

**APPLICATION AS NOTIFIED**

**Queenstown Lakes District Council  
(RM220740)**

# FORM 19

File Number RM220740

## QUEENSTOWN LAKES DISTRICT COUNCIL

### PUBLIC NOTIFICATION

#### **Notification of Requirement for a designation under section 168A of the Resource Management Act 1991.**

Queenstown Lakes District Council give notice of their requirement for a designation to establish up to three water reservoirs and associated infrastructure for community water supply at Trench Hill Road, Quail Rise.

#### **The sites to which the requirement applies is as follows:**

Lot 300 Deposited Plan 457085 & Lot 2 Deposited Plan 469901. The total area of designation will be 1 hectare.

#### **This file can also be viewed at our public computers at these Council offices:**

- 74 Shotover Street, Queenstown;
- Gorge Road, Queenstown;
- 33-35 Reece Crescent, Wanaka; and
- 47 Ardmore Street, Wanaka during normal office hours (8.30am to 5.00pm).

#### **Alternatively, you can view them on our website when the submission period commences:**

<https://www.qldc.govt.nz/services/resource-consents/notified-resource-consents#public-rc>

The Council planner processing this application on behalf of the Council is Mary McConnell, who may be contacted by phone at 021 721 623 or e-mail at [mary.mcconnell@qldc.govt.nz](mailto:mary.mcconnell@qldc.govt.nz).

Any person may make a submission on the notice of requirement, but a person who is a trade competitor of the applicant may do so only if that person is directly affected by an effect of the activity to which the notice of requirement relates that –

- a) adversely affects the environment; and
- b) does not relate to trade competition or the effects of trade competition.

You may make a submission by sending a written or electronic submission to Council (details below). The submission should be in the format of Form 21. Copies of this form are available Council website:

[https://www.qldc.govt.nz/services/resource-consents/application-forms-and-fees#other\\_forms](https://www.qldc.govt.nz/services/resource-consents/application-forms-and-fees#other_forms)

Submissions close on: **24<sup>th</sup> April 2023**

You must serve a copy of your submission to the applicant, C/O Amanda Leith, as soon as reasonably practicable after serving your submission to Council:

Amanda Leith; Remarkable Planning Limited  
[amanda@remarkableplanning.nz](mailto:amanda@remarkableplanning.nz)  
PO Box 2023, Wakatipu 9349

QUEENSTOWN LAKES DISTRICT COUNCIL



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(signed by Wendy Baker pursuant to a delegation given under  
Section 34A of the Resource Management Act 1991)

Date of Notification: Thursday 23<sup>rd</sup> March 2023

**Address for Service for Consent Authority:**

Queenstown Lakes District Council  
Private Bag 50072, Queenstown 9348  
Gorge Road, Queenstown 9300

Phone  
Email  
Website

03 441 0499  
[rsubmission@qldc.govt.nz](mailto:rsubmission@qldc.govt.nz)  
[www.qldc.govt.nz](http://www.qldc.govt.nz)



APPLICATION FOR RESOURCE CONSENT OR  
FAST TRACK RESOURCE CONSENT

# FORM 9: GENERAL APPLICATION



Under Section 87AAC, 88 & 145 of the Resource Management Act 1991 (Form 9)

PLEASE COMPLETE ALL MANDATORY FIELDS\* OF THIS FORM.

This form provides contact information and details of your application. If your form does not provide the required information it will be returned to you to complete. Until we receive a completed form and payment of the initial fee, your application may not be accepted for processing.



## APPLICANT //

- Must be a person or legal entity (limited liability company or trust).
- Full names of all trustees required.
- The applicant name(s) will be the consent holder(s) responsible for the consent and any associated costs.

\*Applicant's Full Name / Company / Trust: **Queenstown Lakes District Council**  
(Name Decision is to be issued in)

All trustee names (if applicable):

\*Contact name for company or trust: **Tony Avery**

\*Postal Address: **Private Bag 50072, Queenstown**

\*Post code:  
**9348**

\*Contact details supplied must be for the applicant and not for an agent acting on their behalf and must include a valid postal address

\*Email Address: **tony.avery@qldc.govt.nz**

\*Phone Numbers: Day **03 441 0499**

Mobile:

\*The Applicant is:



Owner



Prospective Purchaser (of the site to which the application relates)



Occupier



Lessee

Other - Please Specify:



Our preferred methods of corresponding with you are by **email** and **phone**.

The decision will be sent to the Correspondence Details by **email** unless requested otherwise.



## CORRESPONDENCE DETAILS //

If you are acting on behalf of the applicant e.g. agent, consultant or architect please fill in your details in this section.

\*Name & Company: **Amanda Leith; Remarkable Planning Limited**

\*Phone Numbers: Day

Mobile: **021 621 759**

\*Email Address: **amanda@remarkableplanning.nz**

\*Postal Address: **PO Box 2023, Wakatipu**

\*Postcode:  
**9349**



## INVOICING DETAILS //

Invoices will be made out to the applicant but can be sent to another party if paying on the applicant's behalf. For more information regarding payment please refer to the Fees Information section of this form.

\*Please select a preference for who should receive any invoices and how they would like to receive them.

Applicant:



Agent:



Other - Please specify:

Email:



Post:



\*Attention: **Purchase Order # P0035165**

\*Postal Address:

\*Post code:

\*Please provide an email AND full postal address.

\*Email:



## OWNER DETAILS // Please supply owner details for the subject site/property if not already indicated above

Owner Name:

Owner Address:

If the property has recently changed ownership please indicate on what date (approximately) AND the names of the previous owners:

Date:

Names:



## DEVELOPMENT CONTRIBUTIONS INVOICING DETAILS //

If it is assessed that your consent requires development contributions any invoices and correspondence relating to these will be sent via email. Invoices will be sent to the email address provided above unless an alternative address is provided below. Invoices will be made out to the applicant/owner but can be sent to another party if paying on the applicant's behalf.

\*Please select a preference for who should receive any invoices.

Details are the same as for invoicing

Applicant:

Landowner:

Other, please specify:

\*Attention:

\*Email:

[Click here for further information and our estimate request form](#)



## DETAILS OF SITE // Legal description field must list legal descriptions for all sites pertaining to the application. Any fields stating 'refer AEE' will result in return of the form to be fully completed.

\*Address / Location to which this application relates:

Trench Hill Road, Quail Rise

\*Legal Description: Can be found on the Computer Freehold Register or Rates Notice – e.g Lot x DPxxx (or valuation number)

Lot 300 Deposited Plan 457085 and Lot 2 Deposited Plan 469901

District Plan Zone(s): Quail Rise Zone and Open Space



## SITE VISIT REQUIREMENTS // Should a Council officer need to undertake a site visit please answer the questions below

Is there a gate or security system restricting access by council?

YES  NO

Is there a dog on the property?

YES  NO

Are there any other hazards or entry restrictions that council staff need to be aware of?

YES  NO

If 'yes' please provide information below



## PRE-APPLICATION MEETING OR URBAN DESIGN PANEL

Have you had a pre-application meeting with QLDC or attended the urban design panel regarding this proposal?

Yes

No

Copy of minutes attached

If 'yes', provide the reference number and/or name of staff member involved:

Mary McConnell and Richard Denney



## CONSENT(S) APPLIED FOR // \* Identify all consents sought

Land use consent

Subdivision consent

Change/cancellation of consent or consent notice conditions

Certificate of compliance

Extension of lapse period of consent (time extension) s125

Existing use certificate



## QUALIFIED FAST-TRACK APPLICATION UNDER SECTION 87AAC

Controlled Activity

Deemed Permitted Boundary Activity

If your consent qualifies as a fast-track application under section 87AAC, tick here to opt out of the fast track process



## BRIEF DESCRIPTION OF THE PROPOSAL // \*Please complete this section, any form stating 'refer AEE' will be returned to be completed with a description of the proposal

\*Consent is sought to:

Notice of requirement to establish a designation for the purpose of installing up to three new reservoirs and associated infrastructure for community water supply.



## APPLICATION NOTIFICATION

Are you requesting public notification for the application?

Yes

No

Please note there is an additional fee payable for notification. Please refer to Fees schedule



## OTHER CONSENTS

Is consent required under a National Environmental Standard (NES)?

- NES for Assessing and Managing Contaminants in Soil to Protect Human Health 2012

An applicant is required to address the NES in regard to past use of the land which could contaminate soil to a level that poses a risk to human health. Information regarding the NES is available on the website

<https://environment.govt.nz/publications/national-environmental-standard-for-assessing-and-managing-contaminants-in-soil-to-protect-human-health-information-for-landowners-and-developers/>

You can address the NES in your application AEE OR by selecting ONE of the following:

This application does not involve subdivision (excluding production land), change of use or removal of (part of) a fuel storage system. Any earthworks will meet section 8(3) of the NES (including volume not exceeding 25m<sup>3</sup> per 500m<sup>2</sup>). Therefore the NES does not apply.

I have undertaken a comprehensive review of District and Regional Council records and I have found no record suggesting an activity on the HAIL has taken place on the piece of land which is subject to this application.

NOTE: depending on the scale and nature of your proposal you may be required to provide details of the records reviewed and the details found.



## OTHER CONSENTS // CONTINUED

I have included a Preliminary Site Investigation undertaken by a suitably qualified person.

An activity listed on the HAIL has more likely than not taken place on the piece of land which is subject to this application. I have addressed the NES requirements in the Assessment of Environmental Effects.

Any other National Environmental Standard

Yes

N/A

Are any additional consent(s) required that have been applied for separately?

Otago Regional Council

Consents required from the Regional Council (note if have/have not been applied for):

Yes

N/A



## INFORMATION REQUIRED TO BE SUBMITTED //

Attach to this form any information required (see below & appendices 1-2).

To be accepted for processing, your application should include the following:

Computer Freehold Register for the property (no more than 3 months old) and copies of any consent notices and covenants (Can be obtained from Land Information NZ at <https://www.linz.govt.nz/>).

A plan or map showing the locality of the site, topographical features, buildings etc.

A site plan at a convenient scale.

Written approval of every person who may be adversely affected by the granting of consent (s95E).

An Assessment of Effects (AEE).

An AEE is a written document outlining how the potential effects of the activity have been considered along with any other relevant matters, for example if a consent notice is proposed to be changed. Address the relevant provisions of the District Plan and affected parties including who has or has not provided written approval. See [Appendix 1](#) for more detail.



We prefer to receive applications electronically – please see Appendix 5 – [Naming of Documents Guide](#) for how documents should be named. Please ensure documents are scanned at a minimum resolution of 300 dpi. Each document should be no greater than 10mb



## PRIVACY INFORMATION

The information you have provided on this form is required so that your application can be processed under the Resource Management Act 1991 and may also be used in statistics collected and provided to the Ministry for the Environment and Queenstown Lakes District Council. The information will be stored on a public register and may be made available to the public on request or on the company's or the Council's websites.



## FEES INFORMATION

Section 36 of the Resource Management Act 1991 deals with administrative charges and allows a local authority to levy charges that relate to, but are not limited to, carrying out its functions in relation to receiving, processing and granting of resource consents (including certificates of compliance and existing use certificates).

Invoiced sums are payable by the 20th of the month after the work was undertaken. If unpaid, the processing of an application, provision of a service, or performance of a function will be suspended until the sum is paid. You may also be required to make an additional payment, or bring the account up to date, prior to milestones such as notification, setting a hearing date or releasing the decision. In particular, all charges related to processing of a resource consent application are payable **prior to issuing of the decision**. Payment is due on the 20th of the month or **prior to the issue date – whichever is earlier**.



## FEES INFORMATION // CONTINUED

If your application is notified or requires a hearing you will be requested to pay a notification deposit and/or a hearing deposit. An applicant may not offset any invoiced processing charges against such payments.

Section 357B of the Resource Management Act provides a right of objection in respect of additional charges. An objection must be in writing and must be lodged within 15 working days of notification of the decision.

**LIABILITY FOR PAYMENT** – Please note that by signing and lodging this application form you are acknowledging that the details in the invoicing section are responsible for payment of invoices and in addition will be liable to pay all costs and expenses of debt recovery and/or legal costs incurred by QLDC related to the enforcement of any debt.

**MONITORING FEES** – Please also note that if this application is approved you will be required to meet the costs of monitoring any conditions applying to the consent, pursuant to Section 35 of the Resource Management Act 1991.

**DEVELOPMENT CONTRIBUTIONS** – Your development, if granted, may also incur development contributions under the Local Government Act 2002. You will be liable for payment of any such contributions.

A list of Consent Charges is available on the on the Resource Consent Application Forms section of the QLDC website. If you are unsure of the amount to pay, [please call 03 441 0499](tel:034410499) and ask to speak to our duty planner.

Please ensure to [reference any banking payments correctly](#). Incorrectly referenced payments may cause delays to the processing of your application whilst payment is identified.

If the initial fee charged is insufficient to cover the actual and reasonable costs of work undertaken on the application you will be required to pay any additional amounts and will be invoiced monthly as work on the application continues. Please note that if the Applicant has outstanding fees owing to Council in respect of other applications, Council may choose to apply the initial fee to any outstanding balances in which case the initial fee for processing this application may be deemed not to have been paid.



## PAYMENT // An initial fee must be paid prior to or at the time of the application and proof of payment submitted.

Please reference your payments as follows:

Applications yet to be submitted: RM followed by first 5 letters of applicant name e.g RMJONES

Applications already submitted: Please use the RM# reference that has been assigned to your application, this will have been emailed to yourself or your agent.

Please note processing will not begin until payment is received (or identified if incorrectly referenced).

- I confirm payment by:
- Bank transfer to account 02 0948 0002000 00(If paying from overseas swiftcode is – BKNZ222)
  - Invoice for initial fee requested and payment to follow
  - Manual Payment (can only be accepted once application has been lodged and acknowledgement email received with your unique RM reference number)

\*Reference **Purchase Order # P0035165**

\*Amount Paid: Landuse and Subdivision Resource Consent fees - please select from drop down list below

\$6600 - Notice of Requirement (NOR) for a Designation



(For required initial fees refer to website for Resource Consent Charges or spoke to the Duty Planner by phoning 03 441 0499)

\*Date of Payment

Invoices are available on request





## APPLICATION & DECLARATION

The Council relies on the information contained in this application being complete and accurate. The Applicant must take all reasonable steps to ensure that it is complete and accurate and accepts responsibility for information in this application being so.

If lodging this application as **the Applicant:**

I/we hereby represent and warrant that I am/we are aware of all of my/our obligations arising under this application including, in particular but without limitation, my/our obligation to pay all fees and administrative charges (including debt recovery and legal expenses) payable under this application as referred to within the Fees Information section.

OR:

If lodging this application **as agent of the Applicant:**

I/we hereby represent and warrant that I am/we are authorised to act as agent of the Applicant in respect of the completion and lodging of this application and that the Applicant / Agent whose details are in the invoicing section is aware of all of his/her/its obligations arising under this application including, in particular but without limitation, his/her/its obligation to pay all fees and administrative charges (including debt recovery and legal expenses) payable under this application as referred to within the Fees Information section.



PLEASE TICK

I hereby apply for the resource consent(s) for the Proposal described above and I certify that, to the best of my knowledge and belief, the information given in this application is complete and accurate.



Signed (by or as authorised agent of the Applicant) **	
Full name of person lodging this form	<b>Amanda Leith</b>
Firm/Company	<b>Remarkable Planning Limited</b>
Dated	<b>28/2/23</b>

\*\*If this form is being completed on-line you will not be able, or required, to sign this form and the on-line lodgement will be treated as confirmation of your acknowledgement and acceptance of the above responsibilities and liabilities and that you have made the above representations, warranties and certification.

Section 2 of the District Plan provides additional information on the information that should be submitted with a land use or subdivision consent.

The RMA (Fourth Schedule to the Act) requires the following:

#### 1 INFORMATION MUST BE SPECIFIED IN SUFFICIENT DETAIL

- Any information required by this schedule, including an assessment under clause 2(1)(f) or (g), must be specified in sufficient detail to satisfy the purpose for which it is required.

#### 2 INFORMATION REQUIRED IN ALL APPLICATIONS

- (1) An application for a resource consent for an activity (the activity) must include the following:

- (a) a description of the activity;
- (b) a description of the site at which the activity is to occur;
- (c) the full name and address of each owner or occupier of the site;
- (d) a description of any other activities that are part of the proposal to which the application relates;
- (e) a description of any other resource consents required for the proposal to which the application relates;

- (f) an assessment of the activity against the matters set out in Part 2;
- (g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b).

- (2) The assessment under subclause (1)(g) must include an assessment of the activity against—

- (a) any relevant objectives, policies, or rules in a document; and
- (b) any relevant requirements, conditions, or permissions in any rules in a document; and
- (c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).

- (3) An application must also include an assessment of the activity's effects on the environment that—

- (a) includes the information required by clause 6; and
- (b) addresses the matters specified in clause 7; and
- (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

Information provided within the Form above

Include in an attached Assessment of Effects (see Clauses 6 & 7 below)

#### ADDITIONAL INFORMATION REQUIRED IN SOME APPLICATIONS

- An application must also include any of the following that apply:
  - (a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1));
  - (b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A));

## ASSESSMENT OF ENVIRONMENTAL EFFECTS

### Clause 6: Information required in assessment of environmental effects

- (1) An assessment of the activity's effects on the environment must include the following information:
  - (a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity;
  - (b) an assessment of the actual or potential effect on the environment of the activity;
  - (c) if the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment that are likely to arise from such use;
  - (d) if the activity includes the discharge of any contaminant, a description of—
    - (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
    - (ii) any possible alternative methods of discharge, including discharge into any other receiving environment;
  - (e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect;
  - (f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted;
  - (g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved;
  - (h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).

(2) A requirement to include information in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

(3) To avoid doubt, subclause (1)(f) obliges an applicant to report as to the persons identified as being affected by the proposal, but does not—

- (a) oblige the applicant to consult any person; or
- (b) create any ground for expecting that the applicant will consult any person.

### CLAUSE 7: MATTERS THAT MUST BE ADDRESSED BY ASSESSMENT OF ENVIRONMENTAL EFFECTS

- (1) An assessment of the activity's effects on the environment must address the following matters:
  - (a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects;
  - (b) any physical effect on the locality, including any landscape and visual effects;
  - (c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity;
  - (d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations;
  - (e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants;
  - (f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

(2) The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

## UNDER THE FOURTH SCHEDULE TO THE ACT:

- An application for a subdivision consent must also include information that adequately defines the following:
  - (a) the position of all new boundaries:
  - (b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:
  - (c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:
  - (d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:
  - (e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:
  - (f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):
  - (g) the locations and areas of land to be set aside as new roads.

## Will your resource consent result in a Development Contribution and what is it?

- A Development Contribution can be triggered by the granting of a resource consent and is a financial charge levied on new developments. It is assessed and collected under the Local Government Act 2002. It is intended to ensure that any party, who creates additional demand on Council infrastructure, contributes to the extra cost that they impose on the community. These contributions are related to the provision of the following council services:
  - Water supply
  - Wastewater supply
  - Stormwater supply
  - Reserves, Reserve Improvements and Community Facilities
  - Transportation (also known as Roading)

[Click here for more information on development contributions and their charges](#)

OR Submit an Estimate request \*please note administration charges will apply



Please note that some land use consents can be dealt with as fast track land use consent. This term applies to resource consents where they require a controlled activity and no other activity. A 10 day processing time applies to a fast track consent.

If the consent authority determines that the activity is a deemed permitted boundary activity under section 87BA of the Act, written approval cannot be withdrawn if this process is followed instead.

A fast-track application may cease to be a fast-track application under section 87AAC(2) of the Act.

While it is not essential that your documents are named the following, it would be helpful if you could title your documents for us. You may have documents that do not fit these names; therefore below is a guide of some of the documents we receive for resource consents. Please use a generic name indicating the type of document.

Application Form 9	Engineering Report
Assessment of Environmental Effects (AEE)	Geotechnical Report
Computer Register (CFR)	Wastewater Assessment
Covenants & Consent Notice	Traffic Report
Affected Party Approval/s	Waste Event Form
Landscape Report	Urban Design Report
Ecological Report	

## Form 20

### Notice of territorial authority's requirement for designation or alteration of designation

The Queenstown Lakes District Council gives notice of its requirement for a designation for a public work.

#### The site to which the requirement applies is as follows:

Lot 300 Deposited Plan 457085

Lot 2 Deposited Plan 469901

#### The nature of the proposed work is:

The designation is sought for the purpose of establishing up to three water reservoirs and associated infrastructure to provide additional water supply and resilience in the existing reticulated water network. The water reservoirs will provide additional water supply capacity to the Frankton and Ladies Mile areas to cater for both existing and future development.

#### \*The nature of the proposed conditions that would apply is:

##### *Prior to commencement of construction*

1. All engineering works shall be designed and carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Land Development and Subdivision Code of Practice adopted on 8th October 2020 and subsequent amendments to that document up to the date of the Outline Plan.
2. Prior to commencement of earthworks on site, an Environmental Management Plan is to be prepared by a suitably qualified person in accordance with the medium risk requirements of the QLDC Guidelines for Environmental Management Plans. This plan is to be submitted for approval of the Territorial Authority and once approved, implemented for the duration of the works.
3. Prior to commencement of works on site, a Traffic Management Plan is to be prepared addressing construction access and traffic generation. This plan is to be submitted for approval of the Territorial Authority and once approved, implemented for the duration of the works.
4. A suitably qualified and experienced geo-professional as defined in Section 1.7 of QLDC's Land Development and Subdivision Code of Practice who is familiar with the GHD Technical Memorandum entitled 'Quail Rise Preliminary Design – Geotechnical Analysis Reporting' dated 24 February 2022 report shall supervise

the excavation and stabilisation to ensure compliance with the recommendations in the report. This engineer shall continually assess the condition of the excavation and shall be responsible for ensuring that temporary retaining is installed whenever necessary to avoid any potential erosion or instability.

5. The open water race located within Lot 300 Deposited Plan 457085 and within Lot 1 Deposited Plan 469901 (as it adjoins the northwest boundary of Lots 2 and 3 Deposited Plan 469901) is to be piped prior to the initial operation of the first reservoir.
6. Prior to commencement of earthworks for the construction of the reservoir platform, a Construction Noise Management Plan is to be prepared and approved by the Manager Resource Consents. This is to be prepared by a Suitably Qualified and Experienced Person and must include the following information:
  - Agreed operational hours of construction activity on the site
  - Details of the construction equipment to be used
  - Details of all noise mitigation measures to be used
  - Details of the planned site hoarding installations
  - Duration of the work and any planned respite periods
  - Requirements for specific equipment to be tested prior to being used on site to verify that physical mitigation measures have been effectively applied
  - Details of complaints procedures and the need for and responsibilities of people in control of the site
  - Methods for liaising with neighbouring properties prior to high noise activities being undertaken.

The approved Construction Noise Management Plan must be implemented and maintained throughout the earthworks phase. Any changes to the Plan must be agreed in advance by the Council's Monitoring Team.

### *Construction*

7. The first reservoir to be installed is to be constructed in the approximate location of Proposed Reservoir 3 as shown on the 'Figure 1B: Proposed Mitigation – Plan'.
8. A bund is to be formed as shown on the 'Figure 1B: Proposed Mitigation – Plan' to a minimum height of 1.8m above the reservoir platform level.
9. All transition areas of cut and fill are to be shaped to blend into the surrounding natural topography with variation in slope and gradient to replicate surrounding natural landform.
10. No structures such as retaining walls and gabion baskets are to be used on areas of cut and fill. All exposed cut and fill is to be grassed or planted as per the landscape plan, or where rock is exposed is to retain a exposed rock surface. Where stabilisation measures are required to the cut face behind the reservoirs,

any treatments are to be coloured so to blend with the natural colour of the rock.

11. Any perimeter fencing within the designation area is to be visually permeable such as chain link or wire mesh and have a maximum height of 2.5m and to be coloured a recessive natural tone of grey with a light reflectivity value (LRV) of 20% or less. Any other fencing shall be standard farm post and wire fencing.
12. The access road within the designation shall be of a gravel surface or chipseal and exclude the use of concrete kerbs and channel. All drainage shall be grassed or vegetated earth swales.
13. Any damage to the right of way extending through Lot 1 or 3 Deposited Plan 461026 or Lot 101 Deposited Plan 469901 during earthworks and construction is to be remedied within 7 days.

#### *Following construction*

14. Within the first planting season following completion of the earthworks for the formation of the reservoir platform, the planting and associated earth mounding shown on the 'Figure 1B: Proposed Mitigation – Plan' is to be fully implemented in accordance with the specifications detailed on the plan and in the Specification for the QLDC Reservoirs dated 12 August 2022.
15. The Manager Resource Consents at the Queenstown Lakes District Council is to be advised in writing once the implementation of the landscaping plan is complete.
16. All other earthworks areas are to be hydro-seeded with grass within 3 months of completion of the earthworks. All grass seed is to include 'brown top' in the mix to blend into the surrounding farming landscape and not to use an amenity or lawn turf grass mix.

#### *Ongoing conditions*

17. No more than one reservoir (and its supporting infrastructure) is to be constructed within the designation area until the planting shown on the 'Figure 1B: Proposed Mitigation – Plan' has been in place for a minimum of 5 years from the date the Manager Resource Consents at the Queenstown Lakes District Council has certified that the landscaping is complete as required by in Condition 15.
18. The exterior colour of the reservoir tanks, pump shed and all other buildings and structures, including any attachments such as satellite dishes etc within the designation will be Resene Ironsand with a matt or G10 paint finish to reduce glare.
19. The maximum height of all reservoirs and buildings is not to exceed RL 409.20. The difference between the top of the surrounding earth bund and the top of the reservoir tanks is to be no greater than 7m.

20. Any external lighting will be limited to downlights mounted on structures and are to be sensor activated for security and operation purposes only.
21. The use and noise associated with the use of an emergency generator operating for emergency purposes is permitted.
22. The use and noise associated with the use of a back up generator is permitted provided that it is for testing and maintenance purposes and is less than 60 minutes each month during a week day between 0900 and 1700 hrs.
23. All planting shown on 'Figure 1B: Proposed Mitigation – Plan' shall be maintained in good health and shall not be modified or removed. If any tree or plant shall die it shall be replaced within 12 months.

**The effects that the public work will have on the environment, and the ways in which any adverse effects will be mitigated, are:**

See attached application and appendices.

**Alternative sites, routes, and methods have been considered to the following extent:**

An assessment of this is included in Section 7.0 of the application.

**The public work and designation (or alteration) are reasonably necessary for achieving the objectives of the territorial authority because:**

The objectives of the proposal are:

- To ensure public safety and health through the provision of a suitable potable water supply;
- To provide greater resilience in the Queenstown water supply; and
- To provide increased capacity in the Queenstown water supply.

It has been identified through master planning that two new reservoirs (circa 3,400m<sup>3</sup> storage) are required in the next 10 years and a third reservoir of the same size will be needed within the next 50 years to provide for the existing development as well as future development identified within the Spatial Plan.

Inclusion of additional water storage will take pressure of the existing water storage network in Queenstown and will add resilience so that if necessary, one tank can be taken off-line for maintenance or replacement etc.

Potable water of sufficient quantity provides for public safety and health through providing potable water as well as fire fighting water supply in urban areas.

**\*The following resource consents are needed for the proposed activity and have (or have not) been applied for:**

In order to construct the future reservoirs within the proposed designation area,



earthworks are likely to be required outside of the designation area and these may require resource consent. This will be able to be determined through detailed design and any future required resource consent for earthworks will be lodged concurrently (or prior) to the Outline Plan applications for the works within the proposed designation area.

**The following consultation (or No consultation) has been undertaken with parties that are likely to be affected:**

Refer to Section 10 of the attached application.

**The Queenstown Lakes District Council attaches the following information required to be included in this notice by the district plan, regional plan, or any regulations made under the Resource Management Act 1991:**

Form 9  
Application for Notice of Requirement

Appendix A - Designation Plan  
Appendix B - Records of Title  
Appendix C - Landscape and Visual Effects Assessment and Attachments  
Appendix D - Summary of Submissions  
Appendix E - Indicative Reservoir Plans  
Appendix F - Geotechnical Assessment  
Appendix G - Stormwater Report  
Appendix H - Water Permit  
Appendix I - Aviation Assessment  
Appendix J - Contaminated Site Record ORC



.....  
Signature on behalf of  
*Queenstown Lakes District Council (as Requiring Authority)*

February 2023

# APPLICATION FOR A NOTICE OF REQUIREMENT

**Water Supply**  
Quail Rise

**Queenstown Lakes District Council**  
as Requiring Authority

Updated 28 February 2023



## **CONTENTS**

### **1.0 INTRODUCTION**

### **2.0 NOTICE OF TERRITORIAL AUTHORITY'S REQUIREMENT FOR DESIGNATION**

### **3.0 DESCRIPTION OF THE SITE AND SURROUNDING ENVIRONMENT**

- 3.1 Site Description
- 3.2 District Plan Zoning
- 3.3 Surrounds
- 3.4 Consent History

### **4.0 NATURE OF THE PROPOSED WORKS**

### **5.0 THE NATURE OF THE PROPOSED CONDITIONS THAT WOULD APPLY**

### **6.0 AN ASSESSMENT OF THE ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT OF ALLOWING THE ACTIVITY**

- 6.1 Positive Effects
- 6.2 Landscape and Visual Effects
- 6.3 Access
- 6.4 Traffic Generation Effects
- 6.5 Noise Effects
- 6.6 Cultural and Heritage Effects
- 6.7 Land Stability and Natural Hazards
- 6.8 Construction Effects
- 6.9 Connectivity
- 6.10 Stormwater
- 6.11 Conclusion

### **7.0 CONSIDERATION OF ALTERNATIVE SITES, ROUTES OR METHODS - SECTION 168A(3)(B)**

### **8.0 REASONS WHY THE DESIGNATION IS REASONABLY NECESSARY FOR ACHIEVING THE OBJECTIVES OF THE TERRITORIAL AUTHORITY – 168A(3)(C)**

### **9.0 RESOURCE CONSENTS REQUIRED**

### **10.0 CONSULTATION**

### **11.0 ADDITIONAL INFORMATION**

- 11.1 Statutory Considerations

### **12.0 PART 2 ASSESSMENT**

### **13.0 CONCLUSION**

**List of Information Attached:**

- Appendix [A]**      Designation Plan
- Appendix [B]**      Records of Title
- Appendix [C]**      Landscape and Visual Effects Assessment and Attachments
- Appendix [D]**      Summary of Submissions
- Appendix [E]**      Indicative Reservoir Plans
- Appendix [F]**      Geotechnical Assessment
- Appendix [G]**      Stormwater Report
- Appendix [H]**      Water Permit
- Appendix [I]**      Aviation Assessment
- Appendix [J]**      Contaminated Site Record ORC
- Appendix [K]      Affected Party Approval -

Report Prepared by:



.....  
**Amanda Leith**

On behalf of the Queenstown Lakes District Council (as Requiring Authority)

28 February 2023

## NOTICE OF TERRITORIAL AUTHORITY'S REQUIREMENT FOR DESIGNATION

**To:** Queenstown Lakes District Council  
Private Bag 50072  
QUEENSTOWN 9348

*(As Territorial Authority)*

**From:** Queenstown Lakes District Council  
Private Bag 50072  
QUEENSTOWN 9348

*(As Requiring Authority)*

### 1.0 INTRODUCTION

The Queenstown Lakes District Council seeks to establish a new Designation within the Queenstown Lakes Proposed District Plan for the purpose of installing up to three new reservoirs and associated infrastructure for community water supply.

This Notice of Requirement is an amendment to the Notice of Requirement lodged with the Queenstown Lakes District Council in August 2022 with the primary change being to the size and extent of the proposed Designation Area. Some changes to the conditions in Section 5 have also been made.

### 2.0 NOTICE

The **Queenstown Lakes District Council** (QLDC), a requiring authority pursuant to Section 166 of the Resource Management Act 1991 (RMA), gives notice to the Queenstown Lakes District Council (as Territorial Authority) of its requirement for a designation for a public work under Section 168A of the RMA.

The designation is sought for the purposes of establishing water reservoirs to provide additional water supply and resilience in the existing reticulated water network. The water reservoirs will provide additional water supply capacity to the Frankton and Ladies Mile areas to cater for both existing and future development.

### 3.0 THE SITE TO WHICH THE REQUIREMENT APPLIES IS AS FOLLOWS:

#### 3.1 Site Description

The proposed designation is across part of Lot 300 Deposited Plan 457085 (Lot 300) and Lot 2 Deposited Plan 469901 (Lot 2). These lots are shown in Figure 1 below.

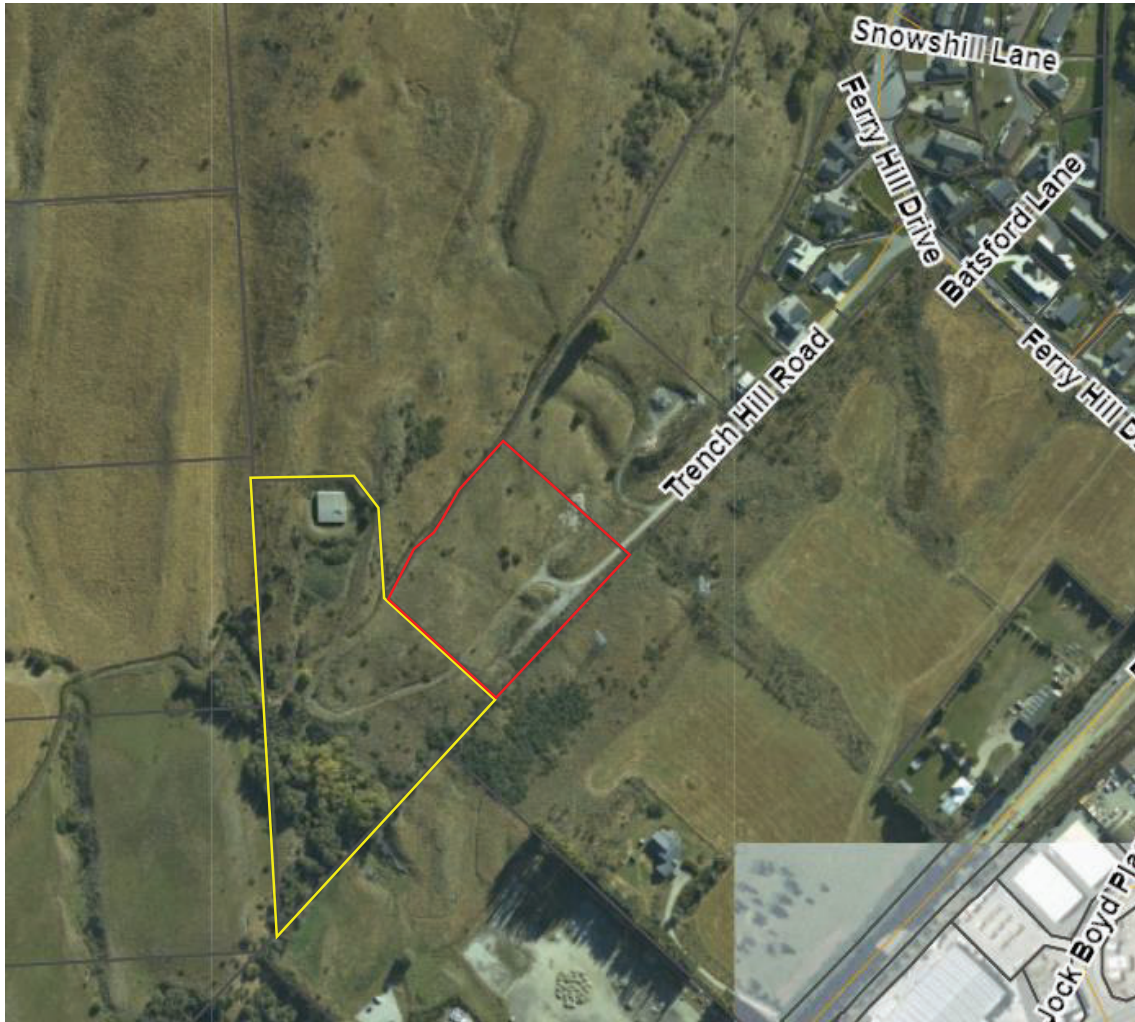


Figure 1: Aerial view of Lot 300 (approximate boundaries shown in yellow) and Lot 2 (approximate boundaries shown in red)

The proposed area to be designated is illustrated in yellow in **Appendix A**.

The abovementioned lots are collectively referred to in this report as the 'Subject Site' and are further described below.

### Lot 300

Lot 300 Deposited Plan 457085 is held by the Queenstown Lakes District Council (QLDC) as a local purpose reserve (utility) and is 2.0031 hectares in size. It is of irregular shape. The Certificate of Title for Lot 300 is attached as **Appendix B**.

Lot 300 slopes up from south to north and forms part of the lower flanks of Ferry Hill. The site is mainly covered in grasses and there is existing vegetation within the southwest portion of the site adjacent to a natural gully.

Lot 300 contains an existing rectangular reservoir within the northern portion of the site as can be seen above in Figure 1. This reservoir is provided for by Designation 475 in the Proposed District Plan (see the blue hatched area below in Figure 2). Designation

475 is not proposed to be altered by the subject application. The existing reservoir is not visible from the surrounding roads due to the landform around it.

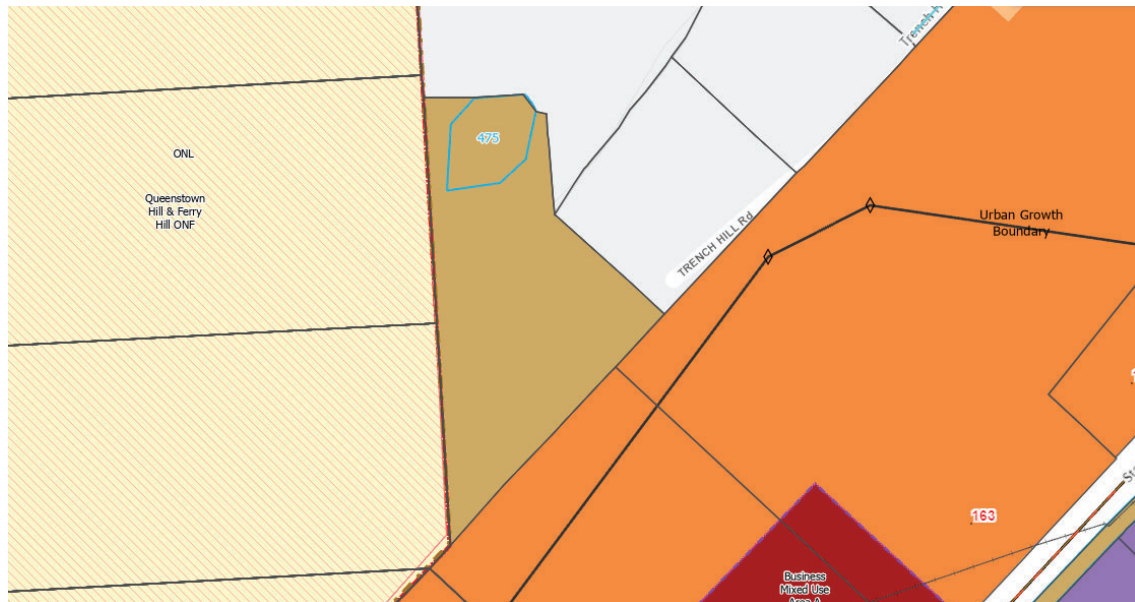


Figure 2: Location of Designation 475 on Lot 300

The Arrow irrigation race extends through the approximate centre of Lot 300 and is secured via an easement across the site as shown in Figure 3 below. As it extends east to west through Lot 300, it is an open channel and flows toward the west.

A right to convey water easement in favour of Arrow Irrigation Company also runs through the gully in the southern part of Lot 300. The gully contains existing vegetation on both sides.

Access to Lot 300 is provided for via a right of way easement (known as Trench Hill Road) across three properties from Ferry Hill Drive.

There is also a right of way easement extending through the Subject Site providing a right of access from Ferry Hill Drive, along Trench Hill Road and through the Subject Site to the property to the north (Lot 1 DP 469901) which is farmed. The location of this easement through the Subject Site is shown in Figure 3 below.

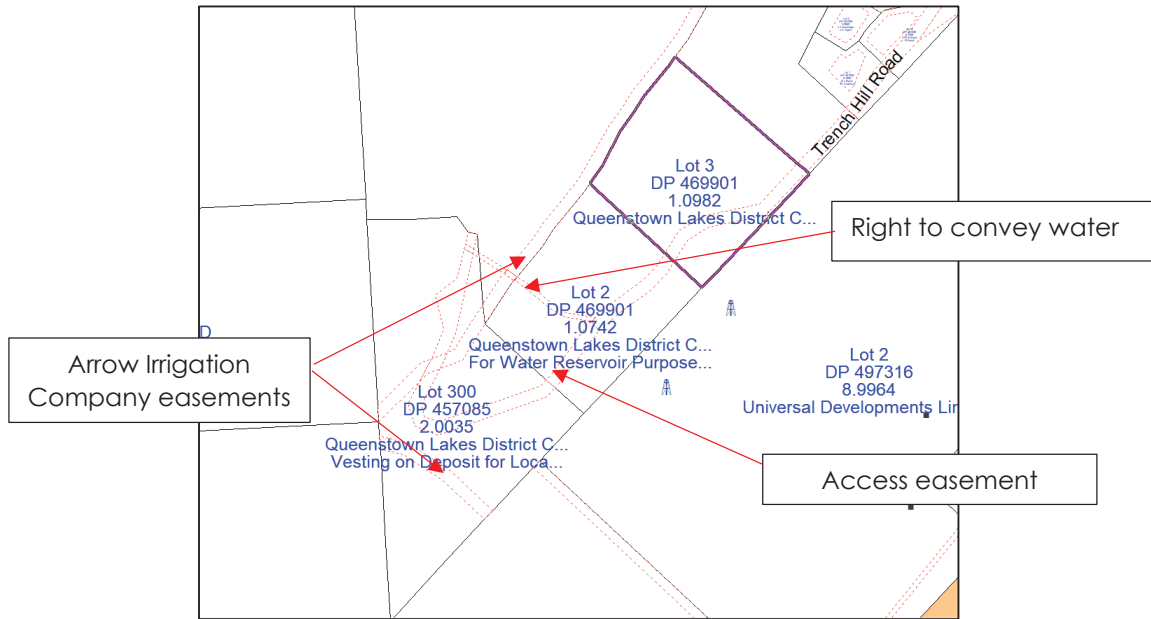


Figure 3: Location of easements across Lots 2 and 300

Apart from the irrigation race, existing reservoir and access, the remainder of Lot 300 is vacant and is not currently used for any purpose other than the provision of infrastructure.

The QLDC GIS hazard mapping identifies a nil to low liquefaction risk for the Subject Site. It also identifies a landslide area (shallow slips and debris flows in colluvium) for the uphill portion of the Subject Site as can be seen in Figure 4 below.



Figure 4: Excerpt from QLDC's GIS hazard mapping (areas of nil to low liquefaction shown in green and landslide area shown in beige pattern)



## Lot 2

Lot 2 Deposited Plan 469901 is owned by the QLDC and is 1.0742 hectares in size and is of rectangular shape. This lot is reserved for water reservoir purposes. A copy of the Certificate of Title for Lot 2 is provided in **Appendix B**.

Lot 2 is presently vacant however earthworks have previously been undertaken to create an extension to the access track along the southeast boundary.

There is no vegetation of note which exists within the lot.

The land slopes up gradually from southeast to northwest and the lot forms part of the lower flanks of Ferry Hill.

As on Lot 300, the Arrow Irrigation Company water race is located adjacent to the north-western boundary but is located entirely outside of Lot 2. There is a right to convey water easement across Lot 2 in favour of QLDC extending to the northwest that can be seen above in Figure 3.

The same as Lot 300, access to Lot 2 is provided for via a right of way easement from Ferry Hill Drive and there is a right of way easement through Lot 2 providing a right of access to Lot 300 and the land to the north (Lot 1 DP 469901). This can be seen in Figure 3 above.

The same natural hazards are identified across Lot 2 as outlined for Lot 300 above and as shown in Figure 4 above.

### **3.2 District Plan Zoning**

#### Operative District Plan

Under the Operative District Plan (ODP), the subject site is zoned Quail Rise Special Zone.

Under the Quail Rise Structure Plan (shown in Figure 5 below), Lots 300, 2, 3 and 101 are located within the 'G' Open Space activity area. Buildings within this activity area are non-complying.

6 and 8 Trench Hill Road are located within the R2(D) activity area within which residential development is anticipated.

Trench Hill Road is shown on the Quail Rise Structure Plan as a 'possible link road'.

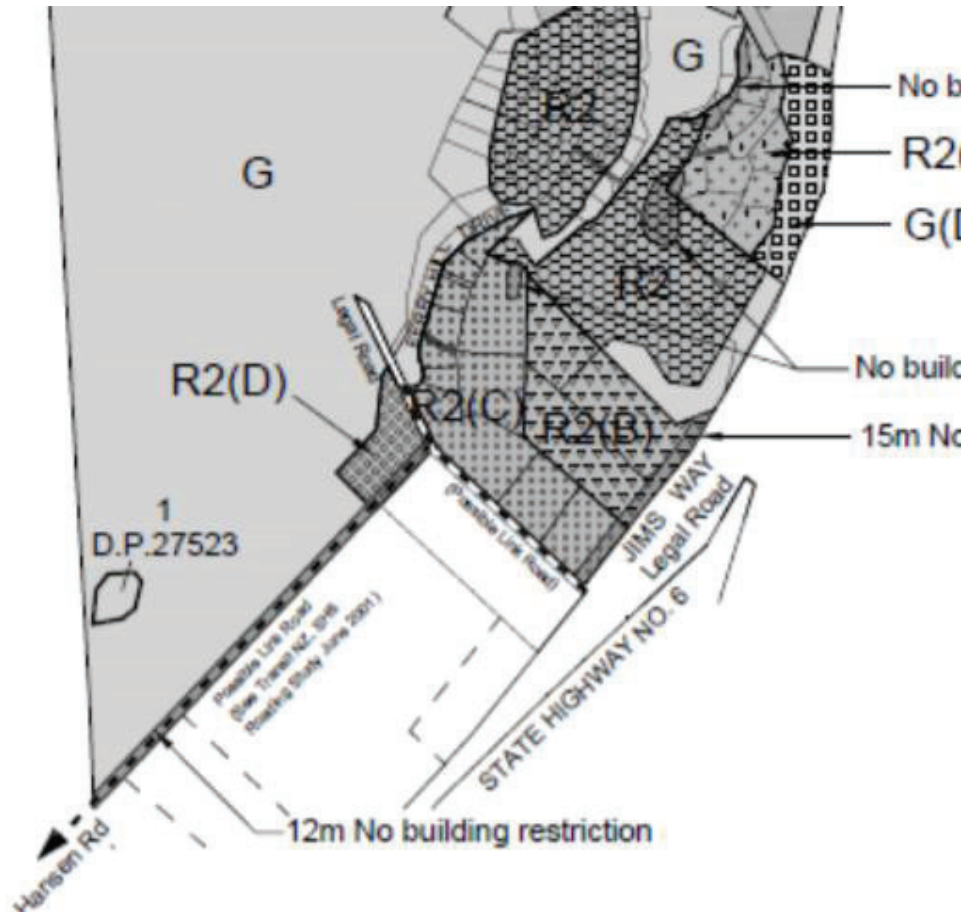


Figure 5: Excerpt from the Quail Rise Structure Plan

### Proposed District Plan

The zoning of Lot 300 has been reviewed and included in the Proposed District Plan (PDP). Under the PDP, Lot 300 is zoned Open Space: Informal Recreation. The zoning of the site has not been appealed.

The zoning of Lots 2, 3, 101 as well as 6 and 8 Trench Hill Road has yet to be reviewed and therefore, they are not currently zoned under the PDP.

### **3.3 Surrounds**

The below is a description of the area which surrounds the Subject Site. Further description is provided in the Landscape and Visual Effects Assessment in **Appendix C**.

#### North

To the north of the Subject Site is Ferry Hill which is an Outstanding Natural Landscape (ONL). This land is maintained as pasture and is farmed.

### Northeast

The land to the northeast of the Subject Site has been developed as a residential subdivision called Quail Rise. This is characterised by low density residential housing with areas of open space surrounding. Quail Rise is accessed via Tucker Beach Road off State Highway 6 (SH6).

### Southeast and South

The land to the southeast and south of the Subject Sites is known under the PDP as Frankton Flats North.

The land adjacent to the Subject Site is hummocky and flattens out to form flat paddock areas adjacent to SH6. Two large power pylons are located within the hummocky land to the south.

There are three residential units located adjacent to the Subject Sites within the Frankton Flats North land. One unit is on each of 145, 163 and 179 Frankton – Ladies Mile Highway. These properties have been zoned a combination of Medium and High Density Residential and part Business Mixed Use.

### West

The land to the west forms part of Ferry Hill and is used for grazing. The land is undulating and includes a number of small gullies and some shelterbelt planting.

A rural-residential subdivision has recently been undertaken of a portion of this land adjacent to Hansen Road. As part of this subdivision (RM151046), a trail has been created from Hansen Road to the eastern boundary of the site which adjoins Lot 300. This trail is accessible by the public.

## **3.4 Consent History**

### RM120688

Resource consent RM120688 was granted on 30 May 2013 for earthworks associated with the realignment of the farm track through Lot 1 DP 27552 and Lot 2 DP 308784 to provide access to the Council reservoir (now Lot 300). The approved alignment of the track is shown in Figure 6 below.

The land that was the subject of this consent has since been subdivided where the works proposed are across Lots 2, 3 and 300.

The resource consent appears to have been given effect to as the track has been realigned within Lot 3 and also partially within Lot 2, however it has not been completed through Lot 2 or Lot 300.

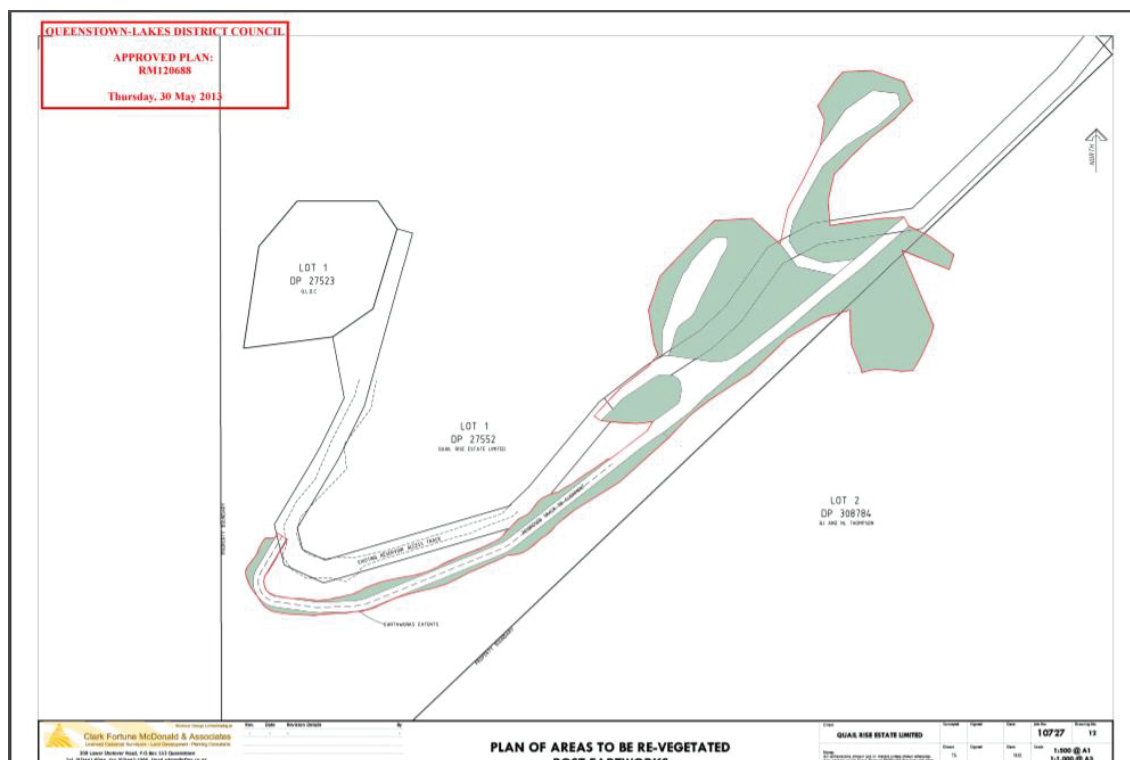


Figure 6: Approved plan under RM120688 showing track alignment

Condition 11 of this resource consent states:

- 11 A Right of Way Easement in Gross over the realigned access track through Lots 2, 3 & 300 DP 457085 in favour of the Queenstown Lakes District Council to legalise the new access route to the water reservoir site. This shall have a minimum legal width of 6m. The Right of Way easement shall be registered on the relevant Computer Freehold Registers for these lots within 2 months from the date of issue of this Decision.

The right of way easement has not been amended in accordance with this condition of consent. However, a right of way easement will be registered as part of the current development to ensure that access is maintained in accordance with the above condition 11 and that it aligns with the physical access that is created.

### RM181622

A resource consent (RM181622) was lodged in December 2018 for a boundary adjustment between Lot 2 and Lot 3 DP 469901. Consent was also sought to construct a residential unit on both sites. This resource consent has not been advanced.

### RM200455

A previous NOR application was lodged for a similar project in June 2020. This NOR encompassed part of Lot 300 and Lot 2 only and was for two reservoirs. The application was publicly notified and eight submissions were received. These submissions are summarised in **Appendix D**.

In response to the points raised in the submissions on this previous NOR application, as well as for design and budget reasons, the design of the project has been revised with the following being the most significant changes:

- Inclusion of a third reservoir,
- Change to the proposed reservoir location,
- Removal of the MSE retaining wall,
- Changes to the access design and location,
- Reduction in the overall reservoir height,
- Amended landscape design, and
- Further consideration of the supporting infrastructure locations.

As a result of the proposal being re-designed, this NOR application has been withdrawn.

#### Current application

The current application was lodged with QLDC, as territorial authority on 23 August 2022. This included a larger proposed designation area that encompassed Lot 3 DP 469901, as well as the portions of Lot 101 DP469901 and 6 & 8 Trench Hill Road where the right of way is located. This was to enable the designation area to include all of the areas of potential earthworks for the construction and installation of the reservoirs.

The area of the designation has since been rationalised in light of the proposed Three Waters Reform being undertaken by the Government.

#### **4.0 THE NATURE OF THE PROPOSED WORK IS:**

The designation is sought for the purpose of establishing up to three water reservoirs and associated infrastructure to provide additional water supply and resilience in the existing reticulated water network. The water reservoirs will provide additional water supply capacity to the Frankton and Ladies Mile areas to cater for both existing and future development.

The provision of potable water is a public work that QLDC has a financial responsibility for thereby meeting Section 168A(1)(a) of the RMA.

The designation is to be located across part of Lot 300 and Lot 2. The extent of the designation is to provide for the installation and operation of the water reservoirs including the areas of the proposed mitigation landscaping.

The extent of the proposed designation is outlined in **Appendix A** and in Figure 7 below.

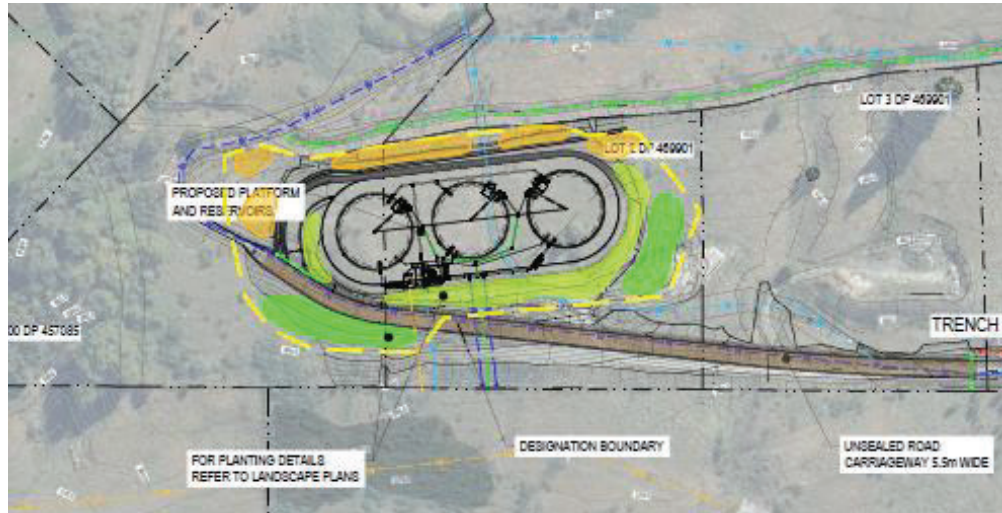


Figure 7: Proposed designation area shown outlined in yellow.

The proposed designation is to be separate to the existing Designation 475 located within the northern portion of Lot 300.

#### Reservoirs

The proposed designation is to allow for the installation and operation of up to three new reservoirs (and the supporting infrastructure) within the designation area.

Plans showing the indicative extent and location of the three reservoirs within the proposed designation area are attached is **Appendix E**.

The final location, size and design of the tanks will be detailed in the future Outline Plan applications. The proposed reservoir tanks and any associated utility buildings and cabinets are to be clad in Resene Ironsand.

The maximum height of the reservoirs are to be RL409.20. This includes allowance for handrails around the access openings.

#### Earthworks

Earthworks will be required to create a platform for the location of the future reservoirs given the topography of the site. The majority of these earthworks will be undertaken within the proposed designation area, however some associated earthworks are also anticipated outside of the designation area.

The proposed designation area only includes the finished form of the proposed utility and the mitigation landscaping given the likely land ownership change that will result from the Three Waters Reform. It is anticipated that the designation area will be transferred to the new entity with the remainder of the land being retained in the ownership of QLDC.

The earthworks within the proposed designation will be addressed via the future Outline Plan application with any earthworks outside of the designation being covered by a concurrent resource consent application.

Cuts of approximately 12m in height are anticipated to create a platform area for the reservoirs.

The volume of earthworks within the designation area is anticipated to be 27,500m<sup>3</sup> of cut and 24,800m<sup>3</sup> of fill. Consequently, approximately 2,700m<sup>3</sup> is cut to waste. The area of the earthworks for the platform will be approximately 15,400m<sup>2</sup>.

The excavation for the platform will require removal of rock. This is expected to be completed by 20 to 30 tonne excavators with both rippers and rock breaking equipment. Conditions are volunteered in order to mitigate the potential effects associated with this activity.

A bund is also proposed to be formed around the southwest, southeast and northeast extents of the platform (with the exception of the access point). The height of this bund will be 1.8m above the reservoir platform level. This will provide screening and also retention of stormwater flows within the platform area. The maximum difference between the top of the tank and the top of the bund will be less than 7m.

All earthworks areas are to be hydro-seeded with grass as soon as practicable following construction.

Prior to the commencement of works on the site, an Environmental Management Plan in accordance with QLDC's Guidelines for Environmental Management Plans is to be prepared and implemented for the duration of the works. This is included as a proposed condition on the NOR.

### *Landscaping*

A structural landscape plan for the land within the designation is attached in **Appendix C** and is described within the Landscape Assessment. It incorporates areas of Mountain Beech planting to the south and north, grey shrubland to the northwest and southwest of the platform area, and medium sized natives to the north, east and south upon the fill batters around the platform.

As Beech Trees eventually grow to about 5m in width, the proposed 2m spacings as shown on the planting schedule in **Appendix C** will be dense. The same applies to the proposed Ribbonwood which grows to approximately 4m in width and Lacebark and Wineberry that grow to 3m wide.

The structural landscape plan is proposed to be implemented within the second year following completion of the earthworks. Prior to this, in the first year, a nurse crop is to be established via hydroseeding and planting groups of Paesia ferns. Once this is done, the plants and trees that are planted in the second year will have better conditions to establish in.

Specifications for the proposed implementation of the planting are outlined on the proposed Landscape Plan (Figure 1B: Proposed Mitigation – Plan) and the Specification document attached as **Appendix C**. These detail that all plants are to be protected from pests and irrigation is to be installed for the first two years following implementation of the landscaping.

In addition, following completion of the earthworks, an eradication process for invasive weed species such as broom and gorse is to be undertaken across the designation area. This is to be undertaken for a minimum of 3 years until the landscape plantings have established.

#### *Timing and Staging*

Based on the current demand projections, one new reservoir is needed in the next 10 years with the other two being required in excess of 10 years (within approximately 40 years).

To provide for this, it is proposed to excavate the full extent of the reservoir platform area and to construct the first reservoir within the approximate location of 'Proposed Reservoir 3' as shown on the plans in **Appendix E** along with the necessary associated infrastructure.

A condition is proposed to prevent installation of the second and third reservoirs until a minimum of 5 years post-implementation of the structural landscape plan attached in **Appendix C**.

#### *Access*

Vehicular access to the designation area is to be via the right of way from Trench Hill Drive. A separate process is being undertaken concurrently to amend the location of the right of way.

#### *Associated Infrastructure*

A pump station will be required within the reservoir platform area on Lot 2 to convey the water and the indicative location and design of this is shown in the plans in **Appendices C and E**.

Any fencing associated with the proposal is to be visually permeable, recessive, a maximum of 2.5m in height and not have barbed wire.

Any external lighting will be limited to downlights mounted on the structures within the designation area and are to be sensor activated. The lighting is to only be for security and operational requirements.

#### *Noise*

Rock is anticipated to be encountered during the excavation works for the creation of the reservoir platform. This is anticipated to be excavated via a combination of rock ripping and rock breaking. The rock breaking activity will likely result in exceedances to the Construction Noise standards. All of the other excavation and construction activities are anticipated to comply.

The operation of the reservoirs and any necessary pumps will be designed and constructed to comply with the District Plan noise standards.



During an emergency or for maintenance purposes that an emergency or back up generator may be required. The use of a generator will adhere to the requirements of Rule 36.4.7 of the PDP.

#### *Water Race*

As part of the proposal, a condition of the NOR is volunteered requiring the piping of the portion of the Arrow Irrigation Race as it adjoins Lots 2 and 3 and extends through Lot 300. See proposed Condition 5 below. These works will be undertaken at the time of earthworks and construction.

### **5.0 THE NATURE OF THE PROPOSED CONDITIONS THAT WOULD APPLY:**

The following conditions of consent are proposed for the NOR:

#### *Prior to commencement of construction*

1. All engineering works shall be designed and carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Land Development and Subdivision Code of Practice adopted on 8th October 2020 and subsequent amendments to that document up to the date of the Outline Plan.
2. Prior to commencement of earthworks on site, an Environmental Management Plan is to be prepared by a suitably qualified person in accordance with the medium risk requirements of the QLDC Guidelines for Environmental Management Plans. This plan is to be submitted for approval of the Territorial Authority and once approved, implemented for the duration of the works.
3. Prior to commencement of works on site, a Traffic Management Plan is to be prepared addressing construction access and traffic generation. This plan is to be submitted for approval of the Territorial Authority and once approved, implemented for the duration of the works.
4. A suitably qualified and experienced geo-professional as defined in Section 1.7 of QLDC's Land Development and Subdivision Code of Practice who is familiar with the GHD Technical Memorandum entitled '*Quail Rise Preliminary Design – Geotechnical Analysis Reporting*' dated 24 February 2022 report shall supervise the excavation and stabilisation to ensure compliance with the recommendations in the report. This engineer shall continually assess the condition of the excavation and shall be responsible for ensuring that temporary retaining is installed whenever necessary to avoid any potential erosion or instability.
5. The open water race located within Lot 300 Deposited Plan 457085 and within Lot 1 Deposited Plan 469901 (as it adjoins the northwest boundary of Lots 2 and 3 Deposited Plan 469901) is to be piped prior to the initial operation of the first reservoir.

6. Prior to commencement of earthworks for the construction of the reservoir platform, a Construction Noise Management Plan is to be prepared and approved by the Manager Resource Consents. This is to be prepared by a Suitably Qualified and Experienced Person and must include the following information:
- Agreed operational hours of construction activity on the site
  - Details of the construction equipment to be used
  - Details of all noise mitigation measures to be used
  - Details of the planned site hoarding installations
  - Duration of the work and any planned respite periods
  - Requirements for specific equipment to be tested prior to being used on site to verify that physical mitigation measures have been effectively applied
  - Details of complaints procedures and the need for and responsibilities of people in control of the site
  - Methods for liaising with neighbouring properties prior to high noise activities being undertaken.

The approved Construction Noise Management Plan must be implemented and maintained throughout the earthworks phase. Any changes to the Plan must be agreed in advance by the Council's Monitoring Team.

#### *Construction*

7. The first reservoir to be installed is to be constructed in the approximate location of Proposed Reservoir 3 as shown on the 'Figure 1B: Proposed Mitigation – Plan'.
8. A bund is to be formed as shown on the 'Figure 1B: Proposed Mitigation – Plan' to a minimum height of 1.8m above the reservoir platform level.
9. All transition areas of cut and fill are to be shaped to blend into the surrounding natural topography with variation in slope and gradient to replicate surrounding natural landform.
10. No structures such as retaining walls and gabion baskets are to be used on areas of cut and fill. All exposed cut and fill is to be grassed or planted as per the landscape plan, or where rock is exposed is to retain a exposed rock surface. Where stabilisation measures are required to the cut face behind the reservoirs, any treatments are to be coloured so to blend with the natural colour of the rock.
11. Any perimeter fencing within the designation area is to be visually permeable such as chain link or wire mesh and have a maximum height of 2.5m and to be coloured a recessive natural tone of grey with a light reflectivity value (LRV) of 20% or less. Any other fencing shall be standard farm post and wire fencing.
12. The access road within the designation shall be of a gravel surface or chipseal and exclude the use of concrete kerbs and channel. All drainage shall be grassed or vegetated earth swales.

13. Any damage to the right of way extending through Lot 1 or 3 Deposited Plan 461026 or Lot 101 Deposited Plan 469901 during earthworks and construction is to be remedied within 7 days.

*Following construction*

14. Within the first planting season following completion of the earthworks for the formation of the reservoir platform, the planting and associated earth mounding shown on the 'Figure 1B: Proposed Mitigation – Plan' is to be fully implemented in accordance with the specifications detailed on the plan and in the Specification for the QLDC Reservoirs dated 12 August 2022.
15. The Manager Resource Consents at the Queenstown Lakes District Council is to be advised in writing once the implementation of the landscaping plan is complete.
16. All other earthworks areas are to be hydro-seeded with grass within 3 months of completion of the earthworks. All grass seed is to include 'brown top' in the mix to blend into the surrounding farming landscape and not to use an amenity or lawn turf grass mix.

*Ongoing conditions*

17. No more than one reservoir (and its supporting infrastructure) is to be constructed within the designation area until the planting shown on the 'Figure 1B: Proposed Mitigation – Plan' has been in place for a minimum of 5 years from the date the Manager Resource Consents at the Queenstown Lakes District Council has certified that the landscaping is complete as required by in Condition 15.
18. The exterior colour of the reservoir tanks, pump shed and all other buildings and structures, including any attachments such as satellite dishes etc within the designation will be Resene Ironsand with a matt or G10 paint finish to reduce glare.
19. The maximum height of all reservoirs and buildings is not to exceed RL 409.20. The difference between the top of the surrounding earth bund and the top of the reservoir tanks is to be no greater than 7m.
20. Any external lighting will be limited to downlights mounted on structures and are to be sensor activated for security and operation purposes only.
21. The use and noise associated with the use of an emergency generator operating for emergency purposes is permitted.
22. The use and noise associated with the use of a back up generator is permitted provided that it is for testing and maintenance purposes and is less than 60 minutes each month during a week day between 0900 and 1700 hrs.
23. All planting shown on 'Figure 1B: Proposed Mitigation – Plan' shall be maintained in good health and shall not be modified or removed. If any tree or plant shall die it shall be replaced within 12 months.

## 6.0 THE EFFECTS THAT THE PUBLIC WORK WILL HAVE ON THE ENVIRONMENT, AND THE WAYS IN WHICH ANY ADVERSE EFFECTS WILL BE MITIGATED:

Section 168A(3) states that when a territorial authority is considering an NOR (and any submissions received) it must, subject to Part 2 of the RMA, consider the effects on the environment of allowing the requirement. The proposed public work is considered to have the potential to result in the following effects:

### 6.1 Positive Effects

The proposal will result in positive effects upon people and the environment as it will provide additional water supply capacity to the Frankton and Ladies Mile areas to cater for both existing and future development.

The installation of additional reservoirs will also continue to ensure public health and safety through the provision of a suitable potable water supply, as well as adding resilience into the network.

Co-locating the proposed future reservoirs with the existing reservoir will also provide operational and maintenance efficiencies for Council staff and contractors.

### 6.2 Landscape and Visual Effects

An Assessment of Landscape and Visual Effects of the proposed designation has been prepared by Boffa Miskell. This assessment is attached as **Appendix C**. This assessment is adopted for the purposes of this application and takes into account the proposed mounding and landscaping shown in the 'Figure 1B: Proposed Mitigation – Plan' and the proposed NOR conditions outlined in Section 5.0 above.

#### Landscape Character and Amenity

In terms of the landscape context of the Subject Site, the site is located on the lower slopes of Ferry Hill, adjoining the Quail Rise residential subdivision and adjacent to the Frankton Flats, which contains mixed use development as well as SH6.

As outlined in Section 3.3 above, the Frankton Flats North land (which adjoins the Subject Site to the southeast and south) has been rezoned under the PDP to allow for a mixture of medium and high density residential development, and mixed use commercial development with building heights of up to 12m<sup>1</sup>.

The land immediately surrounding the proposed reservoir location includes high voltage transmission lines, the Arrow Irrigation Race and a number of farm tracks, some of which have recently been upgraded. In addition, there are existing residential dwellings located to the northeast and southeast, the closest of which are located approximately 155m and 125m away respectively.

The Subject Site itself contains an existing access track and an existing reservoir. The existing reservoir is screened from public views by landform and mounding.

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<sup>1</sup> Beyond 12m is a non-complying activity

Taking the above into account, the landscape assessment identifies that the lower parts of the Ferry Hill slopes are already modified compared to the upper slopes which are more legible and expressive of the formative processes which created the many landforms within the Wakatipu Basin. The proposal will be viewed in the context of the existing modifications associated with the lower flanks of the hillside and is anticipated to result in a less than minor potential adverse effect upon the character upon the Ferry Hill ONL in this context.

### Visual Effects

The visibility of the future reservoirs within the proposed designation has also been assessed in Section 5.3 of the Landscape and Visual Effects Assessment at **Appendix C** and this assessment takes into account the proposed mounding and planting and the proposed conditions outlined in Section 5.0 above.

#### *North and Northwest*

There are no public viewpoints from the north and northwest of the site (Ferry Hill). In terms of private views, the future reservoir(s) will be visible from the land to the north. This land forms the upper area of Ferry Hill and is farmed and there is no residential unit or other buildings located above the proposed reservoir(s) location. From this property, the future reservoirs will be seen in conjunction with the roofs of the existing Quail Rise houses as well as the existing and anticipated development upon the Frankton Flats B Zone and Frankton Flats North. Overall, this potential adverse effect is considered to be less than minor.

#### *Northeast*

The land to the northeast is within the Quail Rise subdivision. The closest public and private viewpoints to the proposed designation location are located along Ferry Hill Drive and are assessed as Viewpoints A – C in **Appendix C**.

The proposed bunding and tree planting shown within the planting plan (**Appendix C**) are anticipated to predominantly screen views from this direction after approximately 10 years with partial screening prior to this time.

These viewpoints are from Ferry Hill Drive, which at present is a cul-de-sac that provides access to only 18 residential units (including those accessed off Hanbury and Batsford Lanes) and consequently, the road does not carry a high volume of traffic. The significance of this visual effect from along Ferry Hill Drive, as outlined in **Appendix C**, is low. Accordingly, the potential adverse visual effects are considered to be minor.

A transient view of the future reservoirs within the proposed designation will also occur for people travelling west on SH6 after the Shotover Country roundabout, heading down toward the Shotover Bridge. This is assessed as Viewpoint H in the Landscape Assessment in **Appendix C**.

The earthworks and first tank are anticipated to be partially visible from this long-range viewing distance initially, however after 5 – 10 years the proposed planting will provide screening of Reservoir 3 and partial screening of the other two. The dark colours of the tanks will also mitigate the visual effect from this view point.

As a result of the proposed tank colour and the proposed planting, as well as the viewing distance, the visibility from this location is anticipated to be very low and therefore a less than minor effect.

#### *South and East*

In terms of public views to the south-east and south, the viewpoints are all from roads within the Frankton Flats (assessed as viewpoints D – G and I in **Appendix C**). Due to the distance and difference in elevation between the Frankton Flats and the proposed reservoir location, full screening of the future reservoir(s) as viewed from these vantage points is difficult.

The proposed mound will provide for some screening of the lower portions of the reservoir(s) and the recessive tank colour will ensure that the tanks are not visually prominent.

The first tank in the location of 'Proposed Reservoir 3' is anticipated to be partially screened by the proposed planting within 5 years. The other two will be partially screened between 5 – 10 years.

The potential adverse visibility effects from the south and southeast however need to be considered within the surrounding context. From these vantage points (viewpoints D – G and I in **Appendix C**) the existing modifications within the area are evident, including the line of the water race in the landform and the high voltage power lines in front of the proposed designation location. Furthermore, the views of the future tanks within the proposed designation from the existing roads within the Frankton Flats will be viewed in the context of the large commercial, light industrial and residential buildings adjoining the roads within the Frankton Flats (both existing and future).

In addition, the development enabled by the rezoning of the Frankton Flats North land will mean that in the future there is likely to be multi-storey residential and commercial development directly to the south and southeast of the proposed designation location. Consequently, the future reservoir(s) would be viewed in the context of this development in the immediate foreground.

The location of the future tanks on the lower, more modified slopes of Ferry Hill will be compatible with the current receiving environment as well as the anticipated form of future development for the Frankton Flats area. Development will be confined to the lower slopes of Ferry Hill and will not extend into the upper slopes which are more visible.

Overall, the significance of the visual effect of the proposal as viewed from the south and southeast, as outlined in the landscape assessment in **Appendix C**, ranges from very low to low. Accordingly, it is considered that the potential adverse visual effects of the future reservoir(s) within the proposed designation as viewed from public places to the south and south-east will be minor.

In terms of private views, the future reservoirs will be visible from the adjoining Frankton Flats North properties to the southeast and south which have recently been rezoned under the PDP. The majority of the views from these properties of the future reservoirs

will be at an oblique angle. The proposed bunding will provide screening of the lower portions of the reservoir(s) with the proposed planting providing partial screening after 5 years and almost complete screening after 10 years. As outlined in the landscape assessment, the scale of this visual effect is considered to be moderate reducing to low over time. Consequently, the potential adverse visual effect on these properties (145, 163 and 179 Frankton – Ladies Mile Highway) are considered to be more than minor initially reducing to no more than minor as the trees grow.

The views from other private properties located within the Frankton Flats to the southeast, south and southwest are all longer range views and are the same as that assessed above for public views and therefore will be no more than minor.

#### *West*

The land to the west of the Subject Site is utilised as farm land associated with an approved rural-residential subdivision accessed via Hansen Road. Due to the landform, no views of the future tanks are anticipated from the existing or future anticipated residential units of the rural-residential subdivision.

A public walkway has been formed within the adjoining land which currently terminates at the northwest boundary of Lot 300. Views from public trails are not required to be taken into account by the District Plan.

#### *Summary*

Overall, based upon the assessment in the Landscape and Visual Effects Assessment in **Appendix C**, the potential adverse effects are anticipated to be very low – low from public viewpoints as well as from the majority of private views. There are three private properties that the Landscape and Visual Effects Assessment identifies as having potential moderate effects initially that will reduce to a low effect over time as the proposed planting grows.

### **6.3 Access**

As detailed in Section 3.1 above, access to the proposed designation location is via a right of way from Ferry Hill Drive over three properties (which is known as Trench Hill Road). There is also an easement over the same three lots and the subject sites in favour of the farmland to the north (Lot 1 DP 469901).

As can be seen in the Indicative Reservoir Plans in **Appendix E**, it is proposed to modify the location of the existing access road to allow for the construction of the future reservoir(s) and access. The Applicant has commenced negotiations with all of the property owners who have an existing right over the right of way to modify it. This is a separate approval process outside of the RMA.

The upgrade of the access track is to allow safe access to the proposed future reservoirs, as well as to improve the access to the existing reservoir and uphill farm land above the site for large service vehicles.

As a result, the potential adverse effects of the proposed NOR in relation to access are considered to be avoided or remedied so that they will be no more than minor.

#### **6.4 Traffic Generation Effects**

The existing right of way off Ferry Hill Drive (known as Trench Hill Road) provides vehicular access to eight properties. Three of these contain existing residential units and one contains the existing reservoir. The remainder of the sites are vacant or are farmed.

During the construction of the future reservoir(s), traffic along the right of way will increase and there will be heavy vehicles accessing the Subject Site. The full extent of the reservoir platform is to be excavated initially. This will ensure that any future works beyond the initial excavation and construction of the first reservoir will be limited to the construction of the additional reservoir(s) and associated infrastructure only. The additional reservoir(s) are to be a minimum of 5 years away following completion of the first reservoir.

The excavation of the reservoir platform and mounding is being designed to limit the excess material. Based on the indicative design, the excess material is 2,700m<sup>3</sup>. Consequently, although noticeable during the excavation stage, the number of additional traffic movements on the surrounding road network will be no more than minor and of temporary duration. Notwithstanding, access and safety along both the right of way and the surrounding streets will be maintained during the construction phase through preparation, approval and implementation of a Traffic Management Plan. Submission of this plan prior to works commencing is proposed as a condition of the NOR in Section 5.0 above.

A further condition is volunteered to ensure that any damage to the portion of the right of way which serves Lots 1 and 3 Deposited Plan 461026 or Lot 101 Deposited Plan 469901 during construction is to be remedied within 7 days. This will mitigate the potential adverse traffic safety and amenity effects upon the landowners and occupants of those properties.

As a result of the above assessment, the potential adverse effects upon the other users of the right of way are considered to be mitigated and temporary and therefore less than minor.

Outside of the construction phase, the traffic generated by the future reservoir(s) will not be significantly different to the traffic generation created by the existing reservoir as all reservoirs within the two designations (the existing Designation 475 and the proposed designation) are likely to be monitored and serviced at the same time. The contractor usually attends the existing reservoir weekly in a light utility vehicle and monthly with a 20 tonne Hiab truck. With the planned upgrades to the right of way, the potential ongoing traffic generation effects are considered to be less than minor.

#### **6.5 Noise Effects**

The proposed construction related effects as well as the ongoing operation related noise effects are assessed below.

As outlined above, it is anticipated that excavation of rock will be required for the construction of the reservoir platform. It is anticipated that this will be able to be



excavated via ripping as well as rock breaking. Ripping of the rock will likely occur for the top levels of the rock, however the further down into the platform is excavated the rock is anticipated to be more competent and require rock breaking.

Ripping creates noise of similar level to other construction activities; however, rock breaking is louder and likely to breach the Construction Noise Standards. Consequently, conditions are volunteered in Section 5.0 above in relation to the approval and implementation of a Construction Noise Management Plan for the excavation phase.

The Construction Noise Management Plan will detail the duration and hours of works for the high noise activities, the physical mitigation measures that will be used (such as hoardings, acoustic barriers etc) and on-site monitoring.

Based on preliminary contractor information, it is anticipated that the rock ripping will take approximately 2 weeks to complete and the rock breaking a further week. The potential adverse effects associated with the removal of the rock is therefore considered to be of short-term and temporary. Based upon the short timeframe and the employment of the Construction Noise Management Plan, the potential adverse effects are anticipated to be less than minor.

All of the other construction activities associated with the construction of the reservoir, access upgrade and installation of services are anticipated to meet the Construction Noise Standards in the District Plan.

Once constructed, the proposed reservoir(s) and associated infrastructure will be designed so to meet the noise standards set out within the District Plan. Furthermore, an emergency or back up generators will be utilised in compliance with the requirements of the District Plan. Conditions to this effect are volunteered in Section 5.0 above.

On the basis of the above, including the volunteered conditions of consent, the potential noise effects are anticipated to be less than minor.

## **6.6 Cultural and Heritage Values**

The Subject Sites are not identified as being part of a wahi tupuna area under the PDP.

There are no features protected under the ODP or PDP located on the Subject Site or on the surrounding sites. Furthermore, the Subject Site has been the subject of a walkover by Origin Consultants who found no visible archaeological features.

Notwithstanding the above, if any cultural or heritage item is uncovered on site during construction then the Heritage New Zealand Accidental Discovery Protocol will be followed.

Aukaha and Te Ao Marama have been consulted regarding the proposal and have raised no concerns.

Consequently, the cultural and heritage effects of the proposed NOR are considered to be less than minor.

## **6.7 Land Stability and Natural Hazards**

As detailed above, the site is identified as having a nil to low risk of liquefaction and a portion of the site is identified as a landslide risk. Accordingly, land stability is addressed in the memo attached as **Appendix F**.

This report identifies that the anticipated earthworks and the development of the Subject Site for the proposed future reservoir(s) is feasible. Accordingly, it is considered that the effects relating to land stability will be no more than minor provided that the recommendations within the report are adhered to. Condition 4 above volunteers supervision of the excavation phase by a suitably qualified and experienced geotechnical engineer to ensure that these recommendations are adhered to.

The Arrow Irrigation Race is located uphill of the proposed designation area. Excavation cuts are anticipated to enable the construction of the reservoir platform. As a result, Condition 5 is volunteered above, for the water race, as it extends above and through the proposed designation area, to be piped.

Should there be a failure of the reservoir (related to a natural hazard event or other), the reservoir platform is being designed as a 'calamity basin' which is formed by the 1.8m high bunding along the southwest, southeast and northeast extents of the platform (with the exception of the access point).

The front bund acts to retain and buffer water should there be a tank failure (or major overflow) and the design allows for this water to be drained into the platform stormwater system at a controlled rate. This system discharges to the access road drainage swale in front of the platform and will run down the road to the existing low point within Lot 3 DP 469901. This low point is an existing crossing point on the road for a natural overland flow path for uphill stormwater that discharges into the Universal/Fill land.

Overall, on the basis of the above, it is considered that the potential effects resulting from natural hazards and land stability can be avoided or mitigated so that they are no more than minor.

## **6.8 Construction Effects**

The potential effects during construction are considered to be related to noise, dust, sediment, traffic and parking.

Conditions are proposed in Section 5.0 above requiring submission of an Environmental Management Plan and Traffic Management Plan to QLDC for approval prior to works commencing. These will address the potential dust, sediment, traffic and parking effects of the future development so that these effects are anticipated to be less than minor.

The potential visual effects of the earthworks are also proposed to be remedied through the requirement to hydro-seed the areas with grass following construction.

The potential noise effects of the excavation and construction have been addressed in Section 6.5 above.

Overall, the potential construction effects will be temporary and are able to be managed so that they are less than minor.

## **6.9 Connectivity**

There is an existing trail that extends to the western boundary of Lot 300. A submission from the Queenstown Trails Trust on the previous NOR application sought a trail through Lots 300 and 2 to join up to the existing trail.

No trail (or easement) is proposed as part of the current NOR, as the proposed NOR seeks only to include the extent of Lots 300 and 2 that encompass the final state of the utility. As it is anticipated that the project will be delivered by the new entity created by the Three Waters Reform, rather than the QLDC.

The QLDC is supportive of the link to the trail through Lots 300 and 2 once a further easement (or written agreement) is secured across neighbouring land to the southeast or northeast that will connect the trail through to Ferry Hill Drive and/or the State Highway. The proposed NOR does not preclude this future trail linkage through Lots 300 and 2. There is ample space within Lots 300 and 2 for the provision of this future trail link around the proposed reservoir infrastructure.

## **6.10 Stormwater Effects**

The construction of the proposed reservoir platform and reservoir tanks will disrupt the current stormwater overland flow paths. Any water collected on the platform will therefore need to be channelled into the existing stormwater system for discharge.

In the interim the proposal is to discharge all stormwater collected on the platform into the access road drainage swale, which will run down the road to the existing low point within Lot 3. This low point is an existing crossing point on the road for a natural overland flow path for uphill stormwater that discharges into the Universal Development land.

This solution is considered to be a temporary scheme only, until the land below the reservoirs within Frankton Flats North is developed and the link road (between SH6 and Ferry Hill Drive) is constructed below the platform. At that time, the stormwater will be connected into the stormwater network in the link road and ultimately discharged to the stormwater pipe at the Hawthorne Drive roundabout.

The report in **Appendix G** assesses the effects of this on the network. Taking into account this assessment, the potential adverse effects are considered to be less than minor.

## **6.11 Conclusion**

Taking into account the above assessment, the majority of the potential adverse effects of the proposed designation are considered to be less than minor or minor,

however the landscape effects as assessed in the Landscape Assessment in **Appendix C** are assessed as ranging from very low to low from the public vantage points and majority of the private vantage points assessed. There are three private vantage points that have been assessed as having a temporary moderate visual effect in **Appendix C**, reducing to a low effect over time. The temporary moderate landscape effect is therefore assessed as being more than minor on those three properties.

## **7.0 ALTERNATIVE SITES, ROUTES, AND METHODS HAVE BEEN CONSIDERED TO THE FOLLOWING EXTENT:**

Section 168A(3)(b) states that when a territorial authority is considering a NOR (and any submissions received) that subject to Part 2, it must consider the effects on the environment of allowing the requirement, having regard to a number of matters including:

- (b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if -*
  - (i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
  - (ii) it is likely that the work will have a significant adverse effect on the environment; and*

As outlined in Section 3.1 above, the Requiring Authority owns Lots 300 and 2 as well as the adjoining Lot 3. Consequently, the Requiring Authority does have an interest in the land sufficient for undertaking the construction of the reservoir(s) and alterations to the access.

Accordingly, an alternatives assessment is not required under section 168A(3)(b)(i).

As outlined in section 6, the majority of the potential adverse effects of the proposed designation are considered to be less than minor or minor. The landscape effects are assessed as ranging from very low to low from the public vantage points and the majority of the private vantage points assessed, with only three private vantage points being assessed as having a temporary moderate visual effect. Overall, it is not considered that the works will have significant adverse effects on the environment.

Accordingly, an alternatives assessment is not required under section 168A(3)(b)(ii).

In any case, a brief summary of the history and alternative sites, routes and methods that have been considered for the project is set out below.

In 2016 and 2018 the QLDC undertook master planning for the Queenstown water supply in which a number of network options were tested. This assessment addressed supply intakes, treatment sites, storage and reticulation across the Ladies Mile, Quail Rise, Kelvin Heights, Hanley's Farm and Jacks Point networks.

From this work, three main scenarios were identified to be tested further for the supply of the Frankton Flats. All of these scenarios included additional water storage at Quail

Rise but considered different elevations and supply sources. Quail Rise was identified as a location that requires ongoing storage of water for the following reasons:

- *“Existing Quail Rise reservoir provides service to the Quail Rise and Tucker Beach residential areas;*
- *Ability to continue to feed the reservoir from the Shotover Country / Glenda Drive supply;*
- *Location is adjacent to Frankton Flats, with elevation suitable for providing Level of Service to the*
- *Flats area;*
- *Sufficient elevation to enable un-boosted supply to Kelvin Heights and Hanley's Farm areas, if required”.*<sup>2</sup>

Further assessment identified the required elevation of the additional water supply at Quail Rise and an assessment of the possible reservoir locations in the vicinity of the existing reservoir was undertaken. These investigations included site visits to consider factors such as topographical suitability, access, visual screening and geotechnical evaluation (visual only). The assessment of potential locations also took into account land ownership.

Five alternative locations were assessed. These included locations within Lot 300 as well as multiple locations on the adjoining land to the west. The alternatives were evaluated against one another with the proposed location being selected given that the QLDC owns the land as well as taking into account the other factors set out above.

Overall, the site selection and location was an iterative process that occurred over a number of years and site selection was made as a balanced evaluation of a number of key factors.

## **8.0 THE PUBLIC WORK AND DESIGNATION (OR ALTERATION) ARE REASONABLY NECESSARY FOR ACHIEVING THE OBJECTIVES OF THE TERRITORIAL AUTHORITY BECAUSE:**

Section 168A(3)(c) requires an assessment as to whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.

The objectives of the proposal are:

- To ensure public safety and health through the provision of a suitable potable water supply;
- To provide greater resilience in the Queenstown water supply; and
- To provide increased capacity in the Queenstown water supply.

It has been identified through master planning that two new reservoirs (circa 3,400m<sup>3</sup> storage) are required in the next 10 years and a third reservoir of the same size will be

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<sup>2</sup> Source – *Quail Rise Reservoir – Location Selection Assessment prepared by GHD dated 7 May 2021*

needed within the next 50 years to provide for the existing development as well as future development identified within the Spatial Plan.

Inclusion of additional water storage will take pressure of the existing water storage network in Queenstown and will add resilience so that if necessary, one tank can be taken off-line for maintenance or replacement etc.

Potable water of sufficient quantity provides for public safety and health through providing potable water as well as fire fighting water supply in urban areas.

As a result, the proposal is considered to be necessary for achieving the objectives of the territorial authority and its requirement to provide lifeline infrastructure to the Queenstown Lakes community.

## **9.0 THE FOLLOWING RESOURCE CONSENTS ARE NEEDED FOR THE PROPOSED ACTIVITY AND HAVE (OR HAVE NOT) BEEN APPLIED FOR:**

The water supply to the reservoir is granted via a water permit from the Otago Regional Council. This is attached as **Appendix H**.

## **10.0 THE FOLLOWING CONSULTATION (OR NO CONSULTATION) HAS BEEN UNDERTAKEN WITH PARTIES THAT ARE LIKELY TO BE AFFECTED:**

As outlined in Section 3.4 above, a prior NOR application was submitted by the Requiring Authority for the site, and this was publicly notified with eight submissions being received. A summary of these submissions is attached as **Appendix D**.

Post-notification of RM200455, consultation with various parties was undertaken to better understand some of the issues outlined within the submissions. These discussions informed the formulation of the proposal that was lodged in August 2022. A number of affected party approvals were obtained and submitted to the Council for the proposal, including from:

- FII Holdings Limited
- Ferry Hill Trust
- Aukaha
- Arrow Irrigation Company Limited
- 6 Trench Hill Road
- 8 Trench Hill Road

As detailed above, following lodgement of the current NOR application, the extent of the proposed designation has been rationalised so to only encompass the final design state of the reservoirs and mitigation landscaping. This is due to the likelihood that the new entity created under the Three Waters Reform will take over the project and the designated area of land.

An updated summary of the consultation to date is provided below. New affected party approvals will be sought from the abovementioned parties. Regardless, public notification is volunteered.

## Kai Tahu

The Requiring Authority has consulted with Kai Tahu via correspondence with both Aukaha and Te Ao Marama in relation to the proposal and no concerns have been raised.

## Queenstown Airport Corporation

The proposed future reservoir(s) and planting will be located below the Airport Approach and Protection Measures requirement in the Queenstown Airport designation. The site is however located within the Inner Horizontal Surface and the tanks will be above the 400m contour.

Notwithstanding, the tanks have been assessed by Queenstown Airport as being shielded as stated in the attached Aviation Report in **Appendix I**. Consequently, the proposal is in compliance with the Queenstown Airport designation and there will be no adverse effects upon the operation of the airport.

The location and height of the tanks have not changed since the consultation was undertaken with the Airport.

## 145 and 163 Frankton – Ladies Mile Highway

These parties as landowners of 145 and 163 Frankton – Ladies Mile Highway have been consulted by QLDC in relation to the proposal.

Universal Developments, the landowner of 163 Frankton – Ladies Mile provided their affected party approval to the proposal that incorporated the larger designation area. They will therefore be consulted again with regard to the reduced designation area.

FII Holdings Limited as landowner of 145 Frankton – Ladies Mile Highway have provided their affected party approval to the proposal and this is attached as **Appendix K**.

## 8 Trench Hill Road and Lot 101

Lot 101 Deposited Plan 469901 and 8 Trench Hill Road are owned by G Burns and T Anderson.

Lot 101 is an 'L' shape and does not contain a residential unit, although there is a lawn area, a shipping container and other residential-type structures located on the property. The northern part of the site is sloping and forms part of the lower flanks of Ferry Hill. 8 Trench Hill Road contains an existing single storey residential unit located on the flat portion of the site.

Following receipt of the submission from the landowners of these properties with regard to the previous notified NOR application (RM200455), consultation has been undertaken in relation to all of the matters raised within the submission. Affected party approval was previously obtained from these landowners and further consultation will be undertaken with regard to the reduced extent of the proposed designation.

### 6 Trench Hill Road

The landowners of this property provided their affected party approval to the larger designation extent. They will be further consulted in relation to the reduced designation area.

### Lot 3

Lot 3 Deposited Plan 469901 is owned by the QLDC and adjoins Lot 2 to the northeast. This lot is not subject to the proposed designation however it is likely to be utilised as a laydown area when the proposed works occur within the designation area in the future. Any necessary consents for the laydown activities, such as temporary earthworks consents, will be applied for at the same time as the future Outline Plan.

As QLDC are the landowner of Lot 3 and the Applicant, approval as landowner is provided.

### Queenstown Trails Trust

A number of discussions have been had with Mark Williams of the Queenstown Trails Trust in relation to the provision of a trail through Lots 300 and 2. As assessed in Section 6.9 above, the proposed NOR does not preclude a future trail linkage through these land parcels.

### Arrow Irrigation Company

A number of discussions have been held with members of the Arrow Irrigation Company and they provided affected party approval for the larger designation extent. Consultation with them with regard to the reduced extent is being undertaken.

### Ferry Hill Trust

Discussions have been held with Ross Copland on behalf of the Ferry Hill Trust so to understand the concerns raised within their submission on RM200455 and also in relation to the proposed changes to the right of way. Affected party approval was provided for the original designation extent and further consultation with this landowner will be undertaken with regard to the amendments to the proposal.

### 179 Frankton – Ladies Mile Highway

Consultation has been attempted with the landowner of 179 Frankton – Ladies Mile Highway: Jaron McMillan, however communications (multiple) have not been returned.

179 Frankton – Ladies Mile Highway contains a residential unit however the property is also used as a base and storage yard for the landowner's business. Council's aerial photos of the property show that the northern part of the site is utilised for the outdoor storage of materials and there is a large shed located centrally within the site that vehicles and machinery are often seen parked around.



In a resource consent application (RM191292) lodged for the property in 2019 (that has not yet been determined) that sought approval for the construction of a new storage building and for the outdoor storage of equipment and materials, it is noted that significant boundary planting was proposed as shown in Figure 8 below.

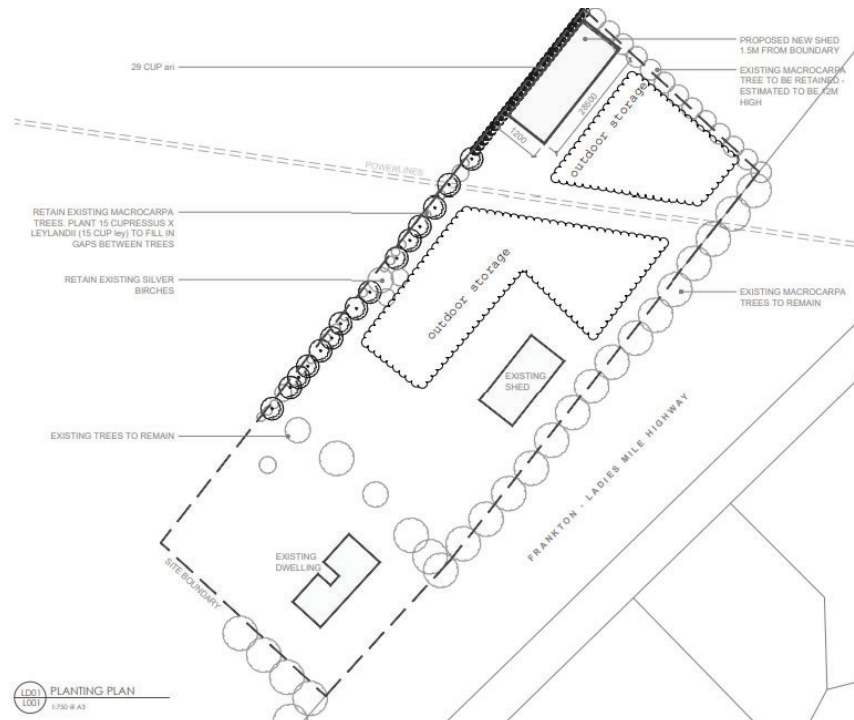


Figure 8: Except of proposed site plan for resource consent RM191292 showing planting along the northwest boundary.

In addition to the above, both 179 Frankton – Ladies Mile Highway and 163 Frankton – Ladies Mile Highway (that wraps around #179 on three sides) have been rezoned Frankton Flats North – High Density Residential under the PDP. Under this zoning, multi-storey residential development is anticipated with the permitted building height being 12m under the PDP. This scale of future development on 163 Frankton – Ladies Mile Highway is anticipated to screen or partially screen views of the proposed designation area.

## 11.0 STATUTORY ASSESSMENT

### 11.1 Statutory Considerations

Section 168A(3)(a) of the RMA specifies that particular regard must be had in the assessment of an NOR application to any relevant provisions of:

- (i) a national policy statement;
- (ii) a New Zealand coastal policy statement;
- (iii) a regional policy statement or proposed regional policy statement;
- (iv) a plan or proposed plan; and

This assessment is provided below.

National Policy Statement for Highly Productive Land

The National Policy Statement for Highly Productive Land 2022 (NPS-HPL) came into force on 17 October 2022.

Clause 3.5(7) of the NPS-HPL specifies that until a regional policy statement containing maps of highly productive land is operative, each consent authority must apply the NPS-HPL as if references to highly productive land were references to land that is:

- (i) Zoned general rural or rural production; and
  - (ii) LUC 1, 2, or 3 land; but
- Is not:
- (i) Identified for future urban development; or
  - (ii) Subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

As detailed above, the subject site is zoned Quail Rise Zone under the ODP and is within the 'G' – Open Spaces Activity & Passive Recreation and Landscaping activity area under the Structure Plan. A review of the zone purpose, issues, objectives, policies, rules as well as the environmental results anticipated for the Quail Rise Zone as detailed in the ODP identifies that use of the subject site for rural production is not anticipated by the ODP and therefore its zoning is not considered to be general rural or rural production.

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES)

A review of both the Otago Regional Council's database of contaminated sites (see **Appendix J**) and the QLDC Hazard Register do not show that the piece of land to which this application relates is a Hazardous Activities and Industries List (HAIL) site, and therefore this National Environmental Standard (NES) does not apply to the land which is proposed to be designated.

Partially Operative Otago Regional Policy Statement 2019

The most relevant provisions in the Partially Operative RPS in relation to the proposal are with regard to outstanding natural landscapes, natural hazards and growth. These are addressed below.

Objective 3.2 and its associated policies relate to identifying, protecting and enhancing, where degraded, Otago's significant and highly-valued natural landscapes. The proposed designation area is on the lower flanks of Ferry Hill which is part of an ONL. As detailed in the Landscape and Visual Effects Assessment in **Appendix C**, the proposed designation area is however not considered to be within the Ferry Hill ONL.

The proposal is considered to be consistent with Policy 3.2.4 as the future reservoirs within the proposed designation area are anticipated to maintain the outstanding values of Ferry Hill which are considered to relate to its legibility associated with the

formative processes which formed the landscape. The potential effects are considered to be avoided, remedied or mitigated via the proposed location in an area where the landscape is already modified and through the controls outlined in Section 5.0 above.

In terms of Policy 3.2.5, the proposed designation area is located within a highly valued landscape. As detailed in Section 6.0 above, the proposal is not anticipated to result in any significant adverse effects upon the values of the landscape. Furthermore, the potential adverse effects are considered to be avoided, remedied or mitigated through the controls set out in Section 5.0 above. The proposed planting is also anticipated to enhance the existing landscape values of the site and surrounding area through improving the amenity. Consequently, the proposal is considered to be consistent with Policy 3.2.6.

Objective 4.1 seeks to minimise the risk that natural hazards pose to Otago's communities. As outlined in the Geotechnical Report in **Appendix F**, the natural hazard risks associated with the Subject Site are low and the design of the future reservoirs will take into account the recommendations within the report.

Objective 4.3 and associated policy 4.3.1 seeks to ensure that infrastructure is managed and developed in a sustainable way through providing for the functional needs of lifeline utilities and increasing the ability of communities to respond and adapt to emergencies and disruptive or natural hazard events. The provision and design of the future reservoirs will be in accordance with these provisions.

Objective 4.5 seeks that urban growth and development, including infrastructure, occurs in a strategic, coordinated and integrated way. Its associated policy 4.5.2 seeks to achieve the strategic integration of infrastructure with land use by recognising and providing for the functional needs of infrastructure as well as locating and designing infrastructure to take into account community needs and changes, resource constraints and other impacts.

The location of the proposed designation takes into account that the location of existing zoned land suitable for development is within the Frankton Flats and surrounding areas. The provision of additional water supply in this area will allow for the timely provision of water supply in line with additional development and demand in the future. The proposed location is as a result of the functional and locational needs of the infrastructure.

Overall, the proposed NOR is considered to be consistent with the relevant provisions of the Partially Operative Otago Regional Policy Statement.

#### Proposed Regional Policy Statement 2021

The Proposed Regional Policy Statement 2021 has been the subject of public notification however the hearing of submissions is yet to commence. Consequently, at this time the Partially Operative Regional Policy Statement is considered to have greater weight.

The first objective and associated policies in the Proposed RPS is Te Mana o te Wai. The proposal is to provide a water supply that is resilient and of capacity to supply people now as well as future generations.

Kai Tahu through Te Ao Marama and Aukaha have been involved and consulted in the development of the project. Consequently, the proposal is considered to be consistent with these provisions.

In terms of freshwater, the proposed reservoirs are to be supplied by water from the Shotover River which has been the subject of separate consenting processes.

The proposed planting is of indigenous species which will enhance the biodiversity of the site. The site is currently grassed with limited vegetation and therefore this will be a positive effect of the proposal.

The Proposed RPS includes enabling objectives and policies around effective, efficient and resilient infrastructure. However, it does seek to avoid locating infrastructure within ONLs and ONFs or areas of high or outstanding natural character. Where this is not possible because of functional or operational requirements, adverse effects on the values that contribute to the area's outstanding nature or significance are to be avoided. Reservoirs do have a functional need to be located at the level proposed within the Subject Site. As detailed in the Landscape Assessment in **Appendix C**, the proposal is not considered to result in adverse effects upon the aspects and values of significance that are attributed to Ferry Hill.

In respect of natural hazards, the Proposed RPS seeks to identify and assess the risk that natural hazards pose the development. As outlined in the Geotechnical Report in **Appendix F**, the land stability risks associated with the Subject Site are low and the design of the future reservoirs will take into account the recommendations within the report.

Overall, the proposal is considered to be consistent with the objectives and policies of the Proposed RPS.

#### Queenstown Lakes Operative District Plan

Chapters 12 and 17 of the ODP are of relevance to the assessment of the proposal. Chapter 12.14 relates to the Quail Rise Zone which is the zoning of the Subject Sites under the ODP and Chapter 17 relates to utilities.

#### *Chapter 12.14 – Quail Rise Zone*

Objective 1 and its associated policies enables low density residential development in conjunction with planned open space and recreational opportunities.

The proposed designation is to be within an open space area within the southern edge of the zone. Although the proposal will introduce further built form within the open space area, its location within the extremity of the zone will not undermine the main areas utilised by residents of the area for recreation and amenity purposes. Furthermore, the proposed landscaping will ensure that the future tanks will be integrated within the landscape and screened from the residential areas of the zone.

Objective 2 seeks to conserve and enhance the physical, landscape and visual amenity values of the Quail Rise zone, adjoining land, and the wider environment. The relevant associated policies seek to ensure that the external appearance of buildings and other structures are characteristic of the zone, avoid incompatible activities and development, to avoid buildings in areas of high visibility and to preserve and enhance the naturalness of the view from the State Highway. Objective 3 and its associated policy also seeks to avoid adverse effects of infrastructure upon the landscape.

The external appearance of the future tanks will not be characteristic of the Quail Rise Zone given that they are utilities, rather than residential houses or structures. Notwithstanding, the proposed Resene Ironsand colour is a colour utilised on buildings within the Quail Rise zone.

The proposed activity of water storage is not considered to be incompatible with the amenity of the zone, however the location of the reservoirs within the Open Space area of the zone is not considered compatible with the intent of the Quail Rise Structure Plan. The proposed designation area is however located at the southern edge of the zone and is adjacent to the Frankton Flats North area which is zoned for, and anticipated to be intensively developed in the future.

As outlined in Section 6.0 above, the future reservoirs within the proposed designation will be located in an area which is visible from within the Frankton Flats area as well as from transient views when travelling along SH6. Although visible, as outlined in the Landscape and Visual Effects assessment in **Appendix C**, the location is one which is already modified and consequently the naturalness of the view of the Subject Site and surrounds is already affected.

Taking the above assessment into account, the proposal overall is considered to be inconsistent with the applicable Quail Rise zone objectives and policies pertaining to the potential visibility of the future tanks and the use of the land for purposes other than open space.

### *Chapter 17 - Utilities*

Objective 1 of this chapter promotes the co-ordination of utilities and Policy 1.1 seeks to ensure possible areas for new development are readily able to be serviced. The proposal will enable installation of additional reservoirs to service the existing and future Queenstown community. Furthermore, the Subject Site is in close proximity to one of the main areas of planned growth within Queenstown and is co-located with the existing Quail Rise reservoir.

Policy 1.5 seeks to recognise the future needs of utilities and to ensure their provision and Policy 1.7 ensures reticulation of those areas identified for urban expansion or redevelopment is achievable. The proposal is considered to align with both of these policies.

Objective 2 of this chapter seeks the establishment, efficient use and maintenance of utilities necessary for the wellbeing of the community.

Policy 2.1 recognises the need for maintenance or upgrading of a utility to ensure its on-going use and efficiency. The proposal is consistent with the intent of this policy as it will allow for the installation of additional water storage to improve the efficiency of the supply and to allow for effective maintenance.

Policy 2.2 seeks to ensure that economic costs are taken into account when alternative locations, sites or methods are considered for the establishment of a utility and Policy 2.3 states that the strategic needs of a utility also need to be taken into account in the consideration of alternative locations. These have all been considered in the assessment of the alternatives for the proposed NOR location as detailed in Section 7.0 above.

Policy 2.4 states that specific provisions for certain activities within the District which have specific locational needs need to be considered to ensure the function of the utility is recognised and Policy 2.5 encourages the co-location of facilities where operationally and technically feasible. As outlined in Section 7.0 above, the location of water reservoir(s) has specific locational needs which is a basis for the proposal. Furthermore, the co-location of the additional reservoir(s) adjacent to the existing reservoir has operational benefits.

Policy 2.6 seeks that the importance of a utility is taken into account when determining whether it will promote the sustainable management of natural and physical resources. As outlined above, the future reservoir(s) is considered to be important in providing resilience into the network as well as to allow for future development. Furthermore, a suitable potable water supply is an important community need for health and safety. Overall, the proposal is considered to promote sustainable management of natural and physical resources as required by Part 2 of the RMA.

Objective 3 seeks to avoid, remedy or mitigate the adverse effects of utilities on the surrounding environments, particularly those in or on land of high landscape value.

Policy 3.1 seeks to avoid, remedy or mitigate the adverse environmental effects created by the operation of utilities, to maintain visual amenity and the quality of the environment. The potential landscape effects of the NOR have been assessed in Section 6.0 above. Although the future tanks within the proposed designation area will be visible from some areas, the proposed location is within an area which already displays elements of modification. The proposed conditions in Section 5.0 will ensure that the potential adverse effects are avoided, remedied or mitigated. Furthermore, the values of the Ferry Hill ONL above the proposed designation area will be maintained.

Policy 3.2 makes provision for utilities which have specific locational needs (such as reservoirs) but still seeks to ensure that the scale of development avoids, remedies or mitigates the adverse effects on the environment. These have been assessed in Sections 6.0 and 7.0 above.

Policy 3.4 seeks to protect areas identified as possessing important natural features or significant habitats of indigenous fauna from utilities which are visually and environmentally incompatible. There are no significant areas of indigenous fauna located within the proposed designation area.

Policy 3.9 ensures that the economic and operational needs are taken into account in assessing the location and external appearance of utilities. The proposed designation conditions take into account these requirements.

Overall, the proposed alteration to the designation is considered to be consistent with the relevant provisions within Chapter 17 – Utilities in the ODP with the exception of Policy 3.1 which relates to the visibility of the future tanks. It is considered that the proposal is inconsistent with this provision.

#### Queenstown Lakes Proposed District Plan

Under the PDP, the relevant provisions are contained within Chapters 3 – Strategic Direction, 30 – Energy and Utilities and 38 – Open Space and Recreation Zones.

#### *Chapter 3 – Strategic Direction*

Strategic Objective 3.2.1 relates to the development of a prosperous, resilient and equitable economy. Its related objectives which are of relevance to the proposal are the functioning of the Frankton urban area as well as infrastructure in the District being operated, maintained, developed and upgraded efficiently and effectively to meet community needs. The proposal is considered to align with these objectives for the reasons outlined in the preceding sections of this report.

Strategic Objective 3.2.5 seeks retention of the District's distinctive landscapes. As detailed in the Landscape and Visual Effects Assessment in **Appendix C**, the proposed designation is located within a landscape which is already modified and in close proximity to existing residential development as well as Frankton Flats North, which in the future will contain high density or mixed use development. The proposal however is anticipated to maintain the values of the Ferry Hill ONL through its location and the conditions proposed in Section 5.0.

#### *Chapter 6 – Rural Character and Landscapes*

Clause 6.3.3B of the PDP outlines that a separate regulatory framework for the Open Space and Recreation Zones is provided and that the provisions of Chapter 6 do not apply.

#### *Chapter 30 – Energy and Utilities*

Objective 30.2.6 seeks to support the well-being of the community through the establishment, continued operation and maintenance of utilities.

Policy 30.2.6.2 states that alternatives must be given consideration along with how the adverse effects will be managed through the route, site and method selection, while taking into account the locational, technical and operational requirements of the utility and the benefits of the utility. This assessment has been detailed in Section 7.0 above.

Policy 30.2.6.3 seeks to ensure that the adverse effects of the utilities on the environment are managed while taking into account the positive social, economic, cultural and environmental benefits. The potential positive and adverse effects of the

proposed alteration to the designation along with the consideration of the alternative locations have been covered in Sections 6.0 and 7.0 above. The potential adverse effects are considered to be managed via the proposed location and the proposed conditions detailing the controls upon the design of the reservoirs, mounding and landscaping.

Policy 30.2.6.4 encourages the co-location of facilities where operationally and technically feasible. The proposed NOR will allow for this to occur with the existing reservoir further to the north which is accessed via the same right of way.

Objective 30.2.7 seeks to ensure that the adverse effects of utilities on the surrounding environments are avoided or minimised. Associated Policy 30.2.7.1 includes a requirement to manage the effects of utilities on the environment by avoiding their location on sensitive sites, encouraging co-location, using landscaping and or colours and finishes to reduce visual effects and integrating utilities with the surrounding environment. The potential landscape effects of the proposal have been assessed in Section 6.0 and it is considered that the location is suitable when taking into account the landform, the existing environment and the receiving environment as well as the mitigation measures which are volunteered as designation conditions.

Policy 30.2.7.4 requires that economic and operational needs are taken into account in the location and external appearance of utilities. These have been taken into account in the selection of the proposed location.

Overall, the proposed NOR is considered to be consistent with the requirements of Chapter 30 of the PDP.

### *Chapter 38 – Open Space and Recreation Zones*

Policy 38.2.1.1 seeks that the development of Open Space and Recreation Zones provide for the needs of the community in which they are located and the needs of the wider community and visitors to the District. Whilst not a recreation related development, the proposal is consistent with this part of the policy.

The policy also seeks that development responds to natural character and landscape values. As detailed in the Landscape Assessment in **Appendix C**, the site is part of an area which forms a transition between the Frankton Flats (with its provision for higher density development) and the more legible landscape values and openness associated with Ferry Hill above. This transition area is already the subject of visible modifications as outlined above.

Policies 38.2.1.5 and 38.2.2.2 seek to avoid activities that do not have a practical or functional need to be located within the zone and limit buildings and structures to those compatible with the role and function of the zone. There are few areas within which new reservoirs can be located within the area due to the need to maintain a consistent height with other water supply infrastructure. Consequently, there is a practical need for the future reservoirs to be located as proposed.

The proposal is consistent with Policy 38.2.2.3 as the area surrounding the future reservoir location is to be landscaped as shown in **Appendix C**. This planting will



mitigate the potential visual amenity impacts of the future construction within the designation as detailed in the Landscape Assessment in **Appendix C**.

Policy 38.2.2.4 seeks that the scale and location of buildings including access, noise and lighting associated with recreation activities is consistent with the level of amenity anticipated in the zone and surrounding environment. Whilst the proposal is not a recreation activity, the proposed upgrades to the access road will not be significantly different to the existing access track. Furthermore, the proposed bunding and landscaping are anticipated to mitigate the potential visual amenity effects as outlined in the Landscape Assessment in **Appendix C**.

Policy 38.2.2.5 seeks to ensure that the scale and location of buildings, structures and accesses adjoining or nearby to an ONL protect, maintain or enhance those values by locating buildings in areas that are least sensitive to change and have capacity to absorb development, requiring buildings to be designed and finished to avoid visual dominance and mitigate or remedy adverse effects and ensuring accesses do not degrade visual amenity values or disrupt the natural character of landform. In line with this, Policy 38.2.2.6 seeks maintenance of amenity values including protection of view shafts.

The Landscape and Visual Effects assessment in **Appendix C** assesses the potential effects of the future reservoirs within the proposed designation area upon the Ferry Hill ONL, as well as within the existing and anticipated context of the site. Taking into account that assessment, it is considered that the proposal is generally consistent with Policy 38.2.2.5 as it will maintain the existing values of the Ferry Hill ONL. The future tanks will be located within an area capable of absorbing change on the lower slopes of the hillside surrounded by existing or future anticipated development. Furthermore, due to the proposed planting, bunding and the tank colours, the future tanks within the proposed designation are not anticipated to be visually dominant in the medium to long term.

## 12.0 PART 2 ASSESSMENT

Section 168A(3) of the RMA states as follows:

- 3. When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to -*

The potential effects on the environment are outlined in Section 6.0 above. The matters listed under Section (3) being (a) – (d) are also addressed above. Consequently, a Part 2 assessment is also required.

Part 2 sets out the purpose and principles of the Act.

### Purpose of the Act

The purpose of the Act is to promote the sustainable management of the natural and physical resources. The definition of sustainable management is outlined in Section 5 of Part 2 and states:

*Managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while –*

- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment*

The provision of an effective, efficient and safe potable water supply to the Queenstown community is considered to be development which enables people to provide for their social, economic and cultural well-being as well as their health and safety. As outlined in the assessment of effects in Section 6.0 above, the proposal is also considered to achieve (a) and (b). With regard to (c), potential adverse landscape effects are anticipated as a result of the visibility of the future tanks. These effects are proposed to be mitigated via the implementation of planting and the use of recessive colours and mounding.

#### Principles of the Act

In addition to Section 5, matters of national importance are contained within Section 6, other matters are contained in Section 7 and consideration of the principles of the Treaty of Waitangi is required to be considered under Section 8.

Under Section 6(b), the assessment of the proposal upon the Ferry Hill ONL is required as protection of ONL's from inappropriate subdivision, use and development are a matter of national importance. The potential effects upon the landscape values of the ONL have been addressed in Section 6.0 above. This assessment has found that the future tanks within the proposed designation are located so that the values of the ONL will not be adversely affected.

Under Section 7 (Other Matters), the proposal is required to maintain and enhance amenity values (Section 7(c)) and maintain and enhance the quality of the environment (Section 7(f)).

As detailed in Section 6.0 above, the future tanks are anticipated to be visible, particularly from the Frankton Flats area to the southeast, south and southwest. Notwithstanding, they are located on the lower slopes of Ferry Hill which is an area which is already subject to modification and development. Furthermore, the controls proposed are anticipated to mitigate the potential effects upon amenity values and the quality of the environment. The proposed planting is also anticipated to enhance the amenity values and quality of the environment on the site.

On balance, it is considered that the proposal achieves Part 2 as it is considered to reflect sustainable management in the form of allowing people and the community to provide for their social, economic and cultural well-being as well as their health and

safety through the provision of potable water. The positive effects of this to a large proportion of the community are considered to outweigh the potential adverse landscape effects which are predominantly limited to transient visual effects, which over time will be reduced through the growth of the proposed planting, as well as the development of the Frankton Flats North land within the foreground.

Furthermore, the location of the proposed designation within an area which is already modified whilst protecting the values of the Ferry Hill ONL ensures that this matter of national importance is recognised and provided for at the same time as achieving the purpose of the Act.

## **13.0 CONCLUSION**

QLDC, as territorial authority, seeks to establish a new designation to allow for the installation of future water reservoirs at Quail Rise to service the wider area.

The proposal will enable QLDC to provide for the water needs of the existing and future Queenstown community in a sustainable manner and to provide resilience in the network.

The actual and potential effects on the environment have been outlined in Section 7.0 of this report where it is concluded that the proposed designation is not likely to have any adverse effects on the environment that are significant.

The proposed designation is considered to be consistent with the relevant objectives and policies of the Partially Operative and Proposed Regional Policy Statements, the ODP and the PDP with the exception of those provisions relating to the visual effects of the proposal as viewed from the Frankton Flats area.

Having undertaken an on balance assessment under Part 2, it is considered that the potential positive effects of the proposal outweighs the potential adverse visual effects and that the proposal overall will achieve the purpose of sustainable management.

It is assessed that the designation is necessary to achieve QLDC's obligations under the Local Government Act 2002 to supply water to the community now and into the future.

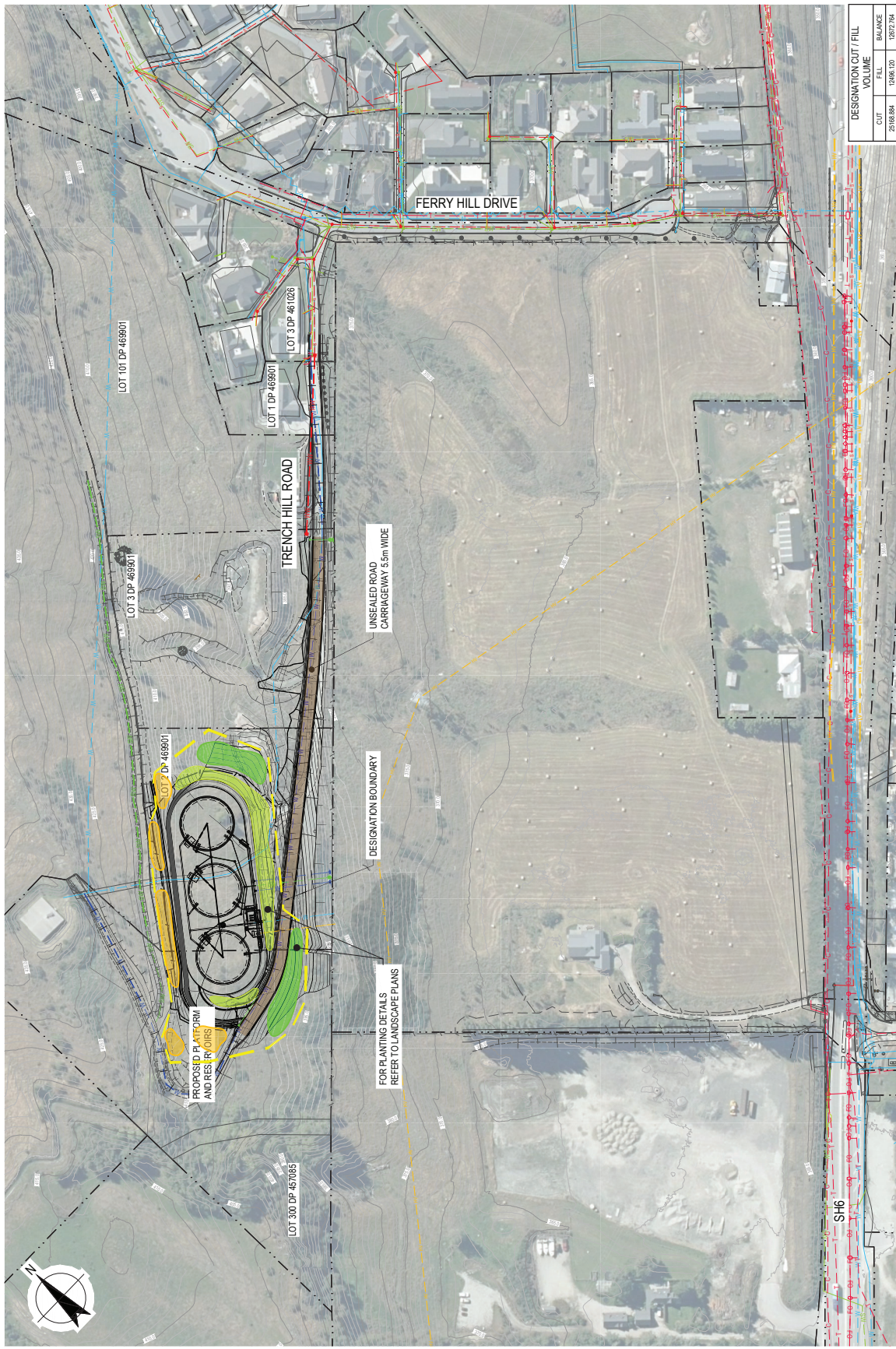
Overall, and in accordance with the assessment contained in this report, it is requested that the Notice of Requirement is confirmed without changes.

LEGEND - EXISTING	
	PROPERTY BOUNDARY
	EASEMENT
	TOP OF BANK
	BOTTOM OF BANK
	BUILDING
	FENCE
	TOP OF WALL
	BOTTOM OF WALL
	DRIPLINE
	BOUNDARY MARK
	SURVEY MARK
	WATER LATERAL
	MANHOLE
	WATER TANK
	TREE

LEGEND - EXISTING SERVICES	
	HIGH VOLTAGE POWER
	LOW VOLTAGE POWER
	CHORUS
	VODAFONE
	FIBRE OPTIC CABLE
	GAS
	SEWER
	SEWER ABANDONED
	STORMWATER
	WATER
	WATER ABANDONED

LEGEND - PROPOSED	
	EXTENT OF SCHEME BOUNDARY
	CENTRE LINE & CHAINAGE
	EDGE OF ROAD
	TOP OF BATTER
	BOTTOM OF BATTER
	EARTHWORKS INTERFACE
	MANHOLE
	CATCHPIT
	STORMWATER
	WATER MAIN
	WATER RISING
	WASTE WATER
	ELECTRICITY

- NOTES:**
- FOR GENERAL NOTES AND LEGEND REFER TO DRGS 12506856-300-0005 TO G007
  - FOR EARTHWORKS, ACCESS ROAD AND STORMWATER DETAILS REFER TO CIVIL DRGS 12506856-300-0100 TO G300
  - FOR RESERVOIR AND PIPEWORK DETAILS REFER TO MECHANICAL DRGS 12506856-300-0100 TO M301
  - SERVICE LOCATIONS AS PER SUPPLIED DETAILS FROM QLDC GIS DATABASE



**GENERAL ARRANGEMENT PLAN**  
SCALE 1:1000

Client: QUEENSTOWN LAKES DISTRICT COUNCIL  
Project: QLDC WATER RESERVOIRS  
Status: PRELIMINARY  
Project No: 12506856  
Sheet: S2  
Drawn: S2  
Rev: C

Queenstown Lakes District Council  
GHD Limited  
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Rev	Description	Checked	Approved	Date
0	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
1	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
2	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
3	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
4	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
5	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
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49	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22
50	ISSUED FOR PERMIT APPLICATION	GP	AW/1	20/11/22



**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land  
Transfer Act 2017**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** 999836  
**Land Registration District** Otago  
**Date Issued** 03 August 2021

**Prior References**

633556

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**Estate** Fee Simple  
**Area** 1.0742 hectares more or less  
**Legal Description** Lot 2 Deposited Plan 469901  
**Purpose** For water reservoir purposes

**Registered Owners**

Queenstown Lakes District Council

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**Interests**

Together with such parts of mines of coal or other minerals if any under the surface of other parts of Sections 13,14,15 and 16 Block II Shotover District as are not taken by Proclamation 2255.

Subject to a right of way (in gross) over part marked D and E and a right to convey water (in gross) over part marked D, K and LA on DP 469901 in favour of Queenstown Lakes District Council created by Transfer 978133.12 - 10.11.1999 at 2:47 pm

The easements created by Transfer 978133.12 are subject to Section 243 (a) Resource Management Act 1991

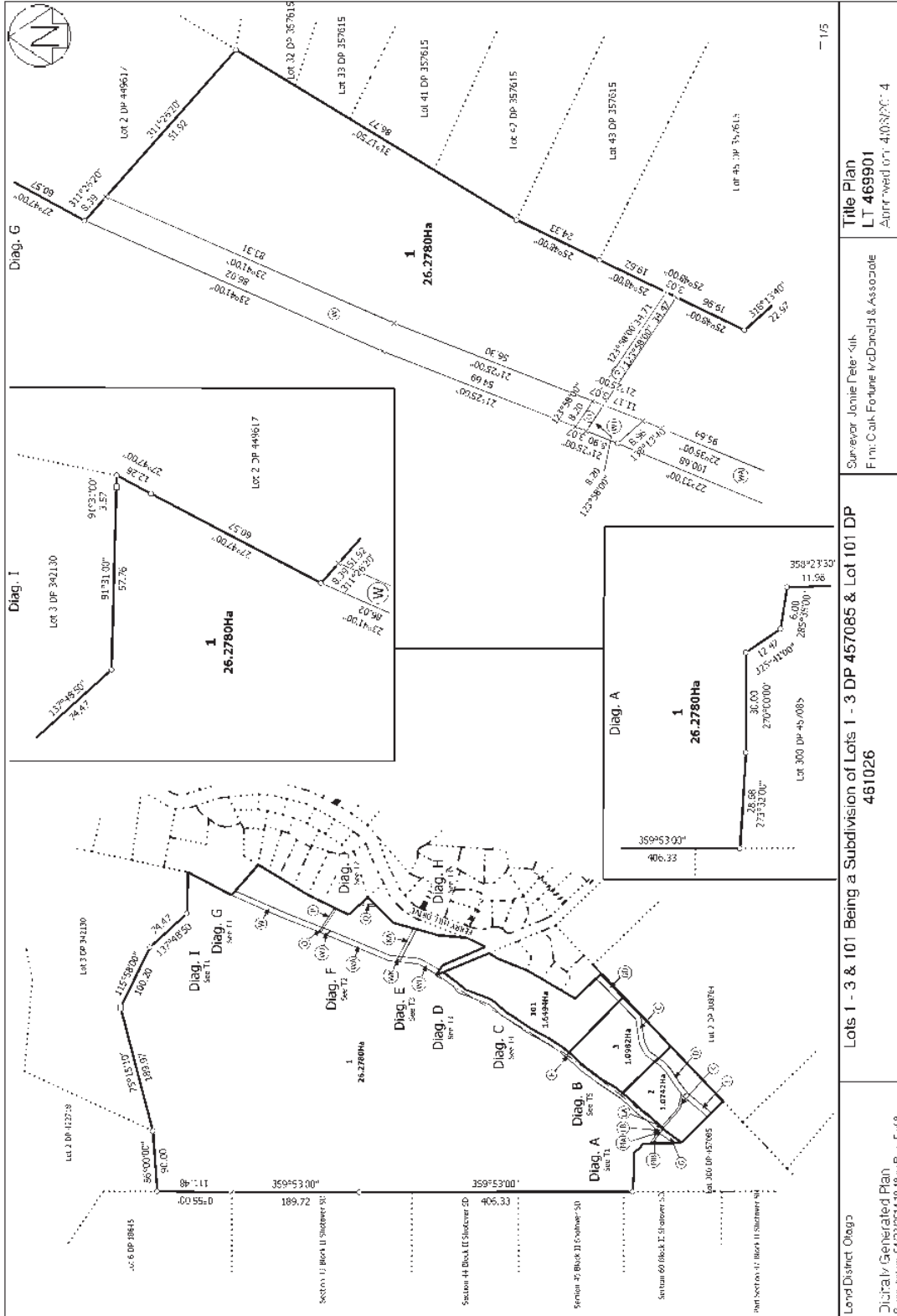
Land Covenant in Easement Instrument 8932274.2 - 28.2.2012 at 1:33 pm

Subject to a right of way over part marked D and E on DP 469901 created by Easement Instrument 9232040.6 - 8.11.2012 at 11:34 am

Appurtenant hereto is a right of way created by Easement Instrument 9232040.6 - 8.11.2012 at 11:34 am

The easements created by Easement Instrument 9232040.6 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Easement Instrument 9232040.7 - 8.11.2012 at 11:34 am (affects part formerly Lot 2 DP 457085)





**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land  
Transfer Act 2017**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** 591851  
**Land Registration District** Otago  
**Date Issued** 08 November 2012

**Prior References**  
471851 OT19A/1017

---

**Estate** Fee Simple  
**Area** 2.0035 hectares more or less  
**Legal Description** Lot 300 Deposited Plan 457085  
**Purpose** Local Purpose Reserve (Utility)

**Registered Owners**  
Queenstown Lakes District Council

---

**Interests**

Subject to a right (in gross) to convey water over part marked WG, G, WH and WI on DP 457085 in favour of Arrow Irrigation Company Limited created by Transfer 863586.2 - 26.8.1994 at 9:26 am

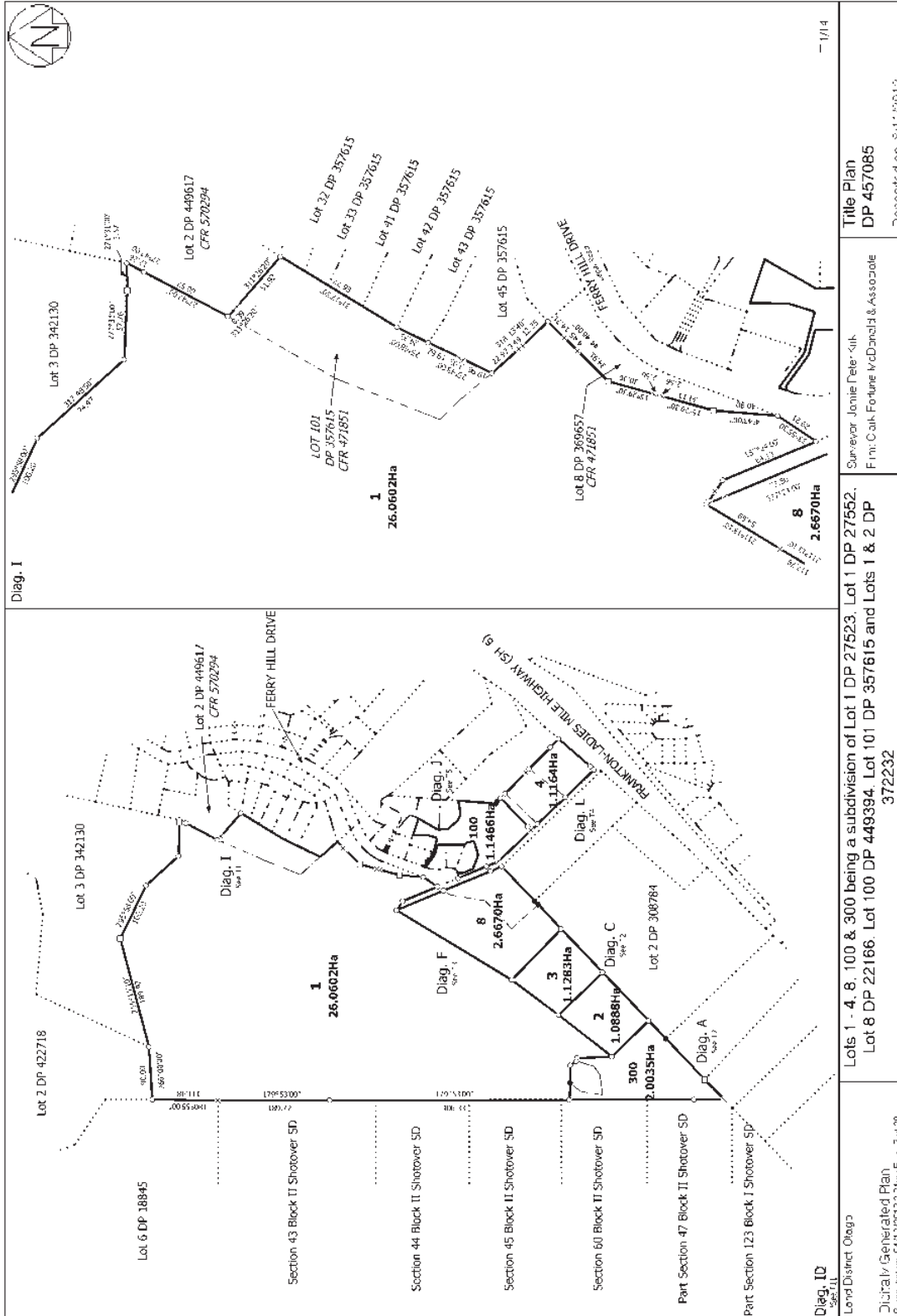
Subject to a right (in gross) to a right of way over part marked F, G, H, I and J and the right to convey water over part marked N and I on DP 457085 created by Transfer 978133.12 - 10.11.1999 at 2:47 pm

Subject to the Reserves Act 1977

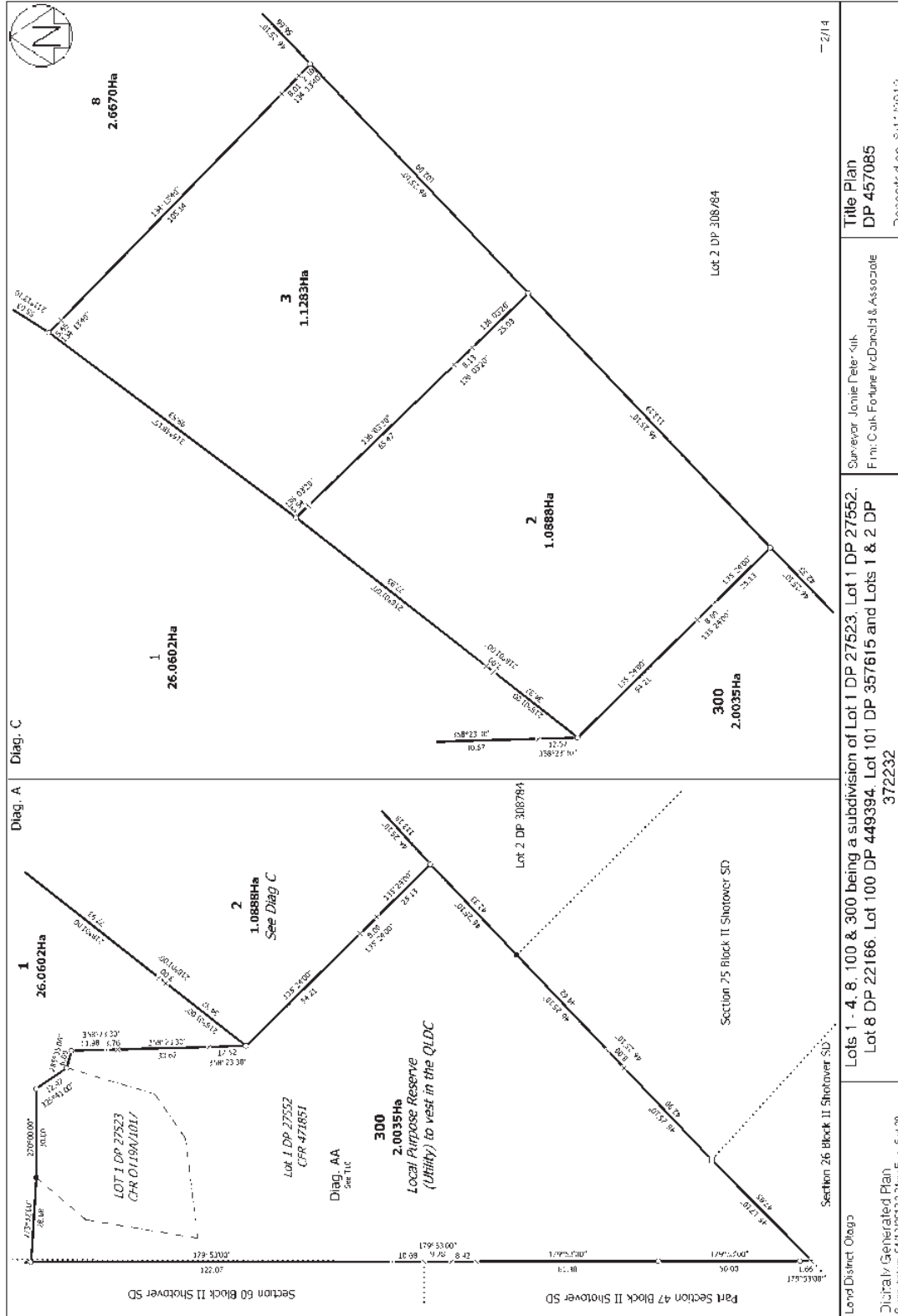
Subject to a right of way over part marked F, G, H, I and J on DP 457085 created by Easement Instrument 9232040.6 - 8.11.2012 at 11:34 am

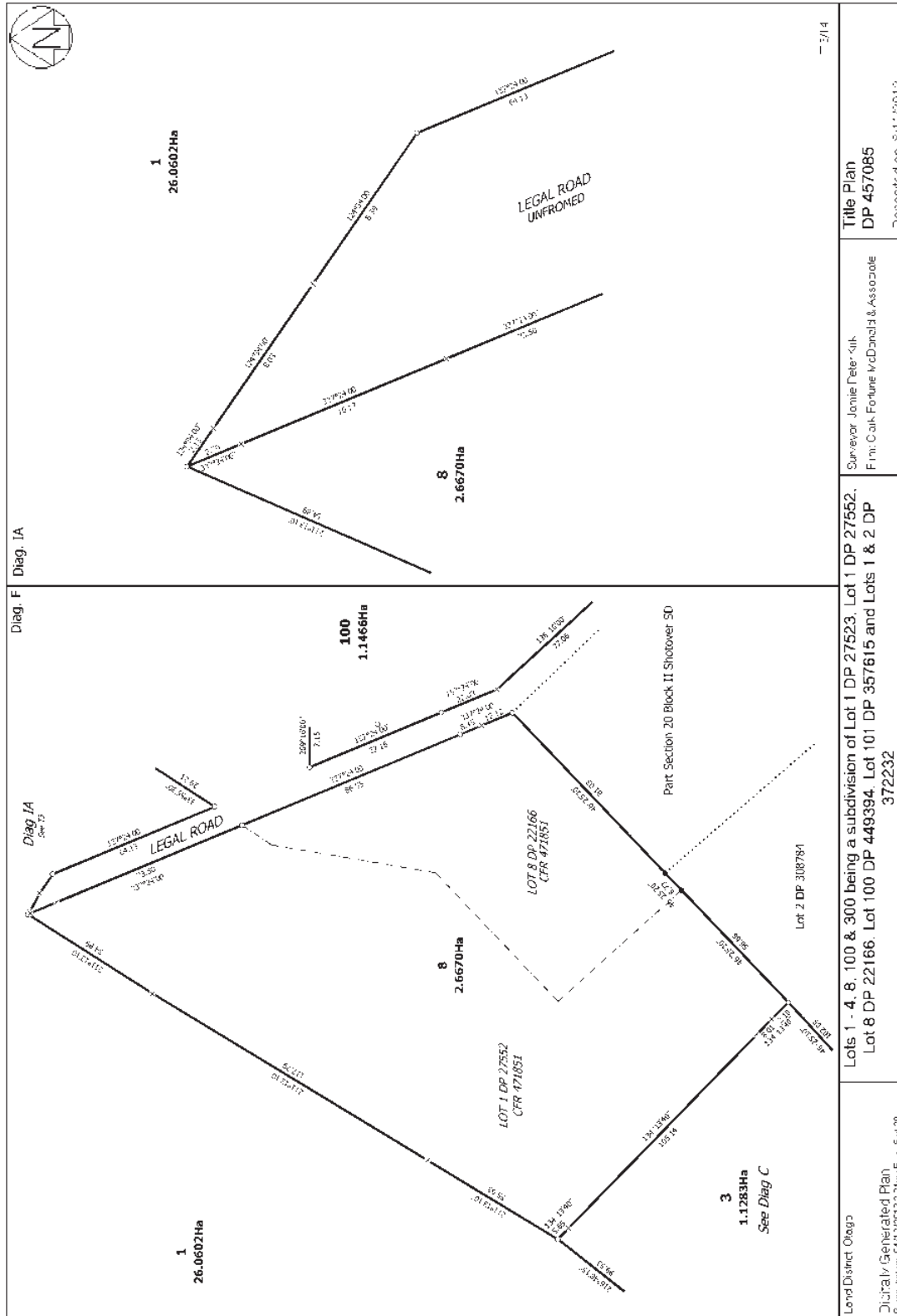
Appurtenant hereto is a right of way created by Easement Instrument 9232040.6 - 8.11.2012 at 11:34 am

The easements created by Easement Instrument 9232040.6 are subject to Section 243 (a) Resource Management Act 1991









<p>— 1/14</p>	<p><b>Title Plan</b> DP 457085</p>
<p>Surveyor: Jennie Teler-Calk Firm: Calk, Fortune, McDonald &amp; Associate</p>	<p>Deposited on: 8/11/2012</p>
<p>Lot 1 - 4, 8, 100 &amp; 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 &amp; 2 DP 372232</p>	<p>Lord District Diagra Digital/Generated Plan Generated on: 04/12/2012 2:54pm Page 5 of 20</p>

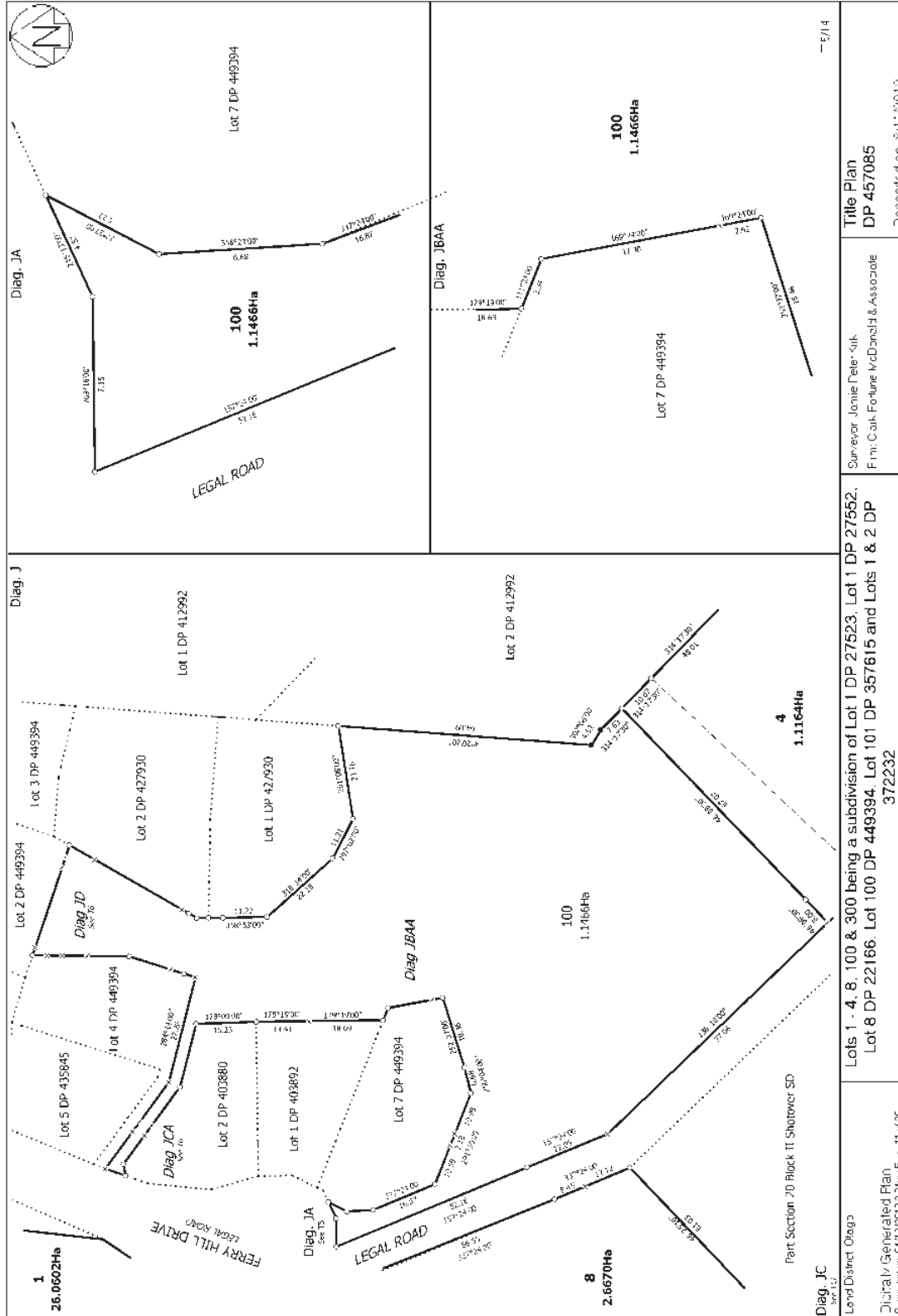


Title Plan  
DP 457085  
Deposited on: 8/11/2012

Surveyor: Jennie Teler-Calk  
Firm: Calk, Fortune McDonald & Associate

Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 101 DP 357615 and Lots 1 & 2 DP 372232

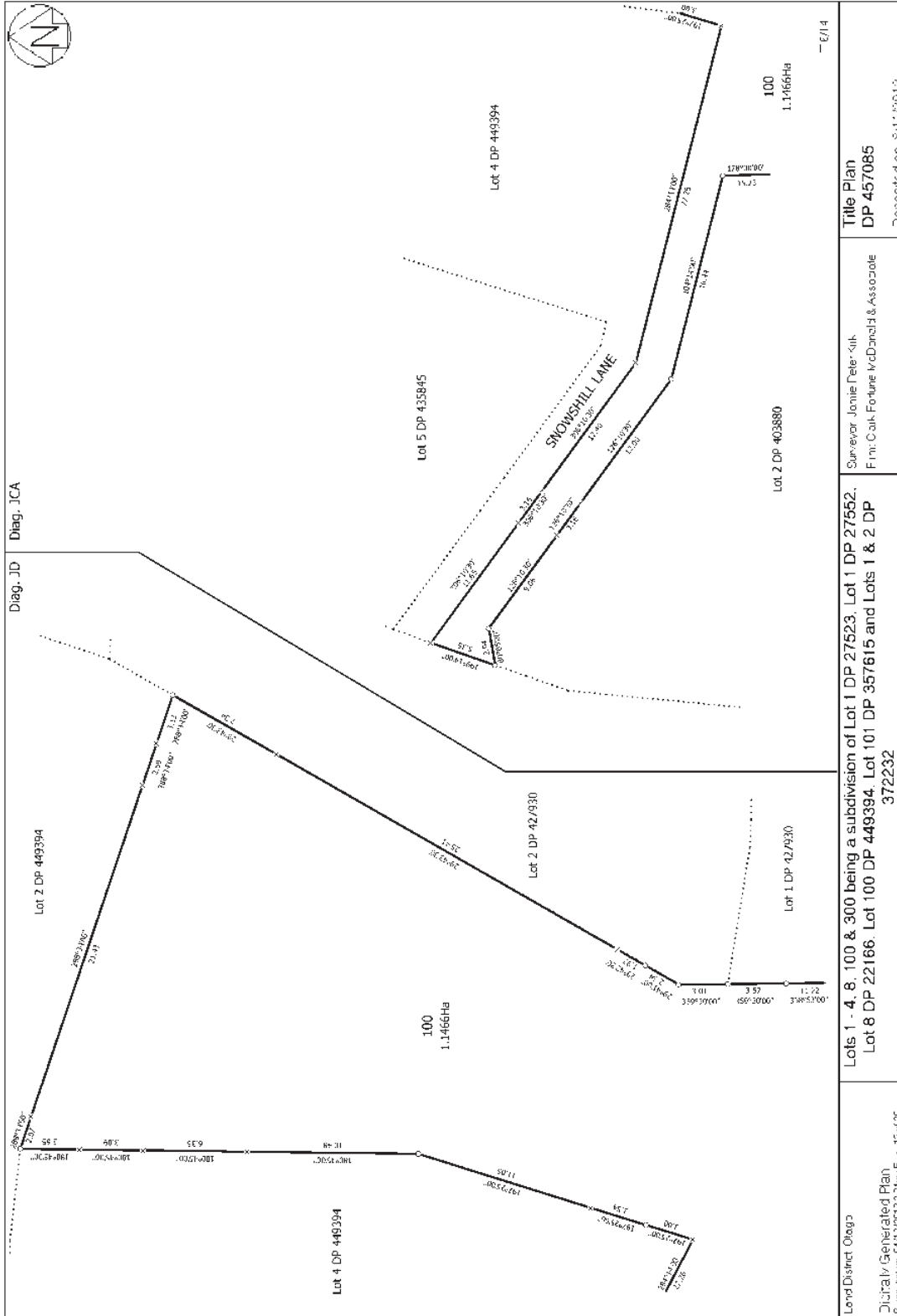
Lord District Otago  
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Generated on: 2012-02-12 12:24:11 Page 10 of 20



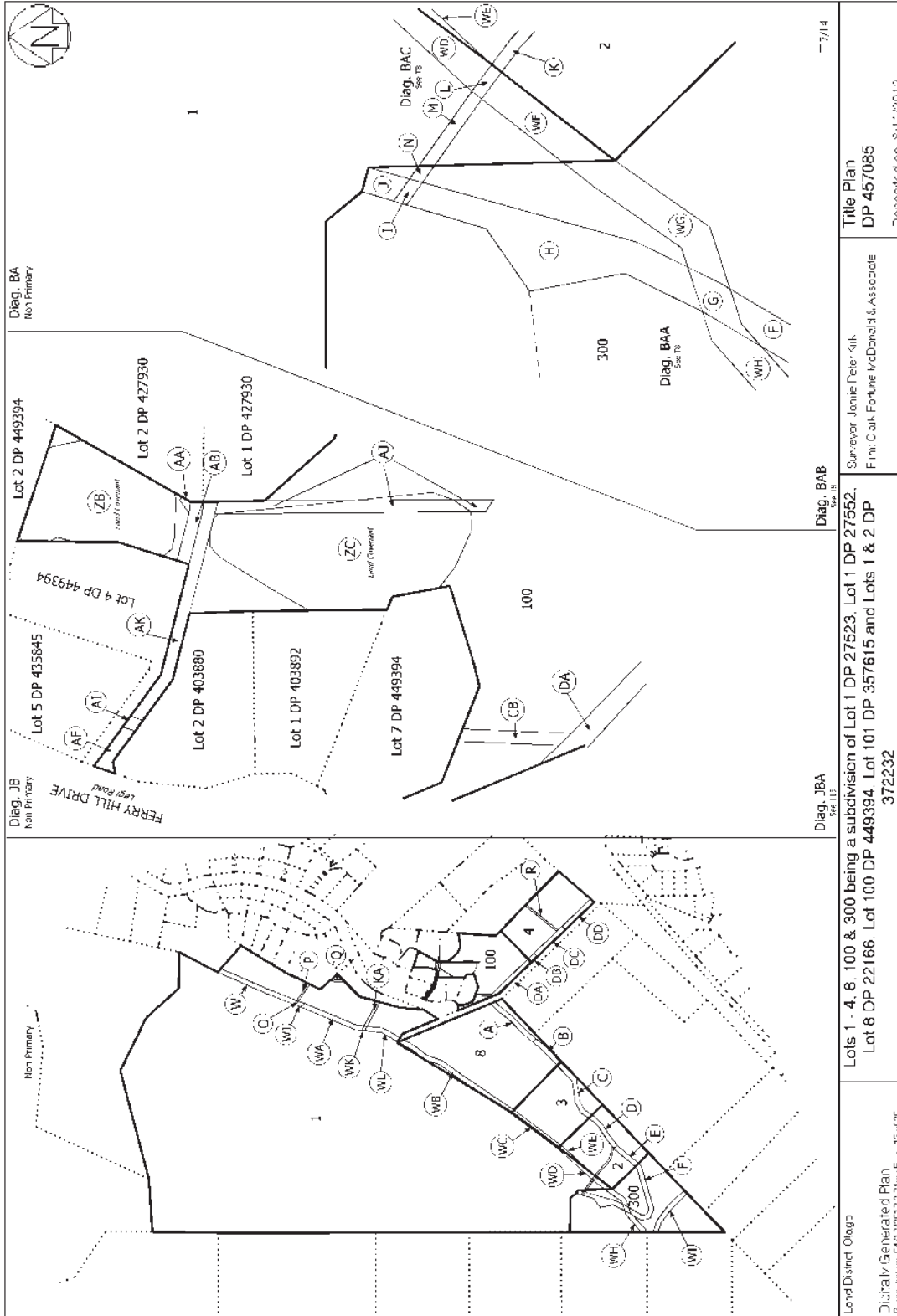
**Title Plan**  
 DP 457085  
 Deposited on: 8/1/2012  
 Surveyor: Jennie Teler-Glik  
 Firm: Coak, Fortune, McDonald & Associate

Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 & 2 DP 372232

**Diag. JC**  
 Part Section 20 Block II Shotover SD  
 Land District Otago  
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 Generated on: 24/12/2012 2:54pm Page 11 of 20



<p>Diag. JD</p> <p>Diag. JCA</p>	<p>Surveyor: Jennie Teler-Calk</p> <p>Firm: Calk, Fortune, McDonald &amp; Associate</p>	<p>Title Plan</p> <p>DP 457085</p> <p>Deposited on: 8/11/2012</p>
<p>Lot 1 - 4, 8, 100 &amp; 300 being a subdivision of Lot 1 DP 27552, Lot 1 DP 27552, Lot 101 DP 357615 and Lots 1 &amp; 2 DP 372232</p>	<p>Lot 2 DP 449394</p> <p>Lot 4 DP 449394</p> <p>Lot 5 DP 435845</p> <p>Lot 2 DP 427930</p> <p>Lot 1 DP 427930</p> <p>Lot 1 DP 27552</p> <p>Lot 101 DP 357615</p> <p>Lot 1 DP 27552</p> <p>Lot 8 DP 22166</p> <p>Lot 100 DP 449394</p> <p>Lot 100 DP 449394</p> <p>Lot 2 DP 403880</p> <p>Lot 100 DP 1.1466Ha</p>	



Diag. BA  
Not Primary

Diag. JB  
Not Primary

Diag. BAA  
See 1B

Diag. BAC  
See 1B

Diag. JBA  
See 1B

Diag. BAB  
See 1B

— 7/14

Title Plan  
DP 457085

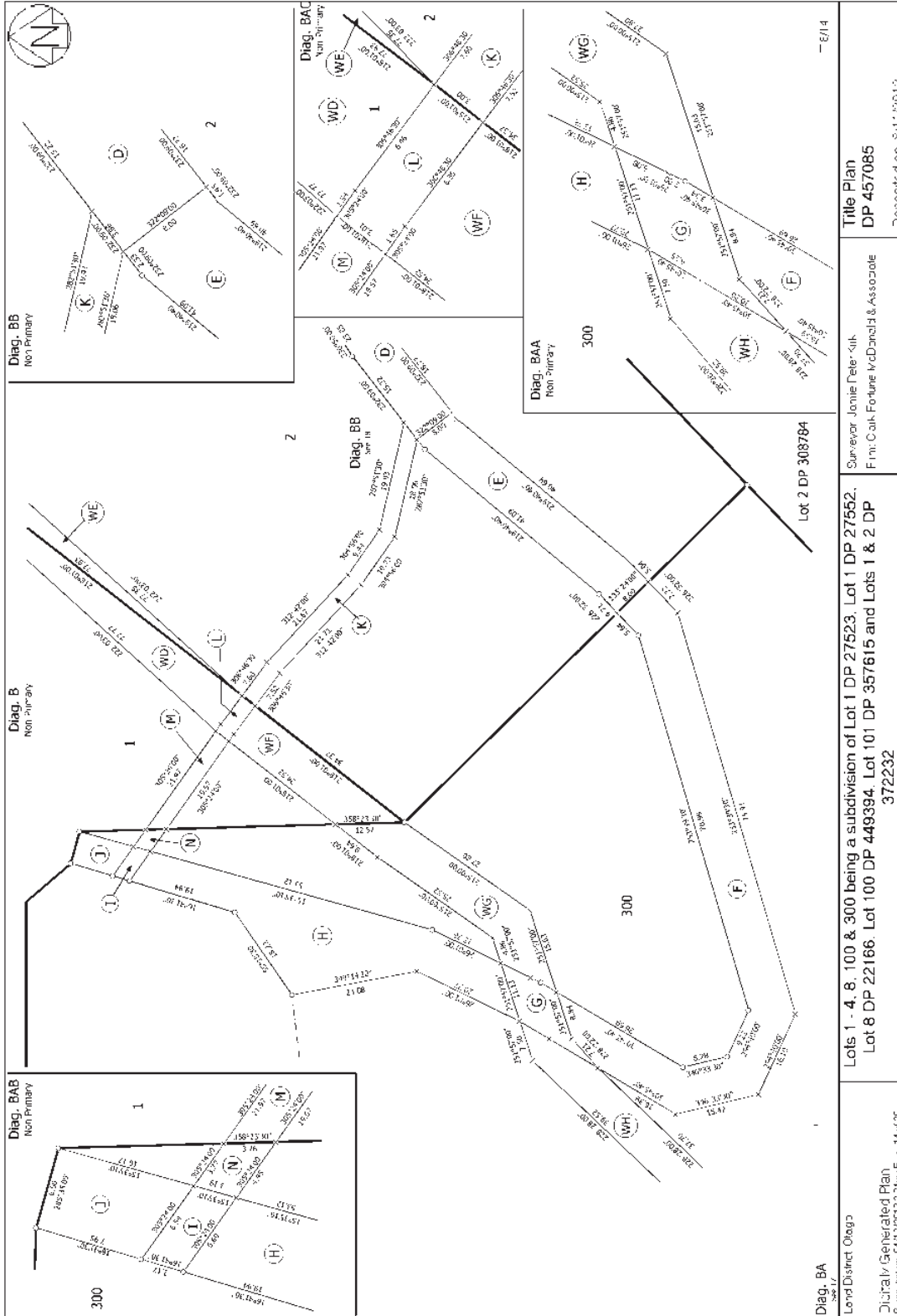
Surveyor: Jennie Teler-Kirk  
Firm: Coak, Fortune, McDonald & Associate

Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 & 2 DP 372232

Deposited on: 8/11/2012

Land District Diagra

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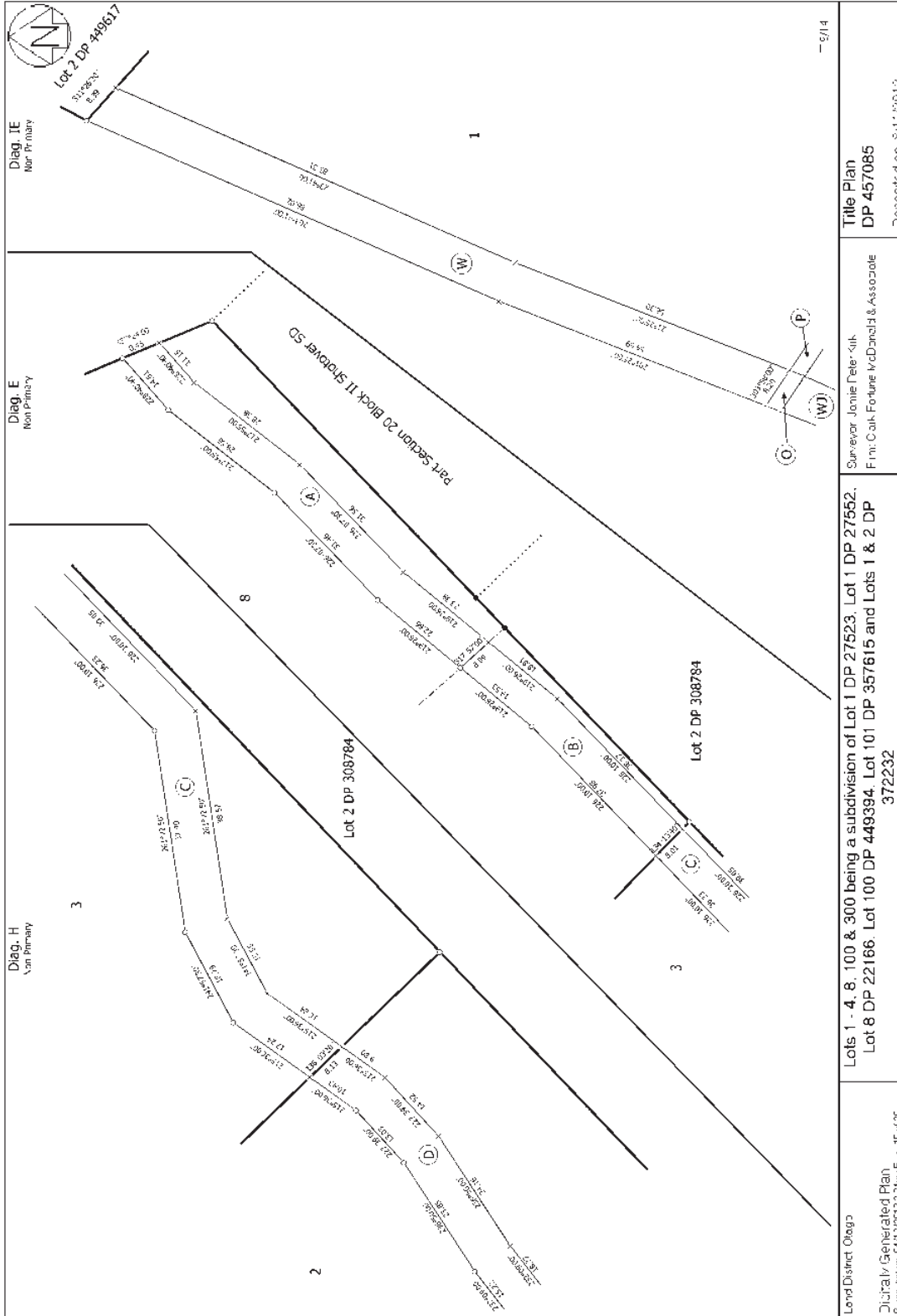
Title Plan  
DP 457085

Surveyor: Jennie Teler-Glik  
Firm: Cook, Fortune McDonald & Associate

Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 & 2 DP 372232

Diag. BA  
see 17  
Lond District Diagra  
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Deposited on: 8/11/2012



Diag. IE  
Non Primary

Diag. E  
Non Primary

Diag. H  
Van Primary

Lot 2 DP 449317

Part Section 20 Block 11 Shiloh CS

Lot 2 DP 308784

Lot 2 DP 308784

Lot 2 DP 449317

— 6/14

Surveyor: Jennie Teler-Glik  
Firm: Colk, Fortune McDonald & Associate

Title Plan  
DP 457085  
Deposited on: 8/11/2012

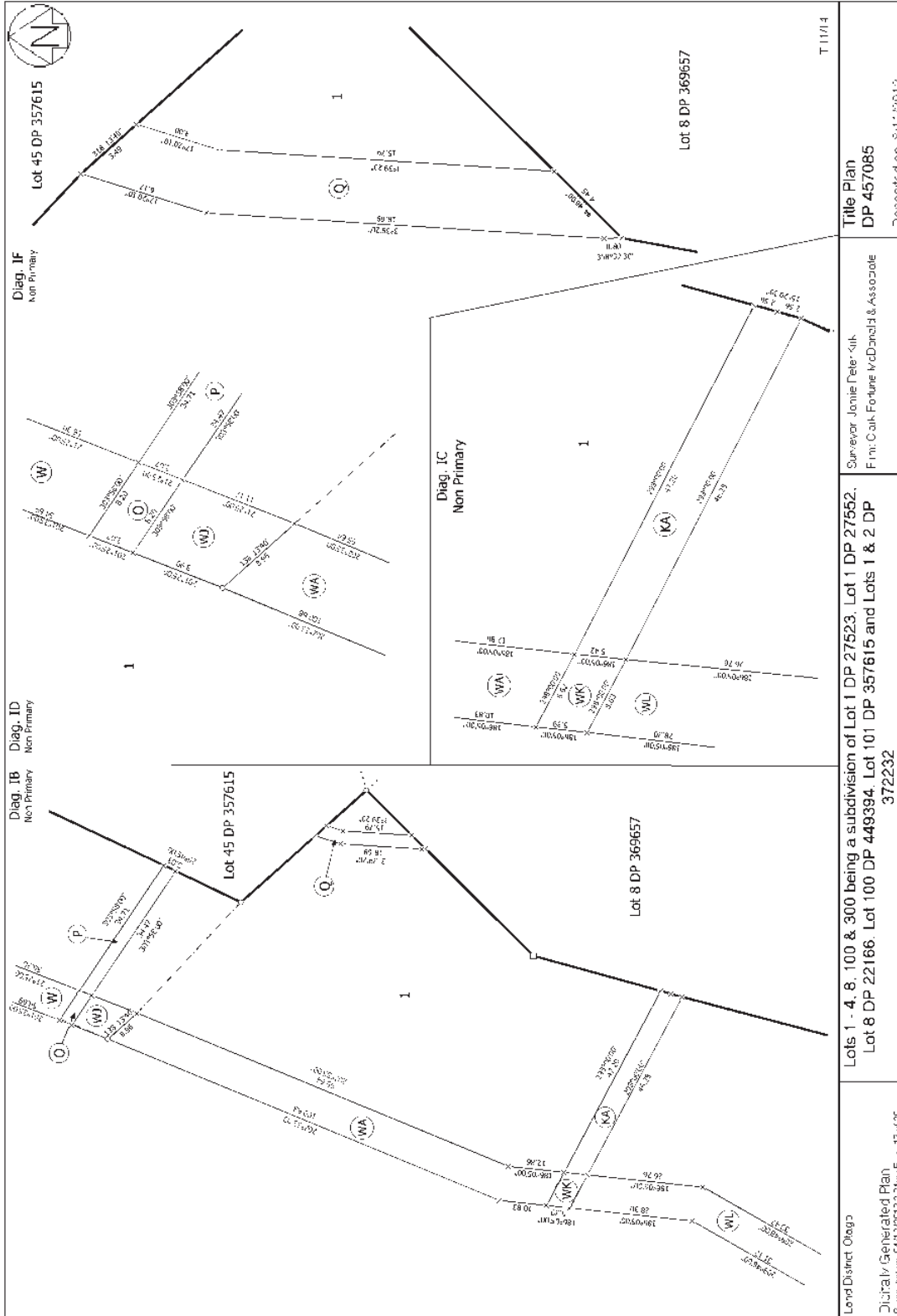
Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 & 2 DP 372232

Lord District Otago

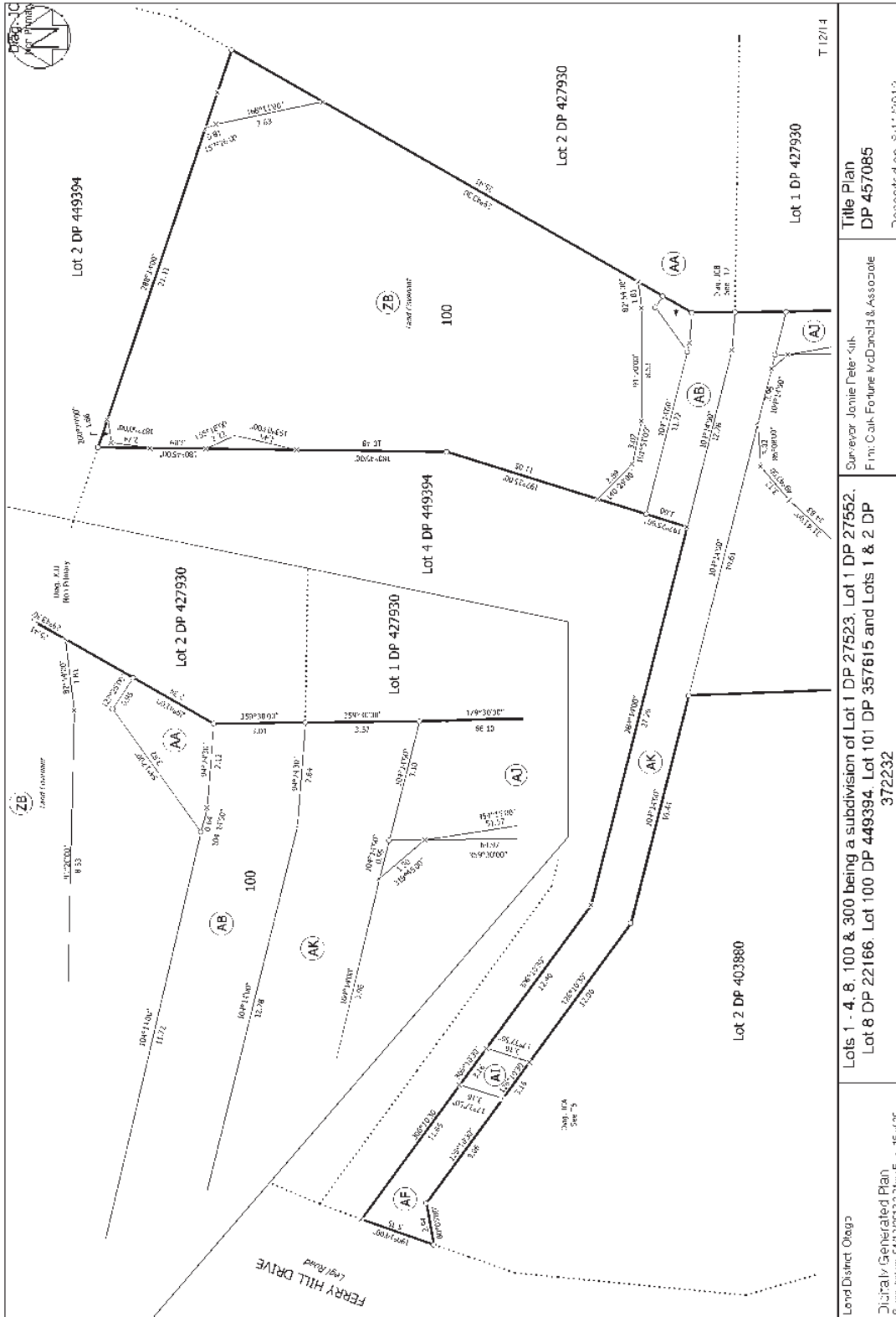
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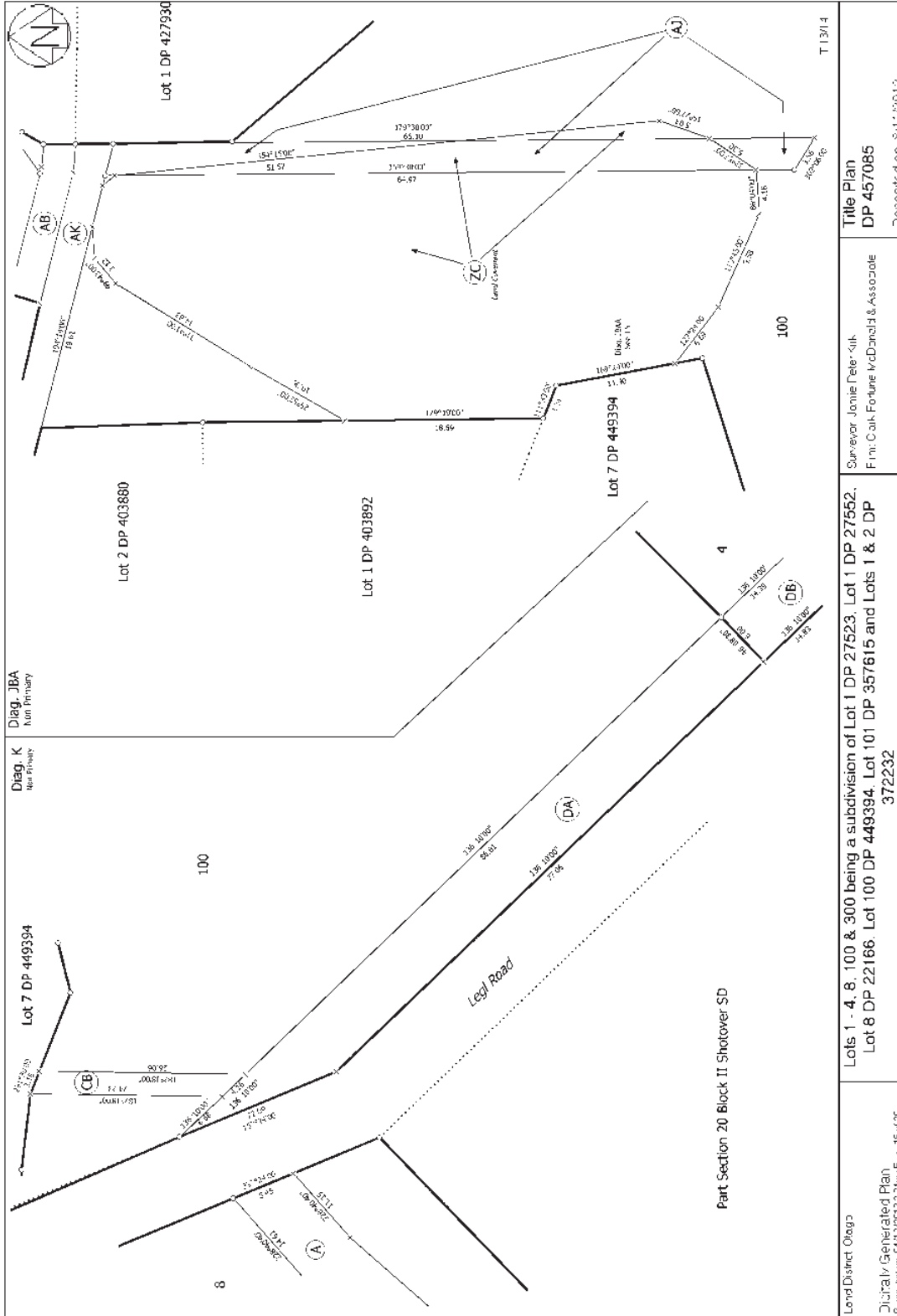




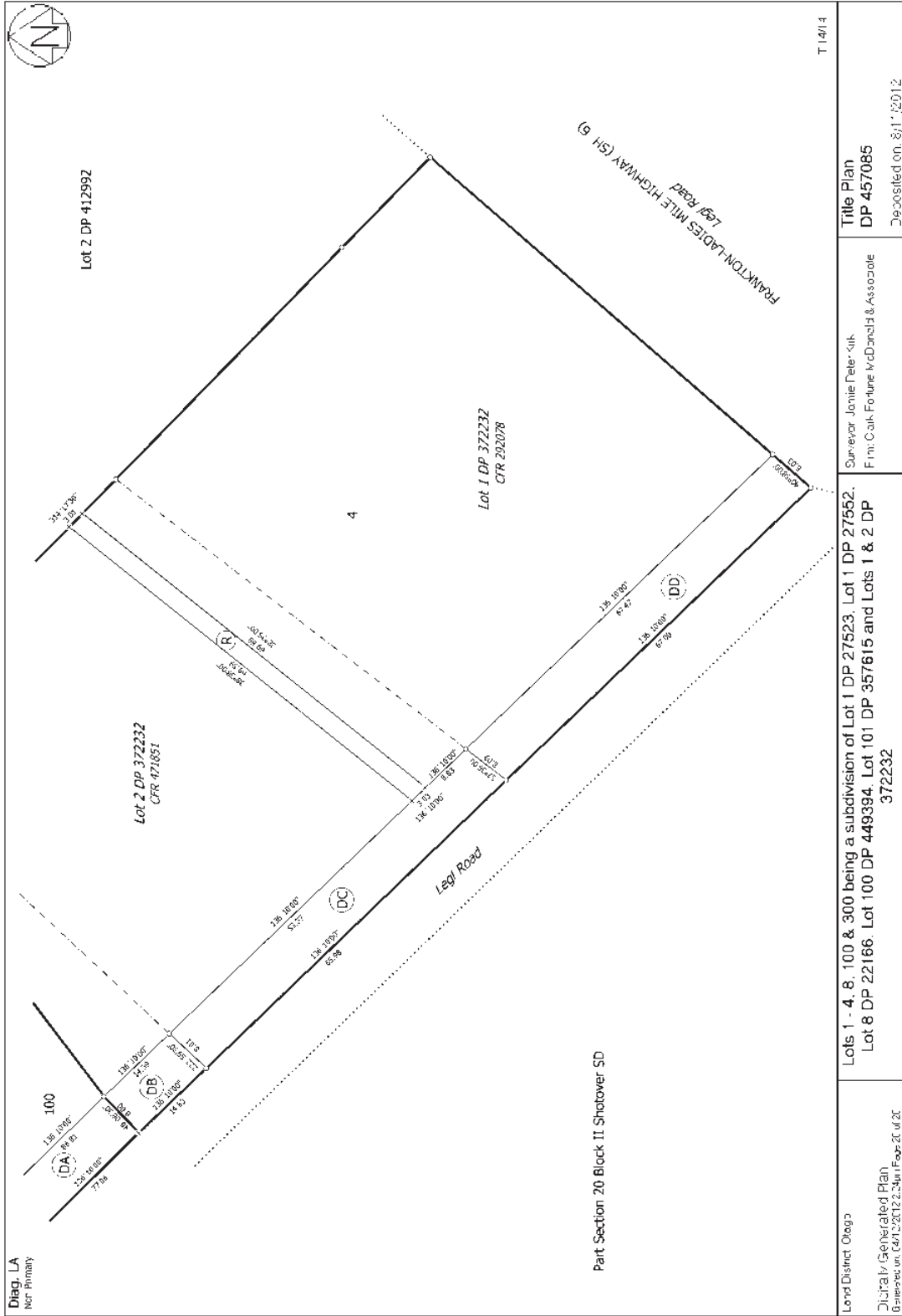
Title Plan  
 DP 457085  
 Deposited on: 8/11/2012  
 Surveyor: Jennie Teler-Guk  
 Firm: Cook, Fortune, McDonald & Associate  
 372232  
 Lots 1 - 4, 8, 100 & 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552,  
 Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 & 2 DP  
 372232  
 Lord District Otago  
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<p>Map District: Otago</p> <p>Digital/Generated Plan</p> <p>Generated on: 04/12/2012 3:41:16 PM Page 16 of 20</p>	<p>Surveyor: Jonnie Teler-Glik</p> <p>Firm: Cook, Fortune McDonald &amp; Associate</p>	<p>Lots 1 - 4, 8, 100 &amp; 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27652, Lot 8 DP 22166, Lot 101 DP 357615 and Lots 1 &amp; 2 DP 372232</p>	<p>Title Plan</p> <p>DP 457085</p> <p>Deposited on: 8/11/2012</p>
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<p>Diag. JBA Run Primary</p> <p>Diag. K Run Primary</p>	<p>Lot 7 DP 449394</p> <p>Lot 2 DP 403880</p> <p>Lot 1 DP 403892</p> <p>Lot 1 DP 427930</p> <p>Lot 7 DP 449394</p>	<p>Legal Road</p> <p>Part Section 20 Block II Shotover SD</p>	<p>Lot 1 - 4, 8, 100 &amp; 300 being a subdivision of Lot 1 DP 27523, Lot 1 DP 27552, Lot 8 DP 22166, Lot 100 DP 449394, Lot 101 DP 357615 and Lots 1 &amp; 2 DP 372232</p>	<p>Land District Otago</p> <p>Digital/Generated Plan</p> <p>Generated on: 04/12/2012 2:54pm Page 15 of 20</p>	<p>Surveyor: Jonnie Teler-Glik</p> <p>Firm: Colin Fortune McDonald &amp; Associate</p> <p>Title Plan DP 457085</p> <p>Deposited on: 8/11/2012</p>
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# **SPECIFICATION**

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

## **QLDC Reservoirs**

### **Quail Rise, Queenstown, New Zealand**

**For GHD**

**BUILDING CONSENT - DRAFT**

Project Ref:

BM19206

Date:

12 August 2022

# TABLE OF CONTENTS

1013	DOCUMENT CONTROL.....	3
1235	SHOP DRAWINGS .....	4
1235S1	SCHEDULE OF SHOP DRAWINGS .....	6
1237	WARRANTIES .....	7
1237S1	SCHEDULE OF WARRANTIES .....	9
1237WA	WARRANTY AGREEMENT.....	10
1238	AS BUILT DOCUMENTATION .....	13
1238S1	SCHEDULE OF AS BUILT DOCUMENTATION .....	14
8310	LANDSCAPE SITE PREPARATION .....	15
8321	SOIL & SOIL PREPARATION FOR PLANTING.....	19
8332	PLANTING .....	23
8333	TURF LAYING AND LAWN SEEDING .....	34
8380S	SOFT LANDSCAPE MAINTENANCE .....	38
8511	IRRIGATION SYSTEM .....	46

# 1013 DOCUMENT CONTROL

## 1. DOCUMENT CONTROL

### Document Control

#### 1.1 PREPARED BY

Company:	Boffa Miskell Ltd
Postal Address:	N/A
Street Address:	level 1/141 Cambridge Terrace
City:	Christchurch 8013
Telephone:	03-366 8891
Email:	mathilde.menard@boffamiskell.co.nz

#### 1.2 DOCUMENT DETAILS

Project Name:	QLDC Reservoirs – Quail Rise
Project Number:	BM19206
Client:	GHD
Client Contact:	Iain Partington

#### 1.3 REVISION CONTROL

Issue:	Building Consent
Revision:	3
Amendment Details:	General updates
Issued to:	GHD
Date of Issue:	12.08.2022
Reviewed by:	Gabe Ross
Approved by:	Gabe Ross

#### 1.4 AUDIT CONTROL

Date:	12.08.2022
Author:	Mathilde Menard
Approved by:	Gabe Ross



## 1235 SHOP DRAWINGS

### 1. GENERAL

This general section relates to common requirements for the preparation, submission and review of shop drawings referred to in this specification and in separate specifications/documents relating to this project. Detailed requirements for shop drawings for particular parts of the work are included in the specific work section.

#### 1.1 SCHEDULE SECTION

Refer to 1235S1 SCHEDULE OF SHOP DRAWINGS for work sections contained in this specification that have requirements for shop drawings.

#### 1.2 PREPARE SHOP DRAWINGS

Where specified in the work sections, allow for the preparation of shop drawings and their submission for review. Make due allowance in the contract programme for the preparation, review and subsequent correction and re-review of shop drawings, prior to the time required for ordering materials and commencing fabrication.

Refer to 1235S1 SCHEDULE OF SHOP DRAWINGS

#### 1.3 SHOP DRAWING FORMAT

Prepare shop drawings at appropriate scales to enable good legibility. Unless otherwise specified in a work section, submit shop drawings in the format as listed in SELECTIONS.

#### 1.4 PROGRAMME FOR SHOP DRAWINGS

Allow time in the programme for the preparation, coordination and review of shop drawings. Allow also for such resubmission and further review as may be required prior to fabrication. No extension of time will be allowed for resubmission and further review.

#### 1.5 COMMUNICATION WITH SHOP DRAWING DETAILER

Agree and arrange for such direct contact as is appropriate between detailer, consultant and others whose input may be required in the preparation of the shop drawings. Such direct communication does not relieve the contractor of the need to carry out their own coordination and check of shop drawings.

#### 1.6 CONTRACTOR COORDINATION OF SHOP DRAWINGS

Before submitting the shop drawings for review, carry out coordination to ensure that allowance has been made for all other parts of the work that relate to the work detailed in the shop drawings.

#### 1.7 COORDINATION WITH SITE MEASURE

The contractor is solely responsible for coordination of shop drawing dimensions with site measurements. The reviewer's dimensional review is limited to visual/aesthetic matters only

#### 1.8 SHOP DRAWING REVIEW

Submit shop drawings to the named reviewers for review, in due time to ensure conformance with the contract programme.

- Where no time is stated in a specific section allow 10 working days for review by the reviewer. Where a large number of drawings are involved more time will be necessary.
- Where no person is named as the reviewer, submit the shop drawings to the contract administrator.

Shop drawing review indicates only that the shop drawing interpretation of the design concept has been reviewed without the need for further modification, other than the corrections indicated by the reviewer.

The reviewer may advise that:

- The shop drawings have been reviewed and work may proceed; or
- The shop drawings have been reviewed and work may proceed subject to notes, annotations or comments provided; or
- The shop drawings have been reviewed and work may proceed subject to notes, annotations or comments provided. Resubmitted revised shop drawings shall be provided for the record, or

- Work may not proceed. Revise and resubmit shop drawings

1.9 RESPONSIBILITY

Review of shop drawings does not relieve the contractor of responsibility for the correctness of the shop drawings, site dimensions, the overall design, coordination and performance, or for ensuring the work is carried out in compliance with the contract documents. It does not remove the need for the contractor to comply with the stated requirements, details and specifications of the manufacturers and suppliers of individual components, materials and finishes. Review cannot be construed as authorising departures from the contract documents.

1.10 RESUBMISSION OF SHOP DRAWINGS

Reviewed drawings which are required to be resubmitted to correct comments or notations indicating where the shop drawings are at variance with the contract documents, are to be modified and resubmitted to the reviewer for re-review. Allow 5 working days for re-review by the reviewer.

1.11 WORK MAY PROCEED

Before proceeding with any fabrication, installation or erection, advice must be obtained from the named reviewers that work may proceed. Where no named reviewer has been nominated advice must be obtained from the contract administrator.

2. SELECTIONS

2.1 SHOP DRAWING FORMAT

Submit the shop drawings in the following format

	<b>Format/Size</b>
Electronic copy	PDF
CAD file	AutoCAD

## 1235S1 SCHEDULE OF SHOP DRAWINGS

### 1. GENERAL

This schedule section identifies work sections in the specification that have requirements for the preparation, submission and review of shop drawings.

#### 1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1235 SHOP DRAWINGS
- Identified Work Sections

#### **Shop drawings**

#### 1.2 SHOP DRAWINGS

Refer to the following sections:

8511 Irrigation System

#### 1.3 SHOP DRAWINGS - ADDITIONAL ITEMS

Refer to separate documentation for shop drawing requirements not contained within this specification.

## 1237 WARRANTIES

### 1. GENERAL

This general section refers to the requirements for warranties/guarantees, referred to within this specification and referred to within separate specifications/documents relating to this project. It includes:

- Warranties for parts of the work required by the principal in a required form
- Installer/applicator warranties for parts of the work in the installer's/applicator's standard form
- Manufacturer/supplier warranties provided with products, appliances and the like in the manufacturer's/supplier's standard form
- Guarantees provided by contractor in the contractor's standard form

These guarantees/warranties are in addition to any warranties, implied warranties, or guarantees that are required by the Building Act, the Building Regulations, or the building consent.

#### 1.1 SCHEDULE SECTION

Refer to 1237S1 SCHEDULE OF WARRANTIES for work sections contained in this specification that have requirements for warranties.

#### **Warranties**

#### 1.2 PROVIDE WARRANTIES

Provide executed warranties in favour of the principal in respect of, but not limited to, materials, components, service, application, installation and finishing called for in that specified section of work. The terms and conditions of the warranty in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability under the terms of the warranty called for in that specified section of work.

- Conform to the WARRANTY AGREEMENT form included in the specification/conditions of contract.
- Commence warranties from the date of practical completion of the contract works (unless otherwise stated).
- Maintain their effectiveness for the times stated.
- Provide executed warranties prior to practical completion.

#### 1.3 WARRANTIES - INSTALLER/APPLICATOR

Where installer/applicator warranties are offered covering execution and materials of proprietary products or complete installations, provide such warranties to the contract administrator. These warranties may be provided in lieu of the warranties that are otherwise required provided that these warranties are subject to similar conditions and periods.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

#### 1.4 WARRANTIES - MANUFACTURER/SUPPLIER

Where warranties are offered covering materials, equipment, appliances or proprietary products, provide all such warranties to the contract administrator.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

## **Submission**

- 1.5 **REVIEW BY CONTRACTOR**  
Obtain the warranties from the installers, applicators, manufacturers and suppliers at the earliest possible date and review to ensure that they are correctly filled out and executed. Where warranties are executed as a deed, ensure that a duplicate copy is provided for execution by the owner/principal. Keep safe and secure until required for submission.
- 1.6 **WARRANTIES - REQUIRED BY CONTRACT**  
Obtain copies of warranties listed in the contract documents. Provide all warranties at the same time. If the project has an operations and maintenance documentation provision, present the warranties with the operations and maintenance information. If no operations and maintenance documentation provision exists, present the warranties to the contract administrator in a loose-leaf binder with a contents index suitably labelled and including the project name and details. Provide a title on the binder edge "Warranties for (project name)"

## 1237S1 SCHEDULE OF WARRANTIES

### 1. GENERAL

This schedule section identifies work sections in the specification that have requirements for warranties.

#### 1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1237 WARRANTIES
- Identified Work Sections

#### **Warranties**

#### 1.2 WARRANTIES

Refer to the following sections:

- 8332 Planting
- 8333 Turf Laying and Lawn Seeding
- 8511 Irrigation System

#### 1.3 PROJECT WARRANTIES

Refer to section 1237 WARRANTIES for project warranties.

#### 1.4 WARRANTIES - ADDITIONAL ITEMS

Refer to separate documentation for warranties not contained within this specification.

# 1237WA WARRANTY AGREEMENT

## 1. SPECIFICS

### 1.1 PARTIES TO THE WARRANTY AGREEMENT

**Principal:** ~  
.....

**Contractor:** ~  
.....

**Warrantor:** ~  
.....

### 1.2 BACKGROUND

The principal has entered into a contract with the contractor for carrying out the contract works. The warranted works / materials are part of the contract works. The contractor has agreed to arrange for the provision of a warranty in respect of the warranted works / materials for the warranty period on the terms set out in this warranty. The warrantor has agreed to provide a warranty in respect of the warranted Works / materials for the warranty period on the terms set out in this warranty agreement.

### 1.3 LOCATION

**Project name:** ~  
.....

**Project address:** ~  
.....

### 1.4 WARRANTED WORKS

**Warranted works:** 2 years for Irrigation installation; 2 years for all trees, shrubs and groundcovers; 2 years for Hydroseeded Grass  
.....

**Warranty period:** 2 years from the date of practical completion of the contract works.

### 1.5 WARRANTED MATERIALS

**Warranted materials:** 2 years for all irrigation materials and fittings  
.....

**Warranty period:** 2 years from the date of practical completion of the contract works.

## 2. WARRANTY TERMS

### 2.1 WORKS ARE AS REQUIRED IN THE CONTRACT

The warrantor warrants to the principal that the warranted work performed /materials supplied shall be as required in the contract. If not otherwise specified the work shall be of good trade practice with materials and fittings of merchantable quality.

### 2.2 WARRANTY ADDITIONAL TO OTHER OBLIGATIONS

This warranty shall be in addition to and shall not derogate from any manufacturer's warranty or any warranty implied by law, or any contract defects liability obligations, attaching to any part of the warranted works.

### 2.3 WARRANTOR TO REMEDY DEFECTS

The warrantor agrees that if within the warranty period, the warrantor is advised by the principal in writing of any defect in the warranted works / materials for which the warrantor is liable under the terms of this warranty, the warrantor will promptly take steps to remedy the defect / replace defective materials.

- 2.4 **CARRYING OUT REMEDIAL WORK / REPLACEMENT OF DEFECTIVE MATERIALS**  
Any remedial work / replacement of defective materials which the warrantor is liable to undertake / provide under this warranty shall be carried out:
- to the standard required by the contract,
  - in a prompt and timely manner,
  - without unnecessary inconvenience to any occupants,
  - at the warrantor's cost,
  - subject to reasonable access being provided to the warrantor for the purpose of carrying out the remedial work.
- 2.5 **WHERE COST OF REPLACEMENT IS OUT OF PROPORTION TO THE DEFECT**  
Where the cost of replacement of work and/or materials is out of all proportion to the consequences of the defect, or where the defect may not be reasonably capable of rectification without substantial expense which is out of all proportion to the cost of the contract works, the warrantor may:
- where the defect or defective material is reasonably rectified by repair rather than by replacement, the warrantor's obligation under this warranty shall be only to repair or otherwise make good the defect; or
  - propose reasonable monetary compensation in lieu of remedying the defect; or
  - propose a combination of both repair and compensation.
- 2.6 **PRINCIPAL SHALL CONSIDER REASONABLE PROPOSALS**  
The principal must consider the warrantor's reasonable proposals and the parties shall endeavour in good faith to reach agreement. Where agreement cannot be reached, the dispute shall be resolved in accordance with the disputes clause in this warranty.
- 2.7 **FAILURE BY WARRANTOR TO PERFORM REMEDIAL WORK**  
If the warrantor fails to promptly, adequately and satisfactorily carry out the remedial work or to propose acceptable repair/compensation, the principal may then arrange for the remedial work to be carried out by others.
- If the warrantor fails to promptly, adequately and satisfactorily provide replacement materials or to propose acceptable repair/compensation, the principal may then arrange for the replacement materials to be supplied by others.
- The principal shall first give the warrantor 10 working days notice, or such other reasonable time as agreed by the principal, to carry out and complete the remedial work / supply replacement materials. If the warrantor does not complete this work / supply replacement materials within the time, the principal shall then advise the warrantor in writing that the work will be carried out / materials will be supplied by others.
- In such an event the warrantor is not released from obligations under this warranty, which continues in full force and effect, except in respect of the defect remedied / materials supplied by the principal or by another person contracted by the principal. The reasonable cost of the remedial work carried out by such other persons including all reasonable costs of the principal is to be paid to the principal by the warrantor on demand.
- 2.8 **WARRANTOR NOT LIABLE FOR**  
The principal agrees that the warrantor is not liable for any defect or damage caused by any of the following:
- Wilful act or negligence of the principal or any person other than the warrantor.
  - Fire, explosion, earthquake, war, subsidence, slips, faulty materials or workmanship other than caused by the defect in the warranted work.
  - Any force of nature which the warrantor could not have reasonably foreseen.
  - Any neglect or unnecessary delay by the principal in giving notice to the warrantor of a defect in the warranted works becoming apparent.
  - Design faults, errors or discrepancies, unless the warrantor undertook the design of the part of the warranted works that is the subject of the defect.
  - Use of the Warranted Works by the Principal or other person in any manner or for any purpose not being the intended manner of use or purpose of the Warranted Works.



- Failure by the principal or other persons to maintain the warranted works in accordance with good practice and any manufacturer's stated or recommended instructions or requirements.
- Fair wear and tear.

2.9 **WARRANTY MAY BE ASSIGNED**  
The principal may assign the benefit of this warranty to any person.

2.10 **DISPUTES**  
Any dispute between the principal and the warrantor arising out of this warranty is to be referred to arbitration before a sole arbitrator. If within 15 Working Days of notice of dispute, the principal and the warrantor cannot agree upon a single arbitrator, either party may request the president of the Arbitrators and Mediators Institute of New Zealand Incorporated (AMINZ) to appoint an arbitrator.

**3. SIGNATORIES**

3.1 **SIGNED BY THE WARRANTOR**

.....  
Signed Date  
.....  
Print name of person(s) authorised to sign

.....  
Signed by witness, include occupation and address Date  
.....

3.2 **SIGNED BY THE PRINCIPAL**

.....  
Signed Date  
.....  
Print name of person(s) authorised to sign

.....  
Signed by witness, include occupation and address Date  
.....

3.3 **NOTE**  
The warranty shall be executed by the warrantor and the principal in the manner required for execution of a deed. In the case of a natural person, the person shall sign and their signature shall be witnessed by another person, a witness must not be a party to the deed.  
Sign the warranty on behalf of a company by having 2 or more directors sign, or if there is only 1 director, by that director whose signature must be witnessed, or if the constitution of the company so provides, a director, or other person or class of person(s) whose signature(s) must be witnessed, or by 1 or more attorneys appointed by the company in accordance with section 181 of the Companies Act 1993.  
Execute the warranty on behalf of a body corporate (other than a company) by affixing its seal, which shall be attested in the manner provided for in the rules of, or applicable to, the body corporate. If signing for another type of entity for example an incorporated society, trust, school board etc. follow the protocol required for the execution of a deed.

## 1238 AS BUILT DOCUMENTATION

### 1. GENERAL

This general section relates to common requirements for the preparation, submission and review of as built documentation referred to within this specification and referred to within separate specifications/documents relating to this project. Detailed requirements for as built documentation for particular parts of the work may be included in specific work sections.

#### 1.1 SCHEDULE SECTION

Refer to 1238S1 SCHEDULE OF AS BUILT DOCUMENTATION for work sections contained in this specification that have requirements for as built documentation.

#### 1.2 AS BUILT DOCUMENT REQUIREMENTS

Where requirements for the as built documents and records are not stated in a specific section, they shall include:

As built drawings recording:

- All irrigation system fittings, pipes, pumps, valves and components

Records of:

- Products and materials selected for alternatives specified
- Approved substitutions and accepted alternatives
- Other approved changes and deviations to items specified.

#### 1.3 PROVISIONAL AS BUILT DOCUMENTS

Prior to practical completion provide provisional/draft as built documents in sufficient detail to allow the principal to operate, maintain, adjust and re-assemble the contract works and to allow for review by the reviewer. Where no named reviewer has been nominated, submit the as built documentation to the contract administrator. Submit in hard copy and electronic form.

#### 1.4 AS BUILT DOCUMENT REVIEW

As built document review indicates only that the reviewer is satisfied that the documents are legible. The review is not a check of the accuracy or completeness of the documents, however the reviewer may comment on any aspect of the documentation and require the documents to be revised and resubmitted. Review of as built documents does not relieve the contractor of responsibility for their correctness.

Where no time is stated in a specific section, allow 10 working days for review by the reviewer. Where a large amount of documentation is involved more time will be necessary.

#### 1.5 COMPLETE AS BUILT DOCUMENTS

Prior to the end of the defects notification/liability period, provide complete as built documents reflecting any review requirements, with all information of good quality and properly titled, numbered, cross-referenced and dated. Provide documents in sufficient detail to allow the principal to operate, maintain, adjust and re-assemble the contract works. Submit in hard copy and electronic form to the contract administrator.

#### 1.6 AS BUILT DOCUMENTS - ELECTRONIC COPY

Provide an electronic copy of the as built documents in the following format:

Drawings: PDF format (in addition provide DWG files if available)

Other documents: PDF format

## 1238S1 SCHEDULE OF AS BUILT DOCUMENTATION

### 1. GENERAL

This schedule section identifies work sections in the specification that have requirements for the submission of as built documentation.

#### 1.1 ASSOCIATED SECTIONS

Read in conjunction with:

- 1232S1 EXPLANATION OF SCHEDULE SECTIONS
- 1238 AS BUILT DOCUMENTATION
- Identified Work Sections

#### **As built documents**

#### 1.2 AS BUILT DOCUMENTS

Refer to the following sections:

8511 Irrigation System

#### 1.3 AS BUILT DOCUMENTS - ADDITIONAL ITEMS

Refer to separate documentation for as built documentation requirements not contained within this specification.

## 8310 LANDSCAPE SITE PREPARATION

### 1. GENERAL

This section relates to:

- clearing and disposal of existing vegetation
- removal and disposal of existing inorganic debris
- weed spraying

#### 1.1 RELATED WORK

Refer to 8321 SOIL AND SOIL PREPARATION.

#### Documents

#### 1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.

The following documents are specifically referred to in this section:

<a href="#">TNZ F/01</a>	Specification for Earthworks construction
Code of Practice for Safety and Health in Tree Work	Part 1 – Arboriculture
NZS 4402.2.2:1986	Methods of Testing Soils for Civil Engineering Purposes

#### Requirements

#### 1.3 ARCHAEOLOGICAL DISCOVERY

If fossils, Maori artefacts, antiquities and other items of value are found, the Contractor to stop further groundwork and report the Contract Administrator prior to removing them.

#### 1.4 QUALIFICATIONS

Workers to be experienced, competent trades people familiar with the materials and techniques specified. Construction plant and equipment shall only be operated by licensed or experienced operators as appropriate.  
Only certified applicators shall be responsible for the application of herbicides.

#### 1.5 ACCESS FOR MACHINES

Determine working conditions and access for machines. Take into account the time of year, the nature of the ground and subsoil to be excavated, the ground water table and all matters influencing the carrying out of the work.

#### 1.6 MYRTLE RUST

For identification and treatment of myrtle rust and the growing, transporting and planting plants in the myrtle family (family Myrtaceae) follow the protocols and precautions of the Myrtle Rust NZ website guidelines: <https://www.myrtlerust.org.nz/>.

Any suspected myrtle rust finds must be reported immediately to the Project Administrator.

#### Quality control and assurance

#### 1.7 INSPECTIONS

Notify the Contract Administrator for inspection of the works following:

- Identification of unsuitable materials requiring removal
- Prior to the placement of any fill material
- At the completion of the Site preparation

## 2. PRODUCTS

### Materials

- 2.1 IMPORTED FILL  
Cohesive clay, clean and free of stones, rubble, organic material, contaminants, stumps, branches and construction debris. Obtain the approval of the Contract Administrator prior to importing the material to site for placement.  
Imported aggregate fill shall be proprietary AP40 or AP65.
- 2.2 HERBICIDES  
Post-emergence selective chemical to control broadleaf weeds and/or a non-selective chemical. Submit for review the proposed chemical and area of use.

## 3. EXECUTION

### Conditions

- 3.1 DELIVERY  
Only deliver material to the site that can be immediately placed in its final location from the delivery vehicle.
- 3.2 SERVICES  
Check for services in the area of this work. Avoid interference or damage to them. Ensure that all new services are in place before commencing work.
- 3.3 REPORT  
Report any survey pegs, bench marks, and the like on any features, leaving them undisturbed until approval is given for removal.
- 3.4 SETTING OUT  
As described on the drawings, confirm with the Contract Administrator prior to commencing works.
- 3.5 PROVIDE SEDIMENT AND SILT RUN OFF PROTECTION  
Provide appropriate measures to prevent or minimise sediment generation and silt run off. Comply with territorial and other authority requirements relating to carrying out earthworks. Refer to the general section 1250 TEMPORARY WORKS & SERVICES for more details.

Contactors may use alternative sediment control option using 600mm wide x 450mm tall trapezoidal compost berm. Compost to meet NZ 4554 standards. Watered berm as it is formed, heel in or lightly compact with each 100mm lift. Water at completion to help set in place.

Undertake regular inspections and maintain the erosion and sediment control measures in operational order.

On stabilisation of disturbed soil or upon sufficient ground cover, remove control measures including the disposal of silt off site.

### Installation/application

- 3.6 TOLERANCES  
All cut and fill work shall be free draining and be constructed to the design levels and shapes to  $\pm 100$ mm. Ensure NZ Building Code ground clearances are maintained against buildings. Ensure all surfaces are graded to shed water and maintain overland flow paths.
- 3.7 CLEARING - GENERAL  
To [TNZ F/01](#) Earthworks construction. Clear the working area of all vegetation and structures except those specifically required to remain.

Include all areas affected by cutting and filling together with sufficient additional areas on which to stockpile stripped topsoil.

Include the complete removal of all trees and other vegetation, stumps, inorganic debris, pipes, fences, stonewalls, retaining walls, hardstand surfaces, boulders, and other materials as specified.

Where machine clearing is not possible, remove vegetation by hand methods. Remove roots from cleared vegetation during cultivation work. Take particular care around the root zone of trees to be retained.

The clearing of hardstand surfaces shall include saw cutting where necessary, breaking and excavation of bedding materials and disposal off site. Store on site cleared materials for re-use.

3.8 TREE CLEARING

Trees and shrubs to be cleared includes the removal of stumps off site. Stumps in excess of 300mm in diameter may be ground in lieu of removal.

3.9 WEED SPRAYING

Provide details of the proposed herbicide and spraying method prior to spraying. Spray all vegetated areas to be planted with 2 applications of approved herbicide one week apart, and one week prior to clearing. Clear or mow any vegetation exceeding 200mm in height prior to application of herbicide. Herbicide shall be applied to cleared or mown areas following sufficient re-growth of the weeds through the mulch as approved by the Contract Administrator.

Existing grass areas to be re-sown shall be eradicated by an application of translocated herbicide. Spraying of herbicides shall not take place in windy conditions and the Contractor shall be responsible for reinstating any damage caused by drift of spray. Where a translocated herbicide is used around plants in leaf to be retained, an adequate guard must be used, or a suitable hood applicator used for spot treatment.

Carefully calibrate all spraying equipment to prevent over or under dosing. No herbicide containers, empty or full, are to be left unattended on site at any time. Planting shall not proceed until at least two weeks after the first application of the residual herbicide, unless prior approval is obtained.

3.10 TOPSOIL STRIPPING

Do not start topsoil stripping until silt control measures are installed. Strip all topsoil including turfs, humus and organic materials. Stockpile stripped topsoil separately and neatly outside of the stripped areas for later re-spreading or disposal. Trim the stockpiles to a free draining slope to reduce ingress of rainwater.

Unless otherwise specified, do not remove topsoil from the site, and surplus topsoil shall remain on site.

3.11 SITE WON TOPSOIL ANALYSIS

Site won topsoil / stripped topsoil shall be analysed by soil specialist for re-use as specified in 8321 SOIL AND SOIL PREPARATION.

3.12 DISPOSAL

Unless otherwise specified, the Contractor is responsible for the disposal off site of all cleared materials in a safe and legal manner, including payment of any associated fees as required.

All general rubbish at the commencement, accumulated or dumped by others during the Contract Period, within the working area as shown on the Drawings, shall be removed by the Contractor under the item for Clearing in the Schedule of Prices.

3.13 MINOR EARTHWORKS

Earth-worked surfaces to have sufficient fall to shed water in a controlled manner and prevent ponding.

Obtain suitable fill material for the earthworks from the cut areas if available, or import where there is a shortfall. Ensure fill material is free of organic material, contaminants, stumps, branches and construction debris.

Place and compact the material to be used for general landscape shaping in layers not exceeding 150mm, and compact by track rolling in 4 passes with equipment in excess of 10 tonnes weight or other approved methods to prevent undue settlement.

Fill material placed adjacent to pipes, walls and other structures shall be compacted by hand held vibrating plate compaction equipment. Heavy equipment shall not be operated within one metre of any pipes or structures.

Ensure that all batters are maintained in a stable condition at all times.

3.14 UNSUITABLE MATERIALS

Advise the Contract Administrator if unsuitable materials are encountered. Remove and dispose of these materials and backfill with compacted clay or hardfill as directed by the Contract Administrator.

3.15 TOPSOIL RESREADING

Refer to 8321 SOIL AND SOIL PREPARATION.

3.16 SURPLUS MATERIAL

Remove surplus excavated material from the site continually as the excavation proceeds. Clean up continually any excavated material dropped on footpaths or roads.

**Completion**

3.17 ROUTINE CLEANING

Reinstate all areas affected by the works to pre-construction condition or better.

Remove all rubbish and spoil from the site on completion of the works, leaving the site in a clean and tidy condition.

**4. SELECTIONS**

4.1 HERBICIDES

Type: Contractor's choice, submit proposal for approval

No. of applications:2

## 8321 SOIL & SOIL PREPARATION FOR PLANTING

### 1. GENERAL

This section relates to the supply, preparation and placement of soil and plant mix for the planting of:

- Trees
- Shrubs
- Grasses

#### 1.1 RELATED WORK

Refer to 8310 LANDSCAPE SITE PREPARATION.  
 Refer to 8332 PLANTING  
 Refer to 8333 TURF LAYING AND LAWN SEEDING  
 Refer to 8380S SOFT LANDSCAPE MAINTENANCE  
 Refer to 8511 IRRIGATION SYSTEM

#### Documents

#### 1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.

The following documents are specifically referred to in this section:

<u>NZS 4402</u>	Methods of testing soils for civil engineering purposes
<u>NZS 4454</u>	Composts, soil conditioners and mulches
<u>TNZ F/1</u>	Specification for Earthworks construction
BS 3882	Specification for topsoil

#### Requirements

#### 1.3 QUALIFICATIONS

Landscapers to be experienced competent workers, familiar with the materials and the techniques specified.

#### 1.4 INSPECTION

The Contractor shall notify Contract Administrator for inspection of the works following:

- Prior to the respreading of stockpiled topsoil and/or imported topsoil
- Completion of the respreading

#### 1.5 TOPSOIL ANALYSIS (SITE WON TOPSOIL FOR REUSE)

Site Won Topsoil to be laboratory analysed and soil analyst's recommendations shall be submitted to the Contract Administrator.

Soil analyst: Submit proposal.

Samples: Collect in accordance with BS 3882.

Submit:

- Nutrient content, pH value and textural classification
- Report detailing soil analyst's recommendations

#### 1.6 APPLYING SOIL AMELIORANT FOR ALL SITE WON TOP SOIL

Soil ameliorant shall be applied to site won topsoil to soil analysis report recommendation.

Soil ameliorant shall be spread evenly and fully incorporated into topsoil to a recommended depth of soil.

Timing: Apply prior to cultivation.

Rate: to soil analysis report recommendation.

Other requirements: to soil analysis report recommendation.



## 2. PRODUCTS

### Materials

#### 2.1 TOPSOIL - GENERAL

Topsoil is defined as the top layer of soil characterised by the presence of organic matter. To NZS 4402, NZS 4454 and BS3882.

- free of pernicious weeds, straw, stones, sticks, clay lumps
- free of foreign matter exceeding 20mm dimension.
- pH value between 5.5 and 7.5
- humus content 5-20%

#### 2.2 SITE WON TOPSOIL

To [NZS 4402](#), [NZS 4454](#) and BS3882. Top quality screened topsoil stripped from its original location to a maximum depth of 200mm.

For this project, site won topsoil shall be analysed by soil specialist for re-use and ameliorated as specified in GENERAL - Requirements.

#### 2.3 IMPORTED TOPSOIL

To [NZS 4402](#) , [NZS 4454](#) and BS3882 . All imported topsoil shall be good quality medium loam, easily moulded when moist. It must be neither too sticky nor leave a smooth polished surface when smeared. Topsoil shall be friable, high quality topsoil suitable to support plant life, including a composition of 10-20% sand, 5-20% humus or organic material intermixed with the balance percentage of silt or clay sized particle without visible lumps of clay or silt and shall have a pH value of between 5.5 and 7.5.

Topsoil shall be free from pollution and all chemical or heavy metal contamination in accordance with regional council acceptance criteria for residential use. It shall not contain excessive proportions of clay, sand, chalk or lime. It shall be free from stones and debris greater than 20 mm, concrete, steel, clay lumps, tree roots, sticks (or other inorganic material), weeds and seeds.

Organic matter derived from a sewage treatment plants shall not be accepted as topsoil.

The Contractor shall supply a sample of the soil to be imported prior to the Contract Administrator for it's approval prior to delivery of soil to site. Should the soil not be approved, the Contractor shall find alternative sources and seek approval from the Contract Administrator to that alternative. Topsoil from any alternative source approved by the Contract Administrator, shall be supplied at the tendered rate.

The Contractor shall obtain all consents, approvals and meet all charges for the supply, loading and delivery of tops soil to site as well as any other works necessary at the source.

All topsoil to be imported shall be conditioned by the application and mixing of the following;

- 30% compost mix

Conditioning materials shall be added and mixed with the topsoil prior to delivery to the site.

Proprietary enriched topsoil/compost mix (Plant Mix/Topsoil by Daltons, Living Earth or other approved source) will be an accepted alternative to adding compost and mixing off-site.

#### 2.4 HERBICIDES

Post-emergence selective chemical to control broadleaf weeds and/or a non-selective chemical. Submit for review the proposed chemical and area of use.

#### 2.5 PLANT MIX

Site won / imported topsoil - Thoroughly mixed medium of 70% topsoil and 30% compost by volume.

Enriched topsoil/compost mix - Refer to SELECTION.

2.6 **BACKFILLING**  
 Site won / imported topsoil - Thoroughly mixed medium of 70% topsoil and 30% compost by volume.  
 Enriched topsoil/compost mix - Refer to SELECTION.

2.7 **IRRIGATION SYSTEM**  
 Refer to 8511 IRRIGATION SYSTEM.

**3. EXECUTION**

**Conditions**

3.1 **DELIVERY**  
 Only deliver material to the site that can be immediately placed in its final location from the delivery vehicle.

3.2 **SERVICES**  
 Check for services in the area of this work. Avoid interference or damage to them. Ensure that all new services are in place before commencing work.

3.3 **ENSURE**  
 Ensure that all areas are clean, ready to be worked and clear of any continuing work by others.

**Application**

3.4 **PREPARATION OF PLANTING AREAS**  
 Rotary hoe subbase to a minimum depth of 100mm to all planting areas. Replace substandard soil with 300mm of plant mix. Place in 100mm layers, lightly compacted by heeling or rolling and slightly mounded in the centre of the bed. Place 300mm of localised topsoil depth for the tree species.

Thoroughly spray planting areas which contain weed growth with a non-selective herbicide. Apply using protective clothing, in dry, still-air conditions to the spray manufacturer's requirements.

The planting is to occur on year 2, after establishment of the hydroseed on year 1. Spot spray with herbicide on year 2 prior planting.

3.5 **PREPARATION OF GRASS AREAS**  
 Replace substandard soil with 100mm of topsoil. Rotary hoe in two directions to a depth of 200mm and bring up to the required topsoil standard. Rake to a fine tilth, level and smooth with run-offs to drainage outlets. Apply selective herbicide.

Thoroughly spray grass areas which contain weed growth with a non-selective herbicide. Apply using protective clothing, in dry, still-air conditions to the spray manufacturer's requirements.

3.6 **TOPSOIL SPREADING**  
 Spread topsoil to the compacted depth as stated in [TNZ F/1](#) for the following areas;

Grassed areas	100mm
Parks and reserves grassed areas	N/A
Shrub and tree areas	300mm

Do not place and spread topsoil when the ground or topsoil are excessively wet or in a condition which would be detrimental to the work.

Carry out final grading of the top 100 - 150mm to ensure a true specified level and slope and to avoid hollows or other depressions where water may collect. Loosen unduly compacted areas (such as in traffic routes) by ripping or discing prior to final levelling.

The final grade shall allow for subsidence so that after settlement the levels shall be the final specified levels.

3.7 FINAL GRADING

When topsoil is reasonably dry and workable, grade it to smooth, flowing contours, with falls, for adequate drainage, removing all minor hollows and ridges.  
Crown all planter beds to provide a gently rounded profile.

**Completion**

3.8 CLEAN UP

All areas affected by the Contractor in undertaking the Contract Works including tracks constructed for access to the Working Area, shall be reinstated to pre-construction condition or better prior to Practical Completion.

Clean up and remove surplus soil, debris, unused materials and elements from the site prior to Practical Completion.

4. SELECTIONS

4.1 REMOVE

Remove debris, unused materials and elements from the site.

4.2 PLANT MIX

Plant Mix Type	Location	Application rate
70% topsoil 30% compost mix	All garden beds	Refer details
70% topsoil 30% compost mix	All grassed areas	Refer details
Plant Mix made of Site Won Topsoil		

## 8332 PLANTING

### 1. GENERAL

This section relates to Planting

It includes;

- Preparing ground conditions
- Supply of plants
- Planting trees, shrubs and groundcovers
- Applying soil, fertiliser and mulch
- Staking and generally securing trees

#### 1.1 RELATED WORK

Refer to 8310 LANDSCAPE SITE PREPARATION for excavation.

Refer to 8321 SOIL AND SOIL PREPARATION for topsoil.

#### 1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

Ltr	Planter Bag Size
N:P:K	The labelling of fertiliser based on the relative content of nitrogen (N), phosphorus (P), and potassium (K).
HDPE	High Density Polyethylene

#### Documents

#### 1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.

The following documents are specifically referred to in this section:

[NZS 4454](#) Composts, Soil Conditioners and Mulches

#### Warranties

#### 1.4 WARRANTY

Provide warranty for:

2 years: For all trees, shrubs and groundcovers

- Provide the warranty in the standard form in the general section 1237WA WARRANTY AGREEMENT.
- Commence the warranty from the date of practical completion of the contract works.

#### Requirements

#### 1.5 QUALIFICATIONS

Landscape contractors to be experienced, competent landscapers familiar with the materials and techniques specified.

#### 1.6 ACCEPTABLE PRODUCT SUPPLIERS

Where a product supplier is named in SELECTIONS, the product must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

#### 1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the products listed in this section. Note Paesia should be ordered as soon as possible to secure supplies. As the time of writing Fern Factor (Tel: 03-344 0297) held stock in these plants.

In exceptional supply shortages, plant substitution may be considered by the Contract Administrator. No substitution shall be made without the written approval of the Contract Administrator. Approved substitutions shall be of similar height and habit to those specified.

## Quality control and assurance

- 1.8 **INSPECTIONS**  
 Contract Administrator to inspect all plants before planting. They shall be inspected on delivery to site or at the contractor's depot in a single batch. Any plant not approved by the Contract Administrator shall be replaced.
- Plants to be first class specimens of nursery stock, true to name and type with well developed and well shaped trunk or stem and head. They shall be well hardened off to cope with the climatic conditions of the site, and free from pests and disease. The roots shall have a high percentage of fibrous roots that are just touching the edge of their containers. Plants with roots that are wound round their containers in circular fashion shall be rejected.  
 Plants shall be free from disfiguring knots, bark abrasions, wind, or freezing injury or other disfigurements and shall bear evidence of proper pruning.  
 Where several specimens of the same species are to be selected, evenness of shape and size is required within the size range specified.
- 1.9 **INSPECTIONS (PLANTING WORK)**  
 The Contractor shall notify the contract administrator for inspection of the works following:
- Planting area setting out
  - Completion of cultivation
  - Selection of Specimen trees materials
  - Delivery of plants
  - Plants setting out
  - Completion of planting
  - End of Defects Notification Period
- 1.10 **IDENTITY**  
 Plants to be good and true representatives of their species, cultivar or variety and each batch shall be labelled.
- 1.11 **LABELLING**  
 Attach legible labels to each plant delivered to site as a separate unit, or to each box, bundle or bale containing plants. The labels shall give the approved botanical name, size, age and quantity and other information required to identify the plant or plants.
- 1.12 **PLANTER BAGS**  
 UV stabilised black plastic planter bags (PB). Standard bag sizes range from PB3 to PB150. Plant sizes are specified by PB bag size (pint bag) up to PB150. Thereafter specimen trees may be specified by bag size, girth or height or a combination of these.
- 1.13 **HEALTH**  
 Ensure plants are free of pests, diseases, disorders, disfiguring knots damage or pruning injury.
- 1.14 **RESPONSIBILITY FOR CONTINUED SURVIVAL, HEALTH AND GROWTH**  
 The Contractor is responsible for the survival, good health and adequate growth of plants connected with this contract during transportation, storage or when planted on the site during the contract and maintenance period.
- Replace any plants which die, are significantly damaged, or which show signs of significant stress or declining health during the contract and maintenance period. Plants destroyed by vandalism by others or theft once planted are excluded from this condition.
- 1.15 **MYRTLE RUST**  
 For identification and treatment of myrtle rust and the growing, transporting and planting plants in the myrtle family (family Myrtaceae) follow the protocols and precautions of the Myrtle Rust NZ website guidelines: <https://www.myrtlerust.org.nz/>.
- Any suspected myrtle rust finds must be reported immediately to the Project Administrator.

Ensure:

- Plants from a commercial nursery have the appropriate completed copies of the NZPPI Nursery Management Declaration form and Plant Transport Declaration form.
- Treatment records are provided for non-commercially sourced plants

Any suspected myrtle rust finds must be reported immediately to the Project Administrator

### **Weed Control**

#### 1.16 WEED CONTROL

Use Chemical Herbicides with caution. They shall conform in every respect to the mixture required and be applied strictly in accordance with the manufacturers instructions. Do not spray herbicide in windy conditions. Make good any damage caused by excess spray drift.

All chemical herbicides used are to be non-toxic to human beings, birds and animals under normal use and only those chemical herbicides registered under the Pesticides Act may be used.

Where a translocated herbicide such as glyphosate is used around plants in leaf, an adequate guard must be used for all spraying.

Carefully calibrate all spraying equipment to prevent under or over dosing. Replace any plants damaged by misplaced herbicide. No herbicide containers, empty or full, are to be left on site at any time.

#### 1.17 FLAIL MOWING WEED

Where the height of existing weed to be sprayed is greater than 300mm, trim back to 100mm to encourage new susceptible growth and to facilitate even application of herbicide. Remove cuttings and dispose of off site.

#### 1.18 PRE-CULTIVATION HERBICIDE

The Contractor is responsible for advising all necessary bodies of their intention to apply herbicide and to obtain all permissions and certificates necessary for carrying out herbicide application. Take great care to avoid spray drift onto plants to be retained and any adjacent land or other property.

Pre-cultivation herbicide shall be glyphosate. Spray at least four weeks before cultivations are due, (during active growth of the target weeds), to the actively growing leafy weed, when no rain is expected for at least twelve hours. No cultivation or planting shall take place until the symptoms of herbicide effects are visible throughout the treated area, even if this takes longer than two weeks from application.

Second and further spraying visits may be necessary if all weed is not killed by the first. Weed species that are not susceptible to glyphosate shall be removed by other approved means.

Do not apply herbicide to water plants emerging from water and do not apply herbicide to plants in the flowing water of streams.

### **Cultivation**

#### 1.19 CULTIVATION OF PLANTING AREAS

Cultivate planting areas to a depth of 300mm to form a firm and friable tilth suitable for pit planting by hand. The ground is to be well scarified along contours with a tooth excavator bucket prior to topsoil placement.

During cultivations remove all weed including weed root off site.

Grade to smoothly flowing or even contours to the finished levels by hand or machine as necessary.

#### 1.20 STONE/DEBRIS PICKING

After cultivating remove all stones, grass sods and other debris larger than 75mm in any dimension and all roots in excess of 15mm diameter or 200mm length.

## 2. PRODUCTS

### Materials

#### 2.1 PLANT MATERIALS GENERAL

The Contractor shall supply plants and planting materials.

Plant materials shall mean plants of all descriptions required for the project in accordance with the plans and as specified.

Plants to be first class specimens of nursery stock, true to name and type with well developed and well shaped trunk or stem and head. They shall be well hardened off to cope with the climatic conditions of the site, and free from pests and disease.

The roots shall have a high percentage of fibrous roots that are just touching the edge of their containers. Plants with roots that are wound round their containers in circular fashion shall be rejected.

Plants shall be free from disfiguring knots, bark abrasions, wind, or freezing injury or other disfigurements and shall bear evidence of proper pruning.

Where several specimens of the same species are to be selected, evenness of shape and size is required within the size range specified.

#### 2.2 CONTAINER GROWN SHRUBS

Container grown shrubs to be strong well-rooted sturdy plants, without stakes or canes, with two or three main stems and a good bushy form. They must have been grown in the containers for at least 6 months over a summer period prior to planting out. The container shall be full of root but not root bound. Recently 'Containerised' or 'bagged up' plants will not be accepted.

Plants shall not have been grown in the container for longer than 12 months without having been potted on.

#### 2.3 TREES

Tree species to have a single well defined leader and a reasonably straight main stem which is sturdy enough to easily support the crown of the tree under the environmental and climatic conditions of the planting site.

#### 2.4 SPECIMEN TREES

The crowns of specimen trees to be vigorous, evenly developed, well branched and with a single well defined, sturdy leader.

#### 2.5 ROOT SYSTEMS

All plants to have good, vigorous, fibrous root systems in keeping with the normal rooting habit of the species. Root balls and container growing medium shall be free from perennial weed and soil borne plant diseases.

#### 2.6 BRANCH SYSTEMS

Plants to have well developed vigorous branch systems of normal habit, dimensions and density for a well grown nursery plant of their species. Plants which have 'leggy', narrow or thin branch systems will not be accepted.

#### 2.7 HARDINESS

Plants to be fully hardy having been acclimatized in the nursery to sun, exposure and cold. Plants which have not been hardened off, drawn plants with soft growth or plants requiring additional support to that specified will not be accepted.

#### 2.8 DRYING OUT

Plants which have dried out or show signs of desiccation or wilting will not be accepted.

#### 2.9 SIZES

For acceptable sizes of plants refer to SELECTIONS. Plants which are larger than the maximum size may be accepted at the discretion of the Contract Administrator who may

require oversize plants to be pruned. Where plants have been recently "bagged on" from a smaller nursery grade they will be deemed to only fulfil the size requirements of the smaller grade.

All plants of the same species to be of similar height and stature ( $\pm 10\%$ ). Plants supplied later in the contract to replace defective plants are to match the current size of those previously planted.

### Components

- 2.10 **IMPORTED TOPSOIL**  
Imported topsoil shall meet the requirements specified in 8321 'SOIL AND SOIL PREPARATION FOR PLANTING'.
- 2.11 **TOPSOIL FROM STOCKPILE**  
Topsoil from Stockpile shall meet the requirements specified in 8321 'SOIL AND SOIL PREPARATION FOR PLANTING'.
- 2.12 **ORGANIC MULCH**  
For specimen trees use organic mulch: Brush chippings and leaf litter (Vegetative material processed through a chipper to pieces not larger than 75 x 50 x 15mm).  
Material permitted:  
Pine bark: From mature trees, graded in size from 50mm x 50mm x 25mm to 25mm x 15mm x 15mm, free from wood slivers.
- For massed planting use Biodegradable 450x450mm EcoJute or approved equal Mulch Mats to be installed around each plant. Secure into place with biodegradable stakes such as Biopins or approved equal. Available from Advance Landscape Systems [www.advancelandscape.co.nz](http://www.advancelandscape.co.nz)
- 2.13 **COMPOST**  
To [NZS 4454](#).  
Compost shall be proprietary top-quality compost produced in accordance with the Best Practice Guidelines contained in the New Zealand Standard for Composts, Soil Conditioners and Mulches (NZS 4454:2005). Provide well rotted vegetative material or animal manure, free from harmful chemicals, grass and weed growth.
- 2.14 **TOPSOIL FROM STOCKPILE**  
Top quality screened topsoil minimum depth 200mm excluding soil conditioner to all planters or planted areas and a localised 300mm screened topsoil for tree species. Free of weeds and stones. Screened site topsoil may be used.
- 2.15 **FERTILISER FOR PLANTING**  
Grotab or approved equal slow release fertilizer to be installed in bottom of planting hole. One tab per plant.
- 2.16 **FOREST DUFF**  
Contractor to collect organic leaf litter and humus material from local mature stand of Beech forest. Contactor is responsible for obtaining appropriate permissions to collect material and it shall be sourced from multiple areas to avoid over depletion in one area. Avoid collecting from areas with nearby weed seed sources. Gather approximately 70 litres of forest duff and apply a handful (about ½ cup) at the base of half the beech trees. Landscape Architect to instruct contractor on which areas are to receive the duff.
- 2.17 **BIODEGRADABLE MATTING**  
Place biodegradable matting secured with pins above topsoil in areas where grade is steeper than 1:2.5 prior to hydroseeding.



### 3. EXECUTION

#### Conditions

#### 3.1 DELIVERY, STORAGE AND HANDLING

Take delivery of materials and goods and store on site and protect from damage. Cover plants during transportation. Plant roots shall be protected at all times from sun or drying winds. Plants that cannot be planted immediately on delivery shall be kept in the shade, well protected, with soil well watered. If shoots or roots suffer slight damage they shall be carefully pruned and treated with an approved fungicidal sealant. Replace damaged plants. Remove pots and other protective materials immediately prior to planting. Do not leave roots uncovered at any time.

#### 3.2 SERVICES

The Contractor shall check for underground services prior to excavation. Any damage to services shall be repaired at the Contractor's expense.

#### 3.3 APPROVAL

Do not start preparation or planting until the setting out has been inspected and approved by the Contract Administrator.

#### 3.4 PRE-INSTALLATION REQUIREMENTS

Prepare all planting areas indicated on the drawings including clearing out, controlling weeds, blanket or spot spraying 1m square areas for each plant three weeks before planting. Spot spraying for second years infill planting to be completed with caution. Contactor is responsible for any damage to adjacent plants due to spray drift.

#### 3.5 TIMING OF OPERATIONS

Work shall only be undertaken when the weather is suitable, i.e. mild, dull and moist, and when the ground is moist and workable. All planting operations shall be suspended during periods of severe frosts, water logging, drought or persistent drying winds. Planting season may only occur between 1 April and 15 October. Hydroseed of disturbed areas to occur on the first planting season. Planting of trees and shrubs to occur on the second planting season. Refer to notes on the landscape plans: BM19206\_503 and 504 for additional information.

#### 3.6 CLEAN OUT PLANTER AREAS

Remove weeds, unwanted plants, stumps, rubbish, and excess earth.

#### 3.7 TOPSOIL

Supply and install topsoil to planting areas to achieve finished surface levels, and to ensure specified topsoil depths are achieved. Remove existing earth where necessary to accommodate topsoil and soil conditioner in planters to achieve finished surface levels. Topsoil shall meet the requirements specified in 8321 'SOIL AND SOIL PREPARATION FOR PLANTING'.

#### 3.8 SUBBASE CULTIVATION

Following clearing and spraying, areas to be planted shall be cultivated to a depth of 100mm. Cultivation shall be by mechanical means outside root zones of trees to be retained. Mechanical means shall include ripping with the tines 300mm apart attached to a bulldozer or excavator, or giant disking, or rotary hoeing.

Minor grading shall be carried out to ensure an even surface that will not hold water.

Root material or other debris exposed during cultivation shall be removed off site.

#### 3.9 ACCEPTANCE OF SOIL CONDITIONS

The Contractor shall assess the condition of the existing topsoil on-site and where they consider that the existing topsoil is deficient, or waterlogged, they shall advise the Contract Administrator to agree the soil condition and whether any remedial measures will be adopted.

In the event that the Contractor fails to advise the Contract Administrator of soil problems and plants subsequently die due to topsoil conditions or any other cause, the Contractor shall be responsible for the replacement of those plants.

### 3.10 SETTING OUT

Planting positions shall be pegged/laid out, in accordance with the planting plan.

Tree positions shall be pegged prior to planting and the final positions approved prior to the holes being dug.

In areas of block planting, plants shall be spaced evenly so that when established they will completely fill the areas indicated as precisely as possible. The area to be filled by each species shall first be defined by plants spaced around the perimeter. The remaining plants shall then be used to fill the centre of the area in an informal manner avoiding straight lines and regular geometric patterns.

The Contractor shall arrange for the Contract Administrator to inspect the setting out. The Contract Administrator may require minor refinement to the design with adjustments to lines, levels and grouping of trees/shrubs locally as the planting proceeds requiring the Contractor's co-operation and agreement.

The Contractor shall not commence planting until the setting out has been inspected and approved. If work is carried out without the prior approval, realignment and re-positioning may be to the contractor's cost.

### 3.11 MARKING & DIMENSIONS

Set out the outlines of seeding, turfing and planting areas. Use sand, paint or short canes close enough together to accurately define the shapes on the ground.

#### **Installation/application**

### 3.12 PLANT LAYOUT

Place and plant at the same density throughout that species area, group or drift. Do not plant in regular rows unless this is shown on the drawings. Pay particular attention to the distribution of plants around the perimeter of areas to ensure they are evenly spaced and that the front row of plants follows the shape of the area.

### 3.13 CURVED EDGES

Achieve a smooth and even curve when setting out curved edges and outlines of planting next to grass or hard surfaces. The first row of plants in the planting area is to exactly follow this curve at a constant distance behind it.

### 3.14 MAINTAINING MARKINGS

Keep all setting out visible until planting has been finished.

### 3.15 PIT SIZE

Dig the planting pit large enough to allow the root-ball of plants to be accommodated without distortion or, in the case of bare root/open ground plants, for their roots to be fully spread. Do not distort or bend roots to fit into the planting pit.

### 3.16 PRUNING BEFORE PLANTING

Before planting, all shrub material shall be pruned by skilled staff as necessary to conform with the best horticultural practice appropriate to the type of plant.

Pruning shall remove all injured twigs and branches and shall be such as to compensate for any loss of roots during planting operations and shall be carried out without any bruising or tearing of the bark.

All pruning waste shall be removed from site.

- 3.17 **PLANTING**  
 All planting shall be performed by experienced workmen in accordance with the recognised best horticultural practice and under the supervision of the contractor's skilled foreman.
- All plants not requiring tree pits shall be planted centrally into holes so that the soil level after settlement, shall match the original soil mark on the stem of the plant. The bottom of each hole shall be pierced to a depth of 300mm with the tines of a fork or similar implement to ensure root penetration and free drainage. The sides of the pit pits dug by rotary augers, shall be roughened to remove and glazing of the surface.
- The base of each hole for plants less than 25Ltr shall be provided with a 25mm layer of proprietary compost.
- Fertiliser shall be applied to the base of the dug hole in accordance with 3.26 BACKFILL FERTILISER.
- For selected areas of Beech trees incorporate approx. one handful of forest duff into planting hole to inoculate planting area with beneficial mycorrhizae.
- Container grown plants shall have the container removed immediately prior to planting. Care shall be taken to ensure that the root ball is not disturbed during container removal or planting. The maximum period roots shall be exposed and un-watered, shall be 1 hour.
- Plants shall be set in their final positions with main stem vertical and at such a depth that the soil, when firmed down is at the same height as the nursery earth marks on the stem or the container soil level. Loose roots shall be spread out in a natural fashion, the soil being carefully placed under and amongst them to fill all voids and firmed in.
- Specimen trees and advanced stock shall be orientated when planted, so that the weathered face of the trunk faces north.
- Any major roots that become accidentally broken off or frayed shall be cleanly cut off from the plant. Damaged roots over 25mm diameter on advanced nursery stock and specimen trees shall be cut back to sound growth and treated with fungicidal sealant.
- 3.18 **BACKFILL**  
 Back fill with finely broken down topsoil free from clay lumps and large clods and thoroughly mixed with slow release planting fertiliser in accordance with 3.26 BACKFILL FERTILISER. Spreading of planting fertiliser on the soil surface after planting will not be accepted.
- 3.19 **TWIG PULL TEST**  
 It should not be possible to lift or disturb the roots of a properly firmed plant by pulling on leaves or un-lignified shoots.
- 3.20 **HEELING IN**  
 Heel the soil firmly after planting and thoroughly water.
- 3.21 **BACKFILL FERTILISER**  
 Place one Grotab slow release fertilizer tab in bottom of planting hole per plant.
- 3.22 **CONDITIONER**  
 Not applicable
- 3.23 **PRUNING**  
 After planting, all plants with damaged branches unless rejected, shall be carefully pruned back to healthy wood. Operations are to be carried out using sharp clean implements to give a clean sloping cut with one flat face. Ragged edges of bark or wood are to be trimmed with a sharp knife.
- All pruning waste shall be removed from site.

At the end of the maintenance period, all plant material shall be checked for any dead wood, broken or damaged branches which shall be pruned and removed from the plant.

### 3.24 WATER GENERALLY

The Contractor shall be responsible to provide water supply for watering (or water carts if necessary) and to water the installed plants to the level required for season the planting is programmed to be installed. Additional watering will be required during the drier seasons.

Attention must be paid to watering during and after planting to ensure successful establishment. Notwithstanding any prevailing restrictions by the local authority on the use of water for watering any plants, the Contractor shall be deemed totally responsible for making any special arrangements which may be necessary to ensure regular and adequate watering of trees and shrubs to ensure successful establishment.

In the interests of good horticultural practice watering shall be sufficient to give 300mm minimum depth penetration and not just surface dampening. The Contractor shall bring to the site sufficient water carts, hoses and sprinklers to provide an adequate water supply to the plant material

The irrigation system shall be installed by an approved appointed irrigation sub-contractor. The Contractor shall inspect the completed installation and ensure that all plants will be adequately irrigated by this system. The non-performance of the irrigation system shall not relieve the Contractor of his obligations to ensure the survival of the plants installed. Should the Contractor consider that the irrigation system does not provide adequate irrigation, the Contractor shall so advise the Contract Administrator of the deficiency. Until such time as the irrigation system is changed, the Contractor shall water any plants to ensure the survival of those plants. Such extra watering shall be at the Contractor's expense.

Planting unable to be completed before 15th October shall require additional watering visits during the establishment period.

The contractor to ensure;

- **Prior to Planting:** All plants shall be thoroughly watered a few hours prior to planting.
- **After Planting:** At the time of planting all trees and shrubs are to be copiously watered in such a way that the entire tree pit or shrub station is moistened to field capacity to encourage settlement. The Contractor shall be responsible for watering all plants as required to ensure their survival.
- **Drought Conditions:** Lack of availability of water shall not release the Contractor from his obligation to replace all dead or dying plants at the end of the first season of growth after planting. The price submitted shall allow for adequate watering and, when not directed, the Contract Administrator shall not need to remind the Contractor of his obligation during periods of drought. If water supply is likely to be restricted, inform the Contract Administrator without delay and ascertain availability and cost of second class water from a sewage works or other approved source. If during a drought some planting has not been carried out, planting may be delayed on the instruction of the Contract Administrator.

### 3.25 PLANTING BED EDGING

All planting beds located adjacent to lawn (where a mowing strip has not been specified) shall have a 100mm deep 'V cut' edging formed around the perimeter of the beds to act as a mulch containment and to provide a neat border with the adjacent lawn.

### 3.26 MULCHING

Install Mulch Mat and peg into place as per suppliers recommendations.

### 3.27 WEED CONTROL

During the Contract Period, the Contractor shall control weeds, which affect the establishment and growth of the plants installed under the contract of existing in areas to be maintained by the Contractor.

Prior to release of the Certificate of Practical Completion, the Contractor shall remove all weeds within landscaped areas. Removal shall be deemed to include the killing of the weed with approved herbicide or removal of the root system.

All weed material shall be removed from the landscape areas and dumped off site according to local municipal regulations.

### 3.28 PEST CONTROL

If in the opinion of the Contractor, pests are likely to cause damage to the plants The Contractor shall be responsible for notifying the Contract Administrator of any damage to the plants by birds, possums or rabbits. Lack of notification by the Contractor may result in the Contractor being responsible for damage caused by pests.

The Contract Administrator may instruct the Contractor to take steps to control the pests to reduce the damage caused by pests by implementing any of the following measures as a Variation;

- Install wire staples around the root balls of the plants,
- Install bird proof netting,
- Install additional stakes and ties to the plants,
- Obtain a permit to capture and relocate birds,
- Obtain a permit to shoot birds,
- Apply Pindone pellets to control rabbits and possums according to supplier specifications.

### 3.29 DEFECTS

All defects shall be repaired / replaced at the Contractor's expense.

Defects for which the Contractor is liable prior to issue of Practical Completion include the following;

- Defective plants shall be deemed to be those plants, which in the opinion of the Contract Administrator are dead or dying,
- Vandalised or broken plants or stakes,
- Gaps in hydromulch erosion control fabric coverage of areas of application.
- Surface erosion or soil washout

### **Completion**

### 3.30 CONDITION ON ACCEPTANCE

The Contractor shall ensure that any non-conformance with these specifications will be remedied prior to application for issue of the Certificate of Practical Completion.

### 3.31 ROUTINE CLEANING

Routine cleaning shall be carried out during Defects Notification Period after planting. Carry out routine trade cleaning of this part of the work including periodic removal of all debris, unused materials and elements from the site.

### 3.32 LOSS, DAMAGE OR THEFT OF PLANTS

All plants shall be maintained during Defects Notification Period after planting.

All loss or damage arising from any reason including theft or malicious damage prior to Practical Completion, shall be made good by the Contractor at his own expense.

Loss or damage of plants 15Ltr and larger, or greater than 10 % of smaller plants (other than to create a bare patch) for any reason other than theft or vandalism, during the Defects Notification period, shall be made good by the Contractor at it's own expense.

A loss of 10% of plants less than (an not including) 15Ltr is deemed to be an acceptable loss, provided the lost plants are evenly spread over the whole of the planted area and are not noticeable as a bare patch. In the event that loss occurs over a confined area, the Contractor shall replace such plants at it's cost. The Contract Administrator shall have sole discretion to determine if the plants are evenly spread or in a confined area.

Any plants stolen or vandalised after Practical Completion shall be notified in writing to the Contract Administrator who may issue an instruction to replace the plants at agreed rates.

Those plants lost during the Defects Notification Period and not notified to the Contract Administrator as being vandalised, shall be assumed to have died as a result of planting operations and shall be replaced at the Contractor's expense.

3.33 **RUBBISH**  
The Contractor shall remove all rubbish, excess stakes, planter bags and undesirable debris, resulting from planting operations from the site, and make good any compaction marks or other damage resulting from the works.

3.34 **DEFECTIVE OR DAMAGED WORK**  
All plants shall be maintained for two full growing seasons after planting. Replace damaged or marked plants during this period.

3.35 **PROTECTION**  
Provide the following temporary protection of the finished work:  
Not applicable

**Commissioning**

3.36 **FINAL INSPECTION AND TESTING**  
Contract Administrator and Contractor representative to inspect the site at practical completion and completion of warranty period.

**4. SELECTIONS**

**Materials**

4.1 **PLANTING SCHEDULE**  
Refer to Boffa Miskell drawing BM19206\_501 - 502 and plant schedules

**Components**

Plastic free fully biodegradable erosion control matting (such as "EcoJute Mulch Mat" or 'FuturFiber Hemp Rolls) & Stakes mats to be applied.

4.5 **FERTILISER**

<b>Fertiliser type</b>	<b>Location</b>	<b>Application rate</b>
Grotab	All plants	Refer EXECUTION

4.6 **COMPOST**

<b>Compost type</b>	<b>Location</b>	<b>Application rate</b>
At direction of soil analysis		Refer EXECUTION

## 8333 TURF LAYING AND LAWN SEEDING

### 1. GENERAL

This section relates to the Hydroseeding of disturbed areas of the site with grass seed. It includes, fertilizer and initial mowing

#### 1.1 RELATED WORK

Refer to 8310 for Landscape Site Preparation  
Refer to 8321 for Soil and Soil Preparation for Planting

#### 1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS.  
This specification is to be reviewed by the hydro-seeding specialist and Contract Administrator.

#### Warranties

#### 1.3 WARRANTY

Provide warranty for:  
2 years: For Hydroseeded Grass

- Provide the warranty in the standard form in the general section.
- Commence the warranty from the date of practical completion of the contract works.

#### Requirements

#### 1.4 QUALIFICATIONS

Workers to be experienced, competent trades people familiar with the materials and hydroseeding techniques specified.

#### 1.5 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

#### 1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

#### 1.7 SAMPLES

Not applicable.

#### Quality control and assurance

#### 1.8 INSPECTIONS

Contract Administrator to inspect the works following:

- completion of respreading topsoil prior to final levelling and hydroseeding
- completion of grass establishment

## 2. PRODUCTS

### Materials - Hydroseed composition

### Materials - Seed

#### 2.1 SEED MIX

The seed mix specification:

- All ryegrasses shall contain a live endophyte content of no less than 80%, have 98% purity and 90% germination.
- The Contractor shall provide seed certificates to the engineer confirming purity, germination and endophyte information if requested. These certificates shall be less than

12 months old.  
- Proportions of mix shall be by weight.

Seed mix shall contain:

- 70% Winter active ryegrass (a mixture of up to 3 cultivars may be used such as Colosseum, Arena and Tambour)
- 20% Creeping red fescue
- 10% Browntop
- Applied at 40g /m<sup>2</sup>

The seed mix shall be reviewed and confirmed by the hydro-seeding specialist consultant following soil testing and approved by the Contract Administrator before commencing the work. The mix shall take into account the geology of the area and be designed to build root mass but not cause water retention due to heavy leaf or top cover.

All seed shall be certified seed of the most recent crop available. All seed label analysis data shall comply with trade standards. The germination capacity of each constituent of the mixture should be not less than 80%, and the purity of the mixture not less than 90%. Ensure seed is free of noxious weeds. Other crop not to exceed 1%. Weed seed shall not exceed 0.05%.

## 2.2 HYDROSEED COMPOSITION

The hydro-seed mix of grass seed or native plants and admixtures (admixture – supplementary material required in seed spraying) shall be specified by a turf grass or green engineering specialist.

Proposed hydro-seed mix and rates shall be specified by a hydro-seeding specialist (in line with Manufacturers Specifications) then submitted to the Landscape Architect for approval prior to application. On approval the proposed mix shall be applied at the approved proportions and rates to the disturbed area of works as identified in engineers plans.

Ensure seed is free of noxious weeds. Other crop not to exceed 1%. Weed seed shall not exceed 0.05%.

## OTHER PRODUCTS

### 2.3 FERTILISER

Fertiliser for grass seed mix shall be proprietary fertiliser mix of nutrients approved by the hydro-seeding specialist, incorporated at the manufacturer's rates.

Fertiliser shall be incorporated into the hydro-seed mix in sufficient proportions that will give the specified rate and applied evenly to the exposed ground, sufficient to ensure that the plants shall survive.

A second application of fertiliser may be necessary during the maintenance period if the grass starts to yellow due to lack of nitrogen. How this fertiliser is applied may be subject to access and on site conditions, therefore the Contractor shall specify the application method in consultation with the hydro-seeding specialist.

If determined that there is insufficient organic matter in the existing soil (as outlined in the soil testing methodology), an application of suitable nutrient material is necessary, eg. ProGanics Biotic Soil Media (BSM). To be agreed by the hydroseeding specialist and Contract Administrator

### 2.4 LIME

Where the Contractor considers that the topsoil is poor quality, Agricultural Lime may be applied to lawn areas at the rate of 50 gm/m<sup>2</sup> as a Variation.

## 3. EXECUTION



## Conditions

- 3.1 **PRE-INSTALLATION REQUIREMENTS -SEEDING**  
On cut batters, the exposed ground shall be prepared as specified in Section 8310 of this specification unless otherwise specified by the hydro-seeding specialist.

The contractor shall prepare a method statement and provide a performance specification for typical substrates and scarification prior to any hydro seeding taking place. All weeds shall be sprayed with Roundup or similar approved herbicide, strictly according to the manufacturer's instructions, at least 14 days before cultivation.

## Installation/application

- 3.2 **TIMING**  
Successful establishment of grass seed is dependent on sowing the seed in seasonal conditions conducive to seed germination and to establish the sward. Hydro-seeding operations shall be programmed with earthworks to coincide with the August- mid-October planting season where the soil moisture is sufficient to establish grass. Where the hydro-seeding is to establish protection to the exposed ground and limit erosion, the seed mix shall be viable over a long period and capable of germinating when there are favourable conditions.

Watering may be necessary during unseasonal drought periods to ensure vigorous establishment. The watering of Grassed surfaces shall be undertaken using fine mist irrigation, and refrain from directed hose application, so as to not wash seed away, dislodge new roots of grass blades, or peel off the surface.

- 3.3 **WEED CONTROL**  
Prior to placement, existing grass or vegetation shall be mechanically/physically removed in entirety or sprayed as specified in the Site Preparation Section C of this Specification; at least 14 days prior earthworks.

## Workmanship

- 3.4 **CULTIVATION**  
Where slopes allow, the finished ground shall be lightly cultivated to provide a suitable tilth for seed placement and grass growth. Weeds, root material, stones, rubble and other debris exposed during cultivation shall be removed and disposed off-site.

Cultivation shall be by mechanical means with rotary hoes or tines of the digger.

- 3.5 **SEED SPRAYING**  
On completion of the ground preparation, the prepared surface shall have an even application of the seed and admixture mix in two directions to give an even, consistent cover, using approved hydro-spraying machines with fan-type nozzle (50 degree tip), and as per the manufacturer's installation instructions and recommendations.

Application rates are dependent on slope gradient; these are to be confirmed with hydro-seeding specialist. Contractor shall provide a method statement prior to application.

Seeding operations shall be programmed to suit seasonal conditions as outlined in 3.2 Timing above.

- 3.6 **FENCING**  
Install "Pigs Tails" and warning tape fencing around the perimeter of the sown area to prevent damage from unauthorised access. Fencing to be removed once the grass is well established or under instruction of the contract administrator.

- 3.7 **WEED CONTROL**  
Weeds are defined as any grass or broadleaf plant not included in the seed mix (or stolons) applied as part of the grassed surface sowing and establishment. Control weeds, which affect the establishment of the grassed surface during the establishment period.

Spray weeds with spot spray or selective herbicide applied to the manufacturers specifications.

Over sown areas rendered with inadequate grass plants following weed control, to re-establish the specified grassed surface species. Apply a fine layer of topsoil or straw mulch over these areas to promote germination and protect the grass.

Prior to Practical Completion, remove all weeds within grassed areas and re-sow as necessary.

### 3.8 ESTABLISHMENT

The Contractor is responsible to ensure that hydro-seed mix germinates and grows to produce the grassed surface or native species mix that is acceptable to the Landscape Architect.

Any areas not meeting the approval of the Landscape Architect shall be re-hydro-seeded, have weeds removed, or have fertiliser applied, or any combination or other measures applied at the Contractor's expense to produce a grassed surface acceptable. (Refer the 'Tolerance' clause below for acceptance criteria)

Where slopes allow the Contractor shall cut the grass when it has reached 100-200mm tall. Cutting height shall be no less than 50mm on the initial cut, to be undertaken in dry conditions with or brush cutters, hedge clippers or where slope permits sharp mower blades. The Contractor shall cut the grass for the second time with a cutting height no less than 75mm at which time the Landscape Architect shall inspect the grass to approve the grassed surface.

Where ground slopes do not allow mowing of grass the Contractor shall maintain the areas to establish to the acceptable level of coverage (80% canopy coverage of the ground) by the end of the Defects Liability and Maintenance Period.

### 3.9 FAILURE TO ESTABLISH A SUCCESSFUL GRASS SURFACE

Make good the grass areas that fail to establish successfully.

### 3.10 TOLERANCES

Grassed surfaces shall be deemed in an acceptable condition when;

- Have fully established grass with vigorous growth
- No ponding of surface water occurs
- Grass covers 95% of the grassed areas. No single area of exposed soil shall be greater than 100mm diameter in any one location
- Broad leaved weeds less than 10% of cover visible by eye through 360 degrees from any location are limited to 4 plants.
- Cutting has been undertaken in accordance with this specification.

## COMPLETION

### 3.11 COMPLETION

The hydro-seeded areas shall not be considered complete until the grass meets the acceptance tolerances detailed above after a 6 month period.

On completion of the work, the Contractor shall ensure all surfaces affected by the works are reinstated to pre- construction condition (e.g. topsoil to be swept off hardstand surfaces) unless specified otherwise.

The Contractor shall remove all rubbish and spoil from the site on completion of the works, leaving the site in a clean and tidy condition.

### 3.12 MAINTENANCE

During the maintenance period Contractor to cut grass around plants only as required to prevent competition from seeded grasses. Cut grass can be left in place around each plant as added mulch.

## 4. SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

## 8380S SOFT LANDSCAPE MAINTENANCE

### 1. GENERAL

This section relates to the maintenance of Soft Landscape Works until final completion (as defined in the Conditions of Contract)

It includes:

- Trees
- Plants
- Grass
- Mulch
- Planting ancillaries

#### 1.1 ABBREVIATIONS AND DEFINITIONS

The following abbreviations apply specifically to this section:

- |     |   |
|-----|---|
| NPK | The labelling of fertiliser based on the relative content of Nitrogen (N), Phosphorus (P), and Potassium (K). |
| ESD | Environmentally Sustainable Design.   |

#### 1.2 REMEDY OF DEFECTS

The Contractor shall remedy all defects relating to the soft landscaping works prior to issue of the Final Completion Certificate.

Defects relating to soft landscaping works include the replacement of dead or dying plants. The Contractor's responsibility includes the need to water, control pests and diseases to maintain the plants to a sufficient degree to ensure the plantings establish and grow.

Defect notification period is outline in the conditions of contract.

#### 1.3 MAINTENANCE

In addition to the remedy of defects, the Contractor shall undertake maintenance of the landscape works regularly throughout the Defects Notification Period. The degree required and frequency are detailed in these specifications.

The objective of maintenance is to encourage the healthy establishment of soft works to a point where the Principal can be assured that there are no inherent defects in the planting stock.

#### 1.4 AREA TO BE MAINTAINED

The area to be maintained shall be the whole site as defined on the construction drawings.

#### Requirements

#### 1.5 QUALIFICATIONS

Workers to be experienced, competent landscape people familiar with the materials and techniques specified.

#### 1.6 HEALTH AND SAFETY

Repair of defects and maintenance of the works will be undertaken while the site is accessible to the public. The Contractor shall undertake all works to avoid potential harm and minimise inconvenience to the Client's staff and the public and avoid harm to the Contractor's staff.

All works will be undertaken in accordance with the requirements of the Health and Safety at Work Act.

Where the public or client's staff are likely to be at risk of harm or contact with paint, chemicals, excessive noise or dust, the Contractor shall isolate the works area with barriers, warning tape or signs (or a combination of these measures) to a degree commensurate with the hazards and to the approval of the Contract Administrator.

Where the works will affect access by vehicles or pedestrians, the Contractor shall supply all materials, labour and equipment to undertake appropriate measures to warn, divert or provide alternative access as necessary, and to the approval of the Contract

Administrator. Blocking of access will not be permitted unless other alternative access is impracticable and is expressly approved by the Contract Administrator.

Barriers, warning tape, signs and works to provide alternative access shall be removed and any damage caused by those measures made good within 48 hours of the completion of the remedial or maintenance works.

- 1.7 **PERIOD**  
Undertake maintenance of the landscaping works regularly for:  
2 years From Practical completion of the Landscape Work.

The degree required and frequency is detailed in these specifications.

- 1.8 **RESPONSIVE MAINTENANCE**  
In addition to the routine maintenance of soft landscaping programmed above, responsive monitoring and repairs as necessary should be carried out as follows:  
- Following a storm event,  
- Following prolonged dry or wet periods.

### **Frequency**

- 1.9 **DEFECTS**  
Defects of soft landscaping shall be remedied within a reasonable time of being notified by the Contract Administrator of the defect and shall be completed no longer than one month after notification and prior to release of the Final Completion Certificate.

Watering, pest and disease control associated with defects liability of soft landscaping shall be at a frequency proposed by the Contractor and agreed by the Contract Administrator.

The Contractor shall submit the proposed maintenance regime to the Contract Administrator for approval. If in the opinion of the Contract Administrator, that the frequency of maintenance visits proposed is inadequate, the Contractor shall amend the maintenance regime to the satisfaction of the Contract Administrator. The approval of the maintenance regime, by the Contract Administrator, shall not relieve the Contractor of its liabilities with respect to defects, in the event that the soft landscaping is found defective.

- 1.10 **MAINTENANCE SCHEDULE**  
Maintenance shall be undertaken in accordance with the schedules. The final maintenance work in each task shall be completed immediately prior to release of the Final Completion Certificate.

### **Quality control and assurance**

- 1.11 **NOTIFICATION OF MAINTENANCE VISITS**  
The Contractor shall supply to the Contract Administrator for their approval, a maintenance schedule detail the dates of proposed visits and work to be undertaken. In addition, the Contractor shall notify the Contract Administrator immediately prior those visits are made.

## **2. EXECUTION**

### **Soft Landscape - Defects**

- 2.1 **PLANTING DEFECTS**  
Any material or plant that is found to be defective (e.g. does not show leaf or make adequate growth) during the Defects Notification Period from any cause other than vandalism, shall be replaced at the Contractor's expense.

Planting shall be done to a standard that is fit for purpose. If poor growth of plants is attributed to the ground preparation or any associated horticultural operation that is within the control of the Contractor, then the Contractor shall be liable for plant replacement and any other associated costs.

Where the Contractor does not advise the Contract Administrator within one week of becoming aware, that vandalism of plants has taken place, any damage or plant die off shall be deemed to be a defect.

Broken or damaged stakes, ties and ground anchors shall be replaced as soon as practicable. Damage to the plants resulting from delays in replacing plant supports shall be made good at the Contractors expense. Refer to the clause relating to vandalism at the end of this Specification.

The Contractor is responsible to ensure that plants installed, survive and grow. Water is essential to achieve this. As part of the Contractor's work relating to defects liability, the Contractor shall water the plants installed as frequently as necessary to achieve this obligation.

The Contractor shall inspect the soft landscape works no less than monthly to confirm the health of the plants, existence of pests or diseases or vandalism. The Contractor shall control pests, diseases or repair vandalism as directed by the Contract Administrator, as a Variation.

## 2.2 HYDROSEEDDED GRASSED AREA DEFECTS

Grassed areas shall be deemed to be defective where they do not meet the following acceptance criteria;

- Be fully established with vigorous growth,
- No ponding of surface water occurs,
- Grass covers 95% of the grassed areas,
- Single areas of exposed soil are less than 100mm diameter in any one location,
- Broad leafed weeds visible by eye through 360 degrees from any location, are limited to 4 weed plants,
- Grass cutting has been undertaken in accordance with this specification,

Grassed areas not meeting this specification shall be returned to seedbed condition and replanted with the appropriate seed mixture until satisfactory cover is established, or take remedial action as agreed with the Contract Administrator.

## 2.3 REPLACEMENT PLANTS

Plants used to replace defective plants, shall be the same species/cultivar and similar size to those originally specified, supplied and approved, unless otherwise agreed between the Contract Administrator and the Contractor. Contractor shall be responsible for any preparatory and other work necessary to enable planting to be properly carried out including the removal and disposal of dead plants and materials.

Dead or unhealthy plants shall be replaced within 1 month of the Contractor being aware of this condition of the plants. Any plant which is found to be defective (eg. does not show leaf or make adequate growth) from any cause other than vandalism (See below), shall be deemed to have deteriorated through poor installation and/or poor maintenance and shall be replaced by the Contractor, at their expense.

The Contractor shall be responsible to ensure replacement plants survive and grow in accordance with these Contract Specifications.

Replacement of plants, which are damaged through vandalism, may be replaced as a variation at the discretion of the Contract Administrator.

## SOFT LANDSCAPE - MAINTENANCE

### 2.4 GENERAL

Maintenance shall include watering, weed removal, plant trimming, cultivation, insect and disease control, checking stakes and ties, pruning and other accepted horticultural operations to ensure normal and healthy plant establishment and growth and generally keeping the area neat the tidy.

**2.5 WATERING (AUTOMATIC IRRIGATION SYSTEM)**

Where planter beds and trees are watered by an automatic irrigation system, operate and manage the system to ensure that all beds receive adequate water at all times. Adjust the watering periods as necessary to accommodate seasonal fluctuations.

Additional to automatic irrigation, carry out watering by hand held hoses at regular intervals as necessary during dry conditions to ensure successful plant establishment and growth.

Water shall be applied until the top 200mm of topsoil around each plant is saturated.

Do not water during the hot part of the day. Watering nozzles shall be high efficiency fine rose or sprinkler heads or irrigation emitters to prevent damage to growth areas of the plants.

**2.6 WEED CONTROL**

The Contractor shall remove and control weeds regularly throughout the period of maintenance. Removal of weeds at the end of the Defects Notification/Maintenance Period is not acceptable.

All cultivated planted areas shall be kept weed free to the extent that perennial weed species are eradicated and annual weed species are well controlled. Care shall be taken to avoid disturbances of the shrub roots and excessive compaction of the bed surface. The Contractor shall remove all arisings, litter and other debris and dispose off site at the end of each day.

Additional weed control may be required in spring when the ground warms and seeds in the soil germinate.

Weeds shall be removed by hand removal where possible. Spaying of weeds with an approved organic herbicide may be required for persistent weeds, however the visible portion of the weed shall be removed as soon as the weed has died. Herbicide application shall be spot sprayed using a protective spray nozzle/cone.

Inadequate mulch depth may allow excessive weed growth, therefore mulch shall be kept topped up to the original specified depth.

**2.7 NOXIOUS PESTS AND DISEASES**

The Contractor shall monitor the works for insect and plant disease problems, shall identify the problem and apply appropriate remedy by accepted horticultural practices including chemical or biological methods.

The Contractor is responsible to take all suitable precautions for the safe handling and application of herbicides, fungicides and insecticides and shall use these strictly in accordance with the manufacturer's specifications. In all cases, sprays shall be applied on windless days. Public shall be advised by signage that spraying is occurring and shall be directed away from the spray area.

Damage to neighbouring properties caused by the Contractor's spraying, shall be made good at the Contractor's expense.

**2.8 FERTILISER**

Slow release fertiliser is applied to the bedding soil of plants at the time of plant installation.

Further applications of approved, NPK balanced, slow-release fertiliser shall be applied in accordance with the Maintenance Schedule. Application rates shall be as recommended by the fertiliser manufacturer with regard to the size of plant.

Fertiliser should be watered-in after application.

Fertiliser shall be applied to grassed areas in accordance with the maintenance programme. Fertiliser shall be slow release type, applied at a rate recommended by the manufacturer.

- 2.9 **MULCH**  
Supply and install additional mulch and/or bark for specimen trees (the same material as existing) to ensure all mulch areas have a minimum depth of 100mm.  
Monitor and secure mulch mats as required during maintenance period.

- 2.10 **PROTECTION OF TREES AND STRUCTURES**  
Avoid damage to existing and newly planted trees during cutting or trimming operations. Trim or cut using small appliances (weedeater or hand mower) for a minimum diameter of 1.0m from the trunk, to avoid ring barking by larger appliances.  
Take due care to locate and protect all structures from damage by mowers. Boundary pegs are included in structures to be protected.

**Shrubs and Ground Cover**

- 2.15 **OPERATIONS - SHRUBS AND GROUND COVER**  
The Contractor shall maintain planting beds to establish good plantings, and achieve a high level of lush vegetation with visual impact. Maintenance shall include weed control, trimming, watering and fertilising. Ground cover plants should grow to fully cover the ground and thus reduce weed growth and maintenance.

Planting beds shall be maintained to a neat a tidy appearance in the same condition as when the works were completed at Practical Completion

- 2.16

**Grass**

- 2.17 **GRASSED AREAS**  
All grassed areas shall be protected and maintained to produce an even sward of grass at a uniform height and healthy colour by watering, mowing and spraying to maintain a good quality turf with a neat appearance to the Owner's satisfaction.

Newly sown areas and grassed areas are to be protected against traffic until the grass is well established.

If establishment is unsatisfactory the Contractor shall return the area to seedbed condition and replant with the appropriate turf sod or seed mixture until satisfactory turfgrass is established.

- 2.18 **GRASS CUTTING**  
Grass cutting shall only be undertaken in dry conditions using a suitable mower with sharp blades. The first cut shall be after the grass has reached 100mm high to cut no more than one third of the height of grass.

Cutting thereafter shall be undertaken in accordance with the maintenance schedule above.

Grass cuttings shall be left to decompose on site.

The Contractor shall exercise all due care in the use of mowing and trimming machines to minimise flying debris hazards. Mowers shall be fitted with stone guards designed for the mower. Safety guards shall be supplied for all other equipment used.

- 2.19 **WEED AND PEST CONTROL**  
Undesirable weeds in grassed areas shall be sprayed with approved herbicide strictly in accordance with the manufacturer's specifications and with all necessary safety precautions.

Undesirable weeds shall be sprayed with Roundup or similar approved chemical mix and applied strictly according to the manufacturer's specifications. Selective weed sprays may be used in appropriate circumstances. Fungal infection and insect attack shall be controlled with appropriate chemical sprays as approved by the Contract Administrator, applied strictly in accordance with the manufacturer's specifications

## **LITTER AND VANDALISM**

- 2.20 **LITTER**  
Litter shall be removed from hard and soft landscaping areas to frequency specified with the Maintenance Schedule.

Litter shall refer to all extraneous waste material which is detrimental to the appearance of the site and shall include stones, bricks, debris, paper, cardboard, confectionery and other wrappings, bottles, cans, plastic containers, plastic, paper, and glass, able to be disposed in council street side rubbish collections.

Litter shall also refer to domestic refuse including items generally dumped from the boot of a car eg: bin bags and vegetative matter.

Broken glass shall be swept from hard surfaces and raked from grassed areas. Attention is required to the prompt removal of glass bottles to reduce the likelihood of glass being broken by others.

All litter shall be removed prior to any grass cutting operations.

Litter shall be removed and disposed off site.

- 2.21 **VANDALISM**  
Any plants vandalised after Practical Completion shall be notified in writing to the Contract Administrator.

Those plants which fail and are not notified to the Contract Administrator shall be assumed to have died as a result of planting operations and shall be replaced at the Contractor's expense.

The cost of plants or other landscape works deemed to have failed due to theft, wilful damage or vandalism shall be the Principal's responsibility.

Where planting is suffering damage as a result of wear and tear, the Contractor shall advise the Contract Administrator who may issue instructions to provide temporary barriers or substitute damaged species with a more resilient planting solution as a variation.

- 2.22 **FLY TIPPING**  
The Contractor shall notify the Contract Administrator of suspected fly tipping to seek approval to remove it.

Fly tipping shall refer to items such as soil, aggregate, builders rubble, motor vehicle bodies, beds, mattresses, fridges and televisions or any other larger item requiring removal by machine.

## **COMPLETION**

- 2.23 **INSPECTIONS**  
The Contractor shall notify the Contract Administrator for inspection of the works following:  
- Completion of Defects Liability Period prior to issue of Defects Liability Certificate

- 2.24 **COMPLETION**  
On completion of the Defects Notification Period and prior to issue to the Defects Liability Certificate, the Contractor shall undertake/supply the following;



- Repair all defects to the satisfaction of the Contract Administrator and undertake all maintenance as required in accordance with the maintenance schedule.
- Provide Written summary of all maintenance visits, machinery used, staff employed and weather during defects liability/maintenance visits.

### 3. SCHEDULES

#### 3.1 MAINTENANCE SCHEDULE - TREES, SHRUBS, GROUND COVER

	<b>Staking</b>	<b>Trimming</b>	<b>Hedge trimming</b>	<b>Fertilizer</b>	<b>Weed control</b>	<b>Watering</b>	<b>Replacement</b>	<b>Mulch top up</b>
<b>Jan</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>Feb</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>Mar</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>Apr</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>May</b>	Monthly - as required	Monthly - as required	No	No	Monthly	No	Monthly - as required	No
<b>Jun</b>	Monthly - as required	Monthly - as required	No	No	Monthly	No	Monthly - as required	No
<b>Jul</b>	Monthly - as required	Monthly - as required	No	No	Monthly	No	Monthly - as required	No
<b>Aug</b>	Monthly - as required	Monthly - as required	No	No	Monthly	No	Monthly - as required	No
<b>Sep</b>	Monthly - as required	Monthly - as required	No	No	Monthly	No	Monthly - as required	No
<b>Oct</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>Nov</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	No
<b>Dec</b>	Monthly - as required	Monthly - as required	No	No	Monthly	2 times per week during dry periods	Monthly - as required	Yes
<b>At Completion</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>

#### 3.2 MAINTENANCE SCHEDULE - GRASS

	<b>Grass release around plants</b>	<b>Mowing (rough)</b>	<b>Edge trimming</b>	<b>Fertilizer</b>	<b>Weed control</b>	<b>Watering</b>	<b>Over-sowing</b>
<b>Jan</b>	Yes	-	-	No	No	3 times per week during dry periods	No
<b>Feb</b>	No	-	-	No	Yes	3 times per week during dry periods	No
<b>Mar</b>	Yes	-	-	Yes	No	3 times per week during dry periods	Yes
<b>Apr</b>	No	-	-	No	No	3 times per week during dry periods	No
<b>May</b>	Yes	-	-	No	Yes	No	No
<b>Jun</b>	No	-	-	No	No	No	No
<b>Jul</b>	No	-	-	No	No	No	No
<b>Aug</b>	No	-	-	No	No	No	No
<b>Sep</b>	Yes	-	-	Yes	No	No	Yes
<b>Oct</b>	No	-	-	No	No	2 times per week during dry periods	No
<b>Nov</b>	Yes	-	-	No	Yes	2 times per week during dry periods	No
<b>Dec</b>	No	-	-	No	No	2 times per week during dry periods	No
<b>At Completion</b>	<b>Yes</b>	-	-	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

## 8511 IRRIGATION SYSTEM

### 1. GENERAL

This section relates to the design and installation of a permanent automatically controlled watering system.  
It includes Fixed Location Systems.

#### 1.1 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following definitions apply specifically to this section:

Spray line pipe: The line of pipe fitted with sprinklers and/or raised drip fittings.  
Main line: The supply pipe that spray or drip line pipes are connected to (sub-mains may be used on very large systems).

#### Documents

#### 1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

[NZS 5103](#) Code of Practice for the Design, Installation, and Operation of Sprinkler Irrigation Systems.  
[AS/NZS 3500.1](#) Plumbing and drainage - Water services  
[Irrigation CoP](#) Irrigation Code of Practice and Irrigation Design Standards (Irrigation NZ Inc)

#### Warranties

#### 1.3 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:  
years: 2 For Irrigation System

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

#### 1.4 WARRANTY - INSTALLER/APPLICATOR

Provide an installer warranty:  
years: 2 For the whole system

- Provide this warranty on the installer/applicator standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

#### Requirements

#### 1.5 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

Designers to hold an NZQA National Certificate in Irrigation Design or equivalent.

#### 1.6 ACCEPTABLE PRODUCT/MATERIAL SUPPLIERS

Where a product or material supplier is named in SELECTIONS, the product/material must be provided by the named supplier. Where more than one named supplier, any one of the named suppliers will be acceptable.

- 1.7 **NO SUBSTITUTIONS**  
Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.
- 1.8 **SHOP DRAWINGS**  
Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.  
Submit drawings and schedules showing the layout and details of the system, to [NZS 5103](#) and [AS/NZS 3500.1](#), section 7 Irrigation and Lawn Watering Systems, including micro-irrigation stake layout, sensor locations and controller cabinets, in hard copy paper and electronic format for approval.
- 1.9 **AS BUILT DOCUMENTS**  
Refer to the general section 1238 AS BUILT DOCUMENTATION for the requirements for submission and review of as built documents and records.  
  
Provide the following as built documents and records:  
  - Drawings and schedules showing accurate locations, dimensions and sizes of all key components in the system.
  - Provide draft as built information prior to practical completion.
  - Provide final as built information prior to the end of the defects notification/liability period.
- 1.10 **INFORMATION FOR OPERATION AND MAINTENANCE**  
Provide the following general operation and maintenance information as electronic PDF format documents:  
Operation of the system.  
  
Provide this information prior to practical completion.  
  
**Compliance information**
- 1.11 **INFORMATION REQUIRED FOR CODE COMPLIANCE**  
Provide the following compliance documentation: -  
  - Manufacturer's, importer's or distributors warranty
  - Installer's warranty
  - Producer Statement - Construction from the installer
- Performance**
- 1.12 **DESIGN BY CONTRACTOR**  
Design an irrigation system in accordance with [NZS 5103](#), [AS/NZS 3500.1](#) section 7, Irrigation and Lawn Watering Systems, and these specifications and prepare concept and construction drawings, to be submitted to the contract administrator for approval prior to commencement of work.  
Achieve the documented flow rates over the area to be irrigated.  
Meet statutory requirements for backflow prevention.  
  
Identify the following key performance indicator units and associated information as required by the [Irrigation CoP](#):  
  - Irrigation crop demand in mm/d, m<sup>3</sup>/ha/week, mm/hr (frost)
  - System capacity (based on 24 hours) litres/s/ha, mm/day
  - Management allowable deficit (MAD)
  - Application rate and depth in mm
  - Infiltration rate (assumed)
  - Application uniformity
- Quality control and assurance**
- 1.13 **INSPECTIONS**  
Give notice to the contract administrator so that inspection may be made at the following stages:  
Concealed or underground services ready for backfilling.

## 2. PRODUCTS

### Fixed Location System

- 2.1 HEADS  
Proprietary heads that maintain a preset arc of throw, are adjustable for radius during watering operations, and vandal resistant.
- 2.2 POP - UP TYPE HEADS  
Proprietary heads designed to rise > 50mm out of their housings under supply pressure.
- 2.3 COVERS  
Proprietary covers to cover inactive sprinkler on playing fields.
- 2.4 AUTOMATIC CONTROL VALVES  
24 volt solenoid actuated hydraulic valves with flow control and a maximum operating pressure rating  $\geq 1$  MPa. Made from stainless steel and able to be serviced in-situ.
- 2.5 ISOLATING VALVES  
Gate valve the same diameter as the automatic control valves
- 2.6 HOUSING  
House both valves in proprietary valve box.
- 2.7 VALVES AND VALVE BOX  
Proprietary UV resistant high impact plastic with high impact snap lock plastic cover containing.  
Check valve - if a rotating head is more than 300mm below the highest head on the same automatic valve, fit an internal or external anti-drain check valve to prevent low head drainage.  
Pressure regulating valve - At take off points provide pressure regulating valves as follows;
- Adjustable between 100 and 700 kPa.
  - Complete with 800  $\mu$ m filter sized to suit the flow and installed immediately upstream from the pressure regulating valve
  - Installed with gate valves upstream from the filter and downstream from the pressure regulating valve.
  - Fitted for backflow prevention.
- Mount the assembly in an accessible position in a valve box, access pit or adjacent building.

### Components

- 2.8 IRRIGATION CONTROLLERS  
Programmable automatic controllers with the following features;
- 240 volt supply and isolating switch at the controller
  - Manual cycle and individual control valve operation
  - Manual on/off operation of irrigation without loss of programme
  - $\geq 4$  on/off cycles/day
  - Day omit
  - 240 volt input and 24 volt output capable of operating 2 control valves simultaneously
  - $\geq 24$  hour battery programme backup
  - Power surge protection
  - Lockable cabinet minimum IP 54 to AS 60529
- 2.9 PUMPS AND MOTORS  
Proprietary pump and motor of sufficient power and capacity to run the system with water supply from reservoir. Refer to SELECTIONS.

### 3. EXECUTION

#### Conditions

- 3.1 DELIVERY, STORAGE AND HANDLING  
Take delivery of materials and goods and store on site and protect from damage. Move/handle goods in accordance with manufacturer's requirements. Reject and replace goods that are damaged or will not provide the required finish
- 3.2 PRE-INSTALLATION REQUIREMENTS  
Check work previously carried out and confirm it is of the required standard for this part of the work.  
Check that back flow prevention, if required, is in place or will be provided as part of this work.

#### Installation

- 3.3 INSTALLATION - FIXED LOCATION SYSTEMS  
Run double insulated cable underground and alongside piping where possible to valves, sensors and controller.  
Fix DN 20 double lugged bronze quick coupling valves with neoprene seats mounted on DN 20 copper risers offset min. 150mm from the supply pipe. Install in valve boxes. Fit impact sprinkler heads with granular fill for min. 75mm around the base of the case. Mount 'above ground' heads on fixed risers, set galvanised steel risers in 300mm x 300mm x 200mm deep concrete blocks. Mount 'in ground' heads on reticulated risers.

#### Completion

- 3.4 ROUTINE CLEANING  
Carry out routine trade cleaning of this part of the work including periodic removal of all debris, unused and temporary materials and elements from the site.
- 3.5 DEFECTIVE OR DAMAGED WORK  
Repair damaged elements. Replace damaged elements where repair is not possible or will not be acceptable. Adjust operation of equipment and moving parts not working correctly. Leave work to the standard required for following procedures.
- 3.6 PROTECTION  
Provide the following temporary protection of the finished work:  
All planting and landscape works.

#### Commissioning

- 3.7 FLUSH SYSTEM  
Flush system thoroughly, check heads, sprays and drippers and clean if blocked. Clean strainers. Adjust system for even distribution with no dry areas.
- 3.8 TESTING AND COMMISSIONING  
The acceptable deviation from the design specification will be;  
- flows  $\pm 5\%$   
- pressures  $\pm 10\%$   
- current (amps)  $\pm 5\%$   
- uniformity - not more than 5% (or 0.05) under that specified  
  
Pressurise pipes to 1.5 times the maximum design working pressure of the pipe for one hour.
- 3.9 HANDOVER  
Provide full demonstration/instruction for the eventual users of the system.

### 4. SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

## Systems

- 4.1 **FIXED LOCATION SYSTEM**
- Location: All planted areas, specimen trees and hydroseeded areas.
- Make/model: Contractor/ designers to confirm (K-line or similar acceptable system)
- Performance: Suitable for establishing trees, plants and hydroseeded areas.
- Coverage: Contractor/ designers to confirm
- Watering period: Contractor/ designers to confirm
- Backflow prevention device: Not required (water supply from reservoir)
- Head material: Contractor/ designers to confirm, plastic is acceptable
- Spray type: Contractor/ designers to confirm to gain coverage of all trees, plants and hydroseeded areas.
- Controls: Contractor/ designers to confirm
- Storage: Contractor/ designers to confirm
- Pump model: Contractor/ designers to confirm
- Pump power rating: Contractor/ designers to confirm
- Pump flow rate: Contractor/ designers to confirm
- 4.2 **VALVE BOX**
- Location: Contractor/ designers to confirm
- Make/model: Contractor/ designers to confirm

# Proposed Reservoirs, Quail Rise

Assessment of Landscape & Visual Effects

Prepared for Queenstown Lakes District Council

7 February 2023





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# CONTENTS

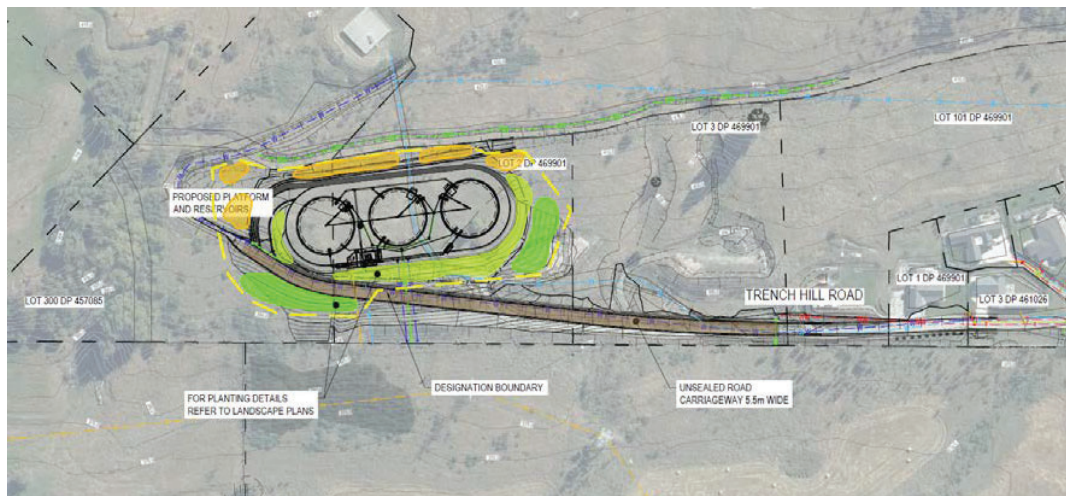
1.0	Introduction	2
2.0	Existing Environment	3
3.0	Landscape Values and Category	4
4.0	Proposal Description	8
5.0	Assessment of Landscape and Visual Effects	11
6.0	Conclusion	22
	Appendix 1: Landscape & Visual Effects Assessment Methodology	23
	Appendix 2: Planting Schedule	6

# 1.0 Introduction

Boffa Miskell Ltd have been engaged by the Queenstown Lakes District Council (QLDC) to prepare an assessment of the potential landscape and visual amenity effects associated with the Notice of Requirement for (a) water reservoir(s) at Quail Rise.

The proposed designation is to allow for the construction and operation of up to three new reservoir tanks within the designation area, which will consist of one tank in the near future and a further two in the long term. The size of the proposed platform area will be large enough to accommodate the three tanks.

The proposed designation area, where the reservoirs are proposed to be constructed, is located on the south facing slope of Quail Rise. For the purposes of this assessment the 'Site' refers to the proposed designation area (see below for Site boundary) where the tanks are proposed to be constructed. This includes Lot 300 DP 457085 and Lot 2 DP 469901 which are owned by the Queenstown Lakes District Council (QLDC).



*Site boundary plan (yellow dashed line)*

This report is related to the application for a Notice of Requirement (NOR) and an Outline Plan will be provided at a later stage. The assessment of landscape and visual effects relates only to the earthworks for the road and platform, as well as reservoirs located on Lot 2 DP 469901.

The site is located on the north-west side of SH6 on the lower slopes of Ferry Hill, located on the northern side of Frankton Flats. The site is accessed via Trench Hill Road, off Ferry Hill Drive on the western side of Quail Rise subdivision.

The landscape and visual effects of the proposal are assessed against the Queenstown Lakes Operative District Plan and the Queenstown Lakes Proposed District Plan.

Five site visits were undertaken on 28 and 31 May 2019, 29 July 2019, 11 July 2022 and once accompanied by QLDC's peer reviewer Richard Denny Landscape Architect (2 March 2020). The on-site investigations included a walk over of the site and surrounding area including Quail Rise subdivision, as well as the Frankton Flats area to review the proposed reservoir location and to undertake an on-site visibility analysis from a variety of potential viewpoints in the surrounding area. The findings were used to assess the potential visual and landscape character effects.

Photographs taken during the site visits are included in the graphic attachment that accompanies this report.

Three visual simulations were prepared as part of the graphic attachment, showing the proposal 1 year, 5 years and 10 years after planting (from viewpoint A, F and J)

## 2.0 Existing Environment

### 2.1 Location and Site Description

The proposed designation area is located across three lots on the southern slopes of the roche moutonnée land form of Ferry Hill, to the west of Quail Rise subdivision. The proposed designation area is set back approximately 300m from the Frankton-Ladies Mile Highway and is approximately 35m above the road in elevation.

The topography of the site is decreasing in elevation from Ferry Hill in the north towards Frankton Flats in the south with some variation in slope angles. Furthermore, localised undulations in between these gullies and the larger hills add another complexity to the nature of the landform.

The land has been cleared of its original vegetation cover and is predominantly used for pastoral farming. Woody vegetation is primarily concentrated within the gullies, but consist mostly of willows.

The upper part of Ferry Hill is devoid of buildings however there is an existing reservoir in the upper portion of Lot 300 DP 457085 which is screened by bunding and landform. There is also a cluster of buildings located to the east of the proposed reservoir Site along Trench Hill Road. This is the start of the Quail Rise residential area that then extends around the eastern side of Ferry Hill.

The site's northern boundary is defined by the Arrow Irrigation Co. water race which extends in an east-west alignment that follows approximately the 415masl contour along Ferry Hill.

Currently, the site retains a relatively open character and affords views southwards towards the Remarkables and the Frankton Flats. The airport and the development of the Five Mile area are very visible from the Site. Visually, this Site is associated and connected with the Frankton Flats.

The land on the northern side of Frankton- Ladies Mile Highway (SH6) is known as 'Frankton North' and has recently been rezoned Medium and High Density Residential and Business Mixed Use which allows for buildings between 8 and 12 metres in height below the reservoir Site (shown on zoning map Figure 4). This zoning adjoins the southern / south-eastern side of the proposed designation area.

### 2.2 Landscape Context

The landscape surrounding the site can be broadly classified into the contrasting landscape types of the low relief Wakatipu Basin and its surrounding mountain ranges.

The wider Wakatipu Basin is defined by a series of surrounding mountain ranges reaching heights of up to 2000 metres above sea level (masl). To the north, numerous peaks and ridges around Coronet Peak and the Crown Range enclose the northern extent of the Basin in an east-west arc. They rise immediately above Arrowtown in a sequence of steep terraces to heights of between 1000 and 1700masl. Coronet and Crown Peaks are key landmarks within these ranges, with

Mount Cardrona and the Harris Mountains extending beyond. To the south, the Remarkables rise steeply from the Kawarau River to more than 2000masl. The steep gorges of the Arrow and Shotover Rivers which drain the Arrow Basin into the Kawarau River are important features carved through these ranges. Glacially formed roche moutonnée hills are also prominent within the basin, including Ferry Hill, Slope Hill and Queenstown Hill.

From Frankton Flats, the horizon is defined by the profiles of the Remarkables to the south, the Crown Range to the east and Ferry Hill in the foreground to the north, with Coronet Peak appearing in the distance.

Land uses within the general context of the Site are varied. The Frankton Flats, to the south of the Site is the most modified, where the Queenstown airport and runway are located amongst areas of light industrial development and mixed use. State Highway 6 (SH6) forms the principal road access through the area and is a major tourist route as the gateway to Queenstown from the east. New areas of industrial, retail and mixed use activity are being constructed adjacent to the highway and include the Five Mile development.

Numerous residential subdivisions are appearing throughout the area. Quail Rise to the east of the Site, is an existing, well-established subdivision which is located on the lower elevations of Ferry Hill. The land immediately below the proposed designation has also recently been rezoned Business Mixed Use and High Density Residential extending along the highway to Quail Rise as shown on Figure 4. Development of this area is yet to commence however it is anticipated that given this zoning, the character of the Frankton North area will change significantly in the future.

## 3.0 Landscape Values and Category

### 3.1 Landscape Values Identification

Ferry Hill landform, as other roches moutonnées in the Wakatipu Basin were formed by glaciers in the ice ages that moved over the landform in an easterly direction. The flow of ice scoured down the eastern side to a lower slope angle, while plucking rocks out of the steep eastern faces. The glacial scouring is still visible and makes it a legible landform.

Due to the alluvial nature of the soils on the western part of this feature, gullies have been formed that drain it, while the south and east-facing slopes are steep and rocky.

The land cover found on Ferry Hill is modified through extensive farming use. The majority of the landform is covered in exotic grassland used for grazing. Several clusters of mature trees are found on the mid slopes, with a line of poplars following a mid-contour terrain indentation on the mid southern slopes. The lower slopes are invaded by spreading weeds in places. Some areas of grey shrubland are found in wetter gullies and on steep parts of the landform. However, native land cover is very limited.

In terms of modification the Quail Rise subdivision has been established around the base and lower slopes of Ferry Hill, on the south-eastern side. Further subdivision follows the same contour around the landform to the northern side to Tucker Beach, where dwellings have been established at a higher elevation. Several existing farm tracks criss-cross the mid and upper slopes of Ferry Hill, providing access to the top of the landform. The tracks above the proposed designation area have undergone upgrades recently. A water race extends across the south-facing slopes and an existing water reservoir is located on the ridge above the proposed Site. This reservoir is not

visible from below. The 110KV transmission line traverses the lower southern slopes in an east-west direction.

Overall, the key landscape values of Ferry Hill relate in particular to the landform and its natural science and legibility values that stem from the expressive display of the formative processes. The roche moutonnée is one of number of elevated landforms within the Wakatipu Basin, similar to other landscape features of the same glacial origin. These landforms have high aesthetic value as they form the backdrop to views gained from various directions around the basin. As the light and seasons change, the light sometimes accentuates the scouring on the landform, providing transient values.

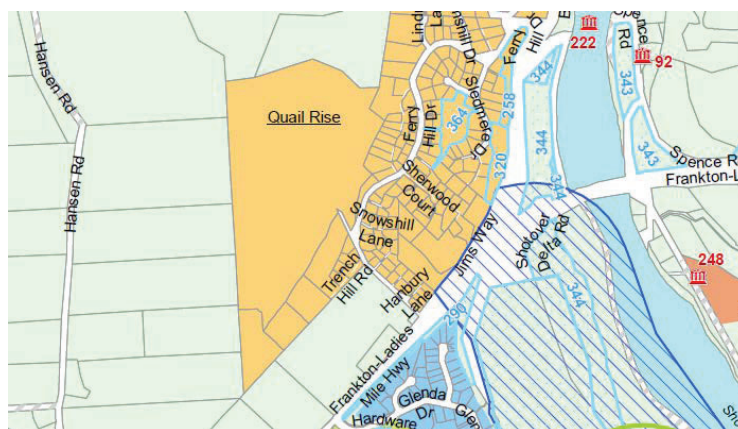
The upper part of Ferry Hill displays an overall moderate to high level of naturalness that is in line with the requirements for ONF/ L identification. The lower parts of the landform have been modified through residential development and infrastructure. The associated earthworks and structures have created unnatural lines detracting from the naturalness and legibility of the lower slopes of the landscape feature to a point where it does not display the same values as the upper slopes.

### 3.2 District Plan

The Queenstown Lakes District Plan is currently undergoing a review, so both the Operative (ODP) and Proposed District Plan (PDP) are relevant in terms of the identification of the landscape category applying to the site.

#### *Operative District Plan*

In the ODP the entirety of the proposed designation area is zoned Quail Rise Zone (see Fig 1 below).



*Fig 1: Extract from ODP Map 31- Lower Shotover. Showing the site as part of the Quail Rise Zone (brown).*

An ONL (WB) has been identified to the north of the site, encompassing Ferry Hill, Lake Johnson, Sugar Loaf and Queenstown Hill. The ONL in the ODP also included parts of the lower slopes of Ferry Hill to the west where the outline followed the landform, and it appears that the ONL includes the Site in proximity to the boundary which follows the change in slopes above Quail Rise (see Fig 2 below).



Fig 2: Extract from ODP APPENDIX 8A - MAP 1 Landscape Categorisation in the Wakatipu Basin. Showing the site just below the ONL outline which appears to follow the water race in this area.

The Quail Rise Zone includes a number of activity areas. These are shown in Figure 3 below. The proposed designation area is located within the 'G' – Open Space activity area.

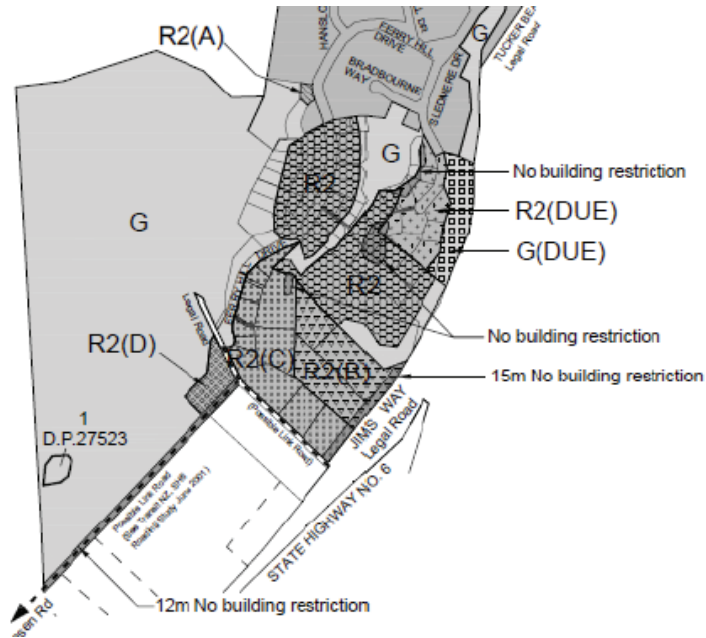


Fig 3: Extract from ODP Section 12- Quail Rise Zone Rules showing the Structure Plan for the Zone, where the Site is shown as Open Space.

#### Proposed District Plan

The zoning of Lot 300 DP 457085 has been reviewed and is zoned Open Space: Informal Recreation. The zoning of the remainder of the designation area is yet to be reviewed as can be seen in Figure 4 below.

The ONL line is currently located along the edge of the Quail Rise zone as can be seen in Figure 4 below, however the location of this line will be reviewed with the zoning of Quail Rise.

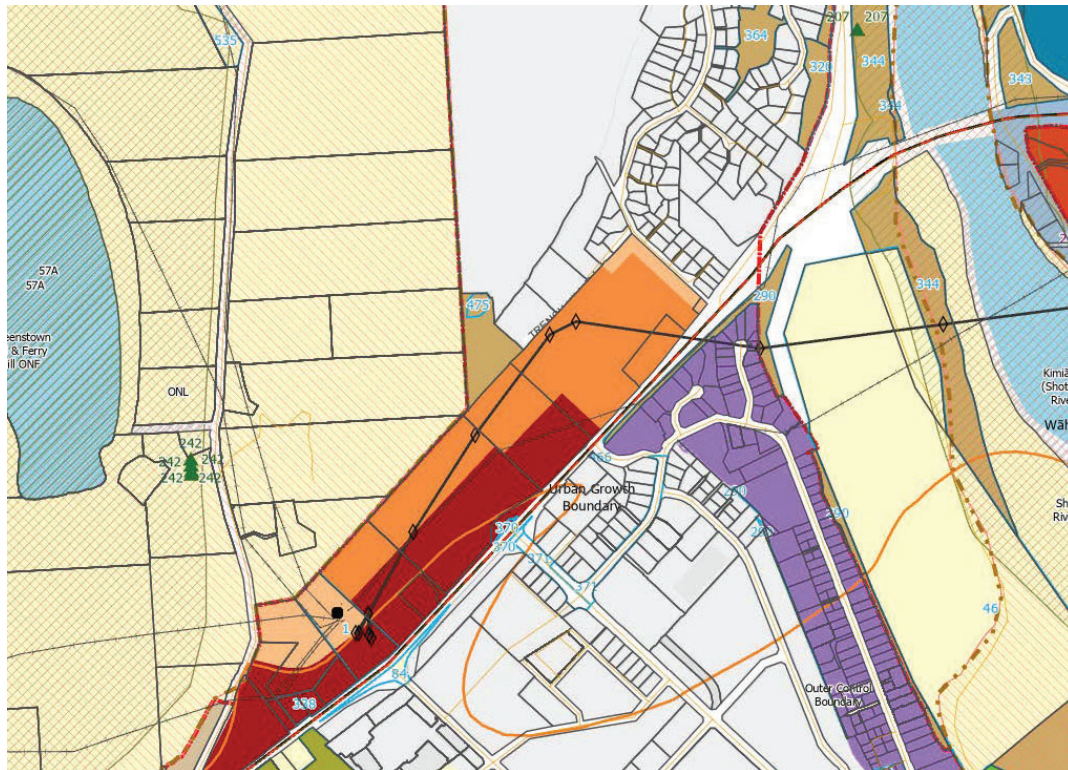


Fig 4: Extract from PDP Map 31- Lower Shotover. Showing the Informal Recreation zoning of Lot 300 (brown) and the remainder of the designation area within the Quail Rise Zone (yet to be reviewed). The ONL outline currently follows the ODP boundary for the Quail Rise Zone. Zoning Map showing Medium (light orange) and High Density Residential (dark orange) and Business Mixed Use along the northern side of Frankton- Ladies Mile Highway.

As part of the DPR landscape schedules were prepared by landscape architects for QLDC for the ONF/Ls that lie adjacent to the Whakatipu Basin. The boundary for the Ferry Hill ONF Priority Area follows the ONL boundary shown above.

#### Summary

As the ONL boundary under the PDP has yet to be determined in relation to the subject sites, the ODP line is of relevance. While the ONF identified in the DPR process excludes the site, under the line shown on the ODP maps the Site falls within the Ferry Hill ONL boundary. The ONL boundary in the ODP pre-dates the Quail Rise zoning and the ONF boundary for the Ferry Hill Priority Area identified through the DPR process follows the Rural Zone boundary, excluding the site from the ONF.

The Site displays open space values and sensitivities associated with a landscape that lies adjacent to residential development. Effects on these values and the visual amenity provided by the open space are addressed in the assessment of effects under both the ODP and PDP (see Section 5).



## 4.0 Proposal Description

### 4.1 The Proposal

The Notice of Requirement proposal seeks to identify a designation across the Site for the purposes of water storage. This is to allow for the construction of up to three water reservoirs and a small pump shed on the south slope of Quail Rise. The new reservoirs are required for the purpose of supplying potable water to the Frankton Flats area and surrounds. The requirement for the new reservoirs to service the Frankton area has been driven by the QLDC Queenstown Water Supply Masterplan.

The installation of the future reservoirs within the proposed designation area will be the subject of an Outline Plan approval process should the designation be approved.

The earthworks that will be required for the establishment of the platform for the tanks are substantial due to the relatively steep angle of the terrain. It is proposed to excavate and form the platform area for all three of the future reservoirs prior to the construction of the first reservoir. The planting (detailed below) will be implemented following the creation of the platform. One reservoir and a pump shed building are anticipated to be constructed within the next 10 years within the proposed designation. This reservoir will be Proposed Reservoir 3 as shown in Figure 1 of the graphic attachment. The timing for the construction of the second and third reservoirs (Proposed Reservoirs 1 and 2) are currently unknown, however it will be in excess of 10 years.

The existing access track (Trench Hill Road) will be re-routed along a short section below and around the proposed reservoir platform to allow for improved access to the existing reservoir and farm land on Ferry Hill and to provide for construction and operation of the proposed future reservoirs.

### 4.2 Proposed Mitigation Measures

As part of the Notice of Requirement, measures are proposed to mitigate the potential visual and landscape effects of the potential future reservoirs.

One of these mitigation measures is the implementation of landscaping within the designation area. Planting is proposed on the slopes to the east, below and above the platform to visually integrate the earth-worked slopes and provide a textured context to the proposed tanks. Mounding around the south and south-eastern sides of the platform is also proposed which will provide additional screening of the future tanks. Tree planting (mountain beech and other larger native trees, such as ribbonwood, lacebark and wineberry) has been kept to two confined clusters where the best screening results can be achieved from the east (Quail Rise) and south (Frankton Flats). The use of shrubs in the remaining area will maintain a degree of openness that reflects the current character of the area without attracting attention to the proposed reservoirs.

The cut face behind the reservoirs will be almost vertical and is likely to consist of rock without topsoil. Therefore, it will not be possible to plant on the cut face itself, but grey shrubland species are proposed above the cut to soften the edges and to provide texture around the cut. The majority of the cut will be hidden behind the proposed reservoir structures.

Landscape mitigation plans have been prepared including a detailed planting schedule (see graphic attachment Figure 1 and Appendix 2- Planting Schedules). The proposed landscaping is to consist of native plants that are suitable to the ecological region. These plants are considered in character with other planting found in the area.

Three groups of planting species have been identified:

1. The cluster of mountain beech and other native trees to the east of the proposal will provide screening of the proposal in views from Quail Rise.
2. Below the reservoir and in the damper areas near the creek, Mountain Beech is proposed in large clusters mixed with other native tree species to provide screening from the west and Frankton Flats.
3. Grey shrubland is proposed above the reservoirs (between the top of the cut face and existing water race) where drier growing conditions dominate.
4. Medium sized native shrubs will be planted on the bund and slopes below the reservoir.

The planting will consist of the following species (see also planting schedules Appendix 2)

<b>Type</b>	<b>Latin Name</b>	<b>Common Name</b>
Native Tree Mix	<i>Fuscopora cliffortioides</i>	Mountain Beech
	<i>Aristotelia serrata</i>	Makomako / Wineberry
	<i>Plagianthus regius</i>	Manatu / Ribbonwood
	<i>Hoheria angustifolia</i>	Hungere / Narrow-leaved Lacebark
	<i>Paesia scarberula</i>	Scented Fern
Grey Shrubland Mix	<i>Coprosma propinqua</i>	Mingimingi
	<i>Coprosma crassifolia</i>	Mingimingi
	<i>Coprosma rugosa</i>	Needle-leaved Mountain Coprosma
	<i>Olearia odorata</i>	Scented Tree Daisy
	<i>Olearia paniculata</i>	Golden Ake Ake
	<i>Olearia avicenniaefolia</i>	Mountain Ake Ake
	<i>Discaria toumatou</i>	Matagouri
	<i>Sophora microphylla</i>	South Island Kowhai
Medium sized native shrubs	<i>Hebe salicifolia</i>	Koromiko
	<i>Austroderia toetoe</i>	NZ Toe Toe Grass
	<i>Pittosporum tenuifolium</i> 'Hawea'	NZ Pittosporum
	<i>Coprosma crassifolia</i>	Mingimingi
	<i>Coprosma propinqua</i>	Mingimingi

The following specifications are proposed for the planting as shown on Figure 1 of graphic attachment:

- a. Install minimum 300mm depth of salvaged topsoil on batter areas. This does not apply to the steep cuts into bedrock behind the reservoirs.
- b. All disturbed ground is to be hydroseeded with Browntop in the first planting season following completion of the earthworks for the platform.
- c. In the second planting season, after establishment of browntop, implement the planting outlined on the planting plans and schedules (Figure 1 graphic attachment).
- d. All plants to be protected from pests, irrigated and have mulch mats at their base to avoid weed competition.
- e. Install each plant with one grotab slow release fertilizer tablets.
- f. Beech trees should be planted with beech forest duff to introduce beneficial and mycorrhizal fungi to support healthy growth.
- g. Ground to be well scarified with toothed excavator bucket along contours prior to topsoil placement. Place pinned biodegradable matting for erosion control above topsoil prior hydroseeding in location where grade is between 1:2 to 1:2.5.
- h. Plant layout to be confirmed onsite with Landscape Architect prior to installation.
- i. The Manager Resource Consents at the Queenstown Lakes District Council is to be advised in writing following the implementation of the landscaping plan is complete.
- j. Refer to Landscape Specifications for more details.

In addition to the proposed planting, the following measures are also proposed to mitigate the potential visual and landscape effects of the platform construction and future proposed reservoirs:

1. The first reservoir to be installed is to be constructed in the approximate location of Proposed Reservoir 3 as shown on the Proposed Mitigation – Location Plan.
2. No more than one reservoir (and supporting infrastructure) is to be constructed within the designation area until the planting shown on the Proposed Mitigation – Location Plan has been in place for a minimum of 10 years. After this time, the designation can contain up to three reservoirs (and supporting infrastructure).
3. The exterior colour of the reservoir tanks and pump shed will be Resene Ironsand.
4. The maximum height of all reservoirs and buildings is not to exceed RL 409.20masl.
5. In addition to the planting, landform screening is to be provided through the construction of a 1.8m high bund surrounding the platform (the top of the bund is at 402.35m RL with the platform at 400.70m RL). The bund will be hydro-seeded and planted.
6. The earthworks will be hydro-seeded with grass as soon as practicable after construction to reduce visibility of the ground disturbance and provide some immediate surface/ soil stability.
7. All fencing is to be visually permeable, eg mesh fencing, at a maximum height of 2.2m. Fence posts are to be of recessive colours. No barbed wire is to be used.
8. External lighting will be limited to downlights mounted on structures to avoid light spill and are to be sensor activated.

## 5.0 Assessment of Landscape and Visual Effects

### 5.1 Summary of Methodology

A detailed methodology, as applied to the assessment in this report, including a scale of effects is attached as Appendix 1. The methodology used in this assessment is grounded in current best practice, informed by case law, NZILA Guidance and expert Landscape Architect's experience.

The effects covered in this assessment, include those that can occur in relation to physical features, viewing audiences and visual amenity and/or on the sites contribution to the existing landscape character and amenity values, as follows:

- Visual Effect relate to the changes that arise in the composition of available views due to changes to the landscape and to people's responses to the changes.
- Landscape character and amenity effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. This may in turn affect the perceived value ascribed to the landscape.

### 5.2 Visual Simulations

In order to inform the visibility analysis three visual simulations were prepared from representative viewpoints. The photos for the visual simulations are taken at 50mm focal length and are displayed at A3 size in the graphic attachment.

The visual simulations are based on one tank being located in the Proposed Reservoir 3 location at year 1 and 5 and all three tanks being implemented at year 10. This represents the worst case scenario from a visual effects point of view, since the Reservoir 3 location is closest to Quail Rise.

VP A shows the side-on view from the east that can be gained from Ferry Hill Road within the Quail Rise subdivision.

VP F, located at the Glenda Drive/ Hawthorne Drive roundabout, is representative for views from the central Frankton Flats area.

VP J illustrates the front-on view from lower-lying private land (Universal) to the south of the proposal, located north of SH6.

For the preparation of the visual simulations NZILA Best Practice was followed. The model was built based on 1m contours in the vicinity of the tanks and extending onto the Frankton Flats area.

The proposed planting has also been modelled at a height of 5 and 10 years<sup>1</sup>. The planting was then shown in Photoshop with the correct species and height.

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<sup>1</sup> The assumption for the height/ growth rates for trees after 10 years are as follows (5 years shown at half those sizes):

- Mountain Beech: 7-8m high with some at 10m high for larger plant grades
- Coprosma propinqua: 4m
- Olearia paniculata: 4m
- Discaria toumatou: 3m
- Sophora microphylla: 6m

For the remaining viewpoints the model with placeholder trees (cylinders at correct location and height) was used to assess the visibility of the proposal without screening and with planting after 10 years.

### 5.3 Visibility and Visual Effects Summary

The **Visual Effects Table** below summarises the potential scale of visual effects identified for each of the properties mentioned in Assessment of Visual Effects. The visibility assessment below takes the screen planting after 5 and 10 years into account, as described in detail in the Notes column.

Location	Address/ location (refer graphic attachment)	Distance from reservoir (approx) <sup>2</sup>	Extent of visibility with screen planting <sup>3</sup>	Significan ce of Visual Effect <sup>4</sup>	Notes
East	Viewpoint A Ferry Hill Dr See visual simulation	405m	Short- distance; no view- full screening	Low	Initially, the top half of the tank would be visible with decreasing visibility over the first five years. The earthworks required for platform establishment will also be visible initially, but grass cover will blend in with existing terrain and land cover.  Proposed planting would screen the proposal eventually. Complete screening of the reservoir and earthworks by the proposed beech tree mix can be achieved after around 10 years with partial screening prior to that.
	Viewpoint B Ferry Hill Dr	420m	Short- distance, no view- full screening	Low	Initially, the top half of the tank would be visible with decreasing visibility over the first five years. The earthworks required for platform establishment will also be visible initially, but grass cover will blend in with existing terrain and land cover.  Almost complete screening from proposed beech tree mix can be achieved after 10 years.
	Viewpoint C Ferry Hill Dr	445m	Short- distance, partial view	Low	Initially, the top half of the tank would be visible with decreasing visibility over the first five years. The earthworks required for platform establishment will also be visible initially, but grass cover will blend in with existing terrain and land cover.  Almost full screening from proposed beech tree mix can be achieved for Reservoir 3 after 10 years. Partial views to the Proposed Reservoirs 1 and 2 would be limited through

<sup>2</sup> Estimated from edge of house to nearest proposed building from ArcGIS

<sup>3</sup> Extent of visibility: Open (all or a significant part of the proposal is visible); Partial (part of the proposal is visible); Glimpse (small part visible); None (no views obtained)

<sup>4</sup> Significance of Visual Effect: Very High/ High/ Moderate-High/ Moderate/ Moderate-Low/ Low/ Very Low

Location	Address/ location (refer graphic attachment)	Distance from reservoir (approx) <sup>2</sup>	Extent of visibility with screen planting <sup>3</sup>	Significan ce of Visual Effect <sup>4</sup>	Notes
					implementation of the bund and shrub planting.
	Viewpoint H SH6 east of Shotover River	1900m	Long- distance, partial view	Very Low	<p>Transient view on west-bound lane of highway across Shotover River.</p> <p>Initially the earthworks and eastern-most reservoir would be partially visible at long viewing distances.</p> <p>After 5 to 10 years, the beech tree mix will provide screening for Proposed Reservoir 3, with shrubs on the bund partially screening the other two reservoirs from this viewpoint. The dark-coloured tanks will be difficult to see at this viewing distance.</p>
South-East	Viewpoint I Hawthorne Dr	1305m	Long- distance, open view with bund screening base of tanks	Low	<p>Transient view on north-bound lane of Hawthorne Drive.</p> <p>Full screening from this viewing angle will be difficult due to the difference in elevation between planting/ bund and reservoir.</p> <p>Initially, a single reservoir will be visible above the planting of shrubs on the bund which will take 5 years to provide partial screening for Reservoir 3.</p> <p>Proposed Reservoir 1 will be partially screened by beech and other larger trees, while the two eastern-most tanks (Proposed Reservoirs 2 and 3) will be partially screened by shrubs on the bund, leading to low effects. However, visibility of the dark-coloured tanks will be low at this distance. Large-scale buildings visible in the foreground in Frankton Flats commercial area.</p>

Location	Address/ location (refer graphic attachment)	Distance from reservoir (approx) <sup>2</sup>	Extent of visibility with screen planting <sup>3</sup>	Significan ce of Visual Effect <sup>4</sup>	Notes
South	Viewpoint D SH6 on Frankton Flats	335m	Short- distance, partial view	Very Low	<p>Views from SH6 on Frankton Flats are currently very limited due to extensive intervening vegetation along SH in foreground.</p> <p>Screening from the proposed bund below the reservoir is more effective for nearby viewpoints due to the oblique viewing angle, screening about half the height of the tank. The proposed western beech/ large tree plantings also provide highly effective screening after 5 to 10 years. The western most reservoir will be screened by the time it is implemented.</p>
	Viewpoint E SH6 round- about with Hawthorn Dr	475m	Mid- distance, partial view, transient	Low	<p>Transient view on north-bound lane of Hawthorne Drive. Relatively oblique view towards the site. In the future, commercial and high density residential development will be located in the foreground.</p> <p>Screening from the proposed bund and planting below the reservoir is slightly less effective than for nearby viewpoints, but due to the oblique viewing angle the proposed western beech/ large tree plantings and shrubs on the bund will provide partial screening after 5-10 years.</p>
	Viewpoint F Hawthorne Dr round- about with Central Street See visual simulation	620m	Mid- distance, open view with bund screening base of tanks	Very Low	<p>Transient view on north-bound lane of Hawthorne Drive. Existing and future structures of Frankton Flats commercial and high density residential area appear in the foreground.</p> <p>Glimpses to the top of Reservoir 3 from this viewing angle can be gained even as shrubs on the bund mature due to the difference in elevation between planting and reservoir. At the time of implementation of the two eastern tanks full screening by the maturing beech trees can be achieved.</p>

Location	Address/ location (refer graphic attachment)	Distance from reservoir (approx) <sup>2</sup>	Extent of visibility with screen planting <sup>3</sup>	Significance of Visual Effect <sup>4</sup>	Notes
	Viewpoint G Central Street	660m	Mid- distance, oblique open view with bund and trees screening base of tanks	Very Low	<p>Transient view on north-bound lane of Central Street with buildings in the foreground. In addition, existing large-scale buildings are visible in the foreground in Frankton Flats commercial area. Additional buildings closer to the viewpoint will block views out towards the lower part of Ferry Hill. The high -density residential area will extend along the base of the hill north of SH6.</p> <p>The proposed beech tree mix to the west will provide full screening after 10 years for the two western tanks with the lower shrubs potentially allowing glimpses to the eastern-most tank.</p>
	Viewpoint J Universal Development s land (Lot 2 DP 497316) See visual simulation	250m	Short- distance, partial view	Moderate to Low reducing to Low	<p>This private viewpoint will change over the coming years with high and medium density residential development taking place in the area.</p> <p>Currently, views to the tanks would be relatively open following construction.</p> <p>For the Proposed Reservoirs 2 and 3, the shrub planting on the bund provides partial screening after approximately 5 years and almost complete screening at 10 years.</p> <p>The beech tree mix in the western area will provide full screening for Reservoir 1 after 10 years at the time of implementation.</p>



## 5.4 Assessment against Operative District Plan

Under the ODP the entirety of the land is zoned Quail Rise Zone which means that the assessment matters in Chapter 12 are relevant, in particular in sections (i) General matters and (v) Earthworks.

### ***i General***

*(a) For all resource consent applications, including subdivision, the Council shall consider the relationship of open space within the Quail Rise zone to the surrounding rural area, and the density of development in terms of:*

- *the impact on the visual quality and amenity values both within the zone and the surrounding landscape;*
- *the visual impact on any significant landforms;*
- *the sensitivity of the landscape;*
- *proposed rehabilitation measures; and [see Earthworks]*
- *integrated management of open space within a proposed development, whether in individual or common ownership.*

The Ferry Hill landform is a legible landform, similar to other roches moutonnees found within the Wakatipu Basin. As described in Section 3, the landscape values are higher on the upper part of the feature where the formative processes are clearly displayed with limited modification to the landform. However, the lower slopes of Ferry Hill on the Quail Rise (eastern and south-eastern) side are substantially modified through the implementation of the Quail Rise subdivision.

The Site itself is located close to the western edge of the Quail Rise Zone where a few dwellings extend along Trench Hill Road off Ferry Hill Drive. The track that extends from Trench Hill Road provides access to the farmed land above, as well as the existing water reservoir that is located to the northwest, above the proposed reservoir. Currently, substantial earthworks are being undertaken by the land owner above the proposed site.

The other relevant modification in proximity to the Site is the existing transmission line that is located just below the proposed reservoir platform. Just above the proposal, an existing water race transects the Ferry Hill slope.

Overall, the lower parts of the south-facing Ferry Hill slopes are more modified than the upper parts which are more legible in comparison. The higher-lying slopes and in particular the east-facing aspect of the feature are expressive of the formative processes through exposure of the scoured landform. This leads to a higher landscape character sensitivity of those areas, compared to the proposed Site.

Given that the Site is located relatively low on the slope of the Ferry Hill landform, the visual impact from the proposed platform and tanks will be viewed in the context of the existing modifications associated with the Site and surrounds. Tree planting will be kept to minimum to maintain a degree of openness that reflects the current character of the area without attracting attention to the proposed reservoirs.<sup>5</sup>

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<sup>5</sup>PA Schedule Ferry Hill (p.1) Important ecological features and vegetation types:

6. Particularly noteworthy indigenous vegetation features include:
  - a. Swathes and scattered pockets of grey shrubland dominated by matagouri and mingimingi occupy the bluffs, rocky slopes and gullies on the landform. Some of these shrublands are interspersed with hawthorn, sweet briar and elderberry.
7. Other distinctive vegetation types include:
  - a. Open pasture and scattered scrub throughout the elevated steep slopes and crest of Ferry Hill.
  - b. Grazed pasture with scattered shelterbelts (including poplars) and clusters of pine and willow trees throughout the lower and more gently sloping flanks of Ferry Hill and the saddle between Pt 781 and Ferry Hill.

The open space is not actively managed as a recreation space and it does not provide any specific amenities, playground, picnic facilities etc. The subject site is located at the outer extent of the Quail Rise Zone and adjoins Rural zoned land which also adjoins the Business Mixed Use and High Density Residential zoned land within Frankton North. The area forms the interface of current rural land uses with existing and future residential and business land uses that will modify this area further.

*(b) Whether, and to what extent, the proposed development is visible from scenic rural roads and other public places.*

As assessed above, the main visibility of the proposal arises in views from the Frankton Flats. Due to the rising landform, the longer-distance visibility is limited to the south-west, south and south-east. The site can also be overlooked from the private property located above the Site on Ferry Hill, but is screened by landform from the Hansen Road area. The property above is used for farming and does not contain a residence on the south-facing side of the hill.

The proposed planting includes a cluster of mountain beech and other large trees on the eastern and southern sides of the platform, shrubs on and below the bund and grey shrubland species above the cut face behind the tanks. The beech/ large native tree planting to the east will over time (after around 10 years) achieve full screening of the proposal from Quail Rise subdivision (see VP A-C and Visual Simulation VP A) and from long distance viewpoints on the eastern side of the Shotover River where glimpses could be gained from a short section of highway (see VP H).

The proposed tanks will be dark-coloured steel tanks and are anticipated to have a shallow pitched roof to maintain a low profile. The pump shed will be of the same dark colours and materials would consist of wood and corrugated iron. The choice of a dark grey colour (Resene Ironsand) for the proposed tanks is in character with the roof colour that can be expected for residential buildings in Quail Rise. The colour of the tanks will blend in with the adjacent residences and will help with the visual integration against the backdrop of Ferry Hill (see visual simulation VP F).

The key visibility from Frankton Flats encompasses viewpoints along a number of roads and public places within the mixed-use, commercial and industrial areas (see VP E, F, G and I). Almost full screening from these viewpoints would be achieved after around 10 years with the majority of the proposal screened after 5 years.

SH6 extends in an east-westerly direction across Frankton Flats in relative proximity to the base of Ferry Hill. From the highway currently numerous shelterbelts and clusters of mature trees block the majority of views with only small gaps at driveways to existing dwelling (see eg VP G). These trees are likely to be removed once mixed-use and high density residential development takes place on the northern part of Frankton Flats, but buildings would replace them over the longer term, similarly curtailing views from the road (see Figure 4).

From more distant viewpoints, such as Hawthorne Drive (see VP E, F and I), currently some relatively open views can be gained, with the future high density residential development to be located in the foreground below the tank(s). The proposed native planting is at a lower elevation to the proposed platform which means that its screening function will require around 10 years for beech trees and shrubs to mature to provide almost complete screening. The vegetative cover will help to visually integrate the tanks to some degree before then through the introduction of vertical landscape elements, but as shown on the visual simulation for VP F, part of the tanks would still be visible after around 5 years with almost full screening after 10 years.

The viewpoints on Frankton Flats offer mostly transient views from roads. Existing apartments are located within the central part of Frankton Flats, however additional mixed use / commercial

land is located in between which is likely to provide screening of views in the direction of the proposal. Furthermore, under the PDP, mixed-use and residential development is anticipated on the northern side of SH6 (see Figure 4 for ). Once this development takes place, to the maximum allowed building height<sup>6</sup>, the proposed tanks would be mostly visible from the southern part of Frankton Flats in long-distance views.

*(c) The extent to which the scale of the activity and the use of the buildings will be compatible with the scale and nature of other activities and buildings and open space in the area.*

An existing reservoir and other utilities/ infrastructure, such as transmission towers and a water race are located in the immediate vicinity of the proposal. The proposal is therefore consistent with the activity of conveyance of infrastructure.

The tanks will be 8.4m high and 27.324m wide which is comparable in scale to a dwelling. The character of the lower slopes of Ferry Hill is influenced by the industrial appearance and height of the lattice towers required for the 110KV transmission line.

Currently, the existing buildings in the vicinity of the proposal are at a distance of around 300m to the east. However, as shown on Figure 4, as a result of the change to the zoning of the Frankton North area of land adjoining the proposed designation, the northern side of Frankton Flats is anticipated to change significantly over the coming decade. The proposed High Density Residential zone, with adjacent Medium Density and Business Mixed Use zones will allow for buildings of up to 12 metre high to extend up the hill to just below the proposed tanks. Consequently, the context for the water tanks will change beyond recognition.

## **v Earthworks**

### **2. Effects on landscape and visual amenity values**

*(a) Whether the scale and location of any cut and fill will adversely affect:*

- *the visual quality and amenity values of the landscape;*
- *the natural landform of any ridgeline or visually prominent areas;*
- *the visual amenity values of surrounding sites.*

The visual amenity aspects of this assessment matter have been addressed under i General (a). The upper parts of Ferry Hill landform are considered to provide high landscape values in terms of legibility and aesthetic value with lower values on the lower slopes. The proposal would not be located on a ridgeline and the low-lying site is not particularly prominent compared to the wider Ferry Hill landform. While the first tank may appear on the skyline of the landform initially when viewed from Ferry Hill Drive, Quail Rise, the beech/ large native trees on the eastern side of the proposal would screen this view within around 10 years (see visual simulation A) while maintaining long distance-views towards Walter Peak.

*(b) Whether the earthworks will take into account the sensitivity of the landscape.*

This assessment matter has been addressed under i General (a). The earthworks are located on the lower slopes between existing cuts and landform modifications, avoiding more sensitive parts of the landform. The proposed rehabilitation will help to reduce the visual effects of the earthworks in the longer term (see assessment matter (d)). The proposed earthworks, required to create the platform for the tanks, be hydroseeded to ensure they blend in over a short time frame (around

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<sup>6</sup> 12 metres in the business mixed use and high-density residential zone and 8 m in the medium density residential zone

half a year to a year after ceasing construction depending on growing season; see following assessment matter for details regarding rehabilitation).

The cut face that is required for the establishment of the platform will be located behind the tanks, minimising its visibility from the lower-lying viewpoints on Frankton Flats. Grey shrub planting above the cut face will help to soften the edges of the earthworks and provide texture on the slope to assist with visual integration.

*(c) The potential for cumulative effects on the natural form of existing landscapes.*

There will be cumulative effects from the proposal in terms of earthworks required for the access road and cut and batter required for the platform. However, the existing access road will be replaced rather than added to. Cumulatively the effect will also add to the current effects of existing structures, such as transmission towers and unnatural lines in the landform relating to the water race. However, it is considered appropriate to cluster existing and proposed modification instead of extending it into currently less modified areas. The proposed planting has been designed to avoid the creation of unnatural lines and uses larger trees only in confined clusters to maintain a degree of openness while visually integrating the proposed structures.

*(d) The proposed rehabilitation of the site.*

The construction of the platform will require substantial earthworks, including 13m high cuts and the construction of a bund around the front of the platform for temporary water retention (buffering of emergency overflows) and to provide some screening.

The rehabilitation of the site will include hydro-seeding the earthworks with grass and implementing planting in the wider area surrounding the site (see Planting Plan Figure 1 graphic attachment). The browntop grass will help to quickly blend the earthworks below the platform in with the surrounding slopes once the rank grass matches the appearance of the surrounding land cover (see Section 4- Proposal Description). The subsequent tree and shrub planting will provide screening and texture to the slope to further integrate the tanks visually. The planting builds on the patters created by trees present to the west of the site and existing areas of shrubland across lower southern slopes of the Ferry Hill landform.

## 5.5 Assessment against Proposed District Plan

Under the PDP the site that contains the existing reservoir (Lot 300) is zoned Open Space: Informal Recreation, so the relevant assessment matters in Chapter 38 Open Space and Recreation Zones apply. The other part of the proposed designation area (Lots 2 and 3) are currently not zoned under the PDP, as the Quail Rise Zone has not undergone review yet.

Although, only part of the site is zoned Open Space: Informal Recreation, the following assessment is of the entire development against the PDP Open Space and Recreation Zone assessment matters in Chapter 38.

The ONL line in relation to Quail Rise has not yet been determined as part of the District Plan Review and therefore the above ODP assessment relating to the effects on the ONL values is relied upon.

### **Chapter 38 – Open Space**

The following objectives and policies relate to landscape in Chapter 38 – Open Space:

*38.2.1.1 The design, development, management and maintenance of Open Space and Recreation Zones shall provide for:*

*e. the location within which Open Space and Recreation Zones are situated, responding to recognised natural character, landscape and heritage values; and*

The proposed reservoirs are located in an open space zone within the Quail Rise zone. The small open space zone is located between an ONL and existing / proposed residential areas. The Site currently forms part of the area which acts as a transition between the Frankton Flats (with its potential higher density development) and the more legible landscape values and openness provided by the ONL above.

While there are no buildings within the zone, the land around the Site has infrastructure situated within it. The development around the modified base and lower slopes of Ferry Hill emphasises the landscape values and openness of the upper part which is ONL due to its higher landscape values and naturalness. The reservoir site in its proposed location only displays low landscape values and the proposal would form an expected element in this part of the landscape. The scale and nature of the proposal is similar in scale to other existing structures in the vicinity of the Site.

Once the High Density Residential Zone below the Site is implemented to the southern boundary of the Site the landscape character will change from the currently more rural setting to an urban area with 3-4 storey buildings that would dwarf the scale of the proposed tanks.

*38.2.2.3 Require areas surrounding buildings, structures, outdoor storage and parking areas to be landscaped to mitigate visual impacts and maintain or enhance amenity values.*

As outlined in detail in the visibility analysis table (Section 5.2) above, the proposal will initially be visible from a number of viewpoints within the Frankton Flats. In most of the areas the views would be transient as they are mostly gained by the public travelling by car or along footpaths. No storage or carparking will be associated with the proposal.

The proposed planting will assist in integrating the reservoirs and pump shed with the existing character of the area. The use of native trees and shrubs will improve the amenity of the site to a degree, with the beech/ large native trees providing effective screening as they mature.

The planting is proposed in clusters that follow the landform and existing vegetation patterns as much as possible to make sure that a visual integration can be achieved through creating texture surrounding the construction footprint. While the proposal will be visible prior to proposed planting maturing, it will not be visually dominant due to the visual integration achieved through planting and the dark colour of the tanks. A degree of openness will be maintained by confining proposed tree planting to two clusters and through the use of shrubs on the remainder of the bund. This will ensure that the viewer's eye is not attracted to the planting area while providing some vertical elements that integrate the proposed structures into the surroundings.

*38.2.2.4 Ensure the scale and location of buildings including associated structures, trails and accesses, and noise and lighting associated with recreation activities is consistent with the level of amenity anticipated in the zone and in the surrounding environment, having particular regard to the following where new buildings, structures or lighting are proposed:*

*a. the purpose, number, size and location of new buildings, structures and lighting are appropriate, in terms of their function and the sensitivity of the environment;*

*b. that building design and appearance positively contributes to amenity, cultural, ecological and landscape values;*38.2.2.5 (adjoining or nearby to an ONL)

The proposed access road will be of a very similar appearance to the existing access track. The earthworks will cause moderate adverse effects in the short term (probably for around half a year, depending on growing seasons) until grass is established and planting is implemented. In the context of the Frankton Flats area, being a mixed-use and light industrial area which comprises predominantly large format businesses, the proposal will not appear out of character or detract further from the existing values. No lighting will be required as part of the proposal.

The mitigation proposed for the tanks consists of a planted bund and areas of mitigation planting. Due to the terrain, which drops steeply to the south, the planting cannot fully visually contain the proposal until it is reasonably mature (around 5-10 years). On the eastern side the proposal will be screened from private and public views from this direction after around 10 years with good visual integration after 5 years. From Quail Rise visibility would be restricted to properties along part of Ferry Hill Drive and Trench Hill Road (see visual simulation VP A). The earthworks and eastern-most tank would be reasonably prominent with moderate- low visual effects immediately following construction. However, planting will reduce these effects to low within around 5 years.

*38.2.2.5 Ensure that any buildings or structures located within, adjoining or nearby to an Outstanding Natural Feature or Landscape, protect, maintain or enhance those values by:*

- a. limiting development and activities in the vicinity of water bodies to the land based components of community recreation water based activities, which have a practical and functional need to be located within these areas; (refer also to Objective 38.2.4)*
- b. preserving the natural character of the margins of waterbodies; (refer also to Objective 38.2.4)*
- c. ensuring buildings are located in areas that are least sensitive to change and have capacity to absorb development;*
- d. requiring buildings to be designed and finished so they:
  - i. avoid visual dominance; and*
  - ii. mitigate or remedy adverse effects on the values of the Outstanding Natural Feature or Landscape; and**
- e. ensuring trails, access and carparking areas (including associated earthworks) do not degrade visual amenity values or disrupt the natural character or landforms.*

There are two waterbodies in the vicinity of the proposal; a man-made water race extends above the reservoir site and an ephemeral stream drains the slopes of Ferry Hill to the west of the site. The natural character of the water race is not relevant given that it is a man-made waterway. The ephemeral stream is located on the western side of the access road and there will be no effects on the natural character over and above of the existing access road.

Given that urban buildings will appear in the immediate foreground of the tanks the visual amenity of the locality will be entirely different to the current setting. The presence of water tanks in the proposed location would be perceived as part of the wider urban development on Frankton Flats. It is, therefore considered that the area will have a high ability to absorb this type of development which is commonly associated with urban areas.

Overall, the proposed development follows the existing development patterns in the area and, while visible, it will not appear incongruent within the surrounding environment.

## 6.0 Conclusion

The proposed designation is to allow for the construction and operation of up to three new reservoirs located on a joint platform within the designation area in the future. The Site for the NOR is situated on the lower south-facing slopes of Ferry Hill above Frankton Flats.

The lower parts of the south-facing Ferry Hill slopes are more modified than the upper parts which are more legible in comparison. The higher-lying slopes and in particular the east-facing aspect of the feature are expressive of the formative processes through exposure of the scoured landform. This leads to a higher landscape character sensitivity of those high-lying areas that have been identified as an Outstanding Natural Landscape (ONL- WB) in the ODP, compared to the proposed Site which falls near the ONL boundary. The zoning of the site and the ONL line in relation to Quail Rise has not yet been determined as part of the District Plan review, but as currently proposed the site would fall outside of the Ferry Hill ONF.

The proposed reservoirs are located in an open space activity area within the Quail Rise zone under the ODP and partially within the Open Space - Informal Recreation zone under the PDP. While there are no buildings on, or immediately adjacent to the Site, the land around the Site has infrastructure situated within it. This includes the existing water reservoir that is located to the northwest above the proposed reservoir, an existing 110KV transmission line that is located just below the proposed reservoir platform and an existing water race that transects the Ferry Hill slope just above the proposal. The Quail Rise subdivision is also located approximately 300m to the east of the proposed designation.

The development around the modified base and lower slopes of Ferry Hill emphasises the landscape values and openness of the upper part. The reservoir site would be located within the ODP ONL, close to its boundary, but within the proposed location it would form an expected element in this part of the landscape. The Site currently forms part of the area which acts as a transition between the Frankton Flats (with its future higher density development) and the more legible landscape values and openness provided by the ONL above.

It is anticipated that the northern side of Frankton Flats will change significantly over the coming decade given the change of the zoning of the land to Business Mixed Use Zone and Medium and High Density Residential Zone just below the proposed tanks.

As outlined in detail in the visibility analysis table (Section 5.2), the proposal will be visible from a number of viewpoints within the Frankton Flats immediately following construction. In most of the areas the views would be transient as they are mostly gained by the public travelling by car or along footpaths with few residences currently present on the flats.

The mitigation proposed for the tanks consists of a planted bund and areas of clustered mitigation planting while maintaining a degree of openness on the site. Due to the terrain, which drops steeply to the south, the planting will require around 5-10 years to visually contain the proposal on the southern side. The proposal will be mostly screened after around 5 years and fully screened after around 10 years to minimise views from private and public views from Quail Rise subdivision.

While the proposal will be visible, it will not be visually dominant due to the visual integration achieved through planting, bunding and the dark colour of the tanks. In the context of the Frankton Flats area, being a mixed-use and light industrial area which is subject to further development, the proposal will not appear out of character or detract further from the existing values or openness of the landscape.

# Appendix 1: Landscape & Visual Effects Assessment Methodology



## Landscape and Visual Effects Assessment Methodology

5 April 2018

### Introduction

The landscape and visual effects assessment process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, the existing character of the landscape and the experience of it. In addition, the landscape assessment method may include an iterative design development processes which includes stakeholder involvement. The outcome of any assessment approach should seek to avoid, remedy or mitigate adverse effects (see **Figure 1**). A separate assessment is required to assess changes in natural character in coastal areas and other waterbodies.

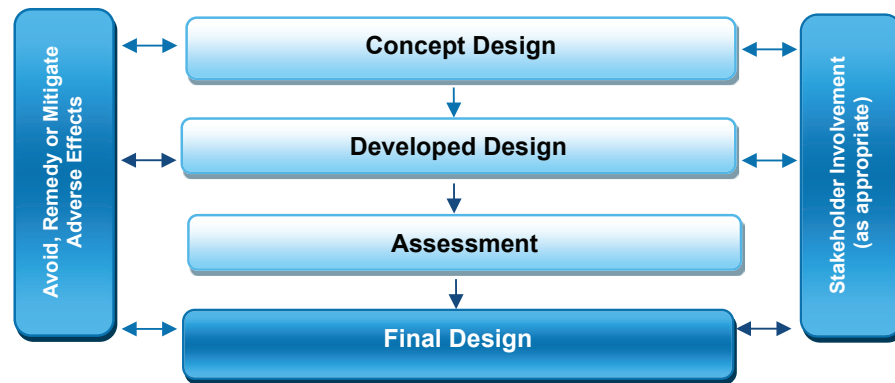


Figure 1: Design feedback loop

When undertaking landscape and visual effects assessments, it is important that a structured and consistent approach is used to ensure that findings are clear and objective. Judgement should always be based on skills and experience, and be supported by explicit evidence and reasoned argument.

While landscape and visual effects assessments are closely related, they form separate procedures. The assessment of the potential effect on the landscape forms the first step in this process and is carried out as an effect on an environmental resource (i.e. landscape elements, features and character). The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:



**Landscape effects:**

*Change in the physical landscape, which may change its characteristics or qualities.*

**Visual effects:**

*Change to views which may change the visual amenity experienced by people.*

The policy context, existing landscape resource and locations from which a development or change is visible all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the landscape must first be described, including an understanding of the key landscape characteristics and qualities. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described alongside a judgement made on the value or importance of the potentially affected landscape.

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the Quality Planning Landscape Guidance Note<sup>7</sup> and its signposts to examples of best practice which include the UK guidelines for landscape and visual impact assessment<sup>8</sup> and the New Zealand Landscape Institute Guidelines for Landscape Assessment<sup>9</sup>.

**Landscape Effects**

Assessing landscape effects requires an understanding of the nature of the landscape resource and the magnitude of change which results from a proposed development to determine the overall level of landscape effects.

**Nature of the landscape resource**

Assessing the nature of the landscape resource considers both the susceptibility of an area of landscape to change and the value of the landscape. This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The value or importance placed on the landscape, particularly those confirmed in statutory documents; and
- The scope for mitigation, appropriate to the existing landscape.

The susceptibility to change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Landscape (RMA s.6(b)) based on important biophysical, sensory/ aesthetic and associative landscape attributes, which have potential to be affected by a proposed development.

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<sup>7</sup> <http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape>

<sup>8</sup> Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

<sup>9</sup> Best Practice Note Landscape Assessment and Sustainable Management 10.1, NZILA

## Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to existing areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
of Nature Landscape Resource	<b>Susceptibility to change</b>	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change which would result from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	<b>The value of the landscape</b>	The landscape includes important biophysical, sensory and associative attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or associative attributes. The landscape is of low or local importance.
of Magnitude Change	<b>Size or scale</b>	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	<b>Geographical extent</b>	Wider landscape scale.	Site scale, immediate setting.
	<b>Duration and reversibility</b>	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

## Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of visual influence' of the site and proposal. Where possible, computer modelling can assist to determine the theoretical extent of visibility together with field work undertaken to confirm this. Where appropriate, key representative viewpoints should be agreed with the relevant local authority.

### Nature of the viewing audience

The nature of the viewing audience is assessed in terms of the susceptibility of the viewing audience to change and the value attached to views. The susceptibility of the viewing audience is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in

outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the landscape setting.

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

### Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change which may distinguish between temporary (often associated with construction) and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA<sup>10</sup>.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 2** has been prepared to help guide this process:

Contributing Factors		Higher	Lower
Nature of the Viewing Audience	<b>Susceptibility to change</b>	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.
	<b>Value attached to views</b>	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community.  Infrequent visitor numbers.
Magnitude of Change	<b>Size or scale</b>	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of view retained.  Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Glimpse / no view of the proposed development.
	<b>Geographical extent</b>	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.
	<b>Duration and reversibility</b>	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).

Table 2: Determining the level of visual effects

### Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time

<sup>10</sup> Best Practice Guide: Visual Simulations BPG 10.2, NZILA

in both subtle and more dramatic transformational ways, these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by **Table 3** set out below:

Nature of effect	Use and Definition
<b>Adverse (negative):</b>	The proposed development would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
<b>Neutral (benign):</b>	The proposed development would complement (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
<b>Beneficial (positive):</b>	The proposed development would enhance the landscape and / or visual amenity through removal of restoration of existing degraded landscapes uses and / or addition of positive elements or features

Table 3: Determining the Nature of Effects

### Determining the Overall Level of Effects

The landscape and visual effects assessment concludes with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation.

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in **Table 4** below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from NZILA's Best Practice Note.

Very Low	Low	Moderate – Low	Moderate	Moderate-High	High	Very High
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Effect Rating	Use and Definition
<b>Very High:</b>	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character.
<b>High:</b>	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains. <i>Concise Oxford English Dictionary Definition</i> <i>High: adjective- Great in amount, value, size, or intensity.</i>
<b>Moderate- High:</b>	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed.
<b>Moderate:</b>	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent but not necessarily uncharacteristic within the receiving landscape. <i>Concise Oxford English Dictionary Definition</i> <i>Moderate: adjective- average in amount, intensity, quality or degree</i>
<b>Moderate - Low:</b>	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent or uncharacteristic within the receiving landscape.
<b>Low:</b>	No material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic and absorbed within the receiving landscape. <i>Concise Oxford English Dictionary Definition</i> <i>Low: adjective- 1. Below average in amount, extent, or intensity.</i>
<b>Very Low:</b>	Little or no loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation.

Table 4: Determining the overall level of landscape and visual effects

## Appendix 2: Planting Schedule

QLDC RESERVOIRS - Quail Rise						
Plant Quantities						
Code	Zone & Plant	Common Name	Percentage/ Number	Grade (L)	Centres (m)	Quantity
<b>Native Tree Mix</b>						
860	m2					
	<i>Fuscospora cliffortioides</i>	Mountain Beech	15%	2.5	2	32
	<i>Fuscospora cliffortioides</i>	Mountain Beech	45%	RT/ 7cm	2	97
	<i>Aristotelia serrata</i>	Makomako / Wineberry	10%	2.5	2	22
	<i>Plagianthus regius</i>	Manatu / Ribbonwood	20%	2.5	3	19
	<i>Hoheria angustifolia</i>	Hungere / Narrow-leaved Lacebark	10%	2.5	2	22
	<i>Paesia scarberula</i>	Scented Fern	-	RT/ 7cm	0.5	40
Subtotal:			100%			<b>231</b>
<b>Grey Shrubland</b>						
760	m2					
	<i>Coprosma propinqua</i>	Mingimingi	20%	2.5	1.5	67
	<i>Coprosma crassifolia</i>	Mingimingi	15%	2.5	1.5	51
	<i>Coprosma rugosa</i>	Needle-leaved Mountain Coprosma	15%	2.5	1.5	51
	<i>Olearia odorata</i>	Scented Tree Daisy	10%	2.5	2	19
	<i>Olearia paniculata</i>	Golden Ake Ake	15%	2.5	2	29
	<i>Olearia avicenniaefolia</i>	Mountain Ake Ake	10%	2.5	2	19
	<i>Discaria toumatou</i>	Matagouri	5%	RT/ 7cm	1	38
	<i>Sophora microphylla</i>	South Island Kowhai	10%	2.5	2.5	12
Subtotal:			100%			<b>285</b>
<b>Medium Size Natives</b>						
930	m2					
	<i>Hebe salicifolia</i>	Koromiko	20%	1.5	1.5	83
	<i>Austroderia toetoe</i>	NZ Toe Toe	15%	RT/ 7cm	1.5	62
	<i>Pittosporum tenuifolium 'Hawea'</i>	NZ Pittosporum	10%	2.5	2	23
	<i>Corposma crassifolia</i>	Mingimingi	25%	2.5	1.5	103
	<i>Corposma propinqua</i>	Mingimingi	30%	2.5	1.5	124
Subtotal:			100%			<b>250</b>

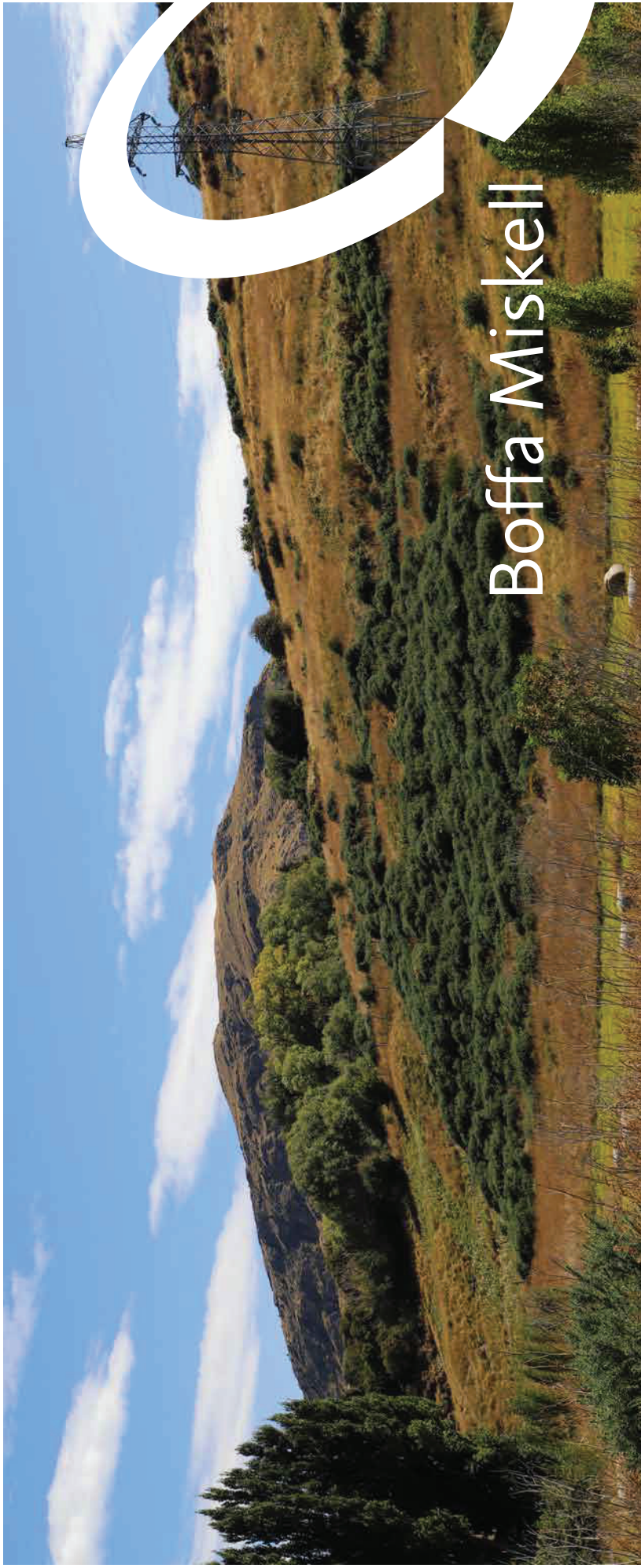
Plant quantities does not account for land grade

**Total plants: 767**

# QLDC Reservoirs, Quail Rise

GRAPHIC ATTACHMENT  
LANDSCAPE ASSESSMENT | BOFFA MISKELL LIMITED

10 August 2022



# Contents

Figure 1A: Proposed Mitigation - Location Plan .....	3
Figure 1B: Proposed Mitigation - Plan .....	4
Figure 2: Viewpoint Map .....	5
Figure 3: Context Photograph .....	6
Figure 4: Viewpoint A .....	7
Figure 5A: Visual Simulation of Viewpoint A - Year 1, 1 tank.....	8
Figure 5B: Visual Simulation of Viewpoint A - Year 5, 1 tank .....	9
Figure 5C: Visual Simulation of Viewpoint A - 10 years, 3 tanks.....	10
Figure 6: Viewpoint A Updated 2022.....	11
Figure 7: Viewpoint B .....	12
Figure 8: Viewpoint C .....	13
Figure 9: Viewpoint D.....	14
Figure 10: Viewpoint E .....	15
Figure 11: Viewpoint F.....	16
Figure 12A: Visual Simulation of viewpoint F - Year 1, 1 tank .....	17
Figure 12B: Visual Simulation of Viewpoint F - 5 years, 1 tank .....	18
Figure 12C: Visual Simulation of Viewpoint F - 10 years, 3 tanks.....	19
Figure 14: Viewpoints G.....	20
Figure 15: Viewpoint H.....	21
Figure 16: Viewpoints I.....	22
Figure 17: Viewpoint J.....	23
Figure 18A: Visual Simulation of Viewpoint J - Year 1, 1 tank.....	24
Figure 18B: Visual Simulation of Viewpoint J - 5 years, 1 tank .....	25
Figure 18C: Visual Simulation of Viewpoint J - 10 years, 3 tanks.....	26
Figure 19: Viewpoint J Updated 2022.....	27