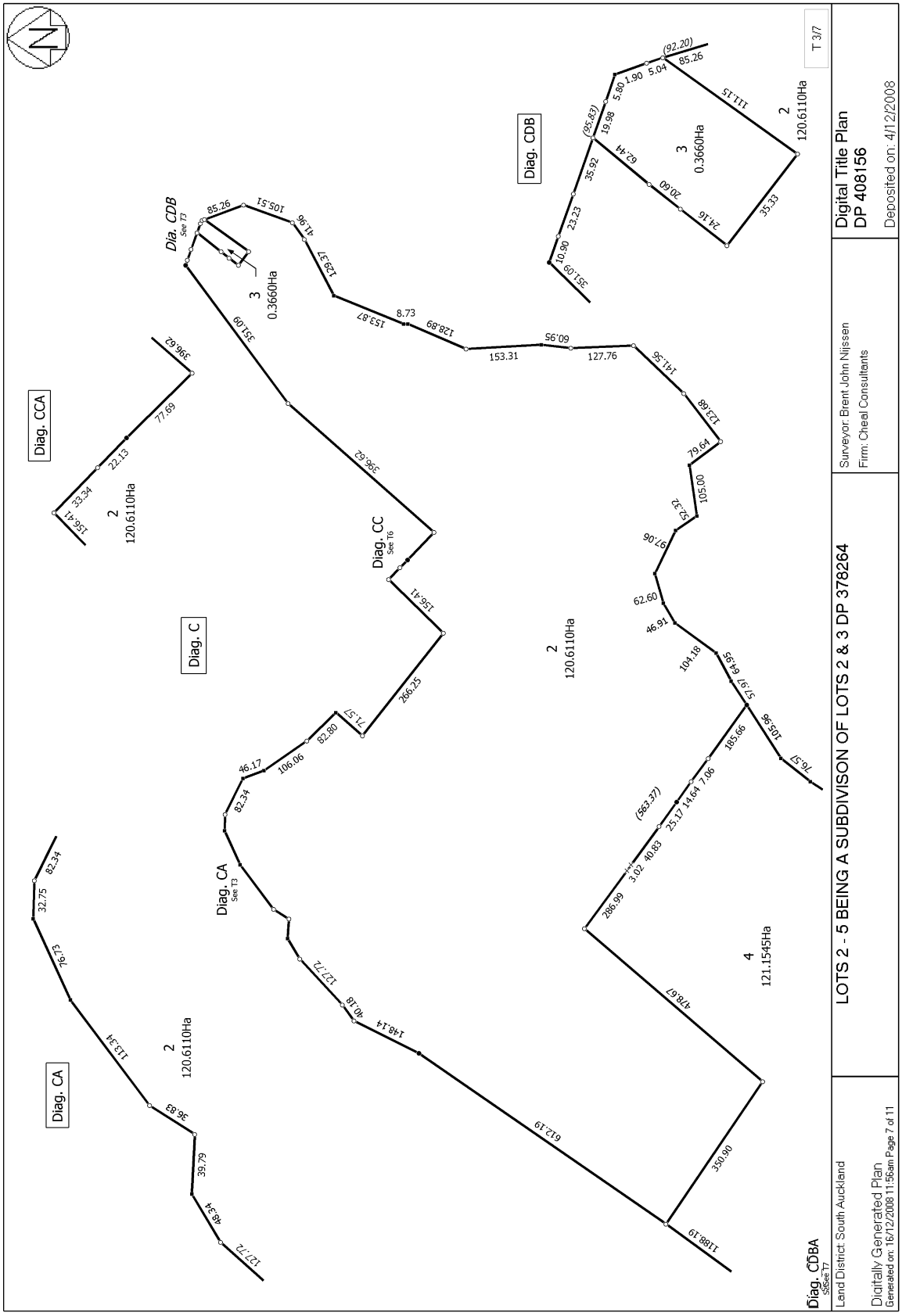
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Digital Title Plan
DP 408156
Deposited on: 4/12/2008
Surveyor Brent John Nijssen
Firm: Cheal Consultants
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 6 of 11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Deposited on: 4/12/2008
Surveyor Brent John Nijssen
Firm: Cheal Consultants
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
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Generated on: 16/12/2008 11:56am Page 7 of 11
T 3/7
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Diag. CCA
Diag. C
Diag. CC
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4
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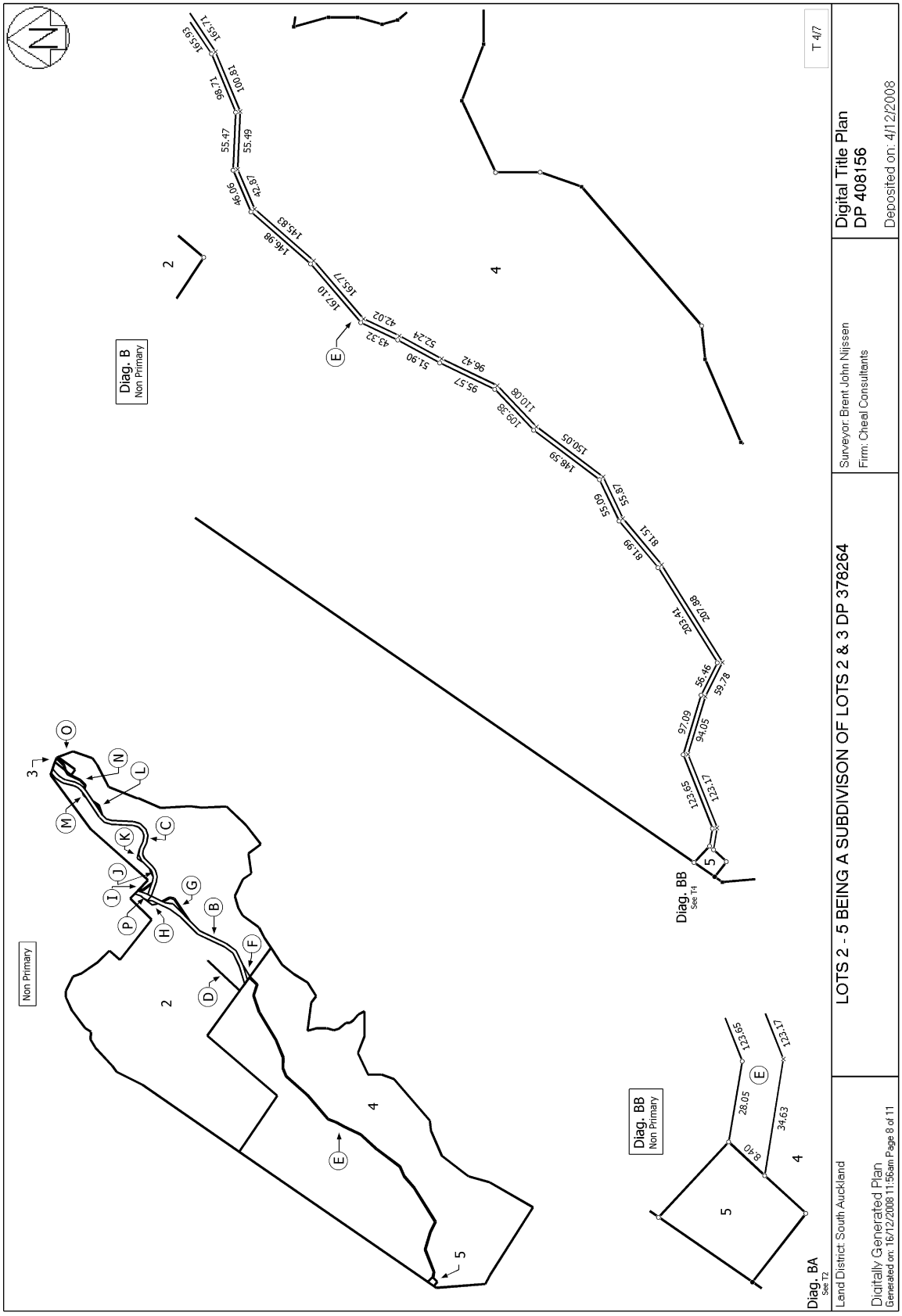
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LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 8 of 11
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See T4
Diag. BB
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See T2
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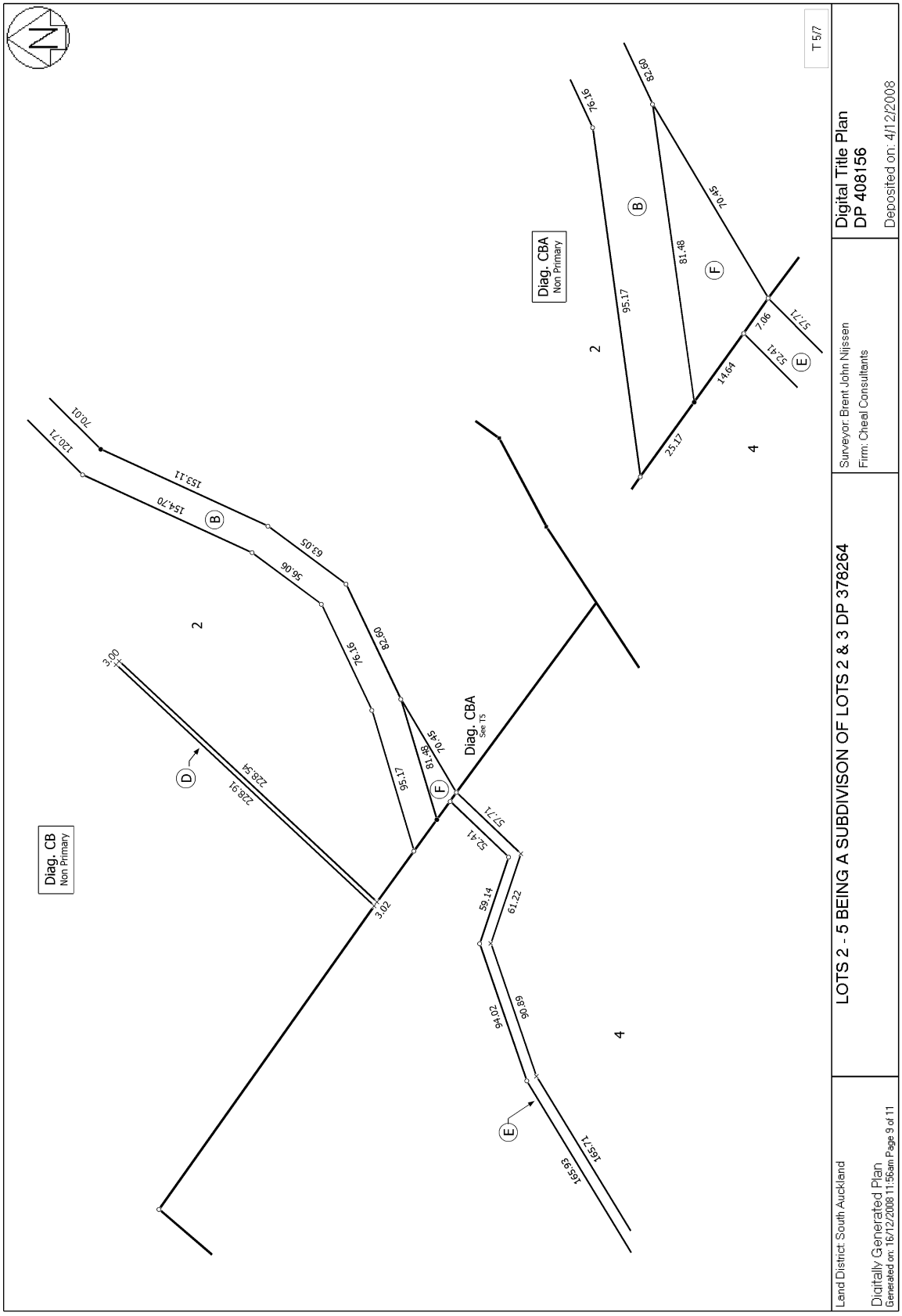
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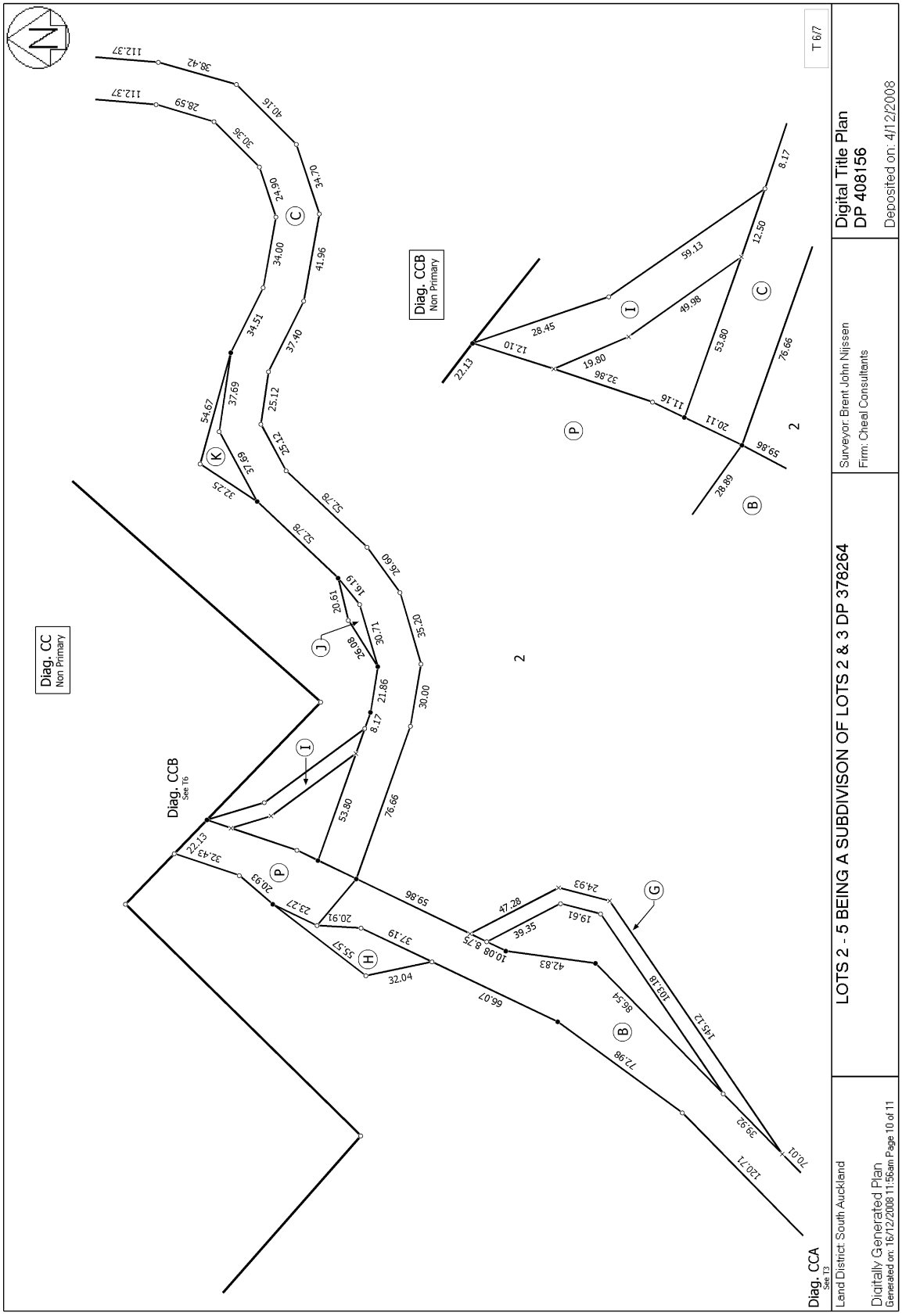
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Digital Title Plan
DP 408156
Deposited on: 4/12/2008
Surveyor Brent John Nijssen
Firm: Cheal Consultants
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 9 of 11
T 5/7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T 6/7
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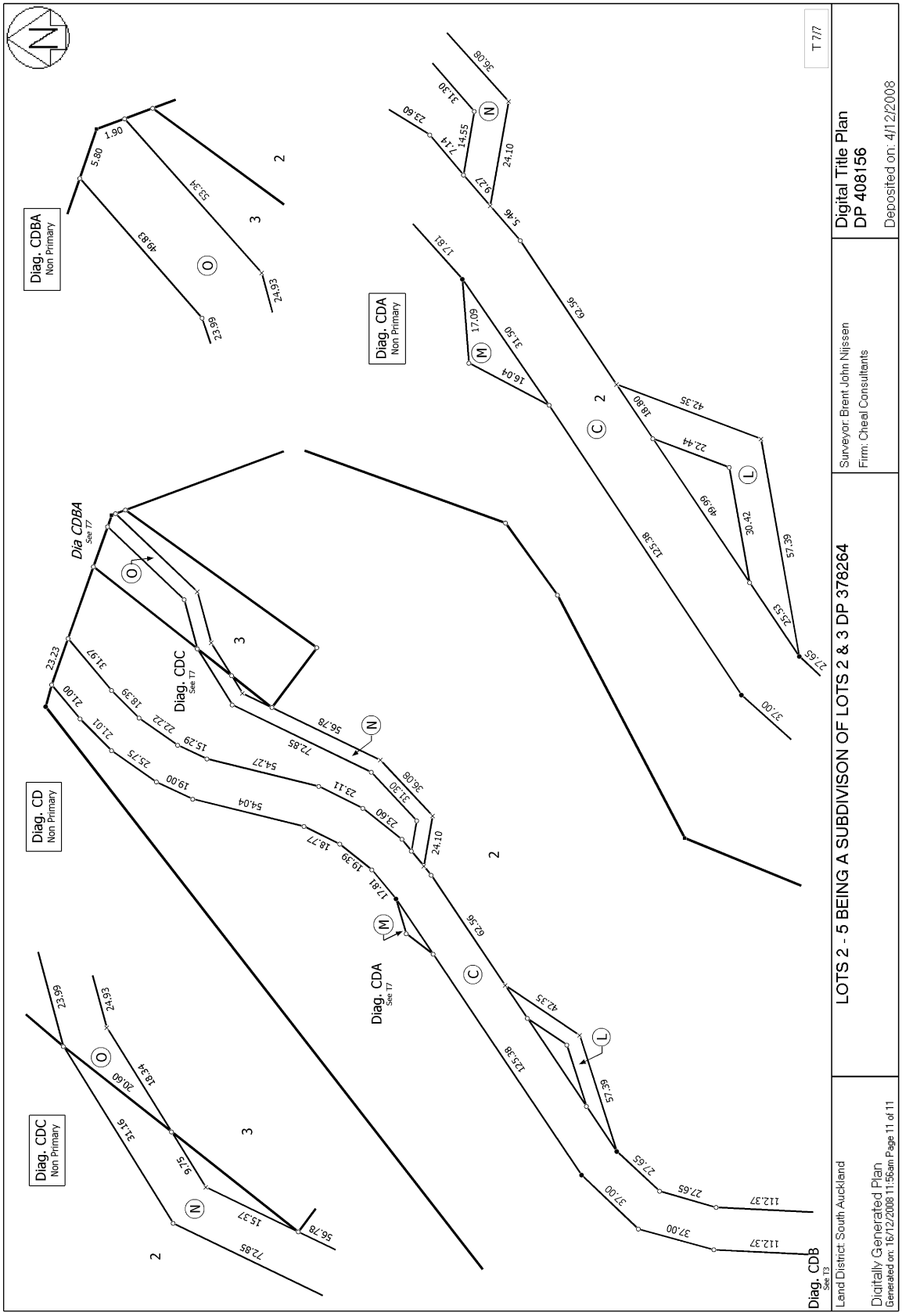
Digital Title Plan
DP 408156
Deposited on: 4/12/2008
Surveyor Brent John Nijssen
Firm: Cheal Consultants
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 10 of 11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See T7
Diag. CDB
See T3
T 7!?
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 11 of 11
Surveyor Brent John Nijssen
Firm: Cheal Consultants
Digital Title Plan
DP 408156
Deposited on: 4/12/2008

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **428973**
Land Registration District **South Auckland**
Date Issued 04 December 2008

Prior References
313612

Estate Fee Simple
Area 121.1545 hectares more or less
Legal Description Lot 4 Deposited Plan 408156
Registered Owners
Michael John Phillips and Christine Anne Phillips

Interests

Subject to Section 11 Crown Minerals Act 1991

Subject to Part IV A Conservation Act 1987

H804440 Land Improvement Agreement pursuant to Section 30A Soil Conservation and Rivers Control Act 1941 - 27.6.1988 at 11.17 am

7457514.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 11.7.2007 at 9:00 am

Appurtenant hereto is a right of way, a right to convey electricity and telecommunications and rights to convey water, created by Easement Instrument 7457514.4 - 11.7.2007 at 9:00 am

The easements created by Easement Instrument 7457514.4 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right of way over part marked E on DP 408156 created by Easement Instrument 8017715.3 - 4.12.2008 at 9:00 am

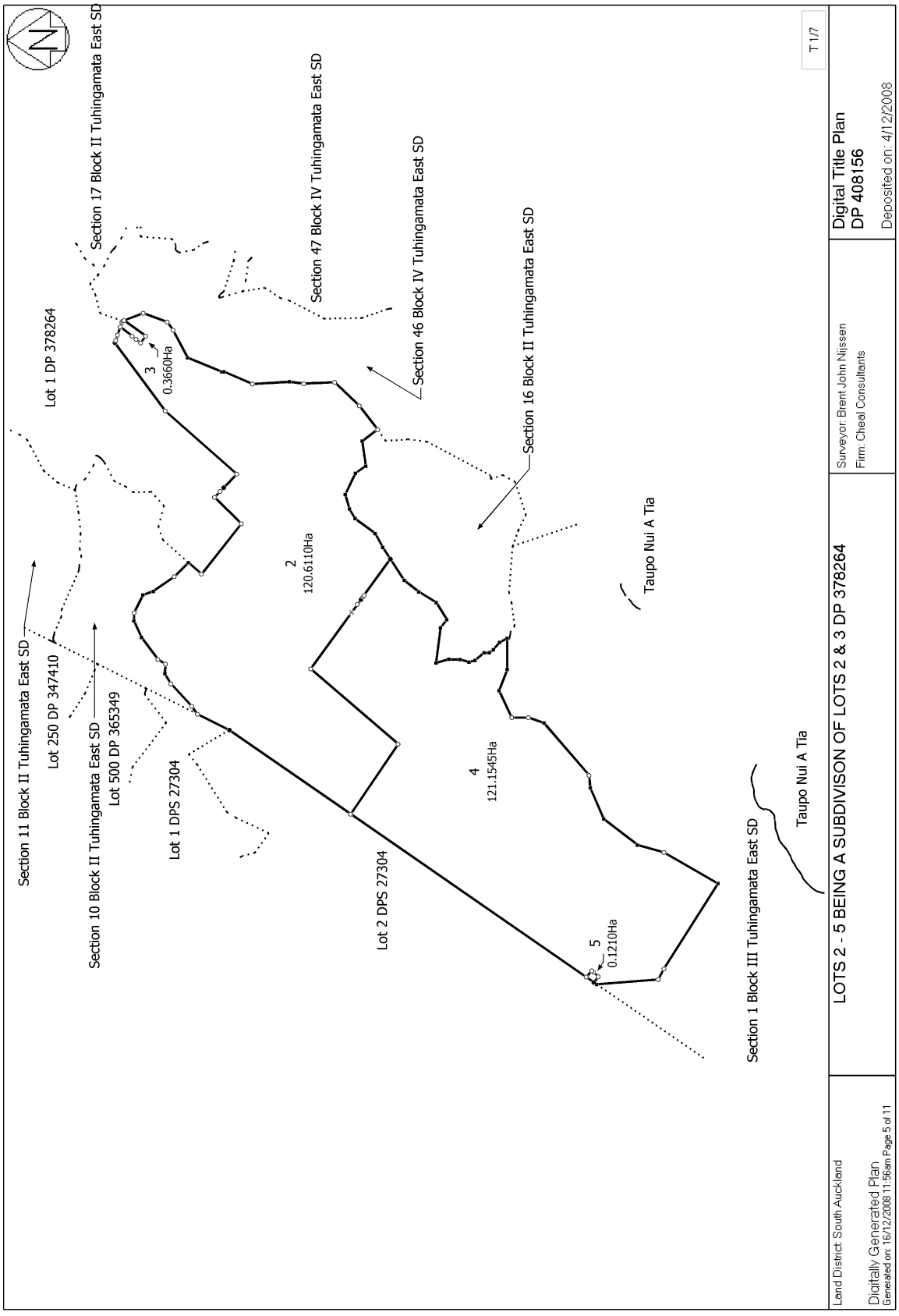
The easements created by Easement Instrument 8017715.3 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Deed 8096888.4 - 13.3.2009 at 3:32 pm

Land Covenant in Deed 8110767.4 - 21.5.2009 at 1:30 pm

Land Covenant in Deed 8111193.4 - 21.5.2009 at 2:05 pm

10705132.3 Mortgage to Rabobank New Zealand Limited - 28.2.2017 at 1:43 pm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Lot 1 DP 378264
Section 47 Block IV Tuhingamata East SD
Section 46 Block IV Tuhingamata East SD
Section 16 Block II Tuhingamata East SD
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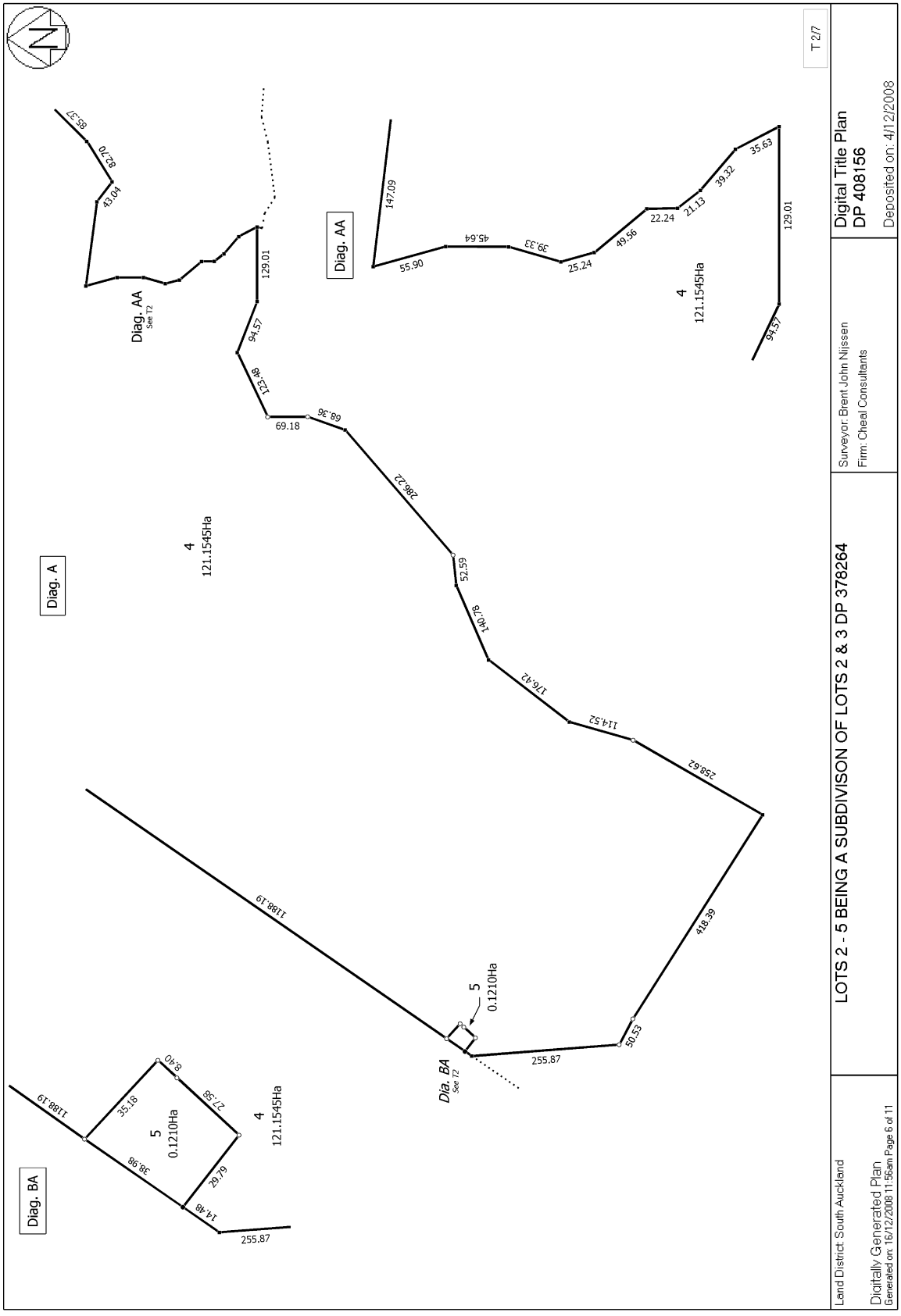
Lot 250 DP 347410
Section 10 Block II Tuhingamata East SD
Lot 500 DP 365349
Lot 1 DPS 27304
Lot 2 DPS 27304
Taupo Nui A Tia
Taupo Nui A Tia
Section 1 Block III Tuhingamata East SD
3
0.3660Ha
2
120.6110Ha
4
121.1545Ha
5
0.1210Ha
T 1/7
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 5 of 11
Surveyor: Brent John Nijssen
Firm: Cheal Consultants
Digital Title Plan
DP 408156
Deposited on: 4/12/2008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See T2
1188.19
5
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Diag. AA
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LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Digital Title Plan
DP 408156
Deposited on: 4/12/2008
Surveyor Brent John Nijssen
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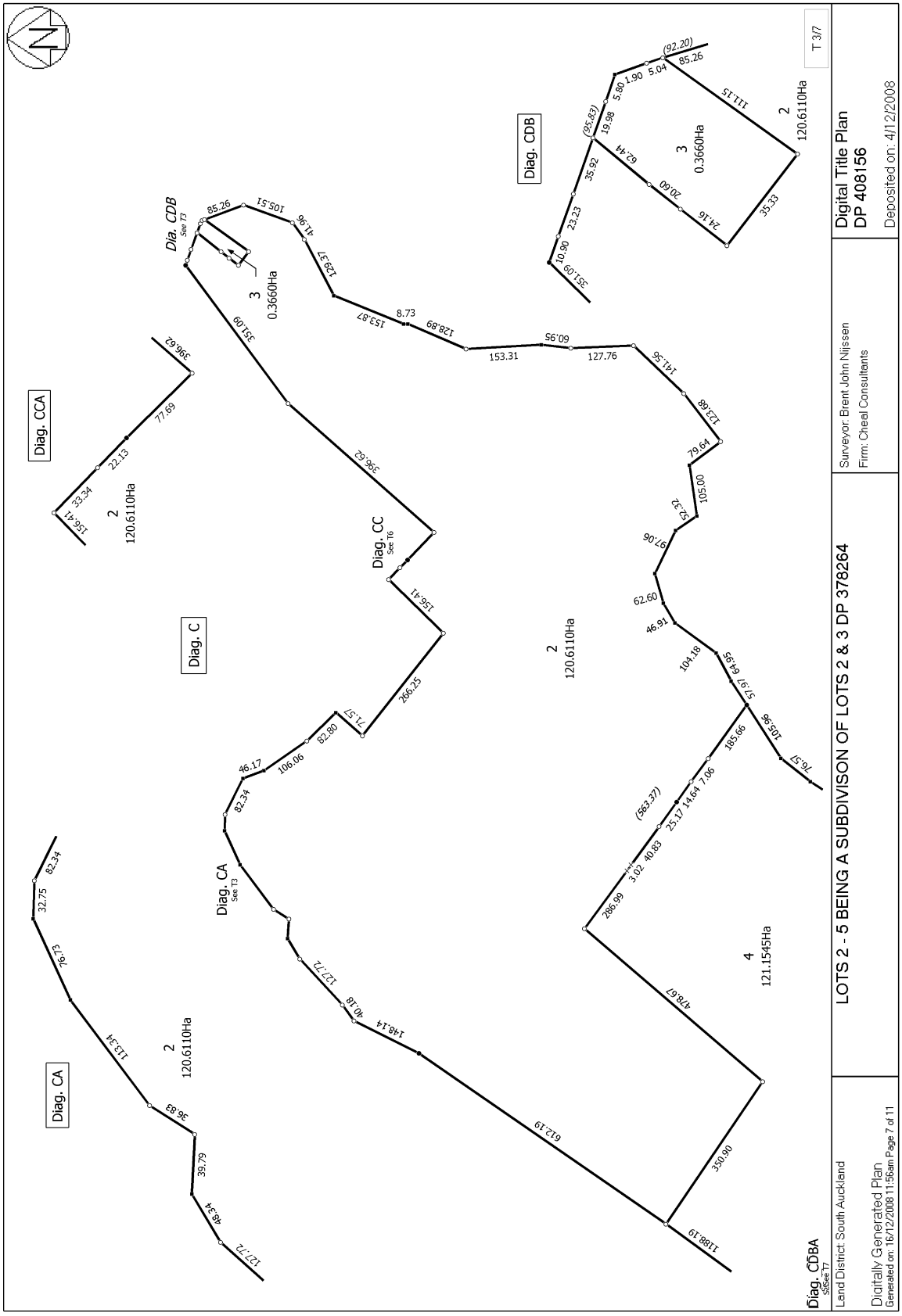
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 6 of 11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LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Digital Title Plan
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Deposited on: 4/12/2008
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Land District: South Auckland
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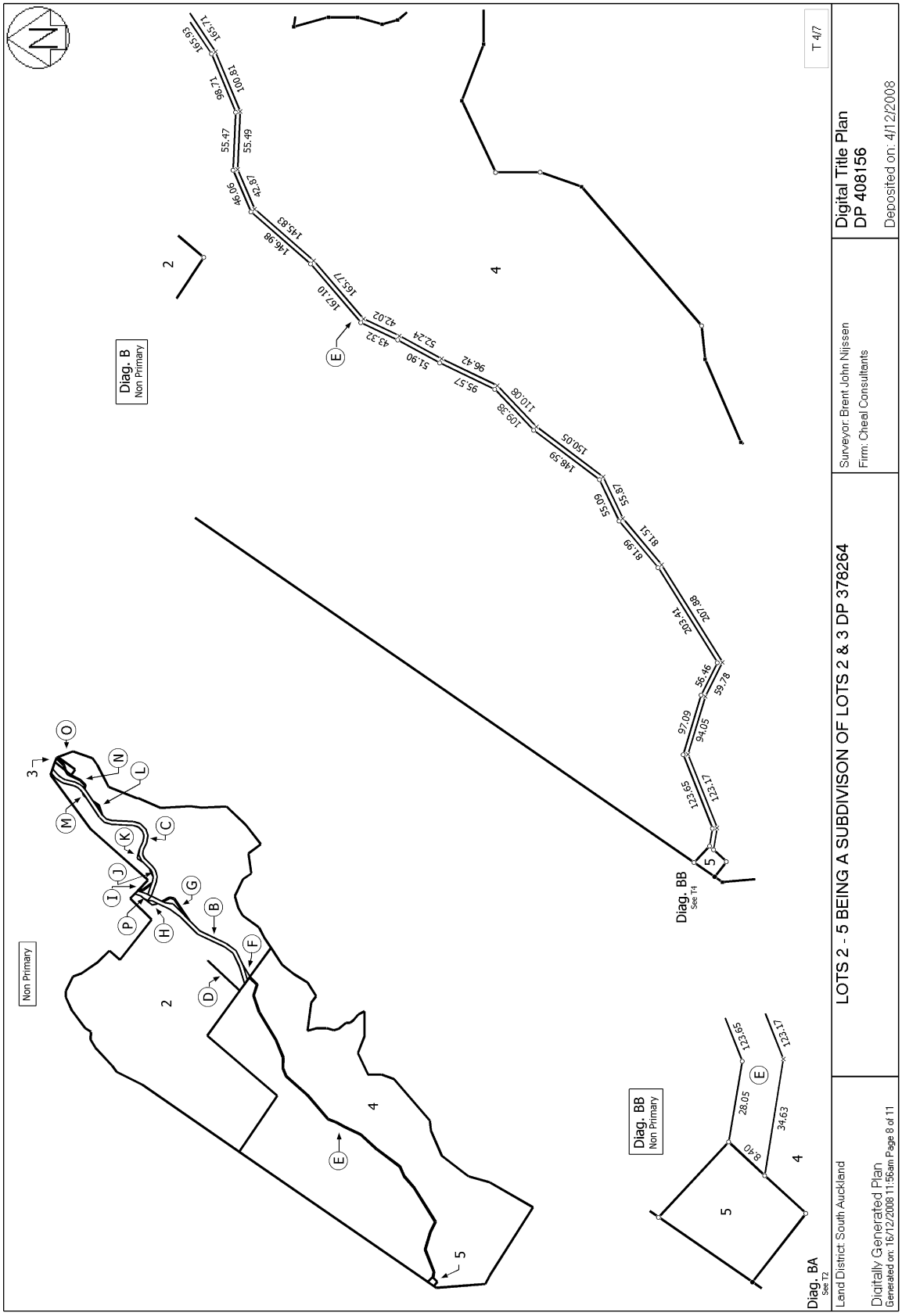
Generated on: 16/12/2008 11:56am Page 7 of 11
T 3/7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Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 8 of 11
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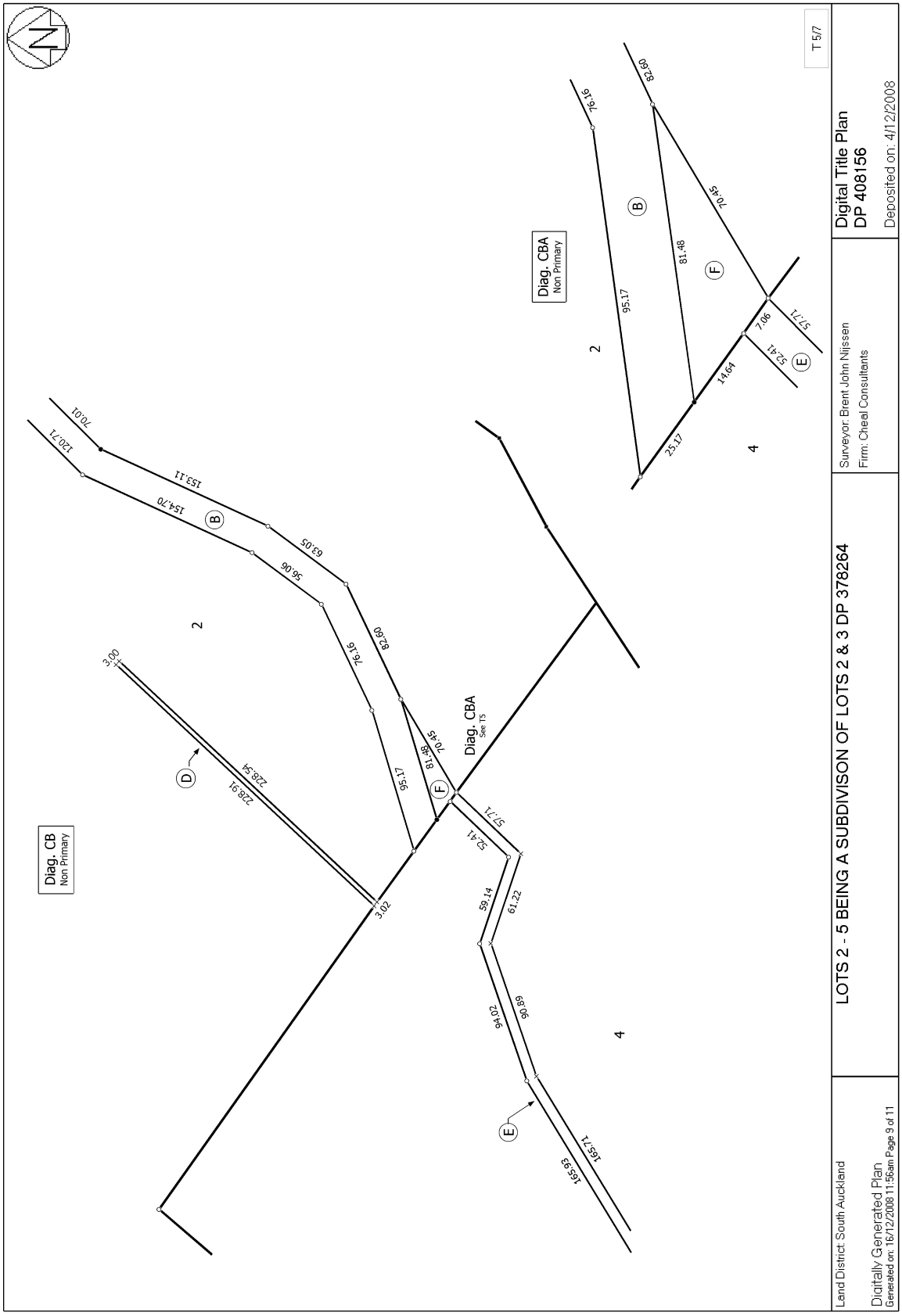
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DP 408156
Deposited on: 4/12/2008
Surveyor Brent John Nijssen
Firm: Cheal Consultants
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Land District: South Auckland
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Generated on: 16/12/2008 11:56am Page 3 of 11
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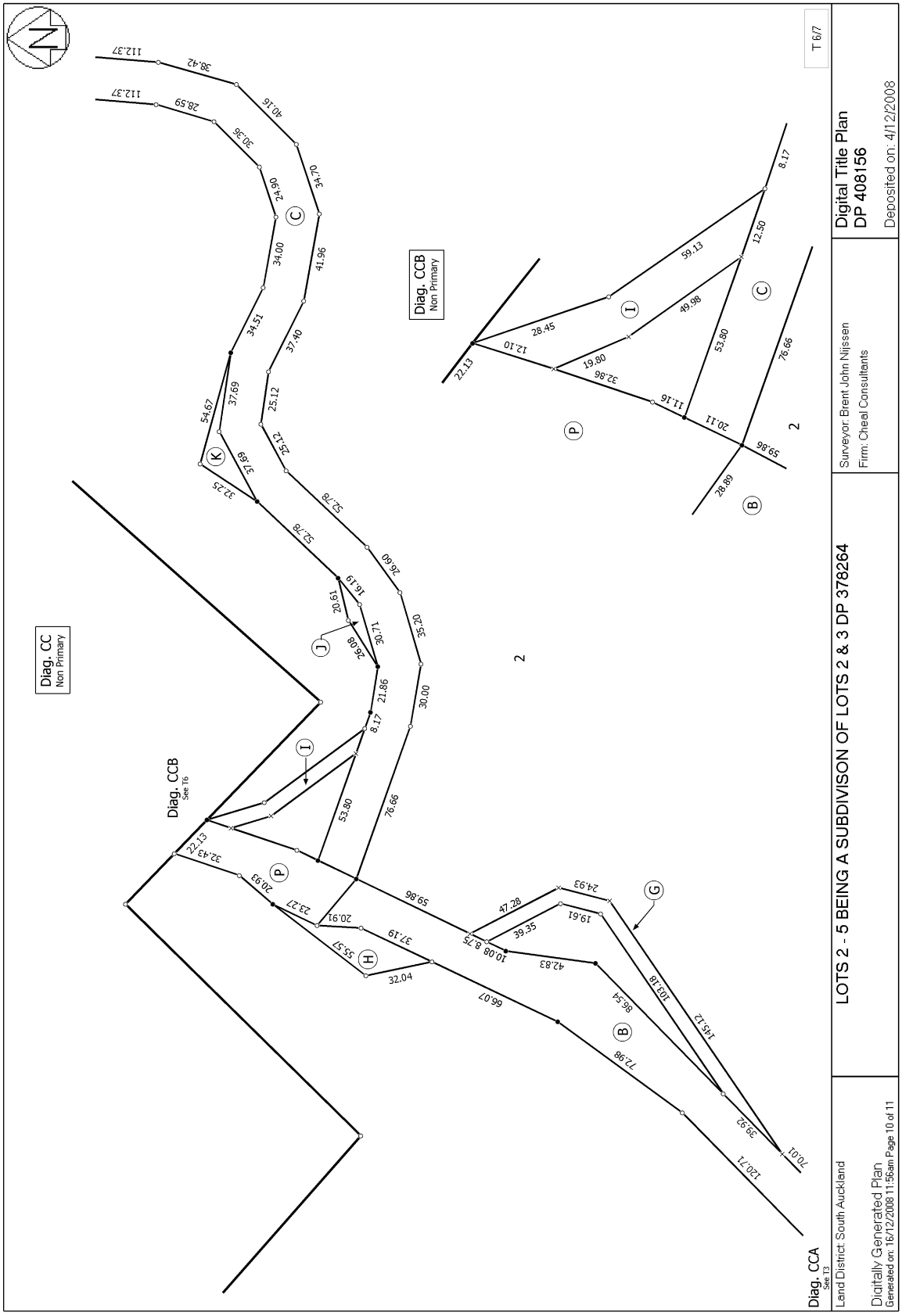
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T 6/7
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Land District: South Auckland
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Generated on: 16/12/2008 11:56am Page 10 of 11
Surveyor: Brent John Nijssen
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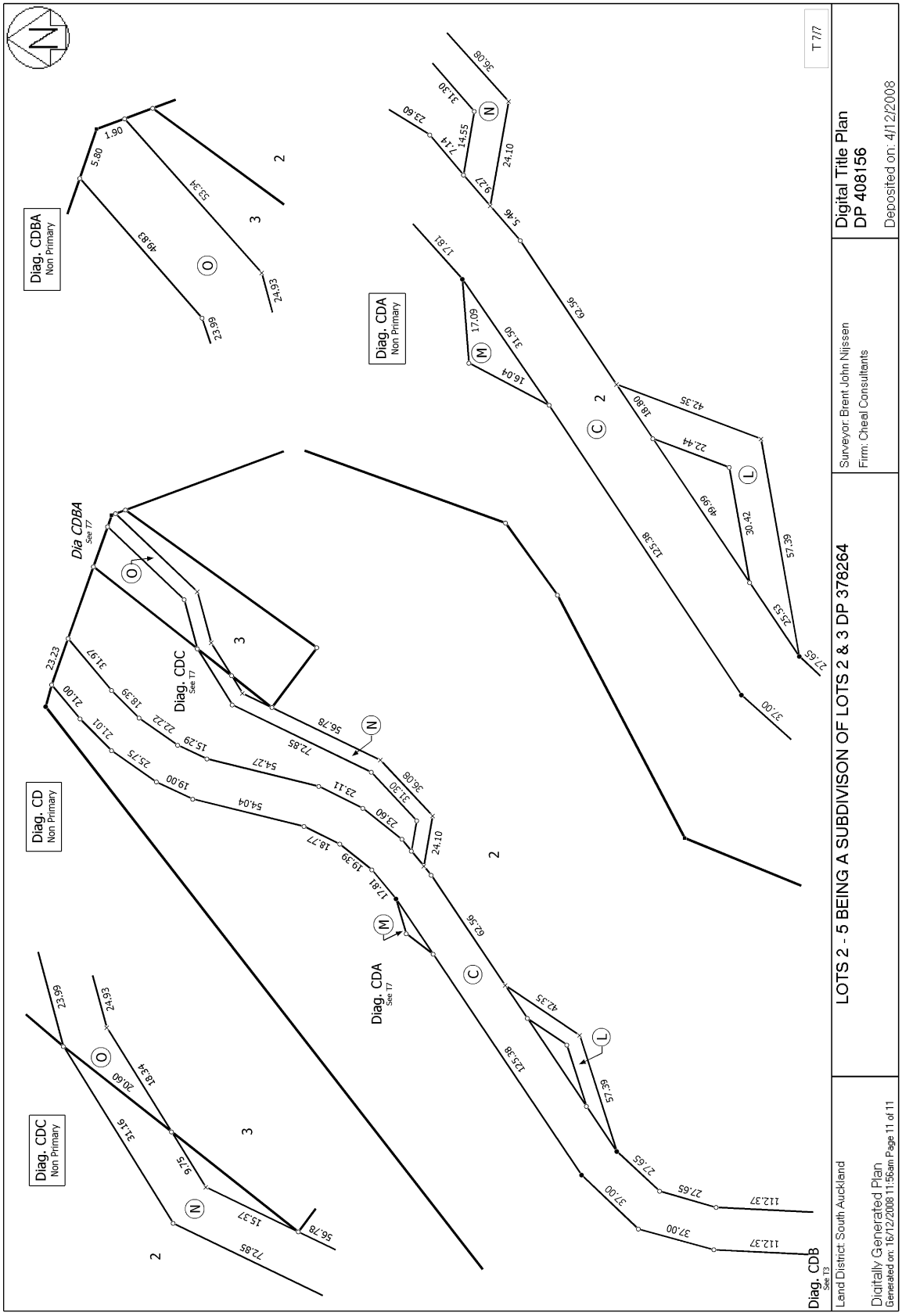
Deposited on: 4/12/2008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See T3
LOTS 2 - 5 BEING A SUBDIVISON OF LOTS 2 & 3 DP 378264
Land District: South Auckland
Digitally Generated Plan
Generated on: 16/12/2008 11:56am Page 11 of 11
Surveyor Brent John Nijssen
Firm: Cheal Consultants
Digital Title Plan
DP 408156
Deposited on: 4/12/2008
T 7!?