APPLICATION AS NOTIFIED

QUEENSTOWN LAKES DISTRICT COUNCIL

(RM241070)

File Number RM241070

QUEENSTOWN LAKES DISTRICT COUNCIL

SERVICE OF NOTICE / LIMITED NOTIFICATION

Service of Notice for Limited Notification of a Resource Consent application under Section 95B of the Resource Management Act 1991.

The Queenstown Lakes District Council (as regulatory authority) has received an application for a resource consent from:

Queenstown Lakes District Council (as territorial authority)

What is proposed:

To breach noise and vibration standards during construction associated with the upgrade of a wastewater pipeline.

The location in respect of which this application relates is situated at:

Robins Road, Queenstown.

A full copy of this Limited Notified package is available for you to download on the following link:

https://www.qldc.govt.nz/services/resource-consents/notified-resource-consents#limited-not-rc or via our edocs website using RM241070 as the reference https://edocs.qldc.govt.nz/Account/Login

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

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

The Council planner processing this application on behalf of the Council is Rebecca Holden, who may be contacted by phone 021 170 1496 or e-mail at rebecca.holden@qldc.govt.nz

Any person who is notified of this application, 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 application relates that –

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

If you wish to make a submission on this application, you may do so by sending a written submission to the consent authority no later than:

Wednesday 30th April 2025.

The submission must be dated, signed by you and must include the following information:

a) Your name and postal address and phone number/fax number.
b) Details of the application in respect of which you are making the submission including location.
c) Whether you support or oppose the application.
d) Your submission, with reasons.
e) The decision you wish the consent authority to make.
f) Whether you wish to be heard in support of your submission.

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 13. Copies of this form are available Council website:

https://www.qldc.govt.nz/services/resource-consents/application-forms-and-fees#other_forms

You must serve a copy of your submission to the applicant (Queenstown Lakes District Council c/- Emily Ireland, WSP, emily.ireland@wsp.com) as soon as reasonably practicable after serving your submission to Council:

C/- Emily Ireland
emily.ireland@wsp.com
WSP NZ Limited
PO Box 1482, Christchurch 8140

QUEENSTOWN LAKES DISTRICT COUNCIL

(signed by Dr Lee Beattie, Independent Commissioner pursuant to a delegation given under Section 34A of the Resource Management Act 1991)

Date of Notification: 28th March 2025.

Address for Service for Consent Authority:

Queenstown Lakes District Council	**Phone**	**03 441 0499**
Private Bag 50072, Queenstown 9348	**Email**	**rcsubmission@qldc.govt.nz**
Gorge Road, Queenstown 9300	**Website**	**www.qldc.govt.nz**

TechnologyOne ECM Document Summary

Printed On 25-Mar-2025

Class	Description	Doc Set Id / Note Id	Version	Date
PUB_ACC	Form 9	8416907	2	17-Dec-2024
PUB_ACC	Record of Title OT324-10	8416908	1	17-Dec-2024
PUB_ACC	AEE	8416909	1	17-Dec-2024
PUB_ACC	AEE Addendum, 17.2.25	8525560	1	19-Mar-2025
PUB_ACC	Appendix A - CNVIA	8416912	1	17-Dec-2024
PUB_ACC	Acoustic consultant advice note - 12.2.25	8525562	1	19-Mar-2025
PUB_ACC	Appendix B - Design Plans - Rev B	8525561	1	19-Mar-2025
PUB_ACC	Appendix C - Stakeholder Interaction Record	8416906	1	17-Dec-2024
PUB_ACC	Appendix D - CNVMP - Rev 01	8530518	1	24-Mar-2025
PUB_ACC	QLDC Acoustic peer review 4_03_25	8505681	1	04-Mar-2025

APPLICATION FOR RESOURCE CONSENT OR
FAST TRACK RESOURCE CONSENT

FORM 9: GENERAL APPLICATION

QUEENSTOWN LAKES DISTRICT COUNCIL

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:
(Name Decision is to be issued in)

All trustee names (if applicable): Queenstown Lakes District Council

*Contact name for company or trust: Andrew Timms

*Postal Address: Private Bag 50072 Queenstown, New Zealand

*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: andrew.timms@qldc.govt.nz

*Phone Numbers: Day

Mobile: +64 21 846 758

*The Applicant is:

- [x] Owner
- [ ] Prospective Purchaser (of the site to which the application relates)
- [ ] Occupier
- [ ] Lessee
- Other - Please Specify:

[x] 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: Emily Ireland, WSP New Zealand Ltd

*Phone Numbers: Day +64 9 302 3150

Mobile:

*Email Address: emily.ireland@wsp.com

*Postal Address: WSP NZ Ltd, PO Box 1482, Christchurch

*Postcode: 8140

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: [x]
- Agent: [ ]
- Other - Please specify: Internal QLDC transfer
- Email: [ ]
- Post: [ ]

*Attention: Queenstown Lakes District Council

*Postal Address: Private Bag 50072 Queenstown, New Zealand

*Post code: 9348

*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:

Owner Email:

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:

Robins Road (legal road corridor), and the Recreation Ground at 1 Memorial Street, Queenstown (Section 134 Block XX Shotover SD)

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

District Plan Zone(s): Road Zone and Active Sports and Recreation

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? If 'yes' please provide information below	YES ☐	NO ☑

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:

CONSENT(S) APPLIED FOR // * Identify all consents sought // ALSO FILL IN OTHER CONSENTS SECTION BELOW

☑ 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

☐ Land use consent includes Earthworks

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:

Section 9(3) consent for the generation of noise and vibration during construction to upgrade a wastewater pipeline along Robins Rd.

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 25m³ per 500m²). 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

Do you need any consent(s) from Otago Regional Council?

☐ Yes ☑ N/A

If Yes have you applied for it?

☐ Yes ☐ No

If Yes supply ORC Consent Reference(s)

If ORC Earthworks Consent is required would you like a joint site visit ?

☐ Yes ☐ No

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 the fee paid at lodgement includes an initial monitoring fee of $287 for land use resource consent applications and designation related applications, as once Resource Consent 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 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. Unless you have requested an invoice.

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 and included on the invoice.

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 – BKNZNZ22)
- ☑ 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: PO number: 63866

Amount Paid: Land Use and Subdivision Resource Consent fees - please select from drop down list below

Please select

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

Date of Payment

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.

☑ 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.

PLEASE TICK

Signed (by or as authorised agent of the Applicant) **

Full name of person lodging this form Andrew Timms

Firm/Company RCP Ltd

Dated 13/12/24

**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:

Information provided within the Form above

    - (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.

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)):

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.

A2 APPENDIX 2 // Information requirements for subdivision

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.

A3 APPENDIX 3 // Development Contributions

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

A4 APPENDIX 4 // Fast - Track Application

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.

A5 APPENDIX 5 // Naming of documents guide

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

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **OT324/10**

Land Registration District **Otago**

Date Issued 07 May 1947

Prior References

OT72/96 PROC 5595

Estate Fee Simple

Area 1.7295 hectares more or less

Legal Description Part Section 134 Block XX Shotover Survey District

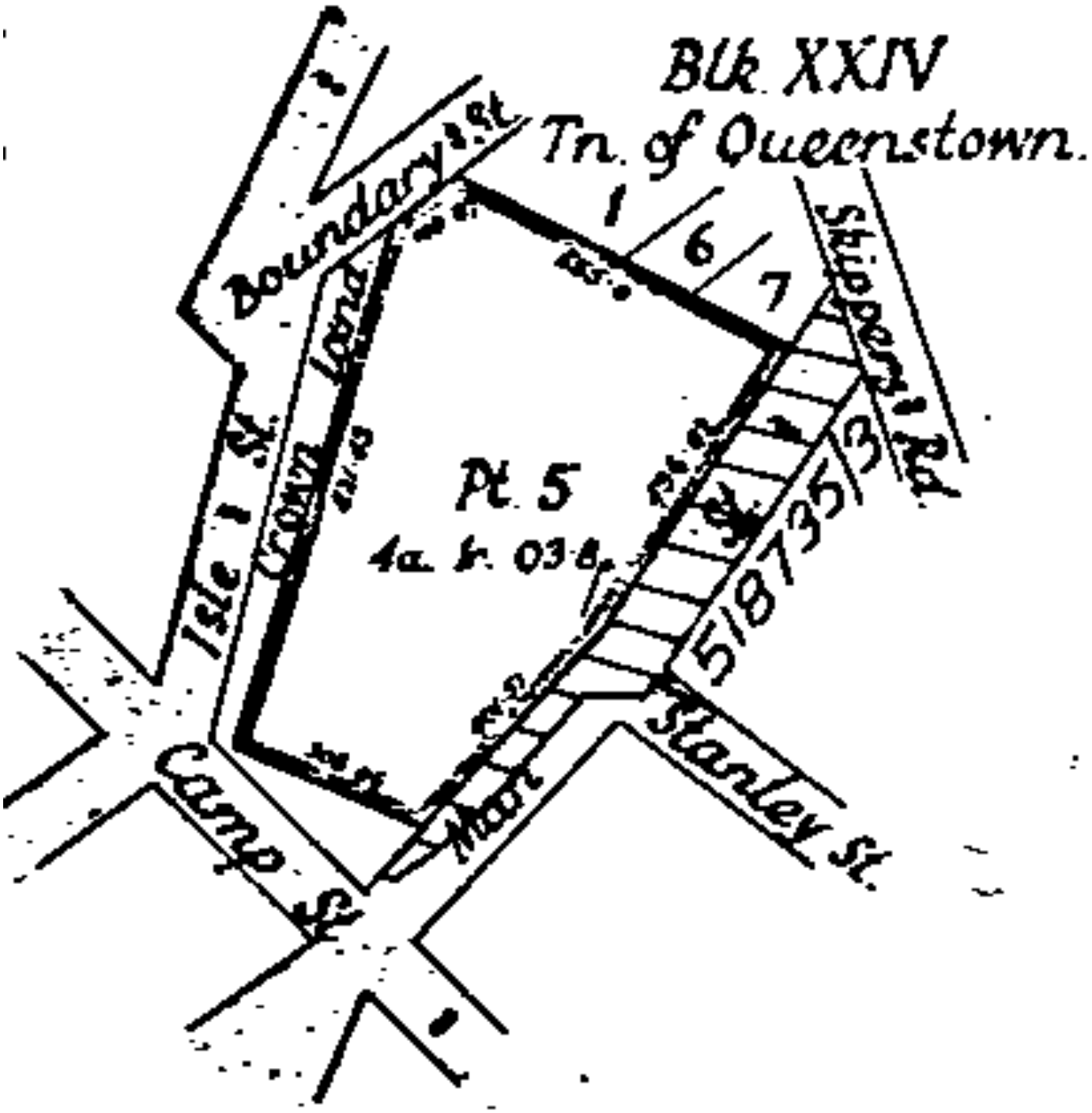
Purpose Recreation reserve

Registered Owners

Queenstown Lakes District Council

Interests

635362 Subject to the Reserves Act 1977 - 21.5.1985 at 10.35 am



Queenstown Lakes District Council

ROBINS ROAD WASTEWATER UPGRADE

6 DECEMBER 2024

PUBLIC

ROBINS ROAD WASTEWATER UPGRADE

Queenstown Lakes District Council

WSP
Christchurch
12 Moorhouse Avenue
Christchurch 8011
New Zealand
+64 3 363 5400
wsp.com/nz

REV	DATE	DETAILS
1	16/10/2024	E. Ireland
2	3/12/2024	E. Ireland

	NAME	DATE
Prepared by:	Emily Ireland	28/11/2024
Reviewed by:	Steve Baker	3/12/2024
Approved by:	Haydn Gwilliam	6/12/2024

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12 Moorhouse Avenue
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TABLE OF CONTENTS

1 INTRODUCTION

1.1 OVERVIEW

In 2020, the Queenstown Lakes District Council (QLDC) developed the Queenstown Wastewater Masterplan to guide future planning and investment in Queenstown. One issue identified within the plan was the under-capacity wastewater pipeline down Robins Road.

The existing pipeline (DN225) was installed prior to 1989, and its alignment goes through seven private properties without easements. The alignment is also in close proximity to Horn Creek.

The pipeline cannot service its current catchment and wastewater overflows have been recorded from the pipeline. There is a risk of contamination to Horn Creek from any future overflows

As a solution, QLDC is proposing to renew the Robins Road wastewater pipeline. The noise and vibration generated during construction to renew the wastewater pipeline require resource consent.

1.2 RESOURCE CONSENT SOUGHT

Based on the description of works (Section 4), the resource consents required to undertake the works have been identified and summarised in Table 1-1 and are sought under the Proposed Queenstown Lakes District Plan (pQLDP).

Table 1-1: Summary of Resource Consents from the pQLDP

RMA SECTION	ACTIVITY
s9(3) Land use consent	• Construction noise • Construction vibration

2 EXISTING ENVIRONMENT

2.1 SITE LOCATION

An existing asbestos cement wastewater pipeline runs along Robins Road before passing through the rear of seven private properties (23-43 Robins Road) and then into the northern end of the recreation reserve located at 1 Memorial Street (Section 134 Block XX Shotover SD), also known as the 'Recreation Ground'.

The land use surrounding this section of Robins Road is varied and consists of largely residential, commercial, educational and recreational/outdoor activities. The majority of the proposed works are within the Road Zone, however, the southernmost part of the works will be within the recreation reserve which is zoned 'Active Sports and Recreation Zone' under the pQLDP zoning. The properties along Robins Road, east of the road boundary are zoned 'High Density Residential Zone' (pQLDP).

The proposed works area is not within a Statutory Acknowledgement Area, Tōpuna or Nohoanga, Wāhi Tūpuna area, Outstanding Natural Feature, or Heritage Landscape Overlay Arae or Heritage Precinct.

The recreation reserve is within Designation 210. QLDC is the authority responsible for this designation which is designated for 'Queenstown recreation reserve purposes'.

In terms of natural features, Lake Wakatipu is located a significant distance from the site, approximately 450m south of the proposed works. Protected Tree 168 (species Julgans regia) is located within the recreation reserve (Figure 2-1). The proposed works will occur more than 10 m *away* from the Protected Tree. Horn Creek flows adjacent to the existing pipeline (Figure 2-2)

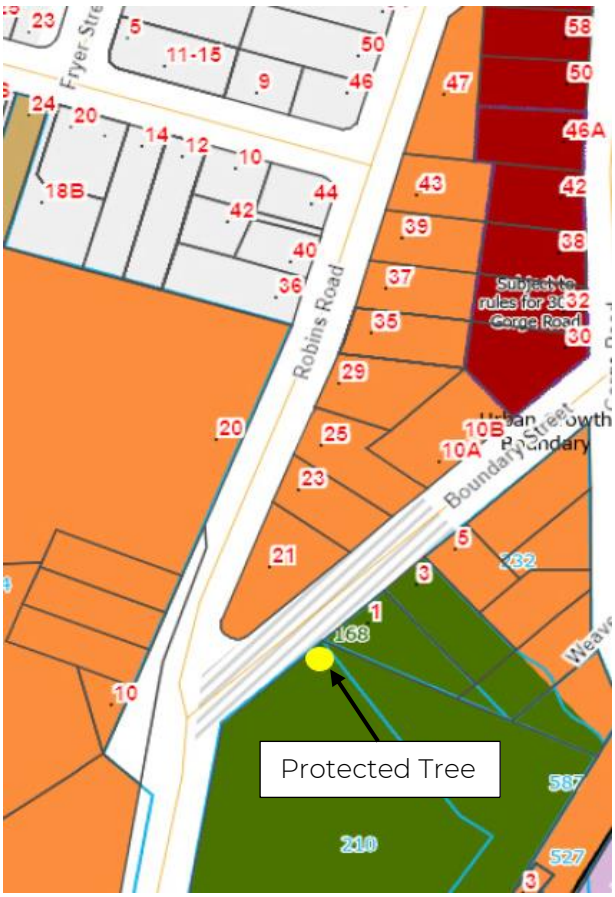

Figure 2-1: pQLDP Maps

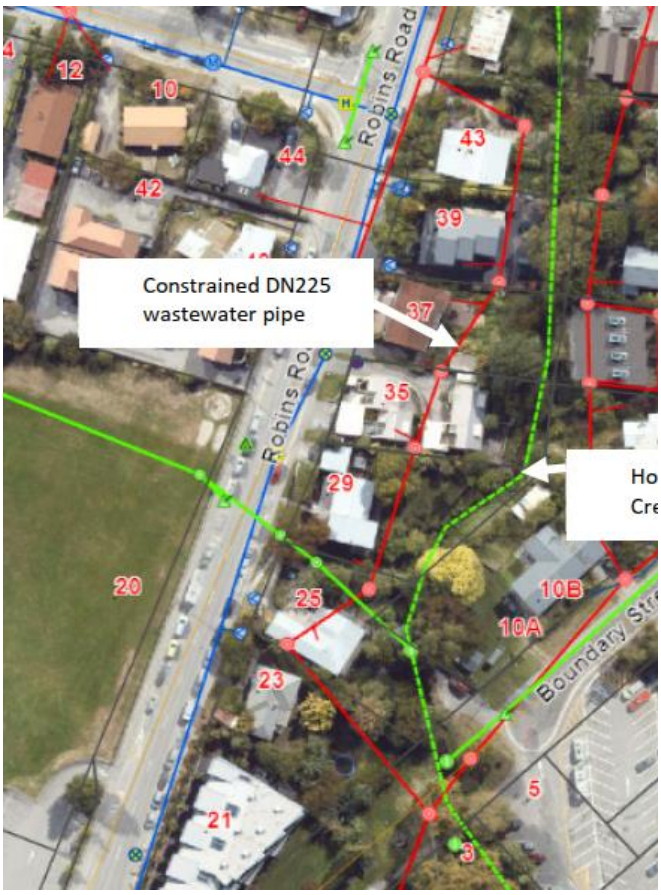

Figure 2-2: Horn Creek in relation to Robins Road wastewater pipe

2.2 NOISE

The Construction Noise and Vibration Impact Assessment (CNVIA) (**Appendix A**) has identified the noise-sensitive receptors (NSRs) within the area of the proposed works and the associated land uses. These are shown in Figure 2-3.

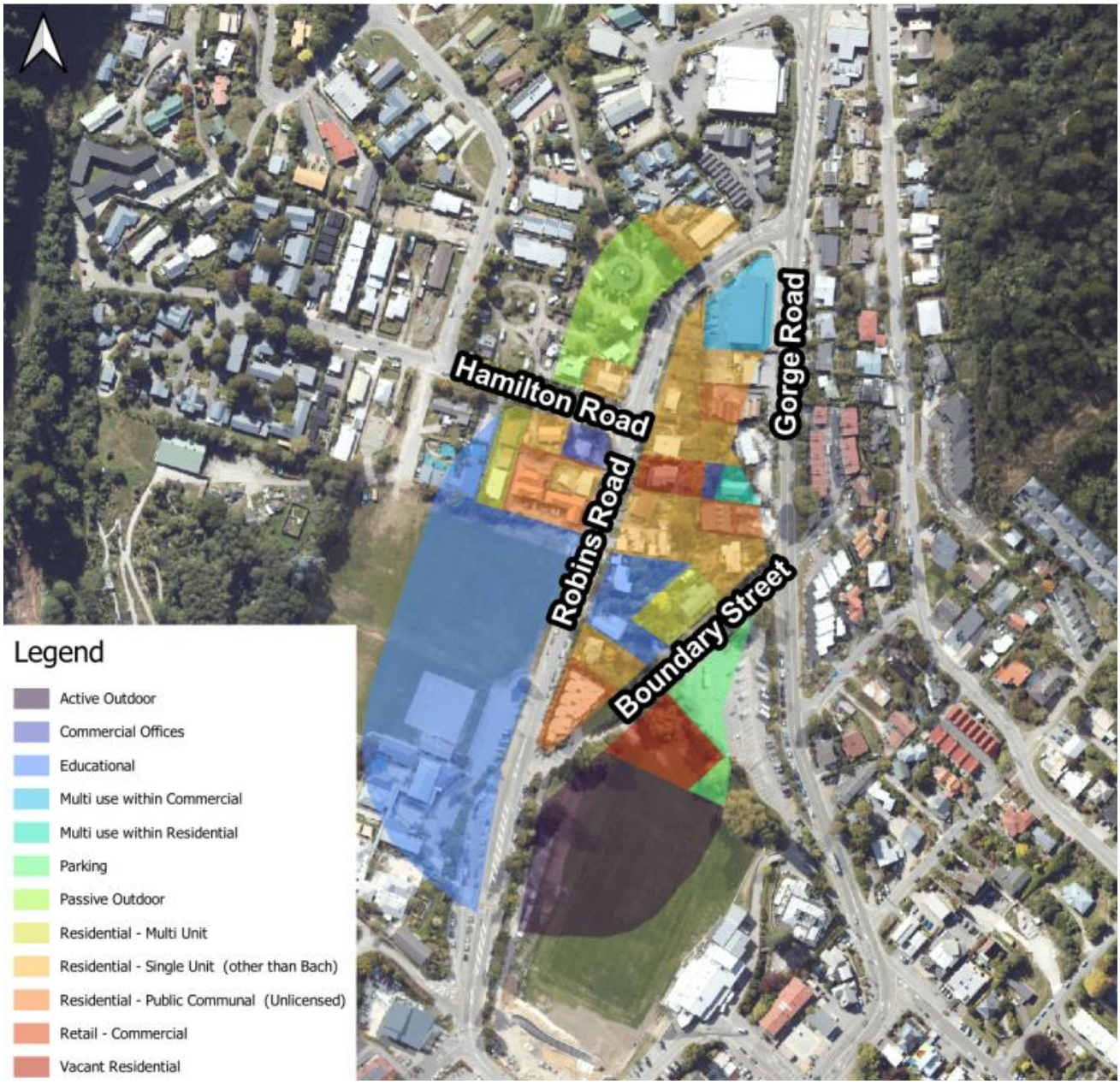

Figure 2-3. 2-4NSRs and land use within proposed works area

3 DESCRIPTION OF WORKS

3.1 OVERVIEW

QLDC proposes to install a new wastewater pipeline that will run from the Gorge Road end of Robins Road south towards the intersection of Boundary Street/Robins Road and into the Recreation Reserve. The pipeline within the reserve will then connect via a manhole to the existing wastewater pipeline running through the reserve. The existing wastewater pipeline running through the private properties adjacent to Robins Road will be abandoned and these properties will instead be service with individual pressure sewers connected to the new wastewater pipeline.

Pipeline construction will occur along the eastern side of Robins Road and involve the construction of six new manholes along the alignment. Laterals and individual pressure sewer systems will be installed within the seven residential properties.

A general overview of the proposed pipeline and works is shown in Figure 3-1. See Appendix B for the Design Plan. It is noted that there are some minor differences in length concerning the pressure sewer pipeline adjacent to the private properties within both the CNVIA and CNVMP and Appendix B. Appendix B and Figure 3-1 are the most up-to-date plans. The minor differences in plans will not have any material impact on the AEE or the CNVIA and CNVMP.

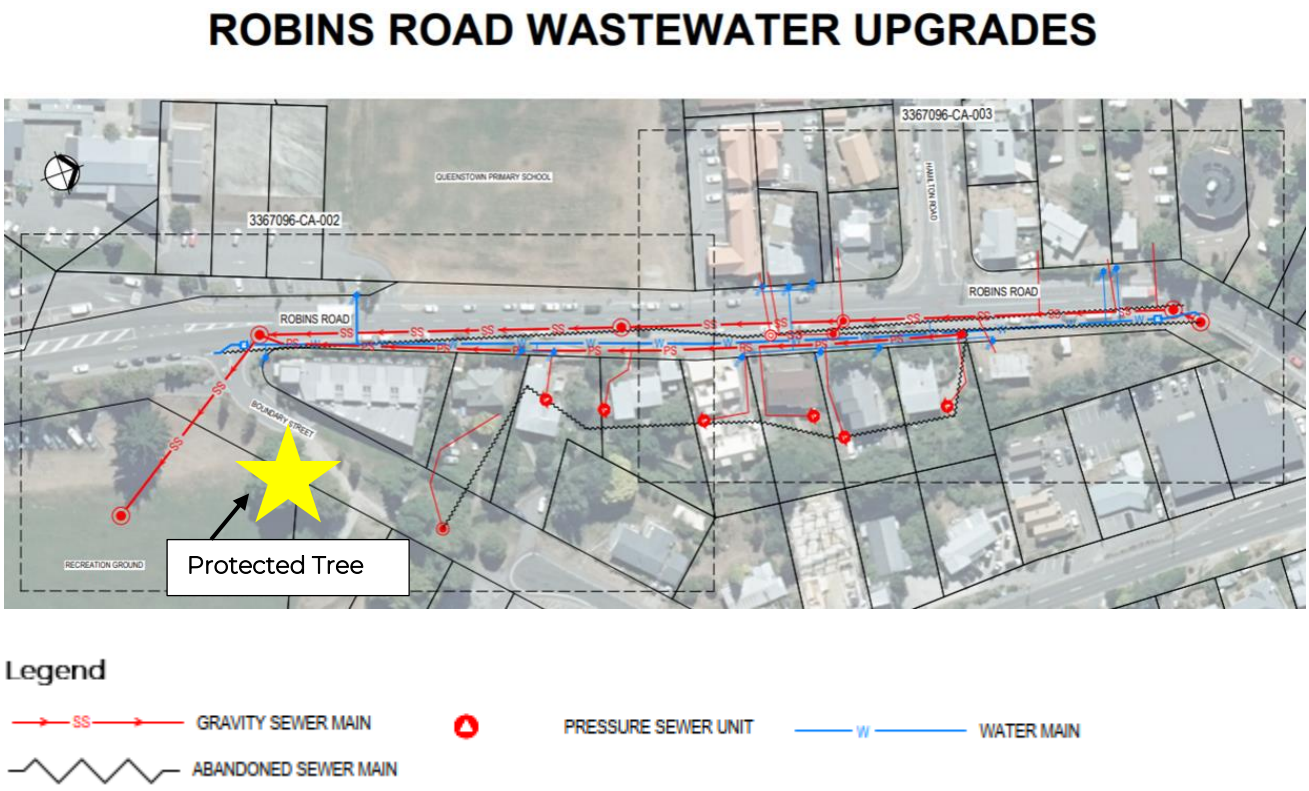

Figure 3-1: Proposed pipe renewal works along Robins Road

Construction activities to undertake the proposed works will involve sheet piling, excavation, dewatering, road reinstatement and tie-in works, all of which will generate noise and vibration. The proposed activities and their total durations over the entire project are provided below:

- Sheet piling for approximately 70 days.

- Reinstatement of the road for approximately 20 days.
- Shallow excavation works (less than 1.5 m in depth) for approximately 30 days.
- Night-time connection/tie in works for approximately 7 nights.

The estimated time durations for the activities noted above are total durations for each activity during the course of the works. Some of the above activities are likely to run in parallel to each other. As such, the activities may not occur consistently or constantly along the project timeline, or all day.

Generally, construction hours will be from 0730 to 1730 hours Monday to Saturday, although this will be subject to the Construction Noise and Vibration Management Plan (CNVMP) that is to be prepared by the contractor as part of the proposed mitigation measures.

Further detail regarding the earthworks and construction activities is provided below.

3.2 WASTEWATER PIPELINE CONSTRUCTION

All earthworks within Robins Road and the Recreation Reserve will be undertaken in accordance with the QLDC consent RM200341, including the development of an erosion and sediment control plan and a construction environmental management plan.

Earthworks for the construction of the new wastewater pipeline will be open trenching involving the use of a combination of trench shield and sheet piling. Trenching will be undertaken in stages, with approximately 10 – 15 m long sections opened at any one time to manage the excavation and to deal with groundwater.

Between manhole 1 and manhole 3 (an approximate distance of 160m) trenching will be supported by trench shields. As the excavation progresses, shields will be installed and moved progressively to support the ground. As the pipeline is progressively installed, the excavation is also then progressively backfilled with AP65 or river run gravel, and the road surface will be reinstated.

Dewatering may be required between the Hamilton Road and Gorge Road section of the alignment which would operate 24 hours a day for 7 days a week. If dewatering takes place, 6-inch pumps will remove water from the excavations. The water will be pumped into a clarifier tank/lamella for treatment. The water will then be discharged in accordance with the QLDC-owned global discharge permit for dewatering (RM20.017.03). The preference will be to use quieter electric pumps (if a power supply can be sourced) otherwise a standby generator will need to be used.

From manhole 3 to approximately CH295 (which is located between manhole 4 and manhole 5), the sewer will be deeper than 5 m and will therefore require specifically designed temporary works to support the ground. Through this section of approximately 135 m, sheet piling will need to be used. Sheet piles will be installed using at least a 100T crane with a Vibro Hammer attachment. The sheet piles will be installed as low to the ground as possible to allow safe straddling of plant over them.

Once sheet piles are installed, excavations of the trench will proceed with approximately 10 – 15 m sections of open trench at any one time, with the pipeline being progressively installed and backfilled. As each 10 – 15 m section is completed, the sheet piles are removed and installed progressively ahead, thereby ensuring the temporary work is always in place ahead of the excavation.

For trench excavation within the Recreation Reserve, the site is listed as being a Hazardous Activities and Industries List (HAIL) site, and therefore, the excavated material will be re-used as part of the trench backfill. The remaining excavated material will be removed and dumped at an appropriate facility.

Night works will be required. When dewatering is required, pumps will be running 24 hours per day, either via electric water pump or by diesel generator. Night-time connection works will also need to take place when connecting the private laterals into the main pipeline, and for other connection activities, as this will be the period of time when there is the least demand on the wastewater system and the least disruption of services. Careful management of noise during night-time works will be required.

All private property access along the eastern side of Robins Road will be maintained throughout the works. The section from manhole 3 to CH295 will require the road to be closed. There are no residential driveways within this section. There is a carpark exit from the adjacent hotel that can be managed on site. All road closures and traffic management throughout the duration of the project will be undertaken in accordance with an approved temporary traffic management plan.

3.3 PRIVATE PROPERTY LATERAL CONNECTIONS

The purpose of the new wastewater pipeline is to replace the old pipeline running along the rear of the seven residential properties. With the replacement pipeline running along Robins Road, earthworks are required within each of the seven properties to install and connect a sewer pressure system to each house, and to connect new lateral pipes to the new pipeline within the road corridor.

Final alignments and details for the pressure sewers are currently being agreed with each of the seven residents. The estimated typical earthworks requirement for each property will be as follows:

- Approximately 10 m^3 earthworks, consisting of approximately 5 m^3 for the pressure sewer tank install, and approximately 5 m^3 of shallow trench for the lateral pipe
- Maximum depth of earthworks within each property will be approximately 2 m for the pressure sewer tank installation
- Maximum depth of earthworks at each property boundary will be approximately 0.5 m for the connection of the property lateral to the wastewater pipeline. The sewer line is shallow as it enters a boundary kit which sits flush with the finished ground level.

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4 ACTIVITY CLASSIFICATION

4.1 OVERVIEW

The following RMA planning provisions have been considered when assessing the resource consent requirements arising from the proposed works.

- Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
- Operative Queenstown Lakes District Plan
- Proposed Queenstown Lakes District Plan

4.2 NATIONAL ENVIRONMENTAL STANDARDS

The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (2011) (NESCS) is the only NES relevant to the proposed works.

The planning assessment identifies that the recreation reserve is Category 2 HAIL (A10: Persistent pesticide bulk storage or use including sports turf, market gardens, orchards, glass, house or spray sheds).

Clause 8 of the NESCS permits disturbances of contaminated soils provided the conditions of the clause are met. To be a permitted activity, the disturbance of soil must meet the following criteria of Regulation 8(3):

a) *Controls to minimise the exposure of humans to mobilised contaminants must—*
   i. *be in place when the activity begins:*
   ii. *be effective while the activity is done:*
   iii. *be effective until the soil is reinstated to an erosion-resistant state:*

b) *the soil must be reinstated to an erosion-resistant state within 1 month after the serving of the purpose for which the activity was done:*

c) *the volume of the disturbance of the soil of the piece of land must be no more than 25 m^3 per 500 m^2:*

d) *soil must not be taken away in the course of the activity, except that—*
   i. *for the purpose of laboratory analysis, any amount of soil may be taken away as samples:*
   ii. *for all other purposes combined, a maximum of 5 m^3 per 500 m^2 of soil may be taken away per year:*

e) *soil taken away in the course of the activity must be disposed of at a facility authorised to receive soil of that kind:*

f) *the duration of the activity must be no longer than 2 months:*

g) *the integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.*

In relation to calculating the permitted volume of material that can be disturbed (Clause 8(3)(c)) and the volume of material that can be removed from the site (Clause 8(3)(d)), advice received from QLDC is that the area of land to be considered when calculating the ratio (i.e., 25 m^3 per 500 m^2) is defined as being the smaller of the area where the HAIL activity has occurred, or the property boundary.

In this instance, the HAIL activity matches the property boundary and therefore the following ratios apply:

- Permitted volume of soil that can be disturbed = 988 m^3
- Permitted volume of soil that can be taken away from the site = 197.7 m^3

The estimated total volume of soil that will be disturbed within the Recreation Reserve because of the proposed works is 144 m^3. This volume falls well within the permitted volume of soil that can be disturbed on site. It is also less than the permitted volume of soil that can be removed from the site. Any remaining soil left over once the pipeline trench has been backfilled and capped can be removed from site as a permitted activity.

A resource consent pursuant to the NESCS will not be required.

4.3 RESOURCE MANAGEMENT ACT 1991

Resource consents are required under Section 9 of the RMA for activities not expressly allowed by a rule in a district plan. The resource consent requirements for the proposed works are summarised in the respective sections below.

4.4 EXISTING CONSENTS

QLDC holds a global district earthworks consent (RM200341) to undertake earthworks for the purpose of replacement, upgrading and adding new stormwater, wastewater and potable water infrastructure.

This consent is applicable to all operative and proposed district plan zones and QLDC designations. The purpose of the proposed works is for the replacement of wastewater infrastructure and therefore, the global consent is applicable to the earthworks within the road reserve and the Recreation Reserve. The earthworks activities will need to be assessed and considered by the project team to determine which specific conditions will apply. However, it is probable the earthworks would be considered a 'medium-risk activity' in which case Conditions 13 – 23 would apply. Conditions 13 to 23 require a CNVMP to be submitted to Council which will include measures to mitigate noise and vibration as per Condition 13(b) of RM200341.

RM200341 does not apply to construction noise and vibration. These specific matters are assessed pursuant to the relevant district plan rules.

RM200341 does not apply to earthworks within private property. In this instance, QLDC will be undertaking earthworks within seven private properties to install pressure sewer systems and to connect the lateral pipes to the new wastewater pipeline. These specific earthworks are assessed pursuant to the relevant district plan rules.

4.5 QUEENSTOWN LAKES OPERATIVE DISTRICT PLAN

Queenstown Lakes District Operative District Plan (QLODP) was made operative in 2009. However, as the pQLDP progresses through the plan-making process, the corresponding rules within the QLODP generally become inoperative. Further detail is discussed in the section below.

4.6 PROPOSED QUEENSTOWN LAKES DISTRICT PLAN

The pQLDP has undergone multiple stages of the plan-making process including notification (2015), submissions, hearings and appeals.

At the time of writing this application, there are two rules under appeal (Rules 25.5.5 and 25.5.6) within Chapter 25 of the pQLDP for earthworks. However, these rules are not relevant to the proposed works. As there are no appeals for rules relevant to the proposed works, the non-appealed rules within the pQLDP can be treated as operative (pursuant to s86F of the RMA) and rules within the QLODP relating to earthworks can be treated as inoperative.

There are no appeals relating to Chapter 36 of the pQLDP for noise and vibration. As all appeals in this chapter have been resolved, these rules are now considered operative (s86F) and the rules within the QLODP relating to noise and vibration can also be treated as inoperative.

As a result, only pQLDP rules are relevant to assess the proposed works against.

4.6.1 PERMITTED ACTIVITIES

The permitted activities associated with the proposed works, and their classifying rules, are summarised in Table 4-1.

Table 4-1: Permitted activities pursuant to the pQLDP

Rule #	Rule	Classification
25.4.1	Rule 25.4.1 provides for earthworks that comply with Table 25.2 (maximum volume) and Table 25.3 (standards) to be a permitted activity	Permitted
25.5.3	Te maximum volume of earthworks within the High Density Residential Zone is 300 m^3. Within each of the seven private properties, the total volume of earthworks required to install the pressure sewer system and lateral pipes is approximately 10 m^3	Permitted
25.5.11.2	Earthworks over a contiguous area of land where the slope is less than 10^0, shall not exceed 10,000 m^2. The total area of earthworks within each of the seven individual properties is very minor and does not exceed 10,000 m^2.	Permitted
25.5.12	Erosion and sediment control measures must be implemented and maintained during earthworks to minimise the amount of sediment exiting the site, entering water bodies and stormwater networks.	Permitted

	The contractor will be implementing an overall Erosion and Sediment Control Plan as part of their requirements under the QLDC global consent. These ESCP measures will include the seven individual properties for the installation of the pressure sewer system and lateral pipelines	
25.5.13	Dust from earthworks shall be managed through appropriate dust control measures. The contractor will be implementing an overall Erosion and Sediment Control Plan as part of their requirements under the QLDC global consent. This will also include dust control measures. These ESCP measures will include the seven individual properties for the installation of the pressure sewer system and lateral pipelines	Permitted
25.5.14	Earthworks that discover: - Kōiwi tangata, wāhi taoka, wāhi tapu - Any feature or archaeological material that predates 1900 - Evidence of contaminated land That is not provide for by the NESCS, any resource consent or other statutory authority, shall comply with the standards and procedures in Schedule 25.10 Accidental Discovery Protocol. Accidental Discovery Protocols will be adhere to if and when required.	Permitted
25.5.15	The maximum depth of any cut shall not exceed 2.4 m. Within each of the seven private properties, the maximum depth of earthworks will be approximately 2 m	Permitted
25.5.1.8	Earthworks greater than 0.5 m in depth shall be set back from the site boundary the following minimum distance: - 300 mm plus a batter slope angle of a maximum 1:3 (v:h), as measured from the crest of the cut. Earthworks will be approx. 0.5m deep at each of the seven property boundaries.	Permitted

4.6.2 RESOURCE CONSENTS SOUGHT

The resource consent requirements associated with the proposed activities, and their classifying rule(s) are summarised in Table 4-2:

Table 4-2: Activities requiring resource consent pursuant to the pQLDP

Rule #	Rule	Classification
36.5.10	Vibration from any activity shall not exceed the guideline values given in DIN 4150-3:1999 Effects of Vibration on Structures at any buildings on any other site. As noted in the CNVIA (**Appendix A**), eight NSR structures are within the DIN 4150-3:1999 setback distance and which may be subject to	Non-complying

	vibration. Dependent on on-site vibration measurement testing, there may be exceedances of the DIN 4150-3 criteria	
36.5.13	Construction sound must be measured and assessed in accordance with NZS 6803:1999 Acoustics – Construction Noise. Construction sound must comply with the recommended upper limits in Tables 2 and 3 of the NZS 6803. Construction sound must be managed in accordance with NZS 6803 As noted in the CNVIA (**Appendix A**), there could be a range from one NSR (property) through to 48 NSRs within the NZS 6803 setback distance depending upon which piece of equipment is being used. Therefore, not all noise generated during construction is likely to meet the NZS 6803 criteria.	Discretionary

4.6.3 OVERALL CLASSIFICATION

The overall classification of the proposed works under the pQLDP is a **Non-Complying Activity.**

5 CONSULTATION

Schedule 4 of the RMA states that an AEE must include: "*identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted*".

A summary of the consultation and outcomes of the consultation is provided in the respective subsections below. However, see **Appendix C** for the Stakeholder Interaction Register (SCEP) for further details.

5.1 SEVEN PRIVATE PROPERTY OWNERS

The purpose of the proposed works is to enable the old wastewater pipeline running along the back of seven properties on Robins Road to be abandoned, and for new wastewater connections to be made from these properties to the new pipeline.

QLDC has undertaken consultation with these property owners regarding the project. In May 2024, QLDC provided information to the seven properties via letter drop and in October/November, advanced warning of the works was also provided via letter drop.

Final alignments for the pressure sewers on each individual property are currently being agreed with the residents.

Prior to QLDC being able to undertake any physical works on these seven properties, a LTO agreement is required with each property owner. This agreement will provide QLDC with the necessary approval to enter these properties, as well as setting out the location for the specific works and the necessary works required to reinstate any disturbed land.

5.2 QLDC PARKS TEAM

The project team have been in liaison with the QLDC Parks team regarding potential impacts to trees within the Recreation Reserve, as well as regarding temporary traffic management plans. An application for tree works on council land has been lodged with the council for tree removal and tree location in accordance with Council's tree replacement policy.

These discussions will be ongoing whilst traffic management plans are finalised.

5.3 QUEENSTOWN PARK BOUTIQUE HOTEL

Consultation has been undertaken between QLDC and the Queenstown Park Boutique Hotel (QPBH). Three separate meetings have taken place to discuss QPBH concerns, the timing of works, and likely construction methodologies and access maintenance for hotel guests.

5.4 QUEENSTOWN PRIMARY SCHOOL

On the 16th of August 2024, QLDC met with the deputy principal to discuss the proposed construction works.

5.5 OTHER NEIGHBOURS

As well as the seven private properties to undergo works to install the pressure sewers, other properties near the proposed works have been consulted with by QLDC via letter drop. These other properties largely sit east of Robins Road, however, the relevant properties west of Robins Road and along Hamilton Road have also received letters providing advanced warning of the works.

6 ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

6.1 OVERVIEW

Section 88 of the RMA requires that an applicant make an assessment of any actual or potential effects that the proposed activity may have on the environment, and the ways in which any adverse effects may be avoided, remedied or mitigated.

Schedule 4(2)(3)(c) requires that an application includes an assessment of the activity's effects on the environment that includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

The application is for a Non-Complying Activity, and as such, QLDC's discretion is unrestricted. The following actual and potential effects on the environment from the proposed works are considered relevant:

- Positive effects
- Construction noise and vibration effects

These effects listed are assessed in the relevant subsections below.

6.2 POSITIVE EFFECTS

Currently, the pipeline cannot service its current catchment and wastewater overflows have been recorded.

The proposed works will enable QLDC to better provide for the safe collection and conveyance of wastewater from the seven private properties discussed in Section 3.1.

The proposed works will increase the capacity and resilience of the wastewater system in the area and allow increased development capacity. The new wastewater pipeline will also remove the potential risk of wastewater overflows into Horn Creek arising from the old pipeline.

The proposed wastewater upgrade will enable people and communities in Queenstown to provide for their social, economic and cultural well-being and their health and safety, consistent with the principles and purpose of the RMA.

Overall, the proposed works will generate positive effects by improving the existing wastewater network, reducing the risk of overflows, and providing for future population growth in that specific area of Queenstown.

6.3 CONSTRUCTION NOISE AND VIBRATION EFFECTS

6.3.1 OVERVIEW

Due to the nature of the proposed works, temporary noise and vibration effects will be generated as part of the construction. To understand the actual and potential effects, a CNVIA has been prepared and is provided in Appendix A.

The CNVIA assesses the predicted noise levels in accordance with NZS 6803:1999 Acoustics – Construction Noise, and the predicted vibration levels in accordance with DIN 4150-3:1999 Structural Vibration – Effects of vibration on structures. The assessment identifies the construction equipment to be used for the proposed works, the associated equipment sound power level, the setback distance for each piece of equipment to achieve the criteria, and the number of NSR predicted to be within the associated equipment setback distance.

Sheet piling has been identified as the construction activity most likely to cause significant noise and vibration effects.

The CNVIA adopts the following terminology when considering noise and vibration effects:

Table 6-1: Noise impact terminology

Term	Description
Acceptable	The predicted noise or vibration level is at or below the acoustic criteria
Reasonable	The predicted noise or vibration level is above the acoustic criteria, but due to timing, assessment location, hours of operation, receiver, or other factors the level of noise or vibration impact on the receiver is low.
Obvious	The predicted noise or vibration level is above the acoustic criteria and is likely to have a low or medium impact on adjacent receptors. Noise-sensitive activities are likely to be disturbed. Despite the adverse noise impact, best practicable means of mitigation have been applied to minimise adverse noise effects where possible.
Unreasonable	The noise or vibration level is likely to have a high impact on adjacent receptors. All but the least noise sensitive activities are likely to be disturbed. No mitigation has been applied and the site is not considered to follow a best practicable approach to minimise adverse noise effects where possible.

6.3.2 CONSTRUCTION NOISE

Table 4 of the CNVIA identifies the setback distance required from each piece of equipment to achieve the 70 dB $L_{Aeq(15MIN)}$ construction noise criteria, and the number of NSR located within each specific setback distance. Table 4 is reproduced in Figure 6-1 below.

Table 4 Construction equipment sound power levels and equipment setback distances to achieve construction noise criteria

EQUIPMENT ITEM	SWL dB L_{wA}	SETBACK DISTANCE IN METRES TO ACHIEVE 70 dB $L_{Aeq(15MIN)}$ CONSTRUCTION NOISE CRITERIA	NSR WITHIN SETBACK DISTANCE
7 kVa Diesel Generator	93	6	1
15 kW Electric Water Pump	96	8	4
14 t Excavator	97	9	7
20 t Excavator	99	11	14
8 t Excavator	99	11	14
30 t Excavator	103	18	20
Construction Roller	103	18	20
Jumping Jack Compactor	104	20	28
Road Sweeper	104	20	28
Bobcat	104	20	28
5 t Vibratory Drum Roller	105	22	28
Plate Compactor*	110	22	28
Truck/Hiab	107	28	33
9 t Loader	107	28	33
Water Cart	107	28	33
Concrete Saw (30% on-time adjustment applied)*	120	39	36
Grader	113	56	42
Vibratory Sheet Piling Rig (Crane, 44 t vibro-hammer and power pack)	118	100	48
* -5 dB screening correction applied for localised screening around equipment item.			

Figure 6-1: Table 4 reproduced from the Construction Noise and Vibration Assessment

A grader is the one piece of equipment with the highest sound output level that will be used throughout the entire alignment. The sound power level of any single maximum noise event from any piece of equipment is predicted to be no greater than 15 dB higher that the average sound power level of the grader.

As per Table 4, there could be a range from one NSR (property) through to 48 NSRs *within* the setback distance depending upon which piece of equipment is being used. Noise levels at the boundary of the closest properties along Robins Road are predicted to be between 100 dB $L_{Aeq(15min)}$ (closest property at 3 m distance) to 82 $L_{Aeq(15min)}$ (property at 26 m distance). This is when the construction activities occur closest to the properties and will be lower when the works are further away.

In some cases, the location of the receptors building is at a greater distance away, in comparison to the boundary, and as such the noise level received at the façade will be lower than that received at the closest point on the boundary of the site.

These outdoor noise levels would mean people will actively move inside (if they are at home). Based on an external noise level of 100 dB $L_{Aeq,15min}$ and assuming a sound reduction from outside-to-inside of 20 – 25 dB with windows closed, the indoor noise effect would likely be intolerable for long periods of time.

The majority of the Project will not be at the shortest distance to the NSRs as assumed by the assessment. Furthermore, for NSR's setback from the Project, screening will likely be provided by closer NSRs, the terrain, or boundary fencing closer to the works.

As a worst-case scenario, a 100% on-time has been assumed for most of the equipment items. It is likely that actual on-times will be lower during construction and therefore, received noise levels will be lower.

The adoption of a Construction Noise and Vibration Management Plan (CNVMP) is identified as the best practicable option for mitigation. This requires a procedure to be developed to ensure the best practicable physical and managerial option of mitigation is adopted by the contractor to reduce the noise and vibration effects from construction. This will include a process to determine if there are NSR that may need to be temporarily moved when works (particularly sheet piling) occurs at the closest point to the NSR.

Based on the above, considering the duration of the works, the nature of the exceedances and with the implementation of a CNVMP, it is possible that noise effects can be managed to be **reasonable** to **obvious**. This assumes provision for proactive community engagement, the best practicable option for physical mitigation being implemented, noise monitoring to NZS 6803, and the temporary relocation of NSRs which may be subject to intolerable noise indoors, unless the building is unoccupied.

6.3.3 CONSTRUCTION VIBRATION

Table 5 of the CNVIA identifies the predicted setback distances to achieve the vibration criteria from the highest vibration-producing equipment, and the number of NSR structures within the respective setback distances. As per Table 5, eight NSR structures are within the setback distance. Table 5 is reproduced in Figure 6-2 below:

Table 5 Vibration setback distances and number of receptors inside the standoff distance

EQUIPMENT ITEM	VIBRATION LEVEL OF EQUIPMENT (mm/s PPV @10m)	SETBACK DISTANCE TO ACHIEVE VIBRATION CRITERIA (m)		NUMBER OF RECEPTORS LOCATED IN THE SETBACK DISTANCE	
		10 mm/s	5 mm/s	10 mm/s	5 mm/s
4 t Vibratory Roller	2.9	1	4	0	5
Plate Compactor	2.5	0.8	3	0	2
Vibratory Sheet Piling Rig	4.0	2	7	0	1

Figure 6-2: Table 5 reproduced from the Construction Noise and Vibration Assessment

The actual 'received' vibration levels are highly dependent on soil type and the construction of the foundation/structure. The assumption of gravel/sand/rock as the main soil-type between the source and receptor will need to be confirmed on site. As a result, vibration measurements of

equipment will need to be undertaken on the first use on-site to confirm the actual on-site setback distances. These measurements should occur at a location where NSR structures are outside the equipment item's predicted setback distance e.g., in the Queenstown Recreation Reserve provided ground conditions are representative of the Project.

Where on-site vibration levels still show an exceedance of the DIN 4150-3 criteria, pre and post-building inspections shall be undertaken to determine whether there was any cosmetic damage due to the construction works.

The methodology for measuring, monitoring, communicating, and predicting vibration levels from site will be adopted within the CNVMP and continuously updated through the construction of the works. The use of a CNVMP is considered the best practicable option of vibration mitigation for this project.

With consideration of the above points, construction vibration effects are predicted to be **reasonable** to **obvious** provided a CNVMP is developed and adopted.

6.3.4 PROPOSED MITIGATION

To manage the effects of construction noise and vibration, managerial and mitigation measures have been identified within the CNVIA as follows:

6.3.4.1 CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

A draft Construction Noise and Vibration Management Plan (CNVMP) is attached at **Appendix D**).

The CNVMP identifies the best practicable options for mitigation of specific activities based on the duration, timing, and location of the works. The CNVMP has been developed in accordance with Annex E2 of NZS 6803 and is required to be followed and updated by the contractor for the duration of the Project.

A general hierarchy of the development of the BPO of mitigation measures to reduce the impact of noise and vibration is presented below. The CNVMP will identify the best practicable option for mitigation using this hierarchy.

1. Selection of equipment and construction methodologies which reduce noise at the source, such as selecting quieter items of plant.
2. Including physical mitigation measures to reduce the noise levels at receivers, such as temporary barriers or enclosures for specific items of plant.
3. Liaising with parties potentially impacted so they know what to expect and can work around specific construction activities.
4. Adopt a site policy that the conduct and behaviours of workers shall be considerate to the local community and refer to noise impacts in regular training sessions, toolbox talks and site inductions.
5. Temporary relocation/movement of parties potentially affected.

The CNVMP shall outline the following matters:

- How communication by the consent holder shall occur about certain construction works expected to exceed the noise levels in NZS 6803, including scheduling / timing of works and the identification of potential temporary nuisance effects.
- How residents may communicate any enquiries or complaints about construction noise

- Procedures for directly notifying neighbouring properties
- Contact details
- Noise and vibration monitoring procedure including the communication procedure post monitoring
- Process for offering temporary relocation where noise levels from construction works at NSR are deemed to not be reasonable, even with the BPO physical and managerial mitigation measures incorporated

6.3.4.2 PHYSICAL MITIGATION MEASURES

Physical mitigation can be used to reduce noise emissions from the construction works. Consideration of physical mitigation is required to reduce noise to a reasonable level under Section 16 of the RMA.

In some instances, the use of physical mitigation may not provide sufficient reduction in the noise emissions from the construction works to comply with the noise limits. In other instances, it may not be practicable to implement physical mitigation (due to space requirements, or machinery utilised). In any case, physical mitigation shall be adopted where practicable to reduce noise levels as far as possible. The final physical mitigation adopted will be included within the CNVMP.

General physical mitigation measures to be adopted include:

- Vehicles with audible reversing warning sirens will be fitted with 'squawkers' rather than 'beepers' where possible
- Use of electric equipment over petrol/diesel alternatives
- Selection of equipment that is an appropriate power for the use
- Where practicable, use power from mains rather than a generator
- Generators and/or water pumps to have acoustic enclosures to reduce the noise radiated

There is a benefit of acoustic barriers being placed close to high-noise equipment / activities where screening can be achieved. For example, movable barriers surrounding the concrete saw. Due to the topography of the site, some NSR may overlook the site and as such typical site hoardings may have limited effect. Where practicable, acoustic hoardings and site barriers shall be used:

- Along the working area(s) of the eastern side of the project / Robins Road
- Localised barriers around the concrete saw and plate compactor when in use

Barriers shall achieve specific specifications as set out in the CNVIA.

6.3.4.3 MANAGERIAL MITIGATION MEASURES

The key managerial mitigation measures to be implemented to reduce the effects of noise and vibration will be:

- Where practicable, high noise equipment (in particular sheet piling) should work around sensitive times for NSR when the activities are closest to these properties
- Where night works are required, and where practicable:

  - All high noise works (excavation, breaking/cutting, compaction) to be completed prior to 2200 hours
  - Localised barriers shall be utilised to block line of sight from source to receptor to adjacent NSR
  - NSR shall be granted respite from night works following guidance from consultation or after receiving noise from three consecutive night-time work shifts
- Vehicles/equipment should not be left to idle when parked or waiting
- Site specific training to be given to site personnel
- Preferential selection of sub-contractors that utilise lower noise-generating methodologies

6.3.5 SUMMARY OF NOISE AND VIBRATION EFFECTS

The construction noise and vibration levels will, at times, exceed the criteria of the respective guidelines. The CNVIA considers these effects are predicted to be **reasonable** to **obvious**.

Based on the level of noise impact used in the CNVIA, a 'reasonable' effect is considered to be a **minor** effect, given that whilst noise and vibration levels may be above the acoustic criteria at times, the level of effect on receivers is low due to factors such as timing, assessment location, hours of operation, and the receiver. An 'obvious' effect is considered to be a **more than minor** effect, given that predicted noise or vibration levels may be above the criteria at times and is likely to have a low or medium impact on adjacent receptors. However, despite the adverse noise impact, the best practicable means of mitigation have been applied to minimise adverse noise effects where possible.

Based on this assessment, the overall noise and vibration effect is considered to be generally minor in nature although at times could be more than minor. A CNVMP is required to be implemented to ensure that the best practicable options are adopted such that noise and vibration impacts are mitigated as far as is reasonably practicable.

7 STATUTORY ASSESSMENT

7.1 OVERVIEW

Section 104(1) of the RMA sets out those matters in addition to the actual and potential effects on the environment that the consent authority must have regard to when considering an application for resource consent as follows:

> *Subject to Part 2 (b) Any relevant provisions of:*
>
> - *a national environmental standard;*
> - *other regulations;*
> - *a national policy statement;*
> - *a New Zealand coastal policy statement (not applicable);*
> - *a regional policy statement or proposed regional policy statement;*
> - *a plan or proposed plan; and*
>
> *(c) Any other matter the consent authority considers relevant and reasonably necessary to determine the application*

The extent to which the proposal is able to satisfy the relevant parts of Section 104 and Part 2 of the RMA, is considered below.

7.2 NATIONAL POLICY STATEMENTS

No national policy statements are relevant to the proposed works.

7.3 OTAGO REGIONAL POLICY STATEMENT 2019

The Otago Regional Policy Statement 2021 (RPS) establishes the framework for the integrated management of the region's natural and physical resources by setting out a set of issues, objectives, policies and methods that are relevant to the whole region.

An assessment of the relevant RPS objectives and policies is provided in Table 7-1.

Table 7-1: An assessment of the proposed works against the relevant objectives and policies of the RPS

OBJECTIVES & POLICIES	COMMENT
Objective 1.1 Issue Otago's resources are used sustainably to promote economic, social, and cultural wellbeing for its people and communities. Policy 1.1.2 Social and cultural wellbeing and health and safety.	The proposed works promote the accessibility of the community within the area to good quality wastewater collection/conveyance infrastructure.
Objective 3.1 The values (including intrinsic values) of ecosystems and natural resources are recognised and maintained or enhanced where degraded.	An ESCP will be submitted by the Contractor to the Council prior to any earthworks taking place which will detail the appropriate controls to be implemented during earthworks and to mitigate

Policy 3.1.8 Soil Erosion Minimise soil erosion resulting from activities, by undertaking all of the following: a) Using appropriate erosion controls and soil conservation methods; b) Maintaining vegetative cover on erosion prone land; c) Remediating land where significant soil erosion has occurred; d) Encouraging activities that enhance soil retention.	any adverse effects from erosion and sedimentation. The earthworks land within the private properties will be managed and remediated as appropriate to the site.
Objective 4.3 Infrastructure is managed and developed sustainably. Policy 4.3.1 Managing infrastructure activities Policy 4.3.2 Nationally and regionally significant infrastructure Policy 4.3.3 Functional needs of infrastructure that has national or regional significance Policy 4.3.4 Adverse effects of nationally and regionally significant infrastructure Policy 4.3.5 Protecting infrastructure with national or regional significance	The effects on existing land uses and natural and physical resources from the proposed works will be minimised by implementing an ESCP and CNVMP. The proposed work area is *not* within an area listed in 4.3.4. a(i-viii) and reverse sensitivity effects are considered irrelevant to the proposed works.

Overall, the proposed works are not inconsistent with the relevant objectives and policies of the RPS.

7.4 QUEENSTOWN LAKES OPERATIVE DISTRICT PLAN

The adverse effects of land use activities, noise and vibration, natural hazards, the subdivision of land, and activities on the surface of the lakes and rivers are managed by QLDC through the QLODP, and its objectives, policies and rules.

Even though the rules of the oQLDP for these proposed works are being treated as inoperative, the objectives and policies of the oQLDP remain in effect until the pQLDP becomes fully operative. Consequently, the relevant objectives and policies of the oQLDP are assessed in Table 7-2.

Table 7-2: Assessment of the proposed works against the relevant oQLDP objectives and policies

OBJECTIVES & POLICIES	COMMENT
SECTION 7 – RESIDENTIAL AREAS	
Objective 3 - Residential Amenity. Pleasant living environments within which adverse effects are minimised while still providing the opportunity for community needs. **Policy 3.8** To ensure noise emissions associated with non-residential activities are within limits adequate to maintain amenity values.	As discussed in Section 6, the best practicable measures are to be implemented to mitigate both noise and vibration effects on properties/structures, this includes the implementation of the CNVMP. In addition, not all construction activities, including sheet piling will occur consistently or constantly along the project timeline. The construction methodology and consultation with residents in accordance with the CNVMP will determine how

	and when the noisiest equipment can be used to maximise the construction timeframe whilst minimising potential adverse effects on the neighbouring properties. The mitigation measures provided within the CNVMP provide for the best practicable option to ensure noise and vibration impacts are mitigated as far as reasonably practicable for the temporary construction activities required.
SECTION 17 – UTILITIES	
Objective 2 - Efficient Use and Establishment of Utilities The establishment, efficient use and maintenance of utilities necessary for the well being of the community. **Policy 2.1** To recognise the need for maintenance or upgrading of a utility to ensure its on-going use and efficiency. **Policy 2.2** To take economic costs into account when considering the alternative locations, sites or methods for the establishment or alteration of a utility. **Policy 2.3** To take into account the strategic needs of a utility when considering possible alternative locations for establishment. **Policy 2.6** To have regard to the importance of a utility when determining whether the establishment of a proposed utility will promote the sustainable management of natural and physical resources	The proposed works will enable QLDC to better provide for the efficient, safe collection and conveyance of wastewater from the seven private properties. The proposed works will increase the capacity and resilience of the wastewater system in the area and allow increased development capacity. As all seven properties require an upgrade to pressure sewers, there is no other appropriate alternative location for the works. The proposed wastewater upgrade will enable people and communities in Queenstown to provide for their social, economic and cultural well-being and their health and safety, consistent with the principles and purpose of the RMA
SECTION 22 EARTHWORKS	
Objective 1 Enable earthworks that are part of subdivision, development, or access, provided that they are undertaken in a way that avoids, remedies or mitigates adverse effects on communities and the natural environment. **Policy 1.1** Promote earthworks designed to be sympathetic to natural topography where practicable, and that provide safe and stable building sites and access with suitable gradients. **Policy 1.2** Use environmental protection measures to avoid, remedy or mitigate adverse effects of earthworks. **Policy 1.3** Require remedial works and re-vegetation to be implemented in a timely manner.	An ESCP will be submitted by the Contractor to the Council prior to any earthworks taking place which will detail the appropriate controls to be implemented during earthworks and mitigate any adverse effects from erosion and sedimentation. The earthworks are associated with the provision of regional infrastructure which will enable people and communities in Queenstown to provide for their social, economic and cultural well-being and their health and safety, consistent with the principles and purpose of the RMA

Policy 1.5 Recognise that earthworks associated with infrastructure can positively contribute to the social and economic wellbeing and the health and safety of people and communities within the District.	

Overall, the proposed works are not inconsistent with the relevant objectives and policies of the QLODP.

7.5 QUEENSTOWN LAKES PROPOSED DISTRICT PLAN

The pQLDP will not be fully operative until all appeals have been resolved. The weighting that will be applied to the objectives and policies of the pQLDP versus the objectives and policies of the operative district plan depends largely on how far through the plan-making process the proposed plan is. As the pQLDP has undergone notification, submissions, and hearings and is resolving active appeals, the pQLDP is a significant way through the plan-making process, and consequently, its objectives and policies will be given greater weighting in decision making over the objectives and policies within the QLODP.

An assessment of the relevant pQLDP objectives and policies is provided in Table 7-3.

Table 7-3: Assessment of the proposed works against the relevant pQLDP objectives and policies

OBJECTIVES & POLICIES	COMMENT
Chapter 25 - EARTHWORKS	
Objective 25.2.1 Earthworks are undertaken in a manner that minimises adverse effects on the environment, including through mitigation or remediation, and protects people and communities. **Policy 25.2.1.1** Ensure earthworks minimise erosion, land instability, and sediment generation and off-site discharge during construction activities associated with subdivision and development. **Policy 25.2.1.5** Design earthworks to recognise the constraints and opportunities of the site and environment. **Policy 25.2.1.6** Ensure that earthworks are designed and undertaken in a manner that does not adversely affect infrastructure, buildings and the stability of adjoining sites. **Policy 25.2.1.7** Encourage limiting the area and volume of earthworks being undertaken on a site at any one time to minimise adverse effects on water bodies and nuisance effects of adverse construction noise, vibration, odour, dust and traffic effects.	An ESCP will be submitted by the Contractor to the Council as part of their requirements under the global earthworks consent. The ESCP will incorporate the works required within the seven private properties. The ESCP will detail the appropriate controls to be implemented during earthworks and mitigate any adverse effects from erosion and sedimentation. The earthworks required within the seven properties are minor and are required to install and connect lateral pipes to the main wastewater pipeline.
Chapter 30 – ENERGY & UTILITIES	

Objective 30.2.5 The growth and development of the District is supported by utilities that are able to operate effectively and efficiently. **Policy 30.2.5.3** Recognise the future needs of utilities and ensure their provision in conjunction with the provider. **Objective 30.2.6** The operation, maintenance, development and upgrading of utilities supports the well-being of the community. **Policy 30.2.6.1** Provide for the operation, maintenance or upgrading of utilities to ensure their on-going viability and efficiency. **Policy 30.2.6.2** When considering the effects of proposed utility developments consideration must be given to alternatives, and also to how adverse effects will be managed through the route, site and method selection process, while taking into account: a. the locational, technical and operational requirements of the utility (including in the case of Regionally Significant Infrastructure functional needs and operational needs); and b. the benefits associated with the utility. **Policy 30.2.6.3** Ensure that the adverse effects of utilities on the environment are managed while taking into account the positive social, economic, cultural and environmental benefits that utilities provide, including: a. enabling enhancement of the quality of life and standard of living for people and communities; b. providing for public health and safety; c. enabling the functioning of businesses; d. enabling economic growth; e. enabling growth and development; f. protecting and enhancing the environment; g. enabling the transportation of freight, goods, people; h. enabling interaction and communication.	The proposed works will enable QLDC to better provide for the efficient, safe collection and conveyance of wastewater from the seven private properties. The proposed works will increase the capacity and resilience of the wastewater system in the area, reduce wastewater overflows and allow increased development capacity, which will overall promote the wellbeing of the community. As all seven properties require an upgrade to pressure sewers, there is no other appropriate alternative location for the works. In addition, the proposed works are to renew Regionally Significant Infrastructure (municipal infrastructure) which will allow the properties along Robins Road to access safe and efficient wastewater collection.
Objective 30.2.7 The adverse effects of utilities on the surrounding environment are avoided or minimised (in the case of Regionally Significant Infrastructure also having regard to functional needs and operational needs). **Policy 30.2.7.1** Manage the adverse effects of utilities on the environment by:	The proposed works, while adjacent to properties within the 'high-density residential zone' are not within heritage and special character areas, Outstanding Natural Landscapes and Outstanding Natural Features, nor skylines and ridgelines.

a. for utilities other than the National Grid, Electricity Sub-Transmission Infrastructure and Significant Electricity Distribution Infrastructure: I. avoiding their location on sensitive sites, including heritage and special character areas, Outstanding Natural Landscapes and Outstanding Natural Features, and skylines and ridgelines except where no other location is practicable; and II. where avoidance is not practicable, avoiding significant adverse effects and minimising other adverse effects of those utilities on those sites, areas, landscapes or features. b. encouraging co-location or multiple use of network utilities where this is efficient and practicable in order to avoid, remedy or mitigate adverse effects on the environment; c. ensuring that redundant utilities are removed; d. using landscaping and or colours and finishes to reduce visual effects; e. integrating utilities with the surrounding environment; whether that is a rural environment or existing built form.	
Chapter 36 – Noise	
Objective 36.2.1 The adverse effects of noise emissions are controlled to a reasonable level to manage the potential for conflict arising from adverse noise effects between land use activities. Policy 36.2.1.1 Avoid, remedy or mitigate adverse effects of unreasonable noise from land use and development.	A CNVMP is required to be implemented to ensure the best practicable options are to be implemented to mitigate both noise and vibration effects on properties/structures. The CNVIA considers noise and vibration can be managed via the CNVMP to a level that is 'reasonable' to 'obvious'. The construction activities will be short-term. There is no other practicable means of constructing the wastewater pipeline. The mitigation measures provided within the CNVMP will ensure that noise and vibration impacts on properties/structures are mitigated as far as is reasonably practicable. There will be no adverse effect of noise emissions arising from the wastewater pipeline once operational.

Overall, the proposed works are not inconsistent with the relevant objectives and policies of the pQLDP.

7.6 SECTION 104D OF THE RMA

Section 104D sets out particular restrictions for non-complying activities. S104D states:

1) *Despite any decision made for the purpose of notification in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either –*
    a. *The adverse effects of the activity on the environment (other than any effect which section 104(3)(a)(ii) applies) will be minor; or*
    b. *The application is for an activity that will not be contrary to the objectives and policies of –*
        i. *The relevant plan, if there is a plan but no proposed plan in respect of the activity;*
        ii. *or the relevant proposed plan, if there is a proposed plan but no relevant pan in respect of the activity; or*
        iii. *both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*

The consent authority may only grant a resource consent for a non-complying activity if it is satisfied that either of the tests provided for in s104D(1)(a) or (b) is met. The tests in s104D(1)(a) and (b) are disjunctive, meaning that in order to satisfy s104D it is necessary to satisfy only one of these tests, not both. That is, either the adverse effects of the activity will be minor, or the activity will not be contrary to the objectives and policies of the relevant plan or proposed plan (or both plans). If neither test is satisfied, the application fails. If the application satisfies either test, then that application is considered under s104 of the RMA.

The activity is unlikely to meet the s104D(1)(a) test because the assessment of effects on the environment (Section 6 of application) concludes that the overall noise and vibration effect is considered to generally be minor in nature, but at times could be more than minor when some activities are taking place.

The proposed works have been assessed against the relevant objectives and policies of both the operative and proposed district plans. The proposed works are considered to not be contrary to the objectives and policies (refer to Section 7.4 and Section 7.5 this application). The works are required for the construction of regional significant infrastructure. The works will be short-term. The implementation of a CNVMP will ensure that the best practicable options can be implemented to ensure construction noise and vibration effects are managed as far as is practicably possible. On this basis, the proposal is considered to meet the test under s104D(1)(b)(iii).

For this reason, the application is considered to meet the requirement of s104D of the RMA for Non-Complying Activities.

7.7 PART 2 RMA – PURPOSE AND PRINCIPLES

The overriding purpose of the RMA is "to promote the sustainable management of natural and physical resources" (Section 5, RMA). The broader principles (Sections 6 to 8) are to inform the achieving of that purpose. When considering an application for a resource consent and any submissions received, the consent authority, must subject to Part 2, have regard to those matters listed under Section 104 of the RMA.

With regards to the application of 'the subject to Part 2' under s104 of the RMA, case law findings have directed that decision makers / Commissioners may now only have recourse to Part 2 of the RMA if it is determined that one of three exceptions apply:

1. If any part or the whole of the relevant plan(s) are invalid;
2. If the relevant plan(s) did not provide complete coverage of the Part 2 matters;
3. If there is uncertainty of the meaning of provisions as they affect Part 2

Subsequently, decisions makers only need to 'go back to' Part 2 of the Act if the relevant planning documents have not fully addressed the Part 2 matters. If a District Plan has not fully addressed the Part 2 matters, then decision-makers can 'go up the tree' to the RPS and then any relevant NPS in relation to any Part 2 matters.

Plans, which have to "give effect" to the higher order statutory planning documents (RPS and NPSs), should have appropriately addressed Part 2 of the RMA.

It is considered that none of the three exceptions listed above apply and that the Part 2 matters have adequately been addressed through the RPS, oQLDP, and pQLDP. Based on the assessment of the proposed work being consistent with the provisions of the aforementioned plans, the proposed work is considered to be consistent with Part 2 of the RMA.

8 NOTIFICATION ASSESSMENT

8.1 SECTION 95A - PUBLIC NOTIFICATION ANALYSIS

A consent authority must follow the steps set out in this section, in the order given, to determine whether to publicly notify an application for a resource consent.

STEP 1: MANDATORY PUBLIC NOTIFICATION IN CERTAIN CIRCUMSTANCES:	YES	NO
Has the applicant requested public notification? [s95A(2)(b)]		X
Is Public Notification required under s95C?		X
The application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.		X
Step 2: Public Notification precluded in certain circumstances:	**YES**	**NO**
Does a rule or NES preclude public notification of the application? [s95B(2)]		X
A controlled activity; and/or		X
Restricted-discretionary or discretionary activities for: - A subdivision of land - A residential activity [s95A(6)] - A boundary activity [87AAB]		 X X X
Step 3: Public Notification required in certain circumstances:	**YES**	**NO**
Does a rule or NES require public notification of the application? [s95B(2)]		X
Are adverse effects on the environment more than minor? [s95A(2)(a)]		X
Step 4: Public notification required in special circumstances:	**YES**	**NO**
Do special circumstances apply that warrant public notification? [s95A(4)]		X

The notification assessment provided above has demonstrated the following:

- Public notification is not mandatory under Step One;
- Public notification is not precluded under Step two
- Public notification is not required under Step Three; and
- No special circumstances exist to require public notification under Step Four.
- Accordingly, it is considered appropriate for this application to be considered without the requirement for public notification.

8.2 SECTION 95B – LIMITED NOTIFICATION ANALYSIS:

The consent authority must follow the steps outlined under Section 95B, in order, to determine whether to publicly notify or limited notify an application for resource consent.

Step 1: Certain affected groups and affected persons **must be notified**:	YES	NO
Are there any affected protected customary rights groups? [s95F]		X
Is the activity on, adjacent to or likely to affect a statutory acknowledgement area? And; would you consider the person(s) for whom the statutory acknowledgement is made to be affected? [s95E(2)(c)]		X
Step 2: Limited Notification **precluded** in certain circumstances:	YES	NO
Does a rule or NES preclude limited notification of the application? [s95B(2)]		X
95B(6)(b) the application is for a controlled activity under a District Plan (excluding subdivision)		X
Step 3: Certain other affected persons **must be notified**:	**YES**	**NO**
Are adverse effects on any person minor or more than minor?	X	
Step 4: Limited notification **required in special circumstances**:	**YES**	**NO**
Do special circumstances apply? [s95A(4)]		X

The Table above demonstrates that limited notification *is* required under section 95B for the following reasons:

- There are no other affected groups or persons under Step One
- Limited notification is not precluded under Step Two
- As per the conclusion of the Assessment of Effects on the Environment (Section 6), there are certain other potentially identified affected persons that meet Step Three; and
- There are no special circumstances requiring limited notification under Step Four.

The notification assessment indicates that limited notification should be considered.

However, it is important to note that while Section 6 has identified minor to more than minor effects on certain properties, the overall noise and vibration effect is considered to be generally minor in nature although at times could be more than minor when certain activities are taking place. The assessment methodology for the CNVIA assumes a 'worst-case scenario' and in reality, once the equipment is on-site, testing and initial monitoring of equipment can be undertaken which could demonstrate compliance with the noise and vibration standards. Moreover, a CNVMP has been prepared and is to be implemented on-site. The CNVMP implements the best practicable options for minimising and mitigating noise and vibration for works that are required for Regionally Significant Infrastructure.

9 CONCLUSION

The proposed works are driven by QLDC's Queenstown Wastewater Masterplan which guides planning and investment in the region, including municipal infrastructure renewal. The purpose of the proposed works is to renew the Robins Road wastewater pipeline and to better service the adjacent private properties.

The key potential adverse effects of the proposed works relate to noise and vibration during earthwork activities to install the new wastewater pipeline. Resource consent is required under Chapter 36 of the pQLDP. The overall activity status is Non-Complying. However, this is considered to be a worst-case scenario on the basis that once on site, testing and initial monitoring of equipment can be undertaken for compliance with the noise and vibration standards.

As a non-complying activity, the proposal must be assessed against s104D of the RMA. Under s104D, the consent authority may only grant a resource consent for a non-complying activity if it is satisfied that either of the tests provided for in s104D(1)(a) or (b) is met.

It has been assessed that the mitigation measures provided within the CNVMP will ensure that noise and vibration impacts on properties/structures are mitigated as far as is reasonably practicable and the CNVMP is the best practicable measure to undertake this. With the implementation of the CNVMP and the best practicable options for managing and mitigation potential noise and vibration effects, the CNVIA considers noise and vibration effects are predicted to be reasonable to obvious. A reasonable to obvious noise or vibration effect is considered to be a minor to more than minor adverse effect. In general, noise and vibration effects are considered to be minor for the majority of the time.

The proposal has been assessed against the relevant objectives and policies of the RPS, oQLDP, and pQLDP. The proposed works are considered to not be contrary to these objectives and policies and thereby meet the test of s104D(1)(b).

17 February 2025

Rebecca Holden
Resource Management Consultant
Queenstown Lakes District Council
Private Bag 50072 Queenstown, New Zealand

WSP Reference: 6-XQ107.07

Addendum to RM241070 - Robins Road Wastewater Upgrade

Dear Rebecca,

The information within and attached to this letter represents an addendum to the consent application (**RM241070)** for the Robins Road Wastewater Upgrade lodged in December 2024. Primarily this includes minor design changes, but more importantly an additional construction methodology for the upgrade installation that includes the alignment being mostly installed via micro tunnelling.

Attachments include:

- Attachment A – Updated Detailed Design Plans
- Attachment B – Acoustic Advice Note

Also provided at the end of this letter is some commentary on why the application for temporary construction noise, and vibration does not meet the threshold for public notification.

Overview of Changes

An addendum is required as there have been some minor changes to the design since lodging the consent. These changes involve additional sewer lateral connections into private properties west of Robins Road and removing a proposed manhole on Boundary Street. Refer to Figure 1 layout plan below which shows the very minor changes. The updated Detailed Design plans are also attached as **Attachment A** of this addendum.

The design update has not increased the size of the project area, or materially the nature of the application.

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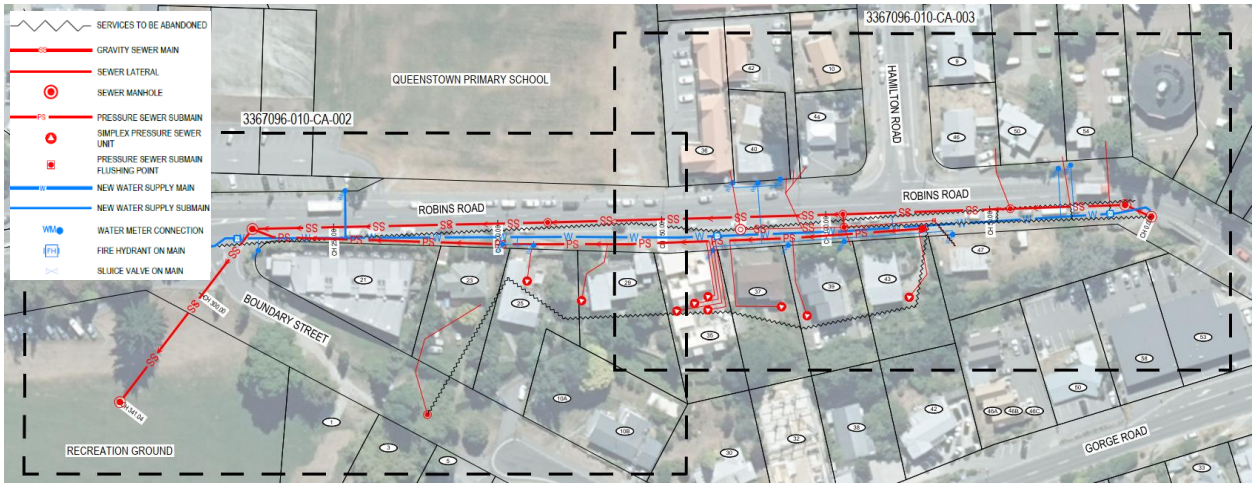

Figure 1: Updated layout plan of proposed works 2025 (reason for addendum)

In addition to the design updates previously discussed, this addendum advises of an additional construction methodology to that outlined in the application. The additional method involves predominantly utilising micro tunnelling methods for the installation of the wastewater pipeline, thereby reducing the need for extensive sheet piling (a reduction in the higher noise generating activities).

This addendum outlines the revised construction methodology, referred to as Methodology A, which is the preferred approach. It is important to note that while Methodology A is the preferred methodology, should micro tunnelling prove unfeasible or unviable once on site or in part of the site, the methodology already described in the application (now referred to as Methodology B) will need to be implemented. Therefore, this addendum does not replace the construction methodology detailed in the application initially lodged but rather provides additional information regarding the preferred option, Methodology A.

Description of Methodology A

Overview

The proposed Methodology A activities and their total durations over the entire project are provided below:

- Sheet piling for approximately 30 days.
- Sheet piling removal for approximately 25 days
- Micro tunnelling for approximately 40 days
- Excavation, installation, and backfilling for approximately 130 days.
- Dewatering for approximately 40 days.
- Reinstatement of the road for approximately 20 days.
- Shallow excavation works (less than 1.5 m in depth) for approximately 40 days. This includes watermain and pressure sewer works
- Night-time connection/tie in works for approximately 7 nights.

The vast majority of the gravity sewer main between MH01 and MH06 will be micro tunnelled.

The section of gravity sewer main from MH02 up to 10m before MH06 will be micro tunnelled (identified in purple Figure 2 below). The section from MH02 to the existing MH101019 will be open trenched and the last 10m at MH06 will also be open trenched (identified in orange Figure 2).

Between MH02 and the existing MH101019, trenching under Methodology A will still be undertaken in stages, with approximately 10 – 15 m long sections opened at any one time to manage the excavation

and to deal with groundwater. For the avoidance of doubt, excavating shields and dewatering for the trenching will be the same methodology as B, as would the approach to the HAIL site management.

Methodology A does not affect the works for the private property lateral connections, refer to the lodged consent.

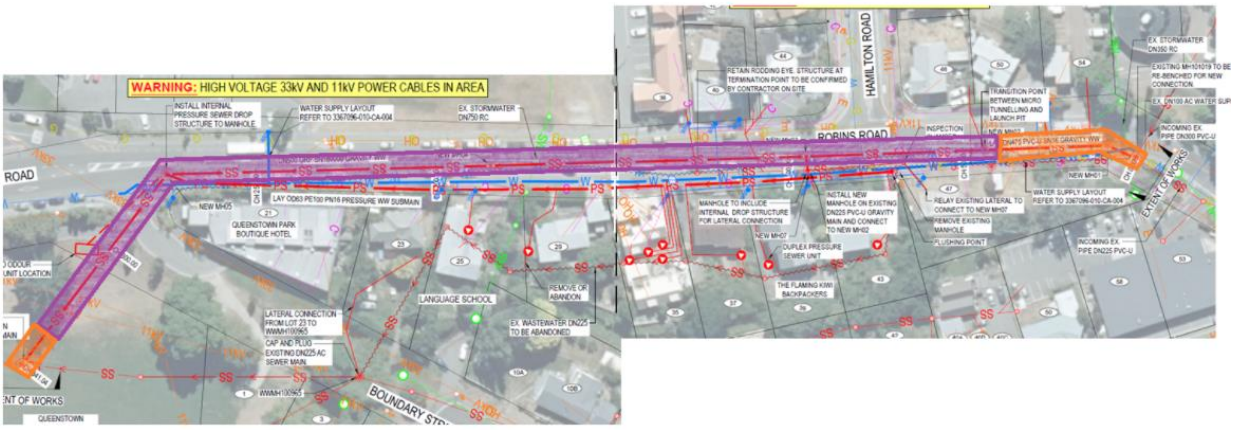

Figure 2: Proposed pipe renewal works (micro tunnelling in purple and open trenched in orange)

Micro tunnelling

The AXIS method uses a vacuum head extraction system rather than standard mud-pressure for other micro tunnelling system which avoids the risk of fracking. Spoil is extracted by way of a vacuum extraction unit, which is located at the top of the work area. The spoil travels through pipes and is discharged straight into a truck for disposal off-site.

The AXIS machine starts at a Pit which needs to be designed to accommodate depth, ground conditions and machine footprint. The Pits will be constructed using Sheet Piles and excavated to depth using large excavator (30T). Sheet piles will be installed using at least a 100T crane with a Vibro Hammer attachment. Such Pits will be required at MH02, MH03, MH04 and MH05. The last pit at MH06 will be open trenched. The Pits will be approximately 4mx4m and up to 7.5m at the deepest Manhole. The Pits will be located to avoid private driveways.

The AXIS machine and vacuum borer head are driven by a hydraulic power pack.

Figure 3: Launch pit, AXIS machine and vacuum head

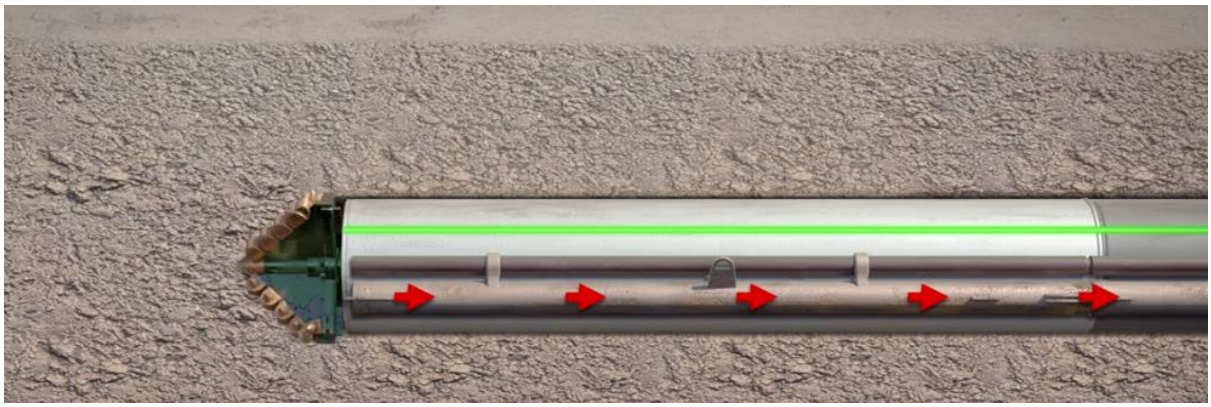

Figure 4: Vacuum head progressing

The vacuum head progresses until it reaches the next pit (up to 90m away for Robins Road). At this pit, the back reaming operation starts as well as permanent pipe installation. A pusher and reamer are installed in the pit. The permanent first pipe is lowered into the pusher and pushed up close to the reamer. The reamer is then started, and the pipe is pushed (by the pusher) into the pilot bore while the reamer progresses. Once the first pipe is fully pushed, the second pipe is lowered and the operation restarts. This process is followed until all pipes are installed. As the pipes are being pushed the casings are retrieved at the launch pit. Once all the pipes are installed, the annulus is then grouted.

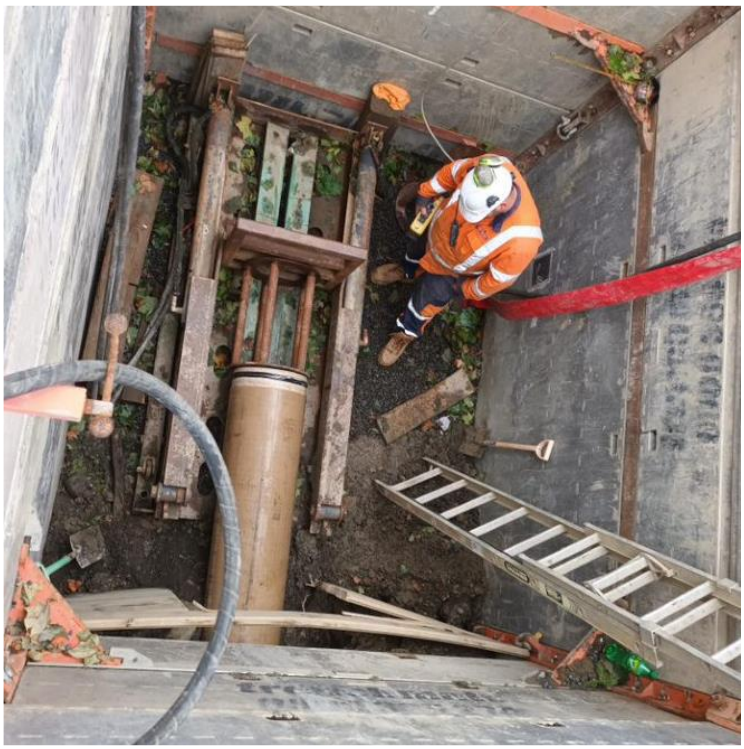

Figure 5: Pushing of pipes

Once the pipes are all installed, the manholes will be lowered in the footprint of the pits. Final connections to the pipes will be completed. The Pits will then be backfilled using AP65. Once backfill is completed, the Sheet piles will be removed using a 100T Crane with a vibro hammer.

Acoustic Consultant Advice Note/Addendum to CNVIA

The Acoustic Advice Note attached to this addendum as Attachment B (dated 12 February 2025), provides an assessment of the noise and vibration of the proposed works using Methodology A.

The Acoustic Consultant Advice Note (CAN) assesses both the noise and vibration effects produced from the proposed works including the use of the micro tunnelling AXIS machine, the power pack and the vacuum head as part of Methodology A. The CAN demonstrates that noise from Methodology A is expected to be reasonable (minor) and vibration is expected to be acceptable (less than minor). This is a result of the reduction in total days required for sheet piling from 70 to 55 days as well as other factors including each NSR only being likely to receive the highest level of noise during two activities: inserting the sheet piles within the pits (required for the AXIS trenchless method) and removing the sheet piles within the pits. Inserting the sheet piles is expected to only take 6-7 days while removing the sheet piles is expected to take 5-6 days.

The Construction Noise Vibration Impact Assessment (CNVIA) that assessed Methodology B which included roughly 135 m of sheet piling, predicted that noise effects from the proposed works would be reasonable to obvious and vibration effects would also be reasonable to obvious. As Methodology B needs to be able to be implemented as a fall-back option (still forms part of the application), the overall summary of noise and vibration of the proposed works is still predicted to be reasonable to obvious.

Why Publicly Notification is not Required

Effects on the wider environment

Public notification is necessary if an application is likely to have adverse effects on the wider environment that are more than minor pursuant to s95A(8)(b) of the RMA.

The level of noise effects from the proposed works is found to likely be intolerable for nearby property occupants if exposed for long periods of time.

The level of vibration effects assessed predicts that there is only a risk of potential cosmetic damage to buildings/structures (such as cracking paint) that can easily be repaired.

While the application stated that the effects on certain properties may be more than minor, the overall noise and vibration effect is considered to be generally minor in nature as the effect on properties may only be more than minor when sheet piling occurs closest to the properties.

The majority of the Project will not be at the shortest distance to the properties as assumed by the assessment. Moreover, the assessment methodology for the CNVIA assumes a ‘worst-case scenario’ and in reality, once the equipment is on-site, testing and initial monitoring of equipment can be undertaken which could demonstrate compliance with the noise and vibration standards.

It is difficult to ring-fence certain properties on a map as potentially having more than minor effects, as discussed above, the assessment assumes a worst-case scenario and effects once on-site may be lower. However, Figure 2: 70 dB LAeq Noise Contour from Sheet Piling within the Acoustic Advice Note locates the NSRs/properties that could exceed the permitted noise standard as part of Methodology A. NSRs within the permitted setback distance are also identified in Table 4 and Table 6 of the CNVIA. Table 5 within the CNVIA also identifies the number of NSRs within the permitted setback distances for vibration. It is not considered that the adverse noise and vibration effects from the project will have a wider or greater effect on people or the environment outside of the properties located within Tables 4, 5 and 6. The potential adverse effects are, therefore, considered to be localised to the owners and occupiers of the properties identified in Tables 4, 5 and 6.

The open-trenched works within the Queenstown Recreational Reserve do not require sheet piling for either methodology, therefore the period of work will be short in duration, and the noise and vibration

effects in this area from the proposed works is considered to be only minor on the wider environment (e.g. parks users).

There is a clear differentiation within the RMA between localised effects and effects on the wider environment. Section 95D(1)(a) of the RMA 1991 requires that when deciding if the effects will have or are likely to have adverse effects on the environment that are **more than minor** for the purposes of public notification, the adverse effects of an activity on the persons below must be disregarded:

- the owners and occupiers of the land on which the activity will occur; or
- the owners and occupiers of any land adjacent to that land[1].

Quality Planning details that the term 'adjacent' can be interpreted as "*close to, but not necessarily adjoining another site."* The Courts have also defined the term adjacent as "*lying near or close; adjoining; continuous, bordering; not necessarily touching'.*

As per Section 95D(1)(a), the effects on the owners and occupiers of the adjacent land (which include the properties identified in Tables 4, 5 and 6) must be disregarded for the purposes of deciding whether the proposed works will likely have adverse effects that are more than minor on the *environment[2].*

It is for the reasons above that as part of the table provided within Section 8.1 *"Section 95A Public Notification Analysis"* of the application for "*Are adverse effects on the environment more than minor*", the box selected was "No".

In summary, public notification of this application is not required.

The following section discusses the importance of facilitating the upgrade and development of network utilities and how these works are supported by local authorities. Additionally, it underscores why public notification of this consent is not sensible and reasonable.

Context

Many local authorities across the country permit obvious noise generated from construction activity within the road corridor. For example, within the Auckland Unitary Plan (AUP) Standard E25.6.29 within Chapter E26 for Noise and Vibration, noise generated from construction activity during the daytime within the road corridor is exempt from achieving the NZS 6803;1999 Acoustic – Construction Noise Standard if a CNVMP is adopted for network utility upgrades. A CNVMP provides the best practicable physical and managerial mitigation measures to manage noise and vibration effects. The Queenstown Lakes Proposed District Plan (pQLDP) uses the same NZS 6803;1999 standard to assess construction noise. The works for the Robins Road Wastewater Upgrade proposes to adopt a CNVMP.

It is not sensible or reasonable that this project's short duration construction activity in a limited area, to enable an essential piece of infrastructure installation in the road reserve in Queenstown needs to be publicly notified, where other Councils in New Zealand allow similar effects as a permitted activity.

Furthermore, Objective 36.2.1 and associated Policy 36.2.1.1 within Chapter 36 for Noise of the pQLDP can be interpreted to be only relevant to activities that generate noise from *permanent* land-use activities not from temporary construction activities.

[1] https://www.qualityplanning.org.nz/node/566

[2] When are adverse effects more than minor? • Environment Guide

Importance of enabling network utility upgrades

The importance of enabling network utility upgrades is highlighted within the objectives and policies of both the Queenstown Lakes Operative District Plan and the pQLDP as provided within the applications AEE as part of **Tables 7-2** and **7-3.** Relevant objective and policy examples from the pQLDP below:

> ***Objective 30.2.5*** *– the growth and development of the District are supported by utilities that are able to operate effectively and efficiently"*
>
> ***Policy 30.2.6.2*** *– When considering the effects of proposed utility developments consideration must be given to alternatives, and also to how adverse effects will be managed through the route, site and method selection process, while taking into account:*
>
> *a. the locational, technical and operational requirements of the utility (including in the case of Regionally Significant Infrastructure functional needs and operational needs); and*
>
> *b. the benefits associated with the utility."*

As detailed in Section 1.1 of the AEE, these upgrades are necessary as the existing pipeline cannot service its current catchment and wastewater overflows have been recorded from the pipeline. There is a risk of contamination to Horn Creek from future overflows.

By considering the operational factors and benefits of network utilities, the policy supports the prioritisation of network utility upgrades, ensuring that they are carried out in a way that balances the need for development with the protection of the environment and community well-being.

Conclusion

This addendum provides clarity on the minor changes to the design of the Robins Road Wastewater Upgrade consent application (RM241070) lodged in December 2024. The addendum also provides a preferred additional construction methodology (Methodology A). Methodology A involves predominantly utilising micro tunnelling methods for the installation of the wastewater pipeline.

Importantly, this addendum details the reasons why public notification is not required in this case and further how it would be not sensible or reasonable.

Regards

Emily Ireland
Resource Management Planner

Brent Hamilton
Principal Environmental Consultant

APPENDIX A – CNVIA

Consultant Advice Note

To	Steve Baker and Emily Ireland WSP
From	Raj Prasad and George van Hout , WSP
Date	2 December 2024
File/Ref	241202-6-XQ107.07-RP-R1-Rev1-RRWWPU CNVIA
Subject	Robins Road Wastewater Pipe Upgrade – Construction Noise and Vibration Impact Assessment

Queenstown Lakes District Council (QLDC) have engaged WSP to assess the construction noise and vibration impacts associated with the installation of a new wastewater pipe and associated enabling works on Robins Road (the Project).

This Consultant Advice Note (CAN) assesses construction noise and vibration associated with the Project. The CAN is based on discussions with the consenting team and contractor, along with the following information:

- Brief Construction Methodology for Consenting by HEB, received 9 October 2024.
- Robins Road Plant Requirements by HEB, received 10 October 2024.
- Robins Road Wastewater Upgrades Developed Design Drawings by Beca, dated 17 May 2024, and received 09 October 2024.
- Robins Road Wastewater Upgrades Geotechnical Factual Report by Beca, dated 21 March 2024, and received 29 November 2024.
- Robins Road Wastewater Upgrades Geotechnical Interpretive Report by Beca, dated 26 March 2024, and received 29 November 2024.

This Consultant Advice Note is necessarily technical in nature and therefore to assist the reader, a glossary of terminology is included within Appendix A.

Project Background

The Project follows Robins Road from south of the Gorge Road intersection to the Queenstown Recreational Reserve, as shown in blue in Figure 1. For further information refer to Appendix B for the Developed Design Drawings.

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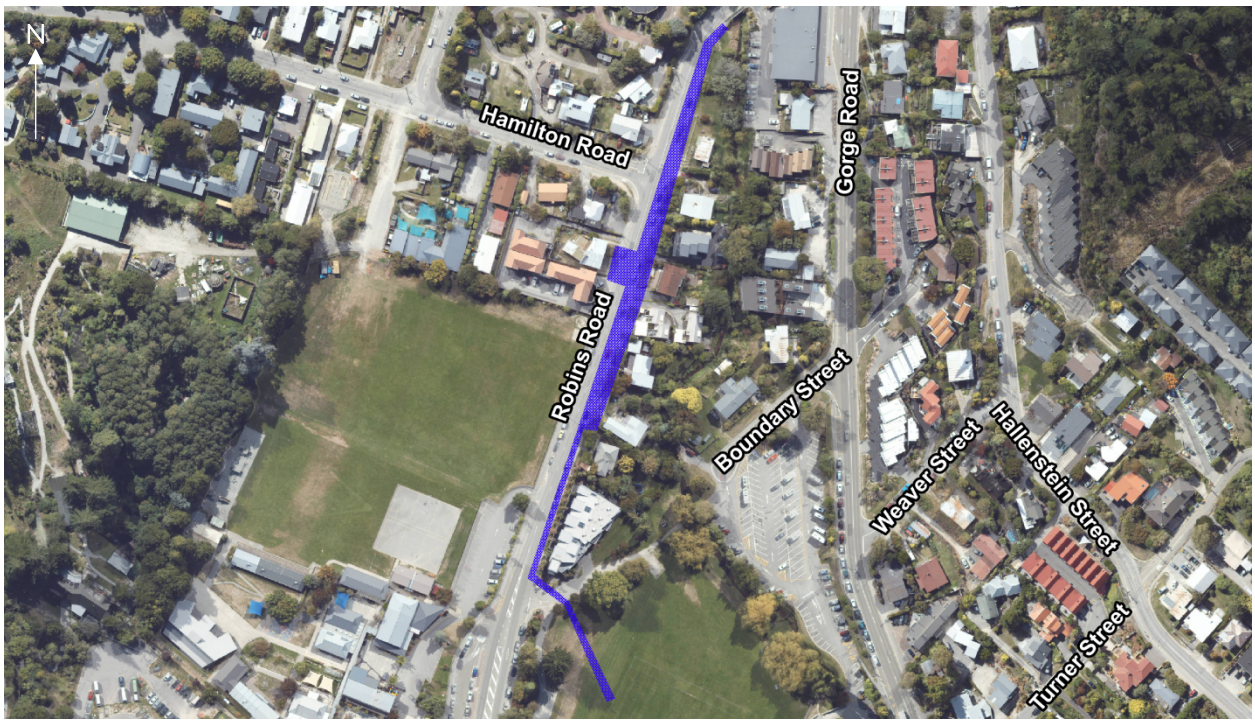


Figure 1 Approximate works area (blue) and surrounds

The Project works will involve the following activities:

- Sheet piling for approximately 70 days.
- Excavation, installation, and backfilling for approximately 140 days.
- Dewatering for approximately 40 days.
- Reinstatement of the road for approximately 20 days.
- Shallow excavation works (less than 1.5 m in depth) for approximately 30 days.
- Night-time connection/tie in works for approximately 7 nights.

Note that some of the above activities are likely to run in parallel to each other, the above are total durations over the entire project. As such, the activities may not occur consistently or constantly along to project timeline or all day.

Generally, construction hours will be from 0730 to 1730 hours Monday to Saturday. The total duration of the project will be greater than 20 weeks when determining the relevant noise criteria.

Dewatering may be required between Hamilton Road and Gorge Road of the alignment which will operate 24 hours a day for 7 days a week. Tie-in works (such as connecting the new wastewater pipe to the existing pipe) may occur at night when usage is lowest.

For further detail on the works, the Brief Construction Methodology for Consenting is included within Appendix C.

Assessment Criteria and Prediction Methodology

Section 16 of the Resource Management Act 1991 (RMA) requires occupiers of land to adopt best practicable option of mitigation so that any noise generated is of a reasonable level.

The QLDC Proposed District Plan (QLDC PDP) outlines the criteria constituting reasonable construction noise and vibration levels. The relevant QLDC rules are 36.5.13 which refers to NZS 6803:1999 *Acoustics – Construction Noise* (NZS 6803) and 36.5.10 which refers to DIN 4150-3:1999 *Structural Vibration -Effects of vibration on structures* (DIN 4150-3). The relevant criteria of these standards are reproduced in Table 1 and Table 2 below.

Table 1 Project construction noise criteria

TIME OF WEEK	TIME PERIOD	NOISE LIMITS (dB)		ASSESSMENT LOCATION
		$L_{Aeq,(15min)}$	L_{AFmax}	
Weekdays	06:30 – 07:30	55	75	At any point within any other site.
	07:30 – 18:00	70	85	
	18:00 – 20:00	65	80	
	20:00 – 06:30	45	75	
Saturdays	06:30 – 07:30	45	75	
	07:30 – 18:00	70	85	
	18:00 – 20:00	45	75	
	20:00 – 06:30	45	75	

Table 2 Project construction vibration criteria

STRUCTURE TYPE	VIBRATION LIMIT	ASSESSMENT LOCATION
Commercial buildings	10 mm/s PPV	On any structures or buildings on any other site.
Residential buildings	5 mm/s PPV	

Prediction Methodology

Construction noise calculations have been undertaken in accordance with the method provided in NZS 6803 to predict setback distances.

Vibration propagation between the source and receiving locations has been predicted based on the methodology outlined in the NZTA methodology guidance[1]. The calculation is based upon competent soil conditions (sandy or silty clays, gravel, most sands, silts, weathered rock), and slab-on-grade foundations type of all adjacent properties.

Assessment of Effects

Table 3 presents the terminology used when considering the noise and vibration effects.

Table 3: Noise impact terminology

TERM	DESCRIPTION
Acceptable	The predicted noise or vibration level is at or below the acoustic criteria.
Reasonable	The predicted noise or vibration level is above the acoustic criteria, but due to timing, assessment location, hours of operation, receiver, or other factors the level of noise or vibration impact on the receiver is low.
Obvious	The predicted noise or vibration level is above the acoustic criteria and is likely to have a low or medium impact on adjacent receptors. Noise-sensitive activities are likely to be disturbed. Despite the adverse noise impact, best practicable means of mitigation have been applied to minimise adverse noise effects where possible.

[1] *Waka Kotahi NZ Transport Agency's State Highway Construction and Maintenance Noise Vibration Guide (version 1.1, dated August 2019)*

TERM	DESCRIPTION
Unreasonable	The noise or vibration level is likely to have a high impact on adjacent receptors. All but the least noise sensitive activities are likely to be disturbed. No mitigation has been applied and the site is not considered to follow a best practicable approach to minimise adverse noise effects where possible.

Noise and Vibration Sensitive Receptors (NSR)

Figure 2 presents the noise sensitive receptors (NSRs) and their use of site per QLDC within the study area considered for the Project. The addresses, use of site, and distance from the Project to the land parcel boundary are provided in Appendix D.

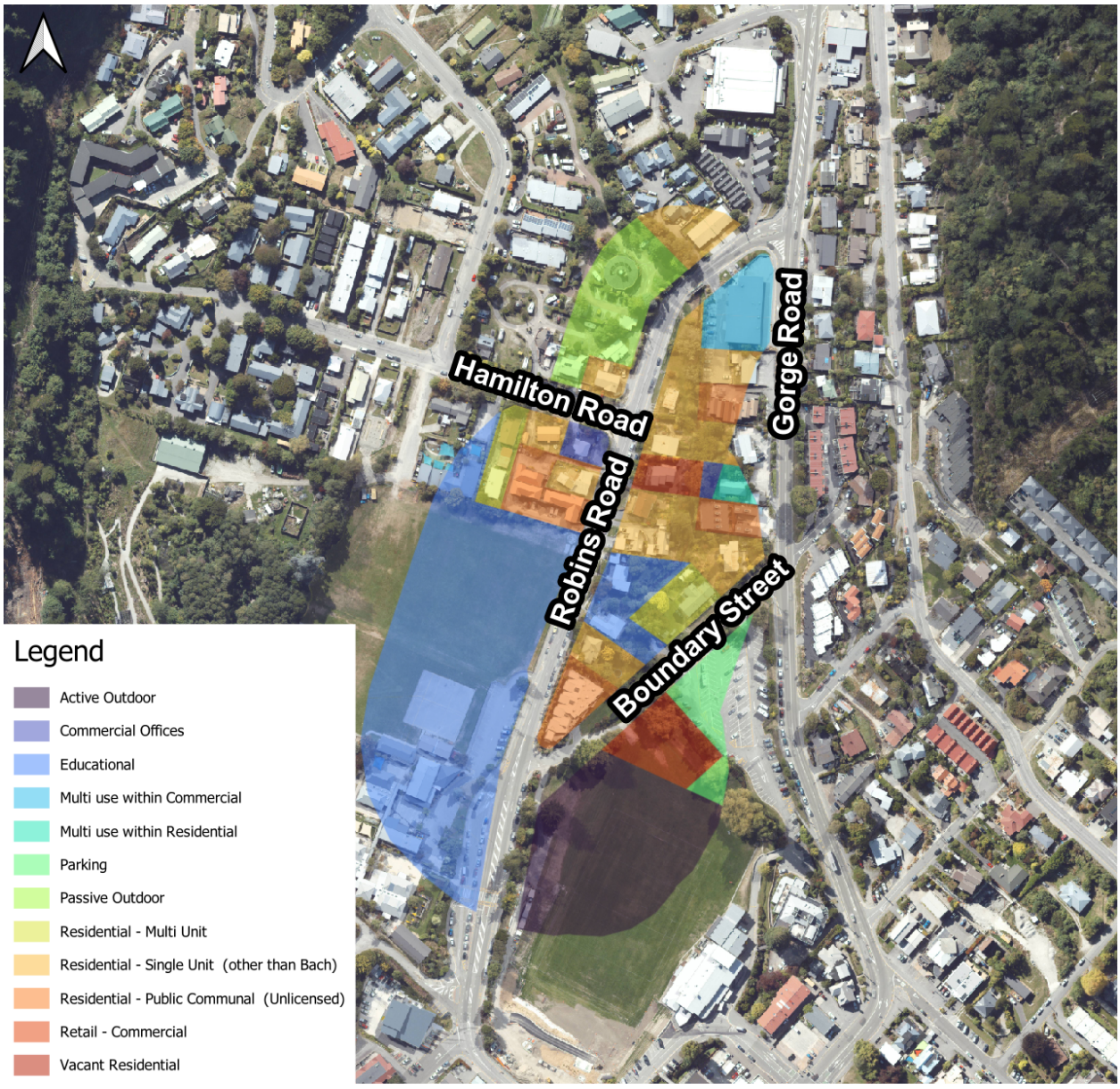


Figure 2 NSRs within study area considered for the Project

Predicted Noise Setback Distances

Table 4 present the construction equipment items for the Project, the associated equipment sound power level, the setback distance for each piece of equipment to achieve the criteria, and the number of NSR predicted to be within the associated equipment setback distance.

Based on correspondence with the contractor:

- Physical mitigation has been applied to certain equipment items of Table 4. These are indicated by an asterisk.
- Equipment on-times have been assumed to be 100% except where noted.

Table 4 Construction equipment sound power levels and equipment setback distances to achieve construction noise criteria

EQUIPMENT ITEM	SWL dB L_{wA}	SETBACK DISTANCE IN METRES TO ACHIEVE 70 dB $L_{Aeq(15MIN)}$ CONSTRUCTION NOISE CRITERIA	NSR WITHIN SETBACK DISTANCE
7 kVa Diesel Generator	93	6	1
15 kW Electric Water Pump	96	8	4
14 t Excavator	97	9	7
20 t Excavator	99	11	14
8 t Excavator	99	11	14
30 t Excavator	103	18	20
Construction Roller	103	18	20
Jumping Jack Compactor	104	20	28
Road Sweeper	104	20	28
Bobcat	104	20	28
5 t Vibratory Drum Roller	105	22	28
Plate Compactor*	110	22	28
Truck/Hiab	107	28	33
9 t Loader	107	28	33
Water Cart	107	28	33
Concrete Saw (30% on-time adjustment applied)*	120	39	36
Grader	113	56	42
Vibratory Sheet Piling Rig (Crane, 44 t vibro-hammer and power pack)	118	100	48
* -5 dB screening correction applied for localised screening around equipment item.			

The sound power level of any single maximum noise event (L_{AFmax}) from any piece of equipment is predicted to be no greater than 15 dB higher than the average sound power level (L_{wA}) of the Grader (which is the highest piece of equipment used across the alignment). This means no further properties would be impacted than those indicated within Appendix D.

The analysis has been undertaken on the basis that the source noise levels presented in Table 4 are not exceeded by the equipment. It is the contractor's responsibility to ensure that all equipment on site is at or lower than the levels presented in Table 4.

Light construction works (such as light handheld tools, manual digging, line painting etc.) are also expected to occur on site. These activities are not considered to generate any significant level of noise or vibration and therefore have not been included within this assessment.

Noise Assessment

Noise levels at the boundary of the closest properties along Robins Road are predicted to be between 100 dB $L_{Aeq,15min}$ (21 Robins Road which is 3m away) and 82 dB $L_{Aeq,15min}$ (66 Robins Road which is 26 m away). This is when the construction activities occur closest to the properties and will be lower when works are further away.

In some cases, the location of the receptors building is at a greater distance away, in comparison to the boundary, and as such the noise level received at the façade will be lower than that received at the closest point on the boundary of the site.

These outdoor noise levels would mean people will actively move inside (if they are at home). Based on an external noise level of 100 dB $L_{Aeq,15min}$ and assuming a sound reduction from outside-to-inside of 20 – 25 dB with windows closed, the indoor noise effect would likely be intolerable for long periods of time.

It is therefore critical to engage with the nearest receptors to determine:

- When occupants will be home and times of high and low sensitivity to noise.
- To communicate when activities will occur, what times they will occur, why the works are required, and total duration of works.
- Times when Queenstown Primary School have tests/exams, assemblies, or outdoor education which may be impacted by high noise levels.

As far as practicable, piling should avoid the most-sensitive noise times at adjacent receptors. This may mean starting piling works later when near certain properties or managing effects by offering to temporarily move residents when piling adjacent to their properties (for example if piling only occurs between 1200 – 1300 hours, offer lunch at a nearby restaurant for people). NSR to consider should be based on updated noise setback distances following completion of noise monitoring of key noise generating activities operating in a location where noise effects on adjacent NSR are the lowest possible.

Noise from equipment close to the ground, such as concrete saws, compactors, and pumps/generators can be readily mitigated with the use of acoustic site hoardings or localised acoustic barriers.

Regarding piling:

- There may be no practicable lower noise alternatives to vibratory sheet piling for the Project.
- Physical mitigation measures such as barriers are not typically effective as line of sight is not blocked by barrier that can be practically installed on site i.e. over 12 metres high to screen the top of the piling head.
- Managerial mitigation measures will be crucial in limiting noise effects. These may include piling when the nearest NSR sites are unoccupied or less sensitive to noise.

The majority of the Project will not be at the shortest distance to the NSRs as assumed by the assessment. Furthermore, for NSR setback from the Project screening will likely be provided by closer NSRs, the terrain, or boundary fencing closer to the works.

As a worst-case scenario, a 100% on-time has been assumed for most of the equipment items. It is likely that actual on-times will be lower during construction and therefore, received noise levels will be lower.

The construction works are proposed to occur between Monday to Saturday. Therefore, there will be a respite day on Sundays where no construction work will be undertaken. Options for additional full respite days (e.g. Saturdays), or days where some activities don't occur (like no sheet piling on Saturdays) could be considered once community liaison has been undertaken, which is required within the Construction Noise and Vibration Management Plan (CNVMP). Noting that additional respite days will likely increase the overall construction duration.

Regarding night-time works:

- Dewatering equipment items (15 kW Electric Water Pump and the 6 kVA Diesel Generator) will need to be enclosed or surrounded by barriers to limit noise effects at night. Where barriers are used, they shall be placed as close as practicable to maximise screening effects. The electric water pump can also benefit from additional screening by being placed within the excavation.
- Careful management of night-time connection works will be required to limit noise effects and sleep disturbance at night. This may involve limiting high noise activities (such as excavation, breaking/cutting, compaction, and the like) prior to 2200 hours, ensuring movable barriers are used to screen noise from equipment items and hand tools, and allowing for adequate respite so that NSR do not receive more than three consecutive periods of night works.

The adoption of a Construction Noise and Vibration Management Plan (CNVMP) has been identified as the best practicable option for mitigation. This requires a procedure to be developed to ensure the best practicable physical and managerial option of mitigation is adopted by the contractor to reduce the noise and vibration effects from construction. This will include a process to determine if there are NSR that may need to be temporarily moved when works (particularly sheet piling) occurs at the closest point to the NSR.

Based on the above, considering the duration of the works, the nature of the exceedances and with the implementation of a CNVMP, it is possible that noise effects can be managed to be reasonable to obvious. This assumes provision for proactive community engagement, the best practicable option for physical mitigation being implemented, noise monitoring to NZS 6803, and the temporary relocation of NSRs which may be subject to intolerable noise indoors, unless the building is unoccupied.

Predicted Vibration Levels

Table 5 presents the predicted setback distance to achieve the vibration criteria from the highest vibration-producing equipment, and the number of NSR structures within the respective setback distances.

Table 5 Vibration setback distances and number of receptors inside the standoff distance

EQUIPMENT ITEM	VIBRATION LEVEL OF EQUIPMENT (mm/s PPV @10m)	SETBACK DISTANCE TO ACHIEVE VIBRATION CRITERIA (m)		NUMBER OF RECEPTORS LOCATED IN THE SETBACK DISTANCE	
		10 mm/s	5 mm/s	10 mm/s	5 mm/s
4 t Vibratory Roller	2.9	1	4	0	5
Plate Compactor	2.5	0.8	3	0	2
Vibratory Sheet Piling Rig	4.0	2	7	0	1

The structures at the following addresses are within the setback distance any equipment item of Table 5:

- 21 Robins Road
- 25 Robins Road
- 29 Robins Road
- 35 Robins Road
- 36 Robins Road
- 37 Robins Road
- 40 Robins Road
- 43 Robins Road

Vibration Effects Assessment

The received vibration levels are highly dependent on intervening soil conditions, and the construction of the foundation/structure. The assumption of gravel/sand/rock as the main soil-type between the source and receptor should be confirmed on site.

Vibration measurements of equipment should be undertaken on the first use on-site to confirm the actual on-site setback distances. This is due to the proximity of NSR structures to the works and that vibration at these structures is predicted to exceed the DIN 4150-3 criteria. These measurements should occur at a location where NSR structures are outside the equipment item's predicted setback distance as presented in Table 5. For example, in the Queenstown Recreational Reserve provided ground conditions are representative of the Project.

Where on-site vibration levels still show an exceedance of the DIN 4150-3 criteria, pre and post building inspections shall be undertaken to determine whether there was any cosmetic damage due to the construction works.

It may be prudent to undertake continuous vibration monitoring at the nearest NSR that is first to be exposed to vibration levels to confirm vibration levels over time from activities. Vibration monitoring then could be extrapolated to other buildings near the works.

People perceive vibration levels well below the 5 mm/s PPV criteria in DIN 4150-3 (at approximately 0.3 mm/s PPV). It is critical that people are advised in writing a minimum of 10 working days before the equipment of Table 5 operate on site to inform on the timing and duration of the activity.

The methodology for measuring, monitoring, communicating, and predicting vibration levels from site will be adopted within the CNVMP and continuously updated through the construction of the works. The use of a CNVMP is considered the best practicable option of vibration mitigation for this project.

With consideration of the above points, construction vibration effects are predicted to be reasonable to obvious provided a CNVMP is developed and adopted.

Managerial and Mitigation Measures

CNVMP

A CNVMP will identify the best practicable options for mitigation of specific activities based on the duration, timing, and location of the works. The CNVMP shall be developed in accordance with Annex E2 of NZS 6803 and is required to be followed and updated by the contractor for the duration of the Project.

A general hierarchy of the development of the BPO of mitigation measures to reduce the impact of noise and vibration is presented below. The CNVMP will identify the best practicable option for mitigation using this hierarchy.

1. Selection of equipment and construction methodologies which reduce noise at the source, such as selecting quieter items of plant.
2. Including physical mitigation measures to reduce the noise levels at receivers, such as temporary barriers or enclosures for specific items of plant.
3. Liaising with parties potentially impacted so they know what to expect and can work around specific construction activities.
4. Adopt a site policy that the conduct and behaviours of workers shall be considerate to the local community and refer to noise impacts in regular training sessions, toolbox talks and site inductions.
5. Temporary relocation/movement of parties potentially affected.

As such, the CNVMP shall outline the following:

- How communication by the consent holder will occur about certain construction works expected to exceed the noise levels in NZS 6803, including scheduling/timing of works and the identification of potential temporary nuisance effects. Including:
    - Regular letter drops prior to the start and through construction. This is to inquire when people are sensitive to noise and vibration (e.g. exams/tests at the school) and vice versa. Also, to keep neighbours up to date on progress and the construction activities.
- How residents may communicate any enquiries or complaints about construction noise.
- Procedures for directly notifying neighbouring properties at least 10 working days in advance of programmed noise and/or vibration events that are predicted to exceed the noise or vibration limit for each property, including the duration that they will occur for and times they will occur between.
- The contact details of the lead contractor/project manager and a representative of the consent holder.
- The noise and vibration monitoring procedure including the communication procedure post monitoring. This will include the following:
    - Undertake attended noise monitoring to NZS 6803 when key noise generating activities first occur on site. The results from the monitoring will be used to recalculate the setback distance and determine NSR best suited for temporary movement while key noise generating activities occur adjacent to the NSR.
    - Undertake vibration monitoring when sheet piling, and the vibratory roller are first used on site. The results from the monitoring will be used to recalculate the setback distances and to update which buildings are impacted.
    - Pre and post building inspections are to be undertaken for buildings within the updated setback distance to determine if any cosmetic damage has occurred.
    - For buildings identified within the updated setback distances. Undertake longer-term vibration monitoring at the first building potentially to be impacted to check levels during typical site operation.
- The process for offering temporary movement/relocation where noise levels from construction works at NSR are deemed to not be reasonable, even with the BPO physical and managerial mitigation measures incorporated.

Physical Mitigation Measures

Physical mitigation can be used to reduce noise emissions from the construction works. Consideration of physical mitigation is required to reduce noise to a reasonable level under Section 16 of the RMA.

In some instances, the use of physical mitigation may not provide sufficient reduction in the noise emissions from the construction works to comply with the noise limits. In other instances, it may not be practicable to implement physical mitigation (due to space requirements, or machinery utilised). In any case, physical mitigation shall be adopted where practicable to reduce noise levels as far as possible. The final physical mitigation adopted will be included within the CNVMP.

General measures

General physical mitigation measures to be adopted for this project are:

- Where practicable, vehicles with audible reversing warning sirens will be fitted with broadband reversing beepers (squawkers rather than beepers).
- Use of electric equipment over petrol/diesel alternatives including saws, hand power tools, and the like.

- Selection of equipment that is an appropriate power for the use (i.e. not using more powerful equipment than needed.
- Where practicable, use power from the mains rather than a generator.
- Generators and/or water pumps are to be selected that have acoustic enclosures to reduce the noise radiated by these units. The reduction the acoustic enclosures provide over standard units depends on the manufacturer. Where generators are required, these shall be installed on site as far as practicable from sensitive receptors. Where possible, dedicated localised acoustic barriers will be constructed around any generators and water pumps.

Site hoardings and localised barriers

Due to the topography of the site, some surrounding residential buildings may overlook the works. As such, typical site hoardings may have a limited effect, as the direct line of sight from the NSR to the construction equipment may not be blocked. In addition, openings in any site hoardings (due to driveway access) may reduce the acoustic reduction provided by these.

There is a benefit of acoustic barriers being placed close to high-noise equipment / activities where screening can be achieved. For example, movable barriers surrounding the concrete saw.

Where practicable, acoustic site hoardings and localised barriers shall be used:

- Along the working area(s) of the eastern side of the Project / Robins Road.
- Localised barriers around the concrete saw and plate compactor when in use

The barriers shall achieve the following minimum specifications:

- Height: ≥ 1.8 metres
- Surface mass: ≥ 10 kg/m^2
- There should be no gaps between barrier panels, and between the barrier and ground.
- "Noise mats" (such as Duraflex Hushtec or SFI Echo Barrier) can be installed directly to temporary fencing as a noise barrier. Noise mats may require doubling up to meet the surface mass requirement.

Acoustic Shroud for Vibratory Sheet Piling Rig

Based on discussions with the Project team, it is understood an acoustic shroud on the vibro-hammer of the Vibratory Sheet Pilling Rig is not feasible for this Project.

Managerial Mitigation Measures

Managerial mitigation will be implemented to reduce the effects of noise and vibration. For this Project, the key managerial mitigation measures for noise and vibration are:

- Where practicable, high noise equipment in particular sheet piling should work around sensitive times for NSR when the activities are closest to these properties.
- Where night-time works are required and where practicable:
    - All high noise work such as excavation, breaking/cutting, compaction, and the like shall be completed prior to 2200 hours.
    - Localised barriers shall be utilised to block line of sight from source to receptor to adjacent NSR.
    - NSR shall be granted respite from night-time works following guidance from consultation or after receiving noise from three consecutive night-time work shifts.
- Vehicles/equipment should not be left to idle when parked or waiting.
- Site-specific training shall be given to site personnel including management and workers involved in construction activities or equipment operators that have the potential to generate noise and vibration effects. This also includes training for personnel involved in monitoring noise and vibration.

- Preferential selection of sub-contractors that utilise lower noise-generating construction methodologies.

A comprehensive overview of managerial mitigation measures will be developed within a Construction Noise and Vibration Management Plan (CNVMP). In practice, the Contractor will be responsible for implementing the managerial mitigation measures where practicable and safe to do so.

Conclusions and Recommendations

The construction noise and vibration impacts associated with the installation of a new wastewater pipe and associated enabling works on Robins Road have been assessed. The Project has been assessed based on the construction methodology and the proposed mitigation provided by the Contractor and QLDC.

Noise and vibration effects are predicted to be reasonable to obvious. It is recommended that as a condition of consent a CNVMP is implemented to ensure that noise and vibration impacts are mitigated as far as reasonably practicable. The CNVMP shall:

- Be in accordance with Annex E2 of NZS 6803.
- Outline mandatory mitigation measures such as those identified within the report to reduce the effects of noise and vibration on adjacent noise and vibration sensitive receptors.
- Outline practicable physical and managerial mitigation measures to reduce the effects of noise on adjacent noise-sensitive receptors, site mitigation to equipment on site, and community liaison methodology.

Assumptions

The following assumptions have been made:

- It is assumed that the reasonable worst-case scenario involves noise from a single item of equipment only.
- Noise levels have been predicted “at or within” the boundary of adjacent sites in line with the QLDC Proposed District Plan, rather than 1m from the façade as per NZS 6803.
- All setback distances are reliant upon QLDC and LINZ data for parcel boundaries and structure locations.

There is always a level of uncertainty in predicting noise from construction activities. Numerous variables including variations in the specific models of equipment, the exact location of each item on site, and how the operator uses the equipment, will affect the accuracy of the noise predicted.

Limitations

This report (‘Report’) has been prepared by WSP New Zealand Limited (‘WSP’) exclusively for Queenstown Lakes District Council (‘Client’) in relation to the construction noise and vibration impact assessment of the installation of a new wastewater pipe and associated enabling works on Robins Road (‘Purpose’) and in accordance with the C-19-052 Strategic Planning Services contract with the Client, signed 17/10/2019 (‘Agreement’). The findings in this Report are based on and are subject to the assumptions specified in the Report and the Offer of Service date 19 September 2024. WSP accepts no liability whatsoever for any use or reliance on this Report, in whole or in part, for any purpose other than the Purpose or for any use or reliance on this Report by any third party.

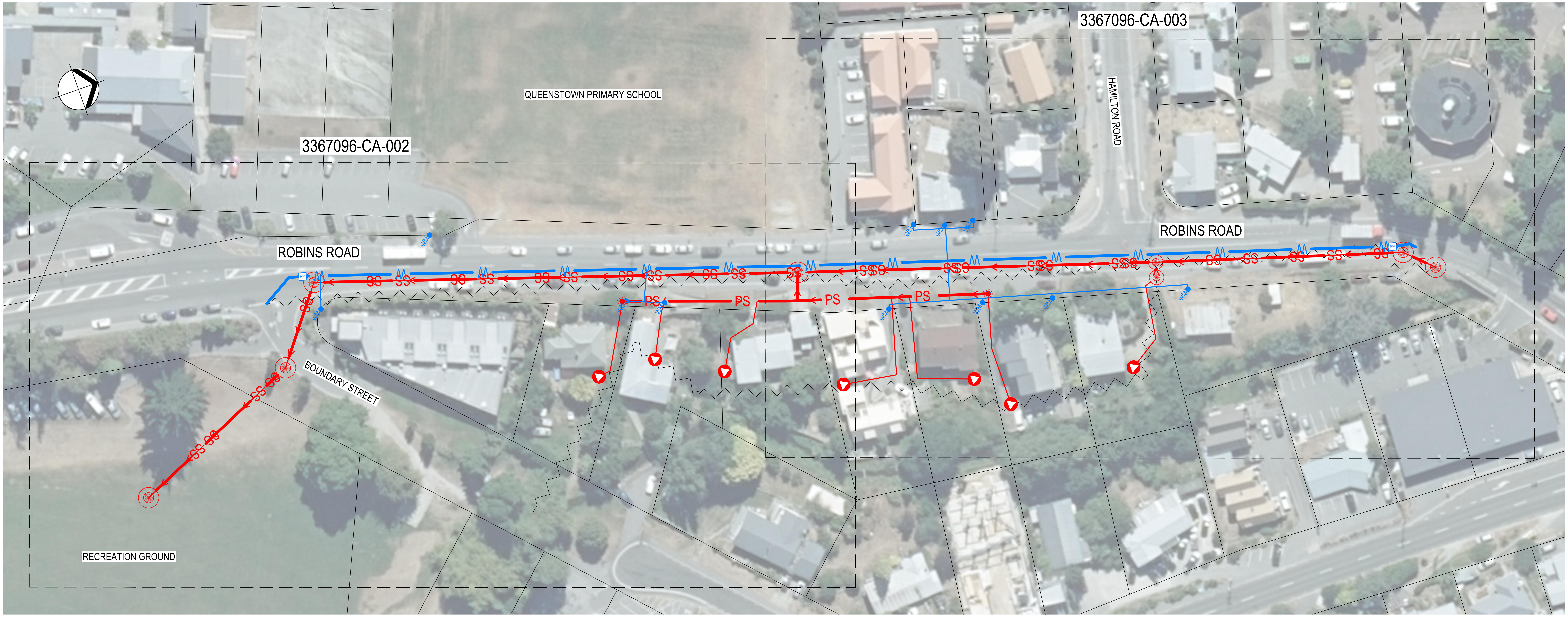
Appendix A: Glossary

Decibel, dB	The decibel (dB) is a logarithmic scale that allows a wide range of sound pressures to be represented in a more comprehensible range, typically 0 dB to 120 dB. The decibel is ten times the logarithm of the ratio of sound energy. (i.e. power squared, or pressure squared relative to a reference level squared). The reference level for sound pressure is typically 20 µPa which is the approximate threshold of human hearing.
A-weighting, dBA	A frequency weighting designed to reflect the relative loudness perceived by the human ear. It de-emphasizes frequencies in which the ear is less sensitive and is commonly used to measure environmental and industrial noise, ensuring readings are more representative of human auditory perception.
Equivalent Continuous Sound Pressure Level, $L_{eq,T}$	Many sounds, such as road traffic noise or construction noise, vary repeatedly in level over a given time period. $L_{eq,T}$ is the equivalent continuous sound level over a given time period (T). It is often referred to as the 'average' level.
Maximum Sound Pressure Level, L_{max}	L_{max} is the absolute maximum sound level recorded over the measurement period.
Sound Power Level, L_w or SWL	The sound power level is the inherent noise of the source and is the total power radiated by the source, in dB. Sound power level does not vary with distance from the noise source or within a different acoustic environment.
Sound Pressure Level, L_p or SPL	The sound pressure level of a source, in dB, varies with distance from the noise source and the environment in which it is located.
Façade Noise Level	A noise level measured/assessed at one metre in front of a sound reflecting object such as a building façade and including the contribution of the sound reflection.
Free-Field Noise Level	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5 metres away from any reflecting wall, screen, or object.
Peak Particle Velocity, PPV	The peak speed in a particular direction a particle travels at the measurement location resulting from vibration.

Appendix B: Developed Design Drawings

Drawing Plotted: 17 May 2024 3:22 pm

ROBINS ROAD WASTEWATER UPGRADES



ISSUED

DRAWING INDEX		DAY MONTH YEAR	28 03 2024	17 05 2024
DRAWING No	DRAWING TITLE			
3367096-CA-000	COVER SHEET AND DRAWING LIST		A	B
3367096-CA-001	GENERAL NOTES AND TRENCH DETAILS		A	B
3367096-CA-002	ROBINS ROAD LAYOUT PLAN SHEET 1		A	B
3367096-CA-003	ROBINS ROAD LAYOUT PLAN SHEET 2		A	B
3367096-CA-004	MANHOLE DROP STRUCTURE DETAILS SHEET		A	B

WARNING
BEWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

ORIGINAL DRAWING IN COLOUR

DEVELOPED DESIGN
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No.	Revision	By	Chk	Appd	Date
B	DEVELOPED DESIGN	EM	PM	RS	17.05.24
A	DRAFT DEVELOPED DESIGN	EM	PAR	RS	28.03.24

Original Scale (A1) AS SHOWN; Reduced Scale (A3) 1/2 SHOWN			Approved For Construction*
Design	E.MOLLOY	25.03.24	
Drawn	E.MOLLOY	25.03.24	
Dsg Verifier	P. REED	26.03.24	
Drg Check	R. SIMPSON	26.03.24	Date

* Refer to Revision 1 for Original Signature

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Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: COVER SHEET AND DRAWING LIST

Discipline: CIVIL ENGINEERING

Drawing No. 3367096-CA-000 Rev. B

Document No. 3367096-CA-000.DWG

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DO NOT SCALE FOR SET OUT DIMENSIONS

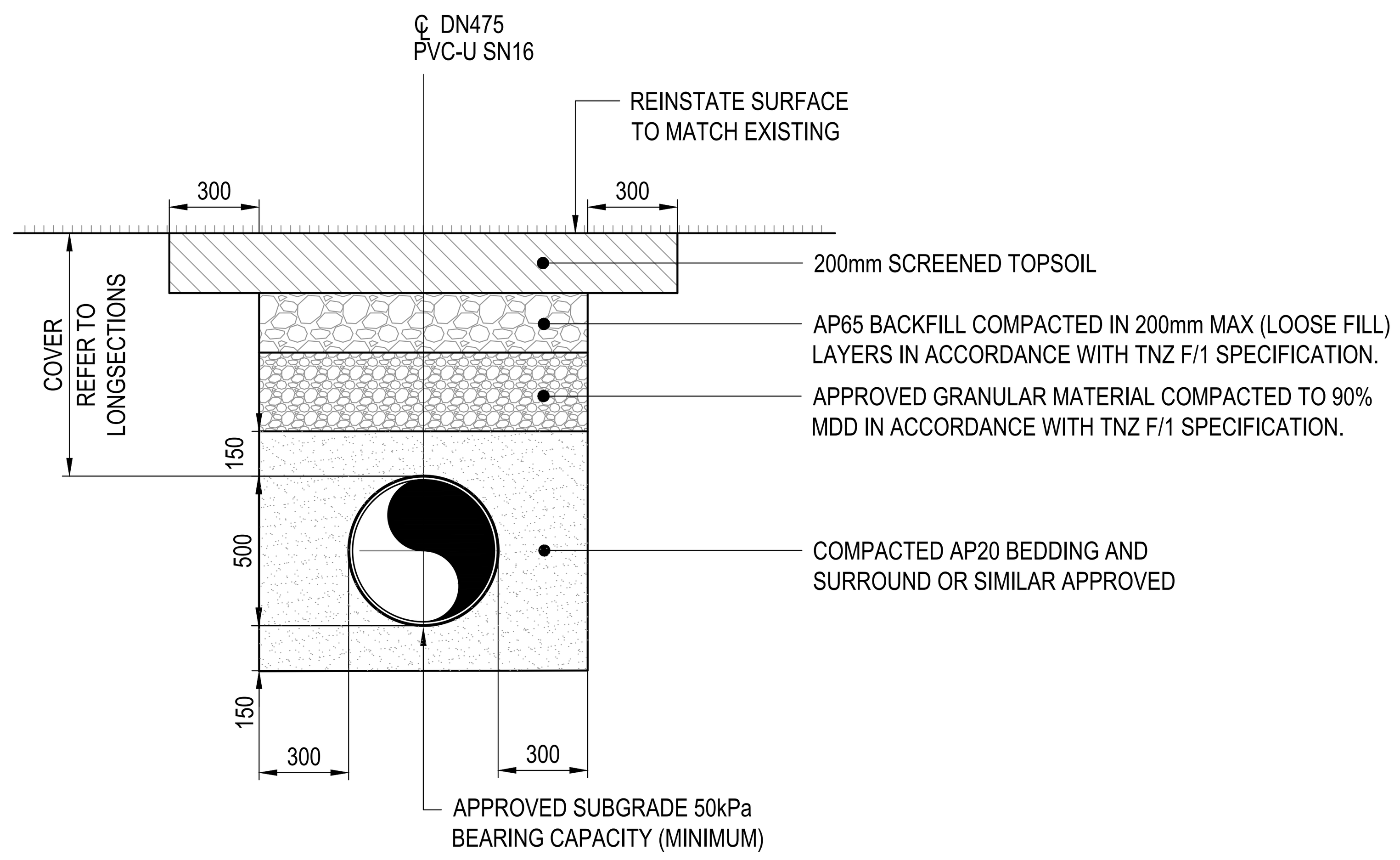
Document Set ID: 8416912
Version: 1, Version Date: 17/12/2024

GENERAL NOTES:

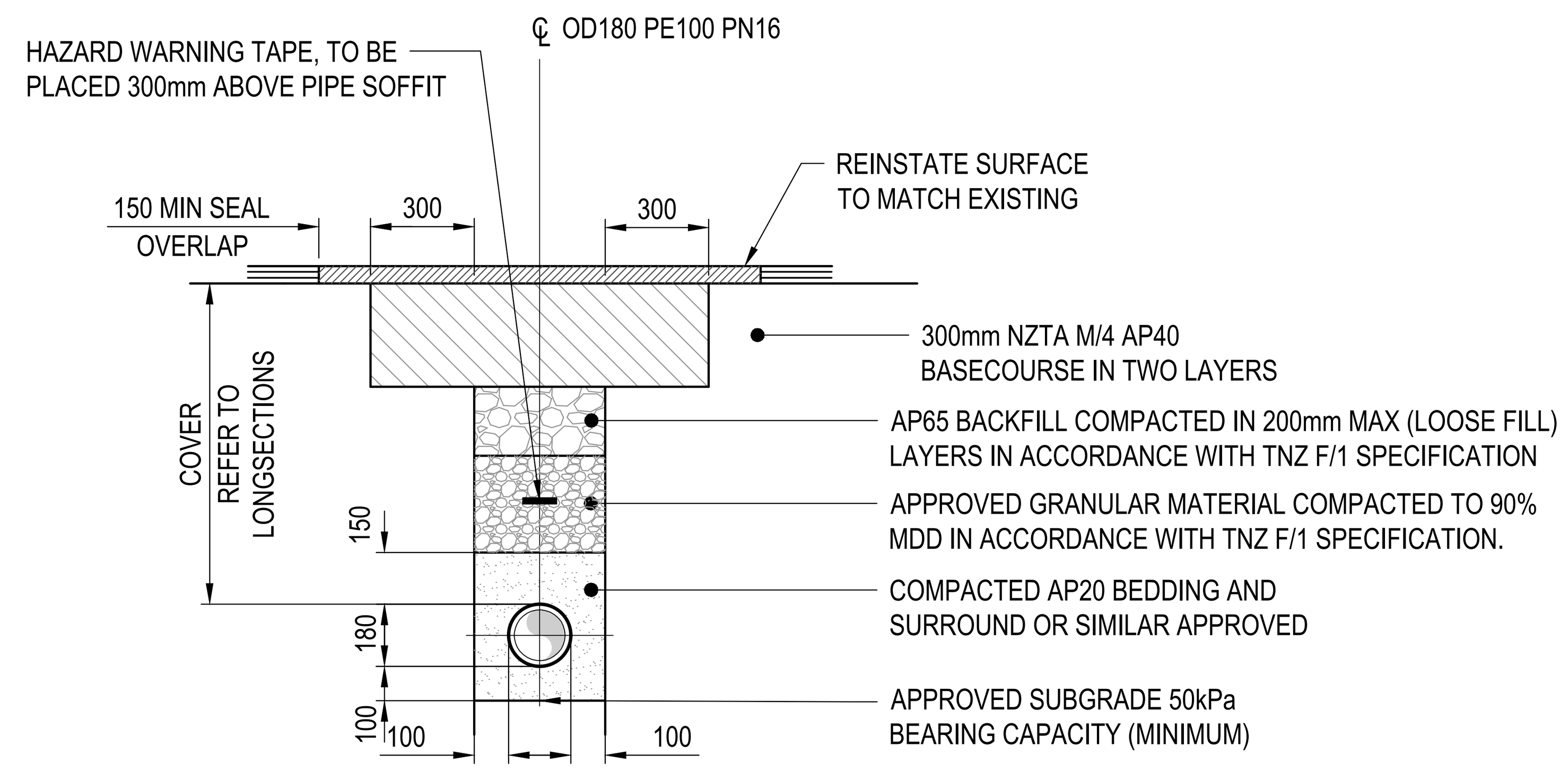
1. LEVELS ARE IN NZVD2016.
2. HORIZONTAL COORDINATES ARE IN TERMS OF NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM)
3. DEPTH OF INVERT GIVEN FROM PROPOSED SURFACE.
4. EXISTING SURFACE BASED ON LiDAR SURVEY (SOURCED FROM LINZ, JULY 2022)
5. SERVICES SHOWN ARE INDICATIVE ONLY. SOURCED FROM BEFOREUDIG AND QLDC GIS.
6. LEVELS OF EXISTING MANHOLES SOURCED FROM QLDC GIS.
7. ALL WORKS ARE TO COMPLY WITH QUEENSTOWN DISTRICT COUNCIL LANDSCAPE AND DEVELOPMENT CODE OF PRACTICE (QLDC COP). IT SHOULD BE NOTED THAT PRINTED VERSIONS ARE UNCONTROLLED. ANY DEVIATION FROM QLDC COP IS TO BE CARRIED OUT ONLY AFTER A WRITTEN INSTRUCTION IS RECEIVED FROM THE ENGINEER.
8. PIPE BEDDING, HAUNCHING AND BACKFILL TO BE IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B CM-002.
9. ALL VALVE COVERS TO BE INSTALLED IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B2-3.
10. SLUICE VALVES TO BE INSTALLED IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B2-5.
11. ALL WATER INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE QLDC COP. ANY DEVIATION FROM THE QLDC COP IS TO BE AGREED BY THE ENGINEER PRIOR TO ANY WORKS COMMENCING.

12. THE LEVELS AND LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO LOCATE ALL UTILITIES AND SERVICES ON SITE (DEPTH AND LOCATION) AND LIAISE WITH THE RELEVANT AUTHORITY IF PROTECTION AND/OR RELOCATION IS REQUIRED.
12. IF THE CONTRACTOR LOCATES ANY UTILITY NOT SHOWN ON THE DRAWINGS, THEY ARE TO INFORM THE ENGINEER IMMEDIATELY. THE ENGINEER SHALL THEN ADVISE THE CONTRACTOR ON HOW TO PROCEED.
14. WHERE POSSIBLE, THE SIZE AND TYPE OF EXISTING PIPE MATERIAL OF SERVICES HAVE BEEN SHOWN TO ASSIST THE CONTRACTOR. THE CONTRACTOR SHALL SATISFY THEMSELVES THAT THIS INFORMATION IS CORRECT.
15. THE CONTRACTOR SHALL CONFIRM THE ALIGNMENT OF THE PIPE IN CONSULTATION WITH THE ENGINEER AFTER ALL THE EXISTING SERVICES HAVE BEEN LOCATED UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

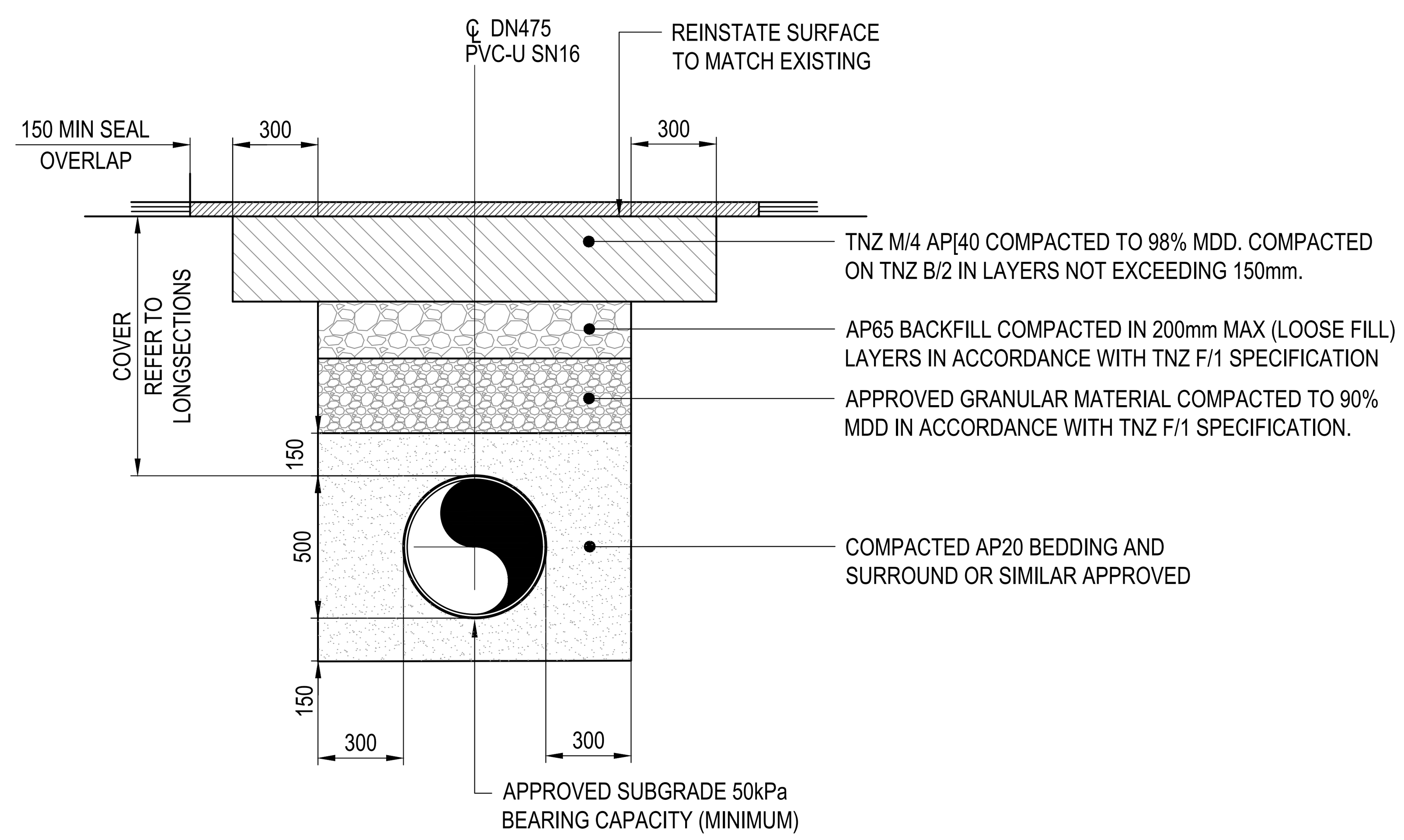
16. ALL MANHOLES TO HAVE 100kPa SAFE BEARING CAPACITY FOUNDATIONS BELOW 600mm OF THE MANHOLE BASE. ALL PIPES TO HAVE 50kPa SAFE BEARING CAPACITY FOUNDATIONS BELOW 600mm OF THE EMBEDMENT BASE. WHERE FOUNDATIONS DO NOT MEET THE BEARING CAPACITY, SITE SPECIFIC DESIGN IS REQUIRED.
17. ALL LATERALS ON DRAWINGS ARE SHOWN AT INDICATIVE LOCATIONS. EXACT LATERAL CONNECTIONS ARE TO BE CONFIRMED ON SITE.



TYPICAL PIPE TRENCH - GRASSED AREAS
(GRAVITY WASTEWATER)
SCALE 1:20



TYPICAL PIPE TRENCH (WATERMAIN)
SCALE 1:20



TYPICAL PIPE TRENCH - SEALED AREAS
(GRAVITY WASTEWATER)
SCALE 1:20

WARNING
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ORIGINAL DRAWING IN COLOUR

DEVELOPED DESIGN
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No.	Revision	By	Chk	Appd	Date
B	DEVELOPED DESIGN	EM	PM	RS	17.05.24
A	DRAFT DEVELOPED DESIGN	EM	PAR	RS	28.03.24

Original Scale (A1) AS SHOWN	Design	E.MOLLOY	25.03.24	Approved For Construction*
	Drawn	E.MOLLOY	25.03.24	
Reduced Scale (A3) 1/2 SHOWN	Dsg Verifier	P. REED	26.03.24	
	Drg Check	R. SIMPSON	26.03.24	Date
	* Refer to Revision 1 for Original Signature			

Beca

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: GENERAL NOTES & TRENCH DETAILS

Discipline: CIVIL ENGINEERING

Drawing No. 3367096-CA-001 Rev. B

Document No. 3367096-CA-001.DWG

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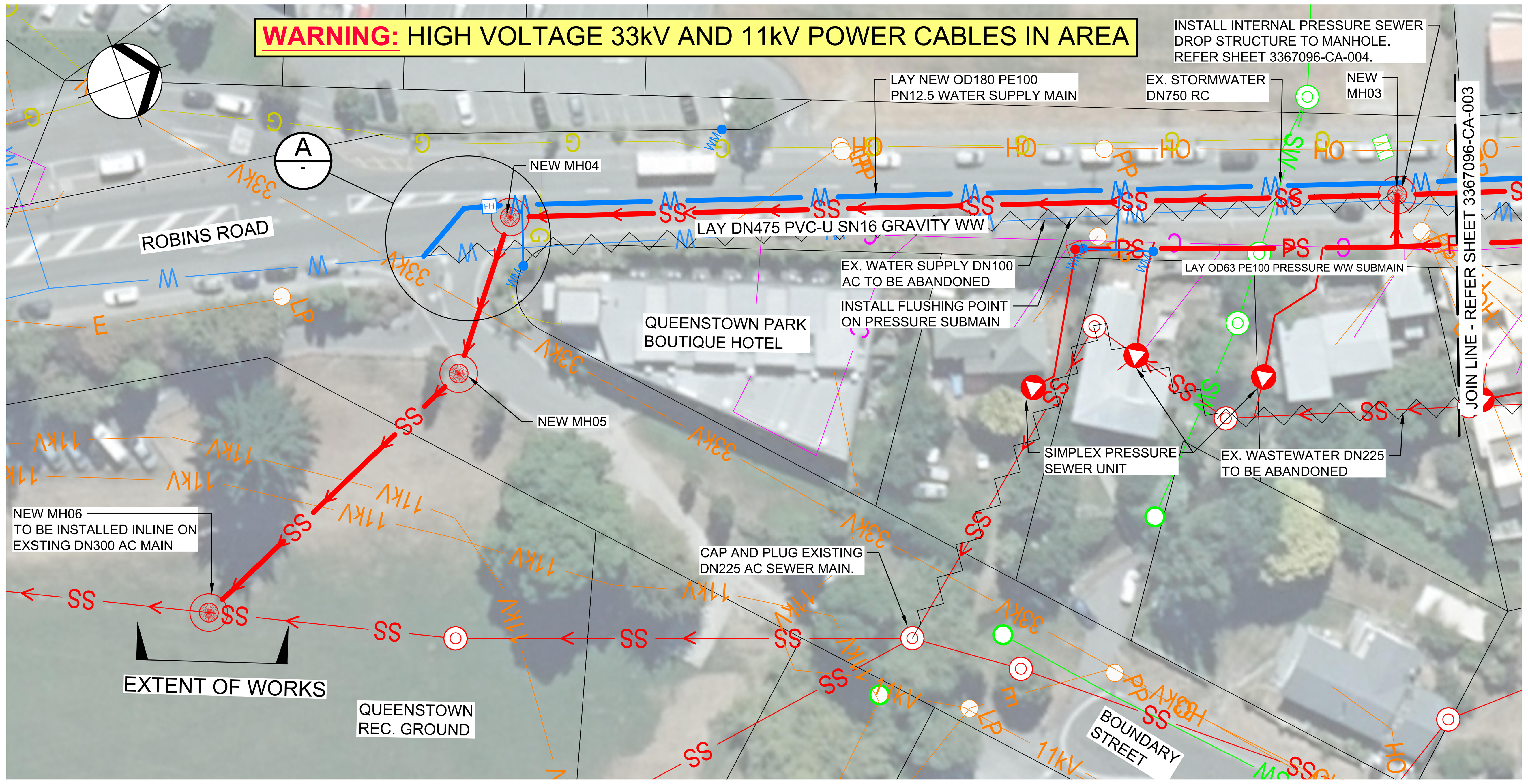
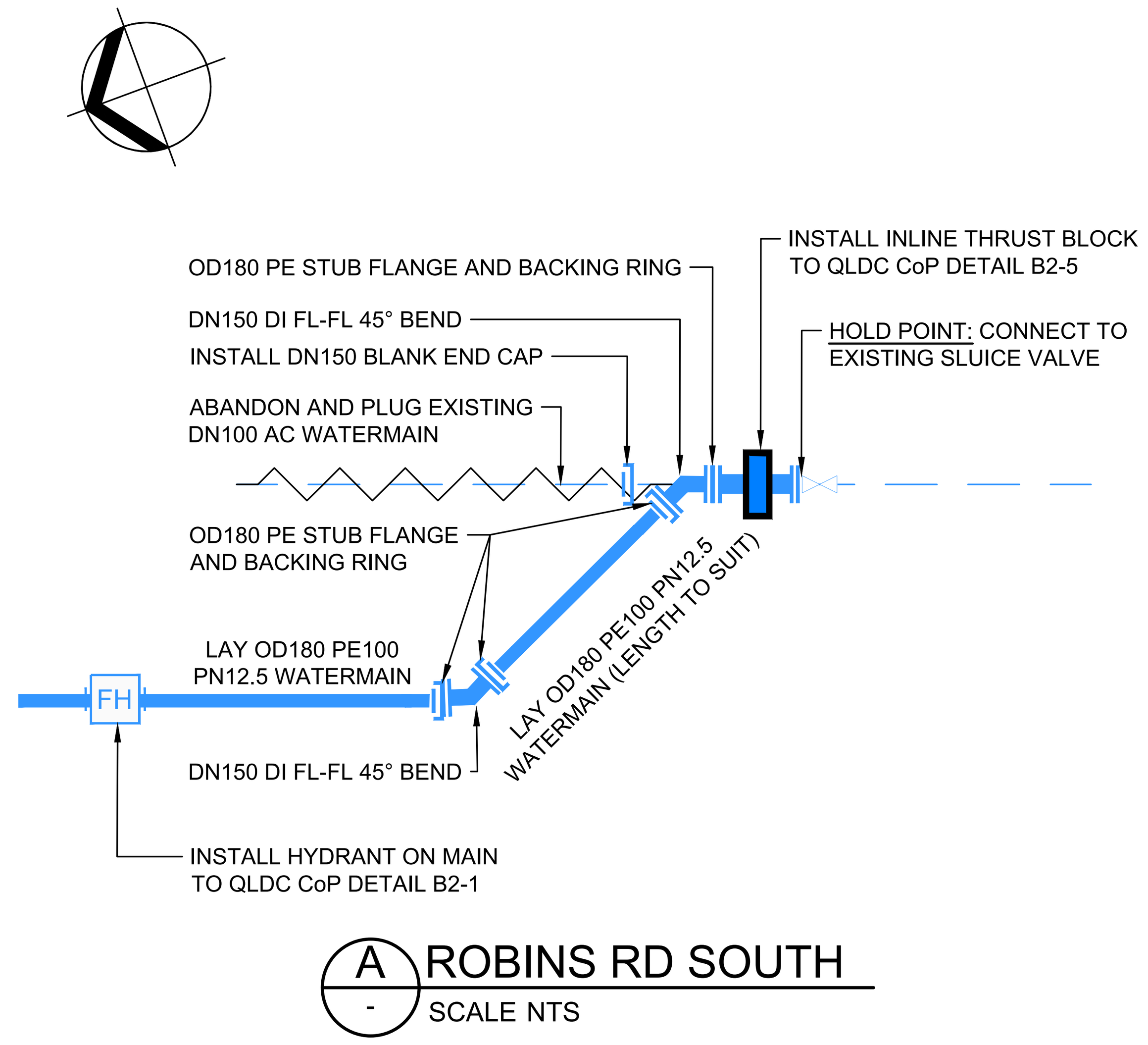
Drawing Plotted: 17 May 2024 3:16 pm



PROPOSED WASTEWATER - PLAN

SCALE: 1:500



A ROBINS RD SOUTH

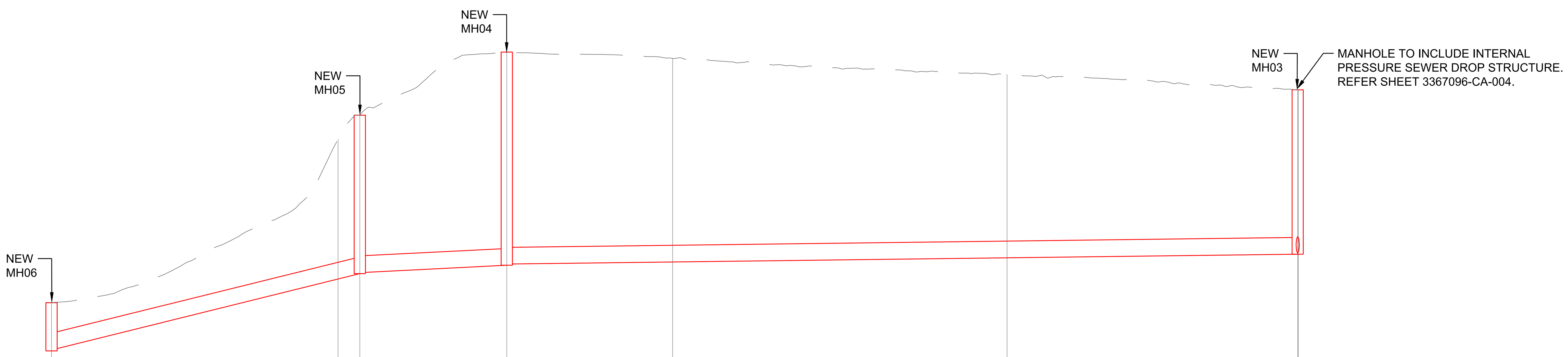
SCALE NTS

LEGEND

- PROPERTY BOUNDARY

EXISTING SERVICES
- SS — GRAVITY SEWER MAIN
- SEWER LATERAL
- W — WATER MAIN
- SW — STORMWATER MAIN
- E — POWER (UNDERGROUND)
- OH — POWER (OVERHEAD)
- 11kV / 33kV — 11kV / 33kV POWER (OVERHEAD & UNDERGROUND)
- G — GAS PIPE
- C — CHORUS
- FO — FIBRE OPTIC
- SEWER PUMP STATION
- SEWER / STORMWATER MANHOLE
- STORMWATER SOAKPIT
- STORMWATER OUTLET
- PP / LP — POWER / LIGHT POLE

PROPOSED SERVICES
- ABANDONED SEWER MAIN
- SS — GRAVITY SEWER MAIN
- SEWER LATERAL
- SEWER MANHOLE
- PS — PRESSURE SEWER SUBMAIN
- PRESSURE SEWER UNIT
- PRESSURE SEWER SUBMAIN FLUSHING POINT
- W — NEW WATER SUPPLY MAIN
- NEW WATER SUPPLY SUBMAIN
- WM — WATER METER CONNECTION
- FH — FIRE HYDRANT ON MAIN
- SLUICE VALVE ON MAIN



	NEW MH06		NEW MH05		NEW MH04		NEW MH03
EXISTING SURFACE LEVEL	317.19		322.79		324.68		323.55
PIPE COVER	0.90		4.19 / 4.22		5.82 / 5.86		4.40
DEPTH TO PIPE INVERT	1.41		4.70 / 4.73		6.34 / 6.37		4.91
PIPE INVERT LEVEL	315.78		318.09 / 318.06		318.34 / 318.31		318.64
PIPE SIZE AND CLASS		DN 475 PVC-U SN8		DN 475 PVC-U SN8		DN 475 PVC-U SN8	
PIPE GRADE		1:20 (4.95%)		1:100 (1.00%)		1:400 (0.25%)	
DISTANCE AND CHAINAGE	342.82	46.07	296.75	21.97	274.78	118.20	156.58
	DN 1500 MH		DN 1500 MH		DN 1500 MH		DN 1500 MH

PROPOSED WASTEWATER - LONGITUDINAL SECTION

SCALE: 1:500 HOR 1:100 VER

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 3367096-CA-001.
2. LOCATIONS OF PRESSURE SEWER UNITS ARE SHOWN AS INDICATIVE ONLY. FINAL LOCATIONS TO BE CONFIRMED FOLLOWING STAKEHOLDER CONSULTATION.
3. ALL PRESSURE SEWER LATERALS TO BE OD32 PE100 PN16 UNLESS STATED OTHERWISE.
4. DETAILS OF ODOUR MITIGATION FOR MANHOLES TO BE FINALISED AT NEXT STAGE OF DESIGN.

WARNING

BEWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

ORIGINAL DRAWING IN COLOUR

DEVELOPED DESIGN
NOT FOR CONSTRUCTION

Scale bar: 0 1 2 3 4 5m 1:100 VERT A1, 1:200 VERT A3; 0 5 10 15 20 25m 1:500 HORIZ A1, 1:1000 HORIZ A3

No.	Revision	By	Chk	Appd	Date
B	ISSUED FOR DEVELOPED DESIGN	EM	PM	RS	17.05.24
A	DRAFT DEVELOPED DESIGN	EM	PAR	RS	28.03.24

Original Scale (A1) AS SHOWN	Design	E.MOLLOY	27.02.24
	Drawn	E.MOLLOY	27.02.24
Reduced Scale (A3) 1/2 SHOWN	Dsg Verifier	P. REED	25.03.24
	Drg Check	R. SIMPSON	25.03.24

Approved For Construction* — Date
* Refer to Revision 1 for Original Signature

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Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: ROBINS ROAD LAYOUT PLAN SHEET 1

Discipline: CIVIL ENGINEERING

Drawing No. 3367096-CA-002 Rev. B

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Document No. 3367096-CA-002.DWG

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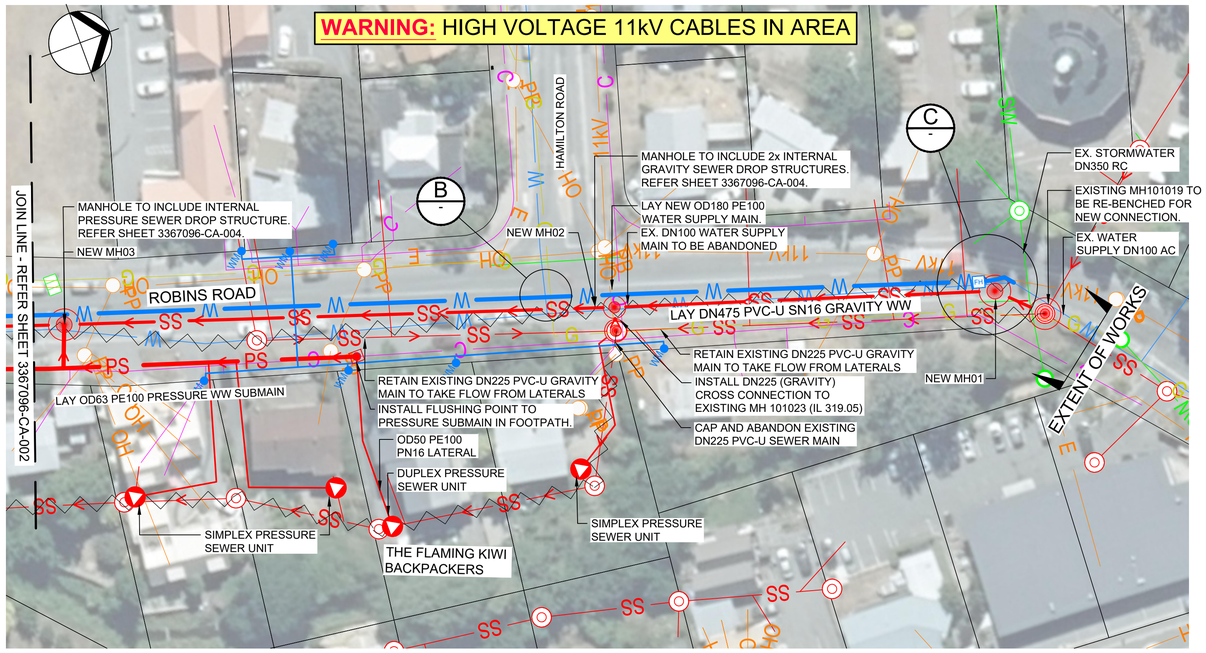

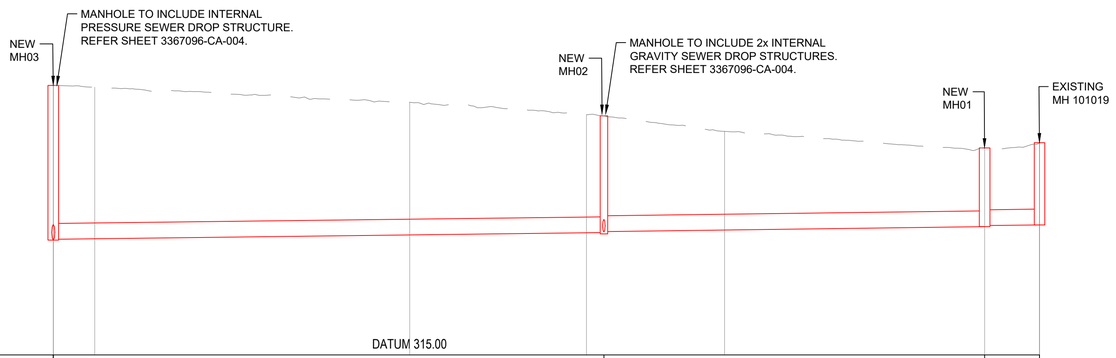

PROPOSED WASTEWATER - PLAN

SCALE: 1:500

EXISTING SURFACE LEVEL	323.55		322.58		321.57	321.73
PIPE COVER	4.37		3.16 3.19		1.95 1.99	2.09
DEPTH TO PIPE INVERT	4.88		3.67 3.70		2.47 2.50	2.61
PIPE INVERT LEVEL	318.67		318.91 318.88		319.10 319.07	319.13
PIPE SIZE AND CLASS		DN 475 PVC-U SN8		DN 475 PVC-U SN8		DN 475 PVC-U SN8
PIPE GRADE		1:413 (0.24%)		1:382 (0.26%)		1:400 (0.25%)
DISTANCE AND CHAINAGE	156.58	87.42	69.16	60.45	8.71	8.71 0.00

DN 1500 MH

DN 1500 MH

PROPOSED WASTEWATER - LONGITUDINAL SECTION

SCALE: 1:500 HOR 1:100 VER

B ROBINS RD / HAMILTON RD

CA-002 SCALE NTS

C ROBINS RD NORTH

\- SCALE NTS

LEGEND

PROPERTY BOUNDARY

EXISTING SERVICES

SS	GRAVITY SEWER MAIN
	SEWER LATERAL
W	WATER MAIN
SW	STORMWATER MAIN
E	POWER (UNDERGROUND)
OH	POWER (OVERHEAD)
11kV 33kV	11kV / 33kV POWER (OVERHEAD & UNDERGROUND)
G	GAS PIPE
C	CHORUS
FO	FIBRE OPTIC
◎	SEWER PUMP STATION
◎ ◎	SEWER / STORMWATER MANHOLE
▥	STORMWATER SOAKPIT
○	STORMWATER OUTLET
PP LP	POWER / LIGHT POLE

PROPOSED SERVICES

⌇⌇⌇	ABANDONED SEWER MAIN
SS	GRAVITY SEWER MAIN
	SEWER LATERAL
◉	SEWER MANHOLE
PS	PRESSURE SEWER SUBMAIN
▼	PRESSURE SEWER UNIT
▣	PRESSURE SEWER SUBMAIN FLUSHING POINT
W	NEW WATER SUPPLY MAIN
	NEW WATER SUPPLY SUBMAIN
WM●	WATER METER CONNECTION
FH	FIRE HYDRANT ON MAIN
⋈	SLUICE VALVE ON MAIN

NOTES:

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2. LOCATIONS OF PRESSURE SEWER UNITS ARE SHOWN AS INDICATIVE ONLY. FINAL LOCATIONS TO BE CONFIRMED FOLLOWING STAKEHOLDER CONSULTATION.
3. PRIVATE PRESSURE SEWER LATERALS TO BE OD32 PE100 PN16 UNLESS OTHERWISE STATED.
4. DETAILS OF ODOUR MITIGATION FOR MANHOLES TO BE FINALISED AT NEXT STAGE OF DESIGN.

WARNING

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ORIGINAL DRAWING IN COLOUR

DEVELOPED DESIGN
NOT FOR CONSTRUCTION

0 1 2 3 4 5m — 1:100 VERT A1 / 1:200 VERT A3
0 5 10 15 20 25m — 1:500 HORIZ A1 / 1:1000 HORIZ A3

No.	Revision	By	Chk	Appd	Date
B	ISSUED FOR DEVELOPED DESIGN	EM	PAR	RS	17.05.24
A	DRAFT DEVELOPED DESIGN	EM	PAR	RS	28.03.24

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Reduced Scale (A3)	Dsg Verifier	P. REED	25.03.24	
	Drg Check	R. SIMPSON	25.03.24	Date
1/2 SHOWN	* Refer to Revision 1 for Original Signature			

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: ROBINS ROAD LAYOUT PLAN SHEET 2

Discipline: CIVIL ENGINEERING

Drawing No. 3367096-CA-003

Rev. B

Document No. 3367096-CA-003.DWG

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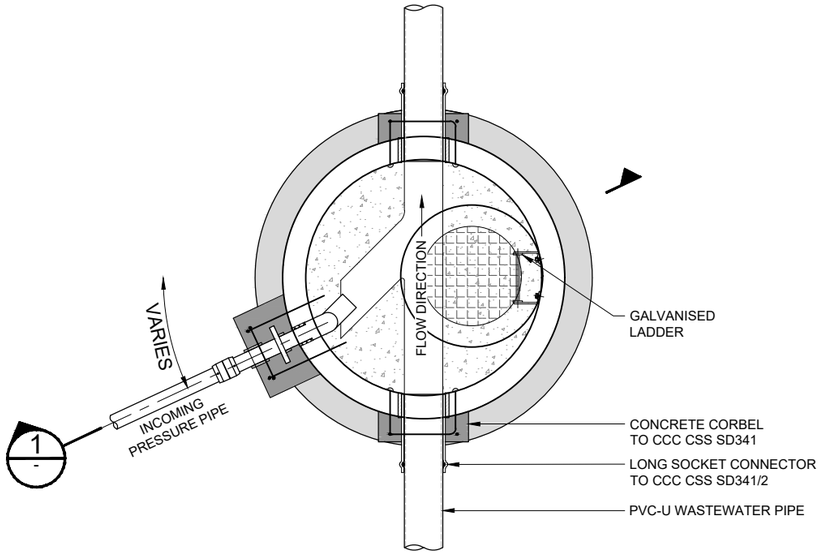
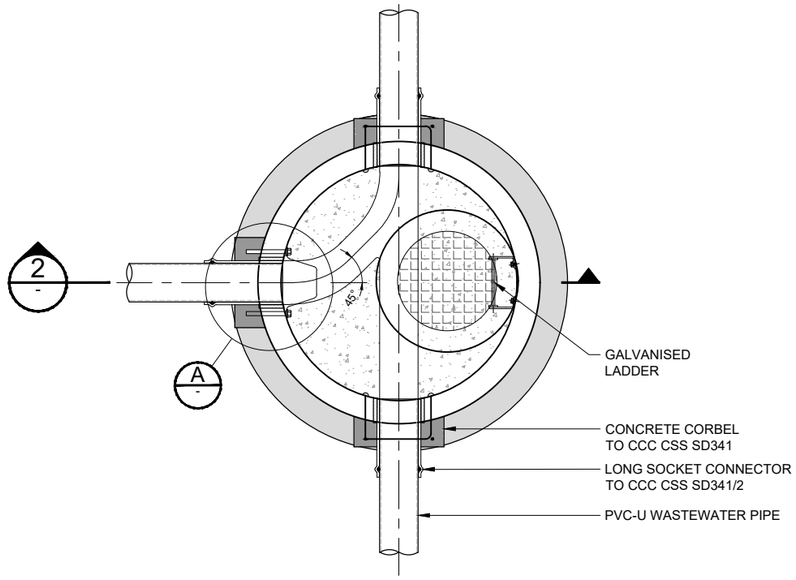
Document Set ID: 8[illegible]
Version: 1, Version Date: 17/12/2024

MANHOLE SCHEDULE				
MANHOLE ID	DIAMETER Ø	DEPTH (m)	LADDER REQUIRED	GRP PLATFORM REQUIRED
1	DN1500	2.5	YES	NO
2		3.2		NO
3		4.9		YES
4		6.4		YES
5		4.7		YES
6		1.4		NO



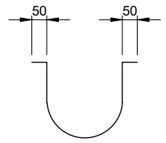
PLAN
SCALE 1:20



PLAN
SCALE 1:20

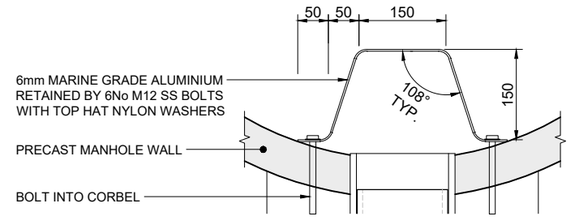
NOTES

1. ALL INTERNAL CONCRETE SURFACES TO BE LINED WITH ARMALINE OR SIMILAR APPROVED TO PREVENT H_2S CORROSION.

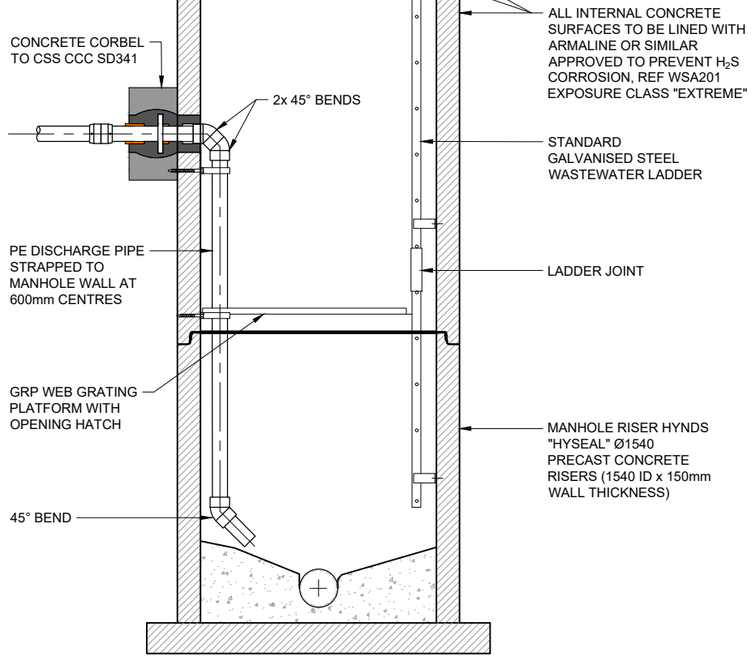


STRAP DETAIL

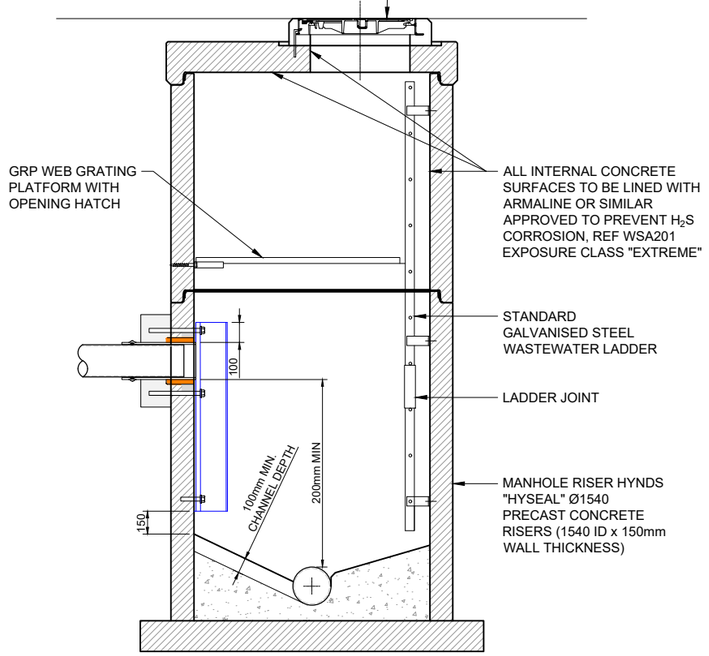
2. 25mm WIDE x 1.25mm 316 S/S STRAP FIXED TO MANHOLE WALL WITH 2x M12 x 100mm 316 S/S THREADED STUDS. EPOXY ANCHOR WITH 50mm EMBEDMENT DEPTH.



A DETAIL - ALUMINIUM STRUCTURE
SCALE N.T.S.



1 SECTION
SCALE 1:20



2 SECTION
SCALE 1:20

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ORIGINAL DRAWING IN COLOUR

DEVELOPED DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	DEVELOPED DESIGN	EM	PM	RS	17.05.24
A	DRAFT DEVELOPED DESIGN	EM	PAR	RS	28.03.24

DO NOT SCALE DRAWING - USE FIGURED DIMENSIONS

Original Scale (A1)	Design	E.MOLLOY	25.03.24	Approved For Construction*
AS SHOWN	Drawn	E.MOLLOY	25.03.24	
Reduced Scale (A3)	Dsg Verifier	P. REED	25.03.24	
1/2 SHOWN	Drg Check	R. SIMPSON	25.03.24	Date

* Refer to Revision 1 for Original Signature

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: MANHOLE DROP STRUCTURE DETAILS SHEET

Discipline: CIVIL ENGINEERING

Drawing No.: 3367096-CA-004

Rev.: B

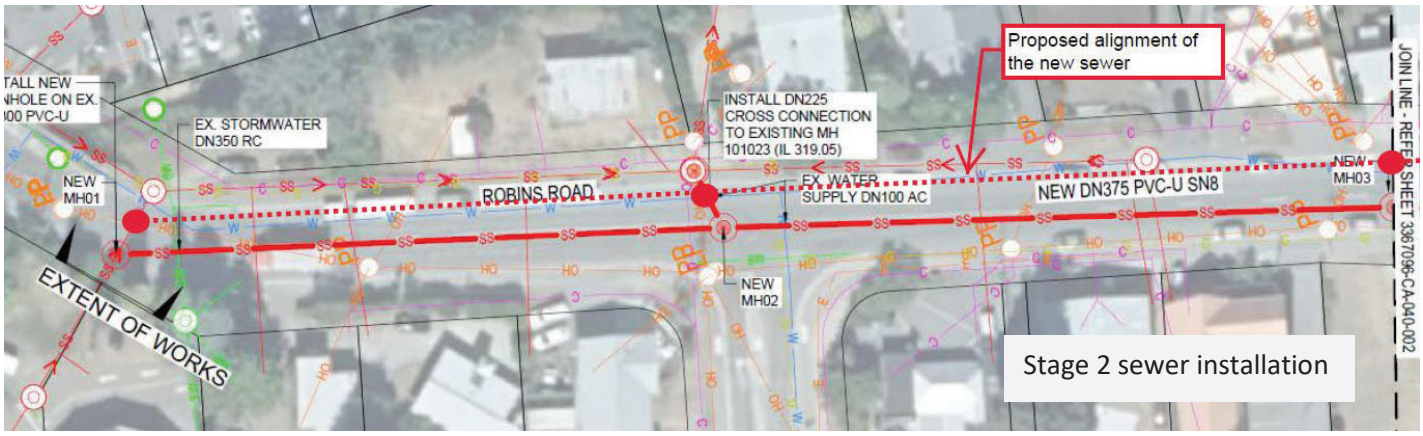
Document No.: 3367096-CA-004.DWG

Appendix C: Brief Construction Methodology

Multiple work fronts to achieve the required completion date

We note that the RFQ indicates a completion date of July 2025. To achieve this, multiple work fronts will be required following on from Stage 1, and our approach involves:

Task Name
Install DN180 Watermain - Open Trenching - 217m at 15m per day
Install OD63 Submain - Open Trenching - 188m at 20m day
Install new Sewer from MH-01 to MH-02 - To be done in Trench Shield - 76.60m at 2.5m per day installed
Install new Sewer from MH-02 to MH-03 - To be done in Trench Shield - 84.5m at 2.5m per day installed
Install first half of the new Sewer from MH-03 to Ch221 - To be done in Sheet Piles - 60m at 2m per day installed
Install second half of the new Sewer from Ch221 to MH-04 - To be done in Sheet Piles - 54m at 2m per day installed
Install new Sewer from MH-04 to Ch295 - To be done in Sheet Piles - 20m at 2m per day installed
Install new Sewer from Ch295 to MH-05 - To be done in Trench Shield - Across the Road - 12m at 2m per day installed
Install new Sewer from MH-05 to MH06 - To be done in Trench Shield - 19.03 at 3m a per day
Install new Sewer from MH-06 to existing line - Open Trench - 16.8m at 6m per day installed



~~Stage 2:~~ pipe installation methodology

- We will excavate the trench using a long reach (longer arm) 20T excavator. As the excavation progresses, shields will be installed to support the ground, and the AC watermain will be removed. Dewatering will be used to deal with ground water. 6’ pumps will be used to dewater the excavation and pump the water into a settling tank/lamella clarifier for treatment. Once the water is treated within consent limits (clarity and pH), it will be discharged into the stormwater system.

- Once the bottom of the excavation is reached, subgrade would be inspected and undercut if required (rafting). The sewer pipe will be installed, hunched (AP20), and backfill will begin. Based on the Geotechnical Report, the existing material is of poor quality and backfilling with existing material over the pipe might prove challenging. This being the case, we propose to use AP65 or River Run for backfill.
- The manholes will be installed using box shields 2.5m x 2.5m x 5m, using the same approach as above for excavation and backfill.
- Upon completion of the trench, the surfacing will be reinstated.

Stage 3: New Sewer from MH-03 to Ch295 (Note that Ch295 is located between MH04 and MH05)

Stage 3: approach, alignment, and traffic management

- In this section, the sewer will be deeper than 5m. Specifically designed temporary works will be required to support the ground here, as the trench shields or slide rails will reach their limit (for details, see the temporary work designs within the appendices).
- As part of this tender, we have already developed a temporary works design detailing the sheet pile staging required to support the ground. This design is shown within the appendices. This design had been developed by our Temporary Works Team, under the direction of our national Engineering Manager Darren Bentham.
- To construct the sewer along this length, the road will have to be fully closed from MH-03 to Ch295. However, there are no residential driveways in this length, although there is a carpark exit – but this can be managed onsite. As such, impact on residents for this length of work will be reduced. For further details see the appendices for our proposed Traffic Management Plan Stage 3.

Stage 3: pipe installation methodology

- The first step will be to install the full length of sheet piles wall from MH-03 up to Ch220. The sheet piles will be installed using a 100T Crane with a 44B Vibro Hammer. The sheet piles will be installed as low to the ground as possible to allow safe straddling of plant over them. It is important to note that the low voltage overhead crossings will need to be temporary relocated for the crane to install some of the sheets. Temporary above-ground connections will be completed before sheetpiling in those locations, and re-instated at completion.
- The excavation will then proceed using a long reach 30T excavator. The clearance within the track of the 30T will allow the excavator to travel above the sheet pile alignment. The load surcharge of the excavator on the sheet piles has been considered during the temporary work design development.
- We will only excavate a 10 to 12m-long section at a time to depth to manage the excavation and deal with the ground water (using a 6’ pump and storage tank, as in Stage 2).
- Once excavation has reached 1m deep, whaler beams and propping will be installed.
- Once the whaler and props are in place, the excavation will proceed to full depth in a similar fashion as Stage 2 (removal of AC main, and subgrade test). The pipe will then be installed and backfilled.
- Once each 10 to 12m section is complete, the sheet piles will be removed by the crawler crane and installed progressively from Ch220 up to Ch295, ensuring that the temporary work is always in place ahead of the excavation. Once all the sections from MH03 to Ch295 have been completed and all sheet piles removed, the surface will be reinstated, including any impacts due to the crawler crane.

Stage 4: New Sewer from Ch295 to the end

- This section will be delivered using trench shields in a similar way as Stage 2.
- The main difference will be the traffic management used. The alignment crosses the access road to the hotel which needs to be kept open at all times. We will stage this crossing one half a time to ensure constant access for hotel management and guests. For further details see the appendices for our proposed Traffic Management Plan Stage 4.
- As the existing material in the Rec Ground is contaminated, we propose to re-use this material as part of the trench backfill and cap it with AP20 and topsoil. This will reduce the dumping costs. We are very familiar excavating Rec Ground contaminated material, following our works on the Rec Ground ECI project.

Appendix D: NSR within Study Area

Table 6 presents the NSR within the study area, the associated use of site as per QLDC, and the shortest distance from the parcel boundary to the works.

Table 6 NSR within the study area, QLDC land use, and the distance to the works

ADDRESS	USE OF SITE PER QLDC	DISTANCE FROM PARCEL BOUNDARY TO WORKS (m)
Unit 1-18/21 Robins Road	Residential-Public Communal (Unlicensed)	3
23 Robins Road	Residential -Single Unit (Other Than Bach)	6
47 Robins Road	Residential -Single Unit (Other Than Bach)	6
25 Robins Road	Educational	7
43 Robins Road	Residential -Single Unit (Other Than Bach)	8
29 Robins Road	Educational	8
39 Robins Road	Retail - Commercial	8
37 Robins Road	Residential -Single Unit (Other Than Bach)	9
35b Robins Road	Residential -Single Unit (Other Than Bach)	9
35 Robins Road	Residential - Multi Unit	9
35a Robins Road	Residential -Single Unit (Other Than Bach)	9
35d Robins Road	Residential -Single Unit (Other Than Bach)	9
35c Robins Road	Residential -Single Unit (Other Than Bach)	9
36 Robins Road	Residential-Public Communal (Unlicensed)	10
40 Robins Road	Residential -Single Unit (Other Than Bach)	11
53 Robins Road	Multi Use Within Commercial	11
44 Robins Road	Commercial Offices	11
20 Robins Road	Educational	12
60 Robins Road	Passive Outdoor	12
46 Robins Road	Residential -Single Unit (Other Than Bach)	13
62 Robins Road	Residential - Multi Unit	18
62a Robins Road	Residential -Single Unit (Other Than Bach)	18
62c Robins Road	Residential -Single Unit (Other Than Bach)	18
Unit 7/62 Robins Road	Residential -Single Unit (Other Than Bach)	18
62e Robins Road	Residential -Single Unit (Other Than Bach)	18
62b Robins Road	Residential -Single Unit (Other Than Bach)	18
62f Robins Road	Residential -Single Unit (Other Than Bach)	18
62g Robins Road	Residential -Single Unit (Other Than Bach)	18
66 Robins Road	Residential - Multi Unit	26
66a Robins Road	Residential -Single Unit (Other Than Bach)	26
66b Robins Road	Residential -Single Unit (Other Than Bach)	26
50 Gorge Road	Residential -Single Unit (Other Than Bach)	23
46 Gorge Road	Residential-Public Communal (Unlicensed)	28
42 Gorge Road	Residential -Single Unit (Other Than Bach)	40
38 Gorge Road	Multi Use Within Residential	45
38b Gorge Road	Commercial Offices	45
38a Gorge Road	Commercial Offices	45
32 Gorge Road	Residential-Public Communal (Unlicensed)	49
30 Gorge Road	Residential -Single Unit (Other Than Bach)	52
1 Boundary Street	Vacant Residential	27
10a-10b Boundary Street	Residential - Multi Unit	32

1 Memorial Street	Active Outdoor	89
10 Hamilton Road	Residential -Single Unit (Other Than Bach)	37
12 Hamilton Road (All units)	Residential - Multi Unit	61
14-18b Hamilton Road	Educational	76
18 Hamilton Road	Residential - Multi Unit	92
20 Hamilton Road	Residential -Single Unit (Other Than Bach)	92
18a Hamilton Road	Residential -Single Unit (Other Than Bach)	92

CONSULTANT ADVICE NOTE

To	Emily Ireland, WSP
From	George van Hout, WSP
Date	12 February 2025
File/Ref	250212-6XQ107-GvH-CAN1-Robins Road Construction Methodology Addendum
Subject	Robins Road Wastewater Upgrades - Finalised Construction Methodology

An updated construction methodology to install the new wastewater pipes associated with the Robins Road Wastewater Pipe Upgrade Project has been received. This consultant advice note (CAN) outlines the updated construction methodology and key changes to the noise and vibration effects associated with the updated construction methodology.

This CAN is based on discussions with the consenting team and contractor, along with the following information:

- Pipe overview drawings titled *Robins Road Wastewater Upgrades*, drawing number 3367096-010-CA-000, revision B, dated 5 February 2025.
- Updated description of works, received by email from HEB Construction Ltd on 6 February 2025

This CAN should be read in conjunction with the construction noise and vibration impact assessment (titled *Robin Road Wastewater Pipe Upgrade – Construction Noise and Vibration Impact Assessment*, reference 241202-6-XQ107.07-RP-R1-Rev1-RRWWPU CNVIA, dated 2 December 2024) (CNVIA).

Updated Construction Methodology

The key changes to the preferred construction methodology are:

- The majority of the wastewater pipe will be installed via micro tunnelling, rather than open trench. The location of micro tunnelling (purple) and open trenching (orange) is shown in Figure 1.

Figure 1: Location of micro tunnelling (purple) and open trenching (orange) wastewater pipe

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wsp.com/nz

- Pits to support micro tunnelling will be constructed at maintenance hole locations MH02, MH03, MH04, and MH05, that are 4 metres x 4 metres, with a depth up to 7.5 metres. Sheet piling will be used for temporary retaining for these pits.
- Additional lateral sewer systems (including those to properties to the west of Robins Road) are proposed and the pressure sewer system has been extended. These pipes are to be installed via shallow open cut sections.
- Updated timing of activities are:
    - Sheet piling for approximately 30 days.
    - Sheet piling removal for approximately 25 days.
    - Micro tunnelling for approximately 40 days.
    - Excavation, installation, and backfilling for approximately 130 days.
    - Dewatering for approximately 40 days.
    - Reinstatement of the road for approximately 20 days.
    - Shallow excavation works (less than 1.5 m in depth) for approximately 40 days. This includes pressure sewer works.
    - Night-time connection/tie in works for approximately 7 nights.
- Open trench sections will use trench shields for retaining.
- Night works are required if dewatering is required between Hamilton Road and Gorge Road only and for the lateral/individual pressure sewer system connections.

Note that if further ground investigations or micro tunnelling works show this is not a viable pipe installation methodology, all works will be open cut as assessed in the CNVIA submitted previously.

Predicted Noise Setback Distances

The updated construction equipment items (new items in **bold**), associated equipment sound power level, the setback distance for each piece of equipment to achieve the criteria, and the number of noise sensitive receptors (NSRs) that experience levels greater than the criteria at any point within the boundary are provided in Table 1.

Table 1: Construction equipment sound power levels and equipment setback distances to achieve construction noise criteria

Equipment Item	SWL dB L_{wA}	Setback distance in metres to achieve 70 dB $L_{Aeq(15min)}$ Construction Noise Criteria	NSR within Setback Distance^*
7 kVa Diesel Generator	93	6	1
15 kW Electric Water Pump	96	8	1
8 t Excavator	97	9	15
14 t Excavator	99	11	15
20 t Excavator	99	11	15
30 t Excavator	103	18	21
Construction Roller	103	18	21
Jumping Jack Compactor	104	20	25
Road Sweeper	104	20	25
Bobcat	104	20	25
5 t Vibratory Drum Roller	105	22	26
Plate Compactor**	110	22	26
Truck/Hiab	107	28	29
9 t Loader	107	28	29
Water Cart	107	28	29
Micro tunnelling machine, power pack, and vacuum	110	55	35

Concrete Saw (30% on-time adjustment applied)**	120	39	30
Grader	113	56	35
Vibratory Sheet Piling Rig (Crane, 44 t vibro-hammer and power pack)	118	100	48
^ Taken as any point within the boundary of an adjacent site. NSR numbers will be lower when assessing to NZS 6803:1999 *Acoustics – Construction noise,* 1metre from the façade. * Does not include a façade reflection allowance as assessment is within the closest point of the site. ** -5 dB screening correction applied for localised screening around equipment item.			

To show the envelope of noise effects, the NSRs within the setback distances for each piece of equipment are provided in Table 3. In addition, Figure 2 provides the 70 dB $L_{Aeq,15min}$ noise contour from vibratory sheet piling (highest noise generating equipment with the longest setback distance), which shows the NSRs that would receive noise levels greater than 70 dB $L_{Aeq,15min}$. NSRs outside of the 70 dB $L_{Aeq,15min}$ contour in Figure 2 receive levels below the permitted standards.

The sound power level of any single maximum noise event (L_{AFmax}) from any piece of equipment is predicted to be no greater than 15 dB higher than the average sound power level (L_{wA}) of the Grader (which is the highest piece of equipment used across the alignment). This means no further properties would be impacted than those indicated within Appendix D.

The analysis has been undertaken on the basis that the source noise levels presented in Table 1 are not exceeded by the equipment. It is the contractor's responsibility to ensure that all equipment on site is at or lower than the levels presented in Table 1.

Predicted Vibration Setback Distances

Table 2 presents the updated highest vibration generating equipment (with new equipment in **bold**), predicted setback distance to achieve the vibration criteria, and the number of NSR structures within the respective setback distances.

Table 2: Vibration setback distances and number of receptors inside the standoff distance

Equipment item	**Vibration Level of Equipment (mm/s PPV @10m)**	**Setback Distance to Achieve Vibration Criteria (m)**		**Number of Receptors located in the Setback Distance**	
		10 mm/s	**5 mm/s**	**10 mm/s**	**5 mm/s**
4 t Vibratory Roller	2.9	1	4	0	5
Plate Compactor	2.5	0.8	3	0	2
Vibratory Sheet Piling Rig	5.0	3	10	0	3
Micro tunnelling equipment	1.50	1.1	1.5	0	0

Updated Acoustic Assessment

The following sections provide an updated acoustic assessment specifically for the new construction methodology. For areas which have not changed, the effects assessment is presented in the CNVIA.

Noise Effects Assessment

The number of NSRs predicted to exceed the noise criteria from sheet piling is not expected to change with the updated pipe installation methodology (due to the levels of noise generated). However, the effects from sheet piling are predicted to reduce from the previously assessed methodology. This is because:

- The total duration of sheet piling reduces from 70 days total to 55 days total.

- Each NSR is only likely to receive the highest level of noise for two periods – a 6-7 day period when sheet piles are inserted, and a 5-6 day period when sheet piles are removed. Under the previous methodology, sheet piling would be elevated and continuous for a number of weeks as works pass each property.
- The highest noise levels received at the boundary of NSRs are the same as that assessed previously ranging from up to 100 dB $L_{Aeq,15min}$ (due to the closest NSR boundary being approximately 3m away) to 89 dB $L_{Aeq,15min}$ (for NSRs directly on the opposite side of Robins Road to sheet piling which are approximately 11 m away).
- These predicted levels are when sheet piling is located closest to the boundary of NSRs. When works occur at other maintenance holes, noise levels received will be lower (for example noise levels during sheet piling at MH03 will be lower when received at NSRs around MH04 than when sheet piling occurs around MH04).
- Sheet piling is localised to maintenance holes rather than along the whole pipe alignment. This means a lower number of NSRs will be exposed to noise in excess of 90 dB. This is a better outcome than under the previous construction methodology.
- In some cases, the location of the NSR buildings is at a greater distance away, in comparison to the boundary, and as such the noise level received at the façade will be lower than that received at the closest point on the boundary of the site.
- The predicted outdoor noise levels would mean people will actively move inside (if they are at home). Based on an external noise level of 100 dB $L_{Aeq,15min}$ and assuming a sound reduction from outside-to-inside of 20 – 25 dB with windows closed, the indoor noise effect would be intolerable for extended periods of time.

  It is therefore critical to engage with the nearest receptors to determine:

  - When occupants will be home and times of high and low sensitivity to noise.
  - To communicate when activities will occur, what times they will occur, why the works are required, and total duration of works.
  - Times when Queenstown Primary School have tests/exams, assemblies, or outdoor education which may be impacted by high noise levels.

Assuming engagement is undertaken, and sheet piling works are undertaken around the most sensitive times of the day for NSRs, noise effects can be reasonable.

Regarding micro tunnelling:

- Noise levels between 90 dB $L_{Aeq,15min}$ (at the closest NSR boundary 4m away) to 80 dB $L_{Aeq,15min}$ (at the NSRs on the opposite site of Robins Road to the equipment) are predicted without noise mitigation.
- With temporary site hoardings and/or localised barriers around surface equipment (which would be the BPO mitigation), noise levels would reduce up to 10 dB assuming the line of sight is blocked between source and receptor.
- Micro tunnelling equipment will occur for 40 days and operate at selected maintenance holes during this period. Therefore, the closest NSRs will not receive these levels for the entire 40 day period.
- Noise levels during micro tunnelling would only occur during select stages and when the pipe installation occurs between the two closest maintenance holes. At times when micro tunnelling occurs at further maintenance holes, noise levels will be lower.

With site hoardings/localised barriers around the power pack and vacuum units and micro tunnelling occurring during the daytime only, noise from this activity will be reasonable.

Vibration Effects Assessment

The overall vibration effects from sheet piling are predicted to reduce due to the micro-tunnelling methodology because:

- Vibration effects relating to sheet piling are isolated near the maintenance holes which have been specifically designed as a 4 metre by 4 metre area.
- Under the previous methodology, as sheet piling occurred along the alignment, more NSRs would receive higher levels of vibration

- Sheet piling reduces from a total duration of 70 days to 55 days. Sheet piling is only required for 5-7-days for installation and 5-6 days for removal at each maintenance hole. The infringements during sheet piling of the DIN 4150-3 criteria are for these two durations only, and not the entire 55 day period.

As vibration exceedances are predicted, vibration measurements of equipment should be undertaken on the first use on-site to confirm the actual on-site setback distances. Where on-site vibration levels still show an exceedance of the DIN 4150-3 criteria, pre and post-building inspections shall be undertaken.

It may be prudent to undertake continuous vibration monitoring at the nearest NSR that is first to be exposed to high vibration levels to confirm vibration levels over time from activities.

No NSRs are predicted to exceed the DIN 4150-3 vibration limits from micro tunnelling, as such vibration effects from micro tunnelling are acceptable.

Vibration mitigation and management outlined in the CNVIA are relevant to this current pipe installation methodology.

Appendix A: NSRs within the noise setback distance.

Table 3: NSRs within the noise setback distance

Equipment Item	NSR within Setback Distance^ in Table 1	
7 kVa Diesel Generator	47 Robins Road	
15 kW Electric Water Pump	47 Robins Road	
8 t Excavator	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road	23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road
14 t Excavator	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road	23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road
20 t Excavator 30 t Excavator Construction Roller	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road	40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road
Jumping Jack Compactor Road Sweeper Bobcat	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road	46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street 62 Robins Road
5 t Vibratory Drum Roller Plate Compactor	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road	46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street

	40 Robins Road 44 Robins Road	62 Robins Road 50 Gorge Road
Truck/Hiab 9 t Loader Water Cart	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road	54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street 62 Robins Road 50 Gorge Road 9 Hamilton Road 10 Hamilton Road 66 Robins Road
Micro boring machine, power pack, and vacuum	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road	46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street 62 Robins Road 50 Gorge Road 9 Hamilton Road 10 Hamilton Road 66 Robins Road 10 Robins Road 13 Fryer Street 9 Fryer Street 7 Fryer Street 5 Fryer Street 12 Hamilton Road
Concrete Saw (30% on-time adjustment applied)*	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road	54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street 62 Robins Road 50 Gorge Road 9 Hamilton Road 10 Hamilton Road 66 Robins Road 10 Robins Road

Equipment Item	NSR within Setback Distance^ in Table 1	
Grader	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road	46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street 62 Robins Road 50 Gorge Road 9 Hamilton Road 10 Hamilton Road 66 Robins Road 10 Robins Road 13 Fryer Street 9 Fryer Street 7 Fryer Street 5 Fryer Street 12 Hamilton Road
Vibratory Sheet Piling Rig (Crane, 44 t vibro-hammer and power pack)*	47 Robins Road 43 Robins Road 39 Robins Road 37 Robins Road 35B Robins Road 35 Robins Road 29 Robins Road 25 Robins Road 23 Robins Road 21 Robins Road 36 Robins Road 40 Robins Road 44 Robins Road 46 Robins Road 50 Robins Road 54 Robins Road 53 Robins Road 58 Gorge Road 46 Gorge Road 42 Gorge Road 38 Gorge Road 32 Gorge Road 20 Robins Road (Queenstown Primary) 10 Boundary Street	62 Robins Road 50 Gorge Road 9 Hamilton Road 10 Hamilton Road 66 Robins Road 10 Robins Road 13 Fryer Street 9 Fryer Street 7 Fryer Street 5 Fryer Street 12 Hamilton Road 15 Fryer Street 17 Fryer Street 33 Gorge Road 31 Gorge Road 29 Gorge Road 27 Gorge Road 25 Gorge Road 23 Gorge Road 19 Gorge Road Boundary Street Carpark 14 Hamilton Road 18 Hamilton Road 20 Hamilton Road
* NSRs which exceed during vibratory sheet piling are shown in Figure 2 overleaf		

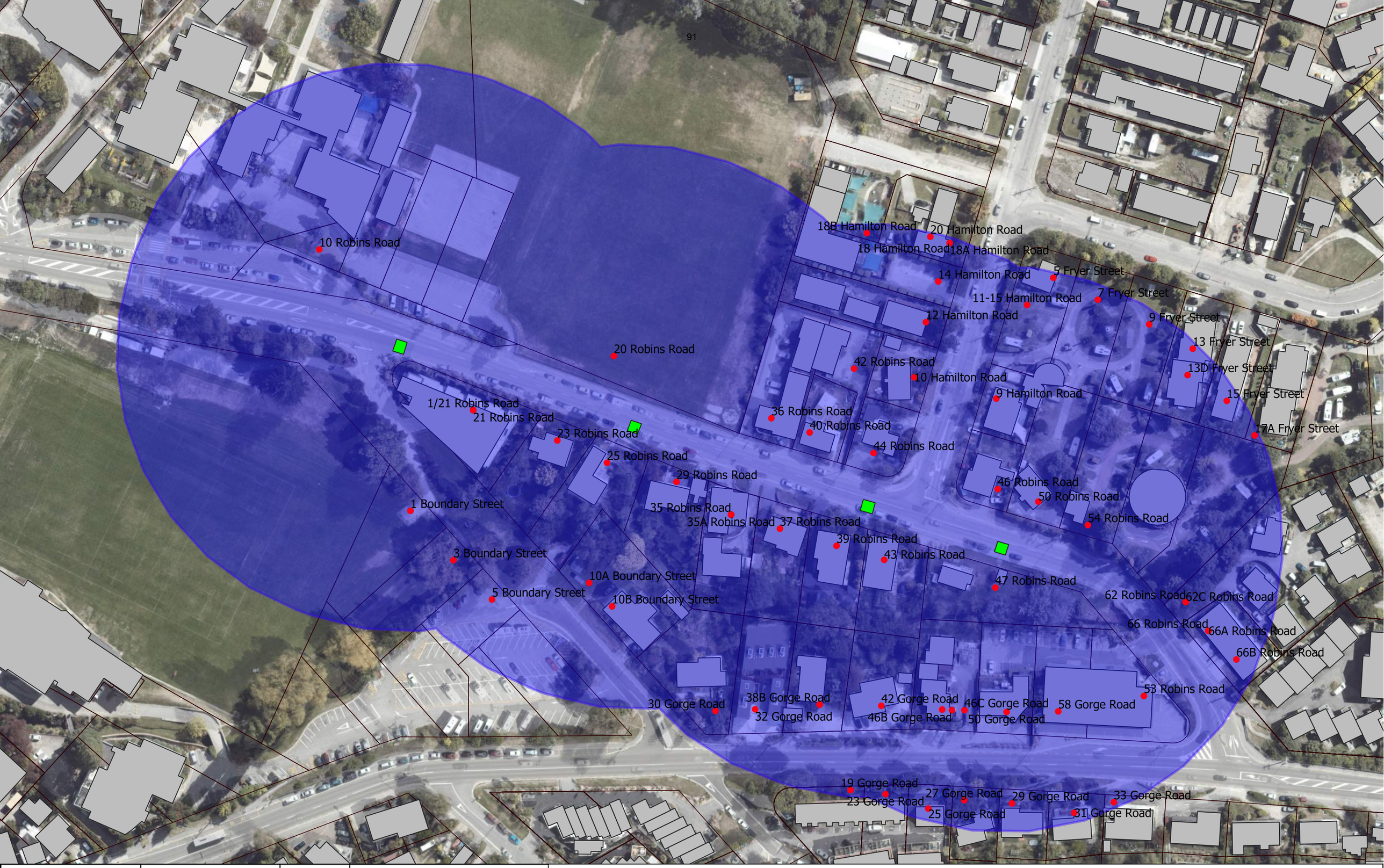


FIGURE 2

Date: 12/02/2025

Author: GvH

N

0 10 20 30 m

1:1,200 at A3

Legend

- Location of sheet piling perimeter
- NSRs within setback distance
- 70 dB LAeq,15min Noise Contour

Robins Road Wastewater Upgrades

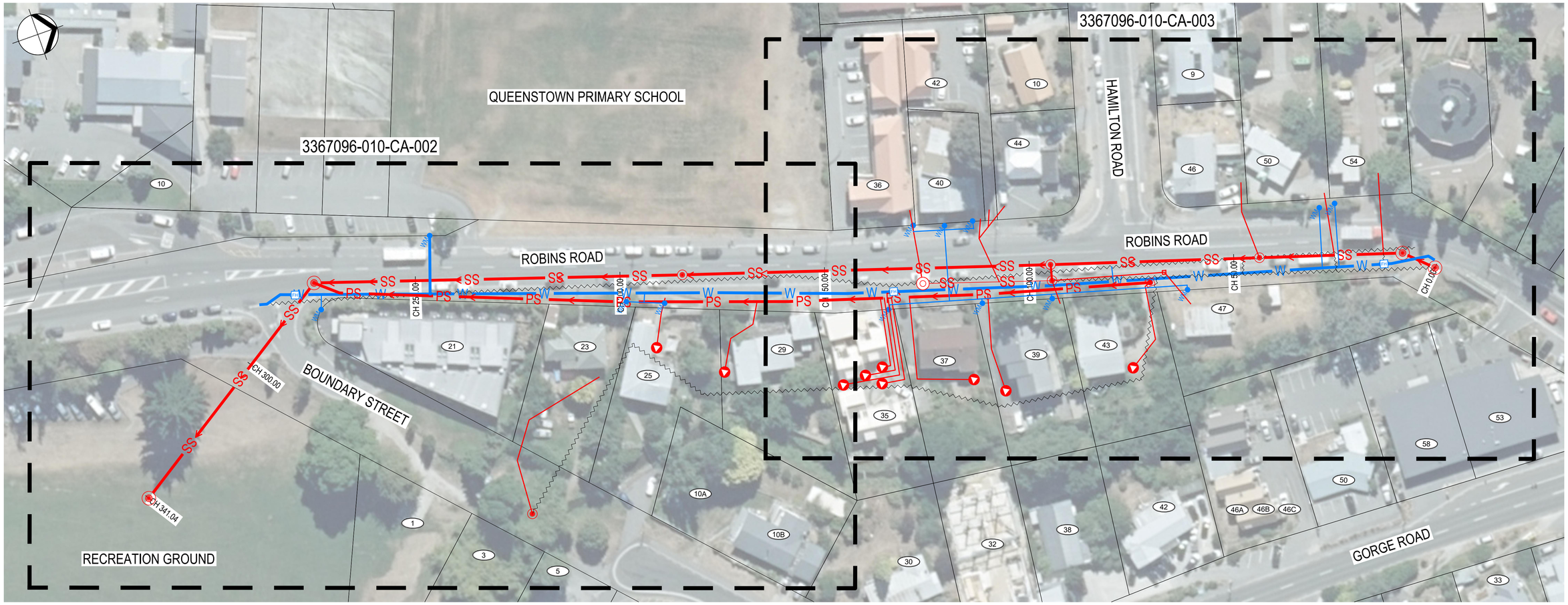
FIGURE 2: 70 dB LAeq Noise Contour from Sheet Piling

To be read in conjunction with WSP document: <REPORT_ID>

Map Source: Queenstown Lakes District Council GIS

Drawing Plotted: 11 Feb 2025 1:19 pm

ROBINS ROAD WASTEWATER UPGRADES



LAYOUT PLAN
SCALE 1:500

DRAWING INDEX		DAY MONTH YEAR	11 02 2025
DRAWING No	**DRAWING TITLE**		
3367096-010-CA-000	COVER SHEET AND DRAWING LIST		B
3367096-010-CA-001	GENERAL NOTES AND TRENCH DETAILS		B
3367096-010-CA-002	WASTEWATER GRAVITY LAYOUT PLAN SHEET 1		B
3367096-010-CA-003	WASTEWATER GRAVITY LAYOUT PLAN SHEET 2		B
3367096-010-CA-004	WATER SUPPLY LAYOUT PLAN		A
3367096-010-CA-005	WASTEWATER PRESSURE LAYOUT PLAN		A
3367096-010-CA-006	WASTEWATER MANHOLE DETAILS SHEET 1		B
3367096-010-CA-007	WASTEWATER MANHOLE DETAILS SHEET 2		B
3367096-010-CA-008	WASTEWATER MANHOLE CONNECTION DETAILS		B
3367096-010-CA-009	WASTEWATER LATERAL CONNECTION DETAILS		B
3367096-010-CA-010	WASTEWATER PE MANHOLE DETAILS		B
3367096-010-CA-011	WASTEWATER ODOUR FILTER LAYOUT DETAILS		B
3367096-010-CA-012	WASTEWATER PRESSURE MANHOLE ARRANGMENTS		B
3367096-010-CA-013	WASTEWATER PRESSURE BOUNDARY KITS AND FLUSHING POINT DETAIL		A
3367096-010-CA-014	WASTEWATER PRESSURE HOUSE CONNECTION DETAIL		A
3367096-010-CA-015	WASTEWATER PRESSURE SIMEPLEX TRAFFICABLE DETAIL		A
3367096-010-CA-016	WASTEWATER PRESSURE SIMPLEX NON-TRAFFICABLE DETAIL		A
3367096-010-CA-017	WASTEWATER PRESSURE DUPLEX TRAFFICABLE		A

WARNING
BEWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

ORIGINAL DRAWING IN COLOUR

DRAFT ONLY
NOT FOR CONSTRUCTION

DETAILED DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	ISSUED FOR DRAFT DETAILED DESIGN -TRENCHLESS	MC	NU	PM	11.02.25
A	ISSUED FOR DRAFT DETAILED DESIGN	MC	NU	PM	17.12.24

Original Scale (A1) AS SHOWN
Reduced Scale (A3) 1/2 SHOWN

Design	N.UNGERER	17.12.24	Approved For Construction*
Drawn	M.CROWLEY	17.12.24	
Dsg Verifier	P.MARSHALL	17.12.24	
Drg Check	R. SIMPSON	17.12.24	Date

* Refer to Revision 1 for Original Signature

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: COVER SHEET AND DRAWING LIST

Discipline: CIVIL ENGINEERING

Drawing No.: 3367096-010-CA-000 Rev.: B

Document No.: 3367096-010-CA-000 - COPY.DWG

DO NOT SCALE FOR SET OUT DIMENSIONS

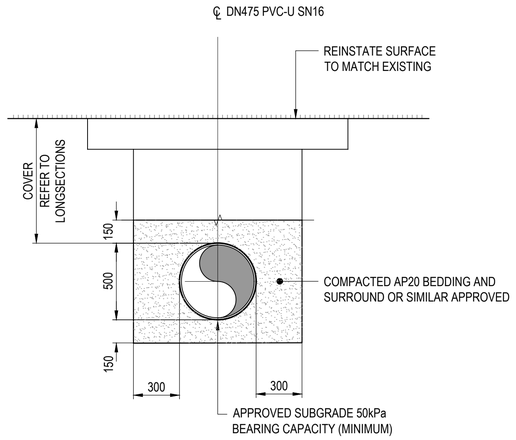
Drawing Plotted: 10 Feb 2025 4:25 pm

GENERAL NOTES:

1. LEVELS ARE IN NZVD2016.
2. HORIZONTAL COORDINATES ARE IN TERMS OF NZGD2000, NEW ZEALAND TRANSVERSE MERCATOR (NZTM)
3. DEPTH OF INVERT GIVEN FROM PROPOSED SURFACE.
4. EXISTING SURFACE BASED ON LiDAR SURVEY (SOURCED FROM LINZ, JULY 2022)
5. SERVICES SHOWN ARE INDICATIVE ONLY. SOURCED FROM BEFOREUDIG AND QLDC GIS.
6. LEVELS OF EXISTING MANHOLES SOURCED FROM QLDC GIS.
7. ALL WORKS ARE TO COMPLY WITH QUEENSTOWN DISTRICT COUNCIL LANDSCAPE AND DEVELOPMENT CODE OF PRACTICE (QLDC COP). IT SHOULD BE NOTED THAT PRINTED VERSIONS ARE UNCONTROLLED. ANY DEVIATION FROM QLDC COP IS TO BE CARRIED OUT ONLY AFTER A WRITTEN INSTRUCTION IS RECEIVED FROM THE ENGINEER.
8. PIPE BEDDING, HAUNCHING AND BACKFILL TO BE IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B CM-002.
9. ALL VALVE COVERS TO BE INSTALLED IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B2-3.
10. SLUICE VALVES TO BE INSTALLED IN ACCORDANCE WITH DRAWING QLDC COP APPENDIX B2-5.
11. ALL WATER INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE QLDC COP. ANY DEVIATION FROM THE QLDC COP IS TO BE AGREED BY THE ENGINEER PRIOR TO ANY WORKS COMMENCING.
12. THE LEVELS AND LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO LOCATE ALL UTILITIES AND SERVICES ON SITE (DEPTH AND LOCATION) AND LIAISE WITH THE RELEVANT AUTHORITY IF PROTECTION AND/OR RELOCATION IS REQUIRED.
12. IF THE CONTRACTOR LOCATES ANY UTILITY NOT SHOWN ON THE DRAWINGS, THEY ARE TO INFORM THE ENGINEER IMMEDIATELY. THE ENGINEER SHALL THEN ADVISE THE CONTRACTOR ON HOW TO PROCEED.
14. WHERE POSSIBLE, THE SIZE AND TYPE OF EXISTING PIPE MATERIAL OF SERVICES HAVE BEEN SHOWN TO ASSIST THE CONTRACTOR. THE CONTRACTOR SHALL SATISFY THEMSELVES THAT THIS INFORMATION IS CORRECT.
15. THE CONTRACTOR SHALL CONFIRM THE ALIGNMENT OF THE PIPE IN CONSULTATION WITH THE ENGINEER AFTER ALL THE EXISTING SERVICES HAVE BEEN LOCATED UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
16. ALL MANHOLES TO HAVE 100kPa SAFE BEARING CAPACITY FOUNDATIONS BELOW 600mm OF THE MANHOLE BASE. ALL PIPES TO HAVE 50kPa SAFE BEARING CAPACITY FOUNDATIONS BELOW 600mm OF THE EMBEDMENT BASE. WHERE FOUNDATIONS DO NOT MEET THE BEARING CAPACITY, SITE SPECIFIC DESIGN IS REQUIRED.
17. ALL LATERALS ON DRAWINGS ARE SHOWN AT INDICATIVE LOCATIONS. EXACT LATERAL CONNECTIONS ARE TO BE CONFIRMED ON SITE.
18. PRESSURE SEWER PIPELINES TO BE INSTALLED IN ACCORDANCE WITH WSA. FOR TRENCH DETAILS REFER TO PSS-1000.
19. REFER TO APPENDIX L OF QLDC COP FOR REINSTATEMENT REQUIREMENTS.

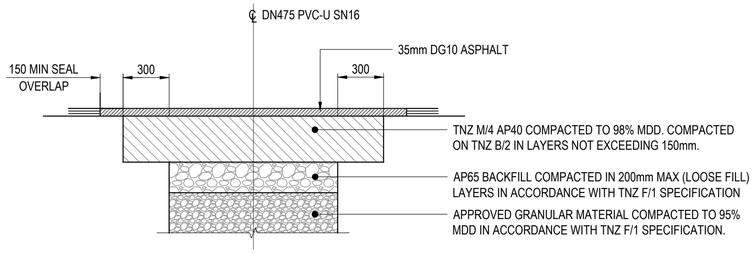
TRENCH NOTES:

1. PRIOR TO CONSTRUCTION, DEWATERING DESIGN IS REQUIRED TO MITIGATE AGAINST DAMAGING THE IN-SITU SOIL STRUCTURE DURING CONSTRUCTION.
2. UNDERTAKE DYNAMIC CONE PENETROMETER (DCP) TESTING AT 1.5m CENTRES ALONG THE CENTRELINE OF THE PIPE ALIGNMENT TO A DEPTH OF 1m BELOW THE PIPE INVERT TO VERIFY THE SUBGRADE CONDITIONS. RESULTS TO ACHIEVE AN AVERAGE OF 3 BLOWS PER 100mm OVER A DEPTH OF 1m (MIN.)
3. WHERE DCP TESTING ACHIEVES LESS THAN AN AVERAGE OF 3 BLOWS PER 100mm OVER 1m DEPTH, A RAFT FOUNDATION IS REQUIRED. DEPTH AND MAKEUP TO BE ADVISED BY THE GEOTECHNICAL ENGINEER BASED ON TESTING RESULTS.
4. DCP TESTING TO BE PERFORMED IN ACCORDANCE WITH NZS 4402 TEST 6.5.2. BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
5. FILL MATERIAL TO BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY OF THE MATERIAL AS DETERMINED BY NZS 4402 TEST 4.1.1.
6. RODDING POINTS SHALL BE PROVIDED FOR ALL SUBSOIL PIPES AT A MINIMUM 100m INTERVALS FOR MAINTENANCE PURPOSES AND MARKER POSTS SHALL BE PROVIDED AT ALL RODDING POINTS AND OUTLETS.



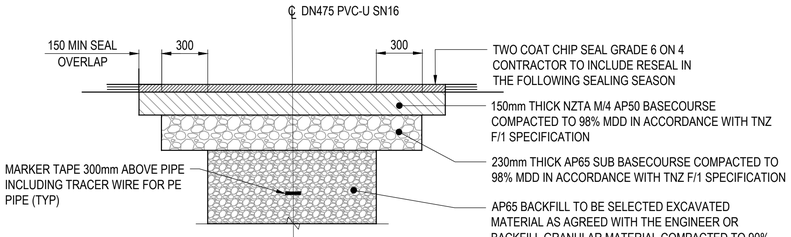
TYPICAL PIPE TRENCH - GRAVITY WASTEWATER 475 PVC

SCALE 1:20



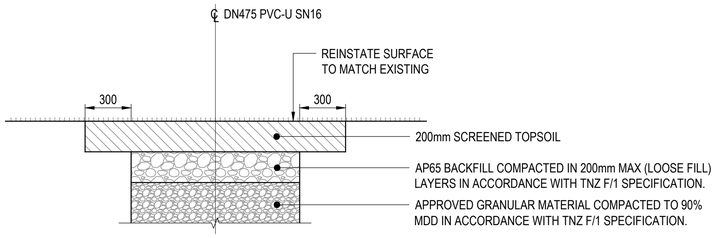
REINSTATEMENT DETAIL - SEALED AREAS (GRAVITY WASTEWATER)

SCALE 1:20



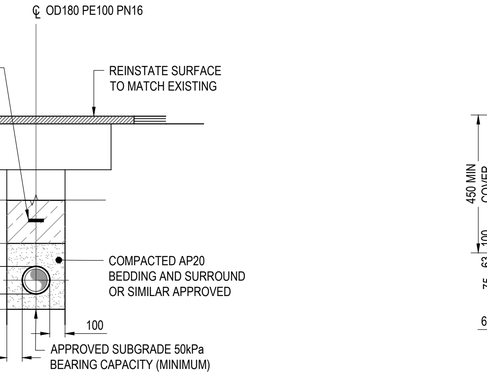
TYPICAL TRENCH - CHIPSEAL COAT (GRAVITY WASTEWATER)

SCALE 1:20



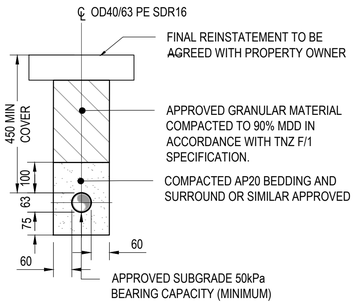
REINSTATEMENT DETAIL- GRASSED AREAS (GRAVITY WASTEWATER)

SCALE 1:20



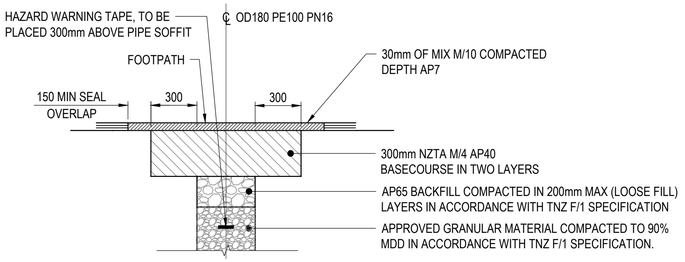
TYPICAL PIPE TRENCH - WATERMAIN OD180 PE

SCALE 1:20



TYPICAL PIPE TRENCH - PRESSURE SEWER

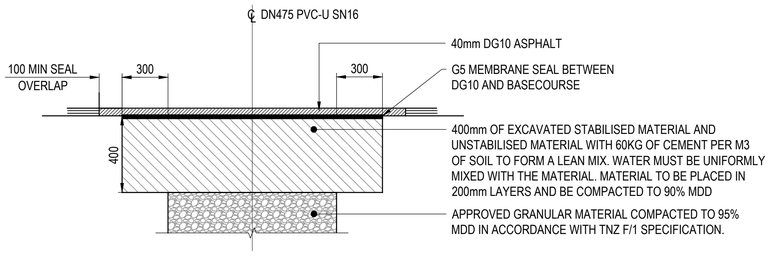
SCALE 1:10



REINSTATEMENT DETAIL - FOOTPATH (WATERMAIN)

SCALE 1:20

NOTE: THE TOP 200mm OF THE EXCAVATED MATERIAL (THE STABILISED MATERIAL) IS TO BE STOCKPILED SEPARATELY TO THE REMAINING MATERIAL EXCAVATED. THIS MATERIAL WHEN CEMENT IS ADDED WILL FORM THE BASECOURSE LAYERS OF THE PAVEMENT.



REINSTATEMENT DETAIL - FOAM BITUMEN PAVEMENTS (GRAVITY WASTEWATER)

SCALE 1:20

DRAFT ONLY
NOT FOR CONSTRUCTION

DETAILED DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
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Drawn	M.CROWLEY	17.12.24	
Dsg Verifier	P.MARSHALL	17.12.24	
Drg Check	R. SIMPSON	17.12.24	Date

* Refer to Revision 1 for Original Signature

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: GENERAL NOTES & TRENCH DETAILS

Discipline: CIVIL ENGINEERING

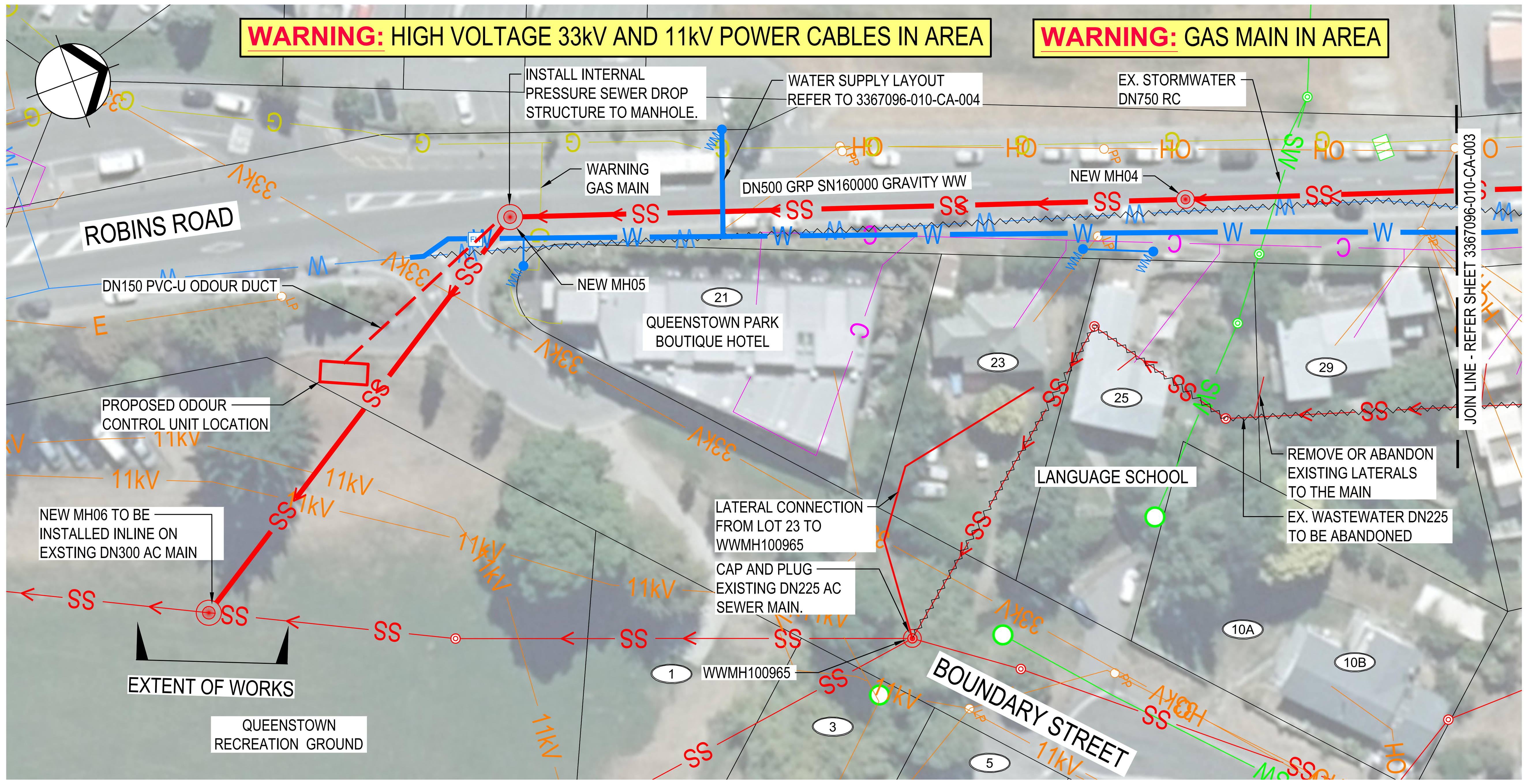
Drawing No.: 3367096-010-CA-001

Rev.: B

Document No. 3367096-010-CA-001.DWG

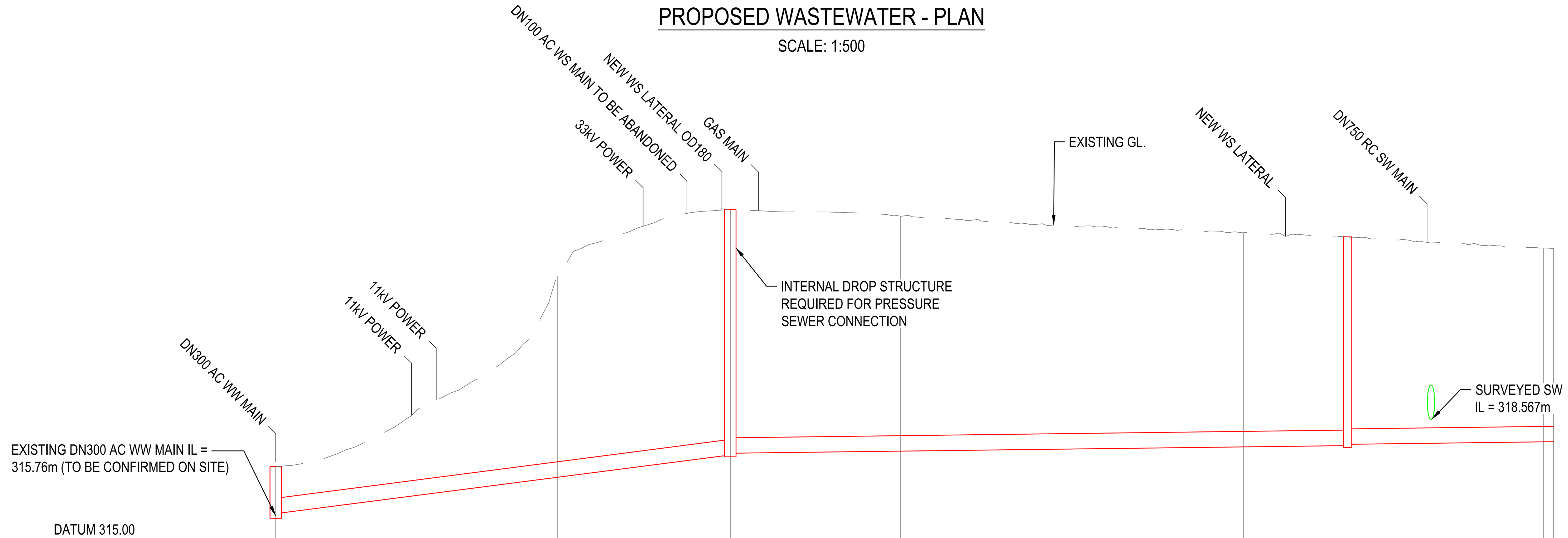
DO NOT SCALE FOR SET OUT DIMENSIONS

Drawing Plotted: 11 Feb 2025 11:57 am



PROPOSED WASTEWATER - PLAN

SCALE: 1:500



EXISTING SURFACE LEVEL	317.19		324.68		323.89		
PIPE COVER	0.87		6.64 / 6.60		5.58 / 5.54		4.37
DEPTH TO PIPE INVERT	1.41		7.19 / 7.14		6.12 / 6.08		4.92
PIPE INVERT LEVEL	315.78		317.49 / 317.54		317.77 / 317.80		318.03
PIPE SIZE AND CLASS		DN 500 GRP SN160000		DN 500 GRP SN160000		DN 500 GRP SN160000	
PIPE GRADE		1:39 (2.59%)		1:402 (0.25%)		1:400 (0.25%)	
DISTANCE AND CHAINAGE	341.04	66.26	274.78	90.00	184.78	90.00	

NEW DN1500 MH06 | NEW DN1500 MH05 | NEW DN1500 MH04

PROPOSED WASTEWATER - LONGITUDINAL SECTION

SCALE: 1:500 HOR 1:100 VER

0 1 2 3 4 5m 1:100 VERT A1 / 1:200 VERT A3
0 5 10 15 20 25m 1:500 HORIZ A1 / 1:1000 HORIZ A3

LEGEND

- PROPERTY BOUNDARY

EXISTING SERVICES

- GRAVITY SEWER MAIN
- SEWER LATERAL
- WATER MAIN
- STORMWATER MAIN
- POWER (UNDERGROUND)
- POWER (OVERHEAD)
- 11kV / 33kV POWER (OVERHEAD & UNDERGROUND)
- GAS PIPE
- CHORUS
- FIBRE OPTIC
- SEWER / STORMWATER MANHOLE
- STORMWATER SOAKPIT
- STORMWATER OUTLET
- POWER / LIGHT POLE

PROPOSED SERVICES

- SERVICES TO BE ABANDONED
- GRAVITY SEWER MAIN
- SEWER LATERAL
- SEWER MANHOLE
- PRESSURE SEWER SUBMAIN
- SIMPLEX PRESSURE SEWER UNIT
- PRESSURE SEWER SUBMAIN FLUSHING POINT
- NEW WATER SUPPLY MAIN
- NEW WATER SUPPLY SUBMAIN
- WATER METER CONNECTION
- FIRE HYDRANT ON MAIN
- SLUICE VALVE ON MAIN

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 3367096-010-CA-001.
2. LOCATIONS OF PRESSURE SEWER UNITS ARE SHOWN AS INDICATIVE ONLY. FINAL LOCATIONS TO BE CONFIRMED FOLLOWING STAKEHOLDER CONSULTATION.
3. DETAILS OF ODOUR MITIGATION FOR MANHOLES TO BE FINALISED AT NEXT STAGE OF DESIGN.
4. ALL MANHOLES TO BE ABANDONED SHALL BE BROKEN DOWN 500mm BELOW GROUND AND BACKFILLED WITH A SELF COMPACTING MATERIAL. THE PIPES SHALL BE GROUTED ON PRIVATE PROPERTY AND A CONCRETE PLUG SHALL BE INSTALLED 500mm THICK AT THE END OF THE PIPE TO BE ABANDONED.
5. PRESSURE SEWER LAYOUT NOT SHOWN. PRESSURE SEWER SHOWN ON 3367096-010-CA-005.

ORIGINAL DRAWING IN COLOUR

WARNING
BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

DRAFT ONLY NOT FOR CONSTRUCTION

DETAILED DESIGN NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	ISSUED FOR DRAFT DETAILED DESIGN -TRENCHLESS	MC	NU	PM	11.02.25
A	ISSUED FOR DRAFT DETAILED DESIGN	MC	NU	PM	17.12.24

Original Scale (A1) AS SHOWN	Design	N.UNGERER	17.12.24
	Drawn	M.CROWLEY	17.12.24
Reduced Scale (A3) 1/2 SHOWN	Dsg Verifier	P.MARSHALL	17.12.24
	Drg Check	R. SIMPSON	17.12.24

Approved For Construction* Date
* Refer to Revision 1 for Original Signature

Beca

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

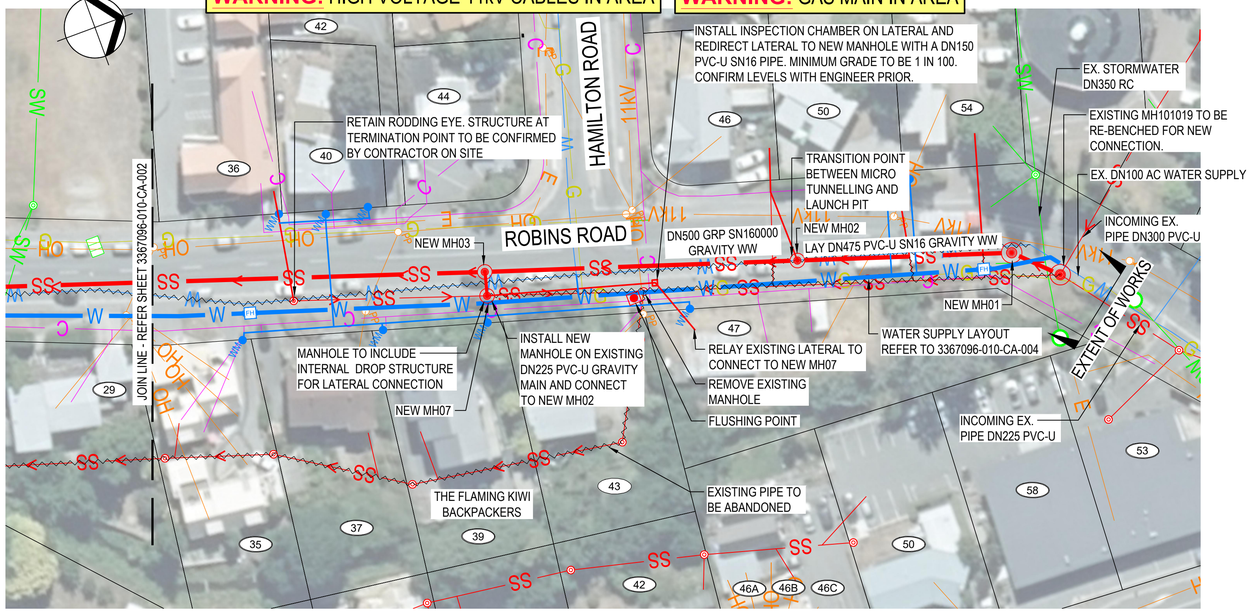
Project: ROBINS ROAD WASTEWATER UPGRADES

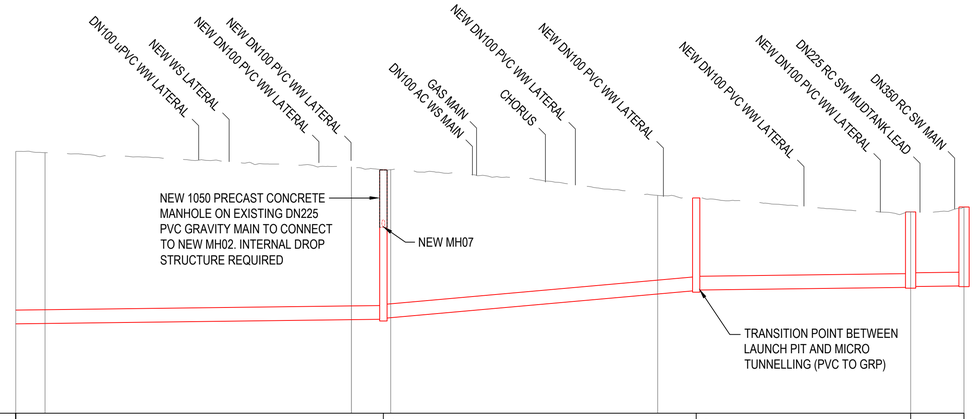
Title: WASTEWATER GRAVITY LAYOUT PLAN SHEET 1

Discipline: CIVIL ENGINEERING

Drawing No. 3367096-010-CA-002 Rev. B

Document No. 3367096-010-CA-002.DWG





Drawing Plotted: 11 Feb 2025 11:58 am

WARNING: HIGH VOLTAGE 11kV CABLES IN AREA

WARNING: GAS MAIN IN AREA

PROPOSED WASTEWATER - PLAN

SCALE: 1:500

DATUM 315.00

EXISTING SURFACE LEVEL		322.94			322.03			321.57		321.73
PIPE COVER	5.54	4.37	4.34	2.52	2.51		1.97	1.94		2.08
DEPTH TO PIPE INVERT	6.08	4.92	4.88	3.06	3.03		2.49	2.46		2.60
PIPE INVERT LEVEL	317.80	318.03	318.06	318.97	319.00		319.08	319.11		319.13
PIPE SIZE AND CLASS	DN 500 GRP SN160000		DN 500 GRP SN160000		DN 475 PVC SN16			DN 475 PVC SN16		
PIPE GRADE	1:400 (0.25%)		1:56 (1.78%)		1:399 (0.25%)			1:369 (0.27%)		
DISTANCE AND CHAINAGE	90.00	94.78	51.07	43.71	35.00		8.71	8.71		0.00

NEW DN1500
MH03

NEW DN1500
MH03

NEW DN1500
MH02

NEW DN1500
MH01

EXISTING
MH101019

PROPOSED WASTEWATER - LONGITUDINAL SECTION

SCALE: 1:500 HOR 1:100 VER

0 1 2 3 4 5m — 1:100 VERT A1, 1:200 VERT A3
0 5 10 15 20 25m — 1:500 HORIZ A1, 1:1000 HORIZ A3

LEGEND

PROPERTY BOUNDARY

EXISTING SERVICES
- GRAVITY SEWER MAIN
- SEWER LATERAL
- WATER MAIN
- STORMWATER MAIN
- POWER (UNDERGROUND)
- POWER (OVERHEAD)
- 11kV / 33kV POWER (OVERHEAD & UNDERGROUND)
- GAS PIPE
- CHORUS
- FIBRE OPTIC
- SEWER / STORMWATER MANHOLE
- STORMWATER SOAKPIT
- STORMWATER OUTLET
- POWER / LIGHT POLE

PROPOSED SERVICES
- SERVICES TO BE ABANDONED
- GRAVITY SEWER MAIN
- SEWER LATERAL
- SEWER MANHOLE
- PRESSURE SEWER SUBMAIN
- SIMPLEX PRESSURE SEWER UNIT
- PRESSURE SEWER SUBMAIN FLUSHING POINT
- NEW WATER SUPPLY MAIN
- NEW WATER SUPPLY SUBMAIN
- WATER METER CONNECTION
- FIRE HYDRANT ON MAIN
- SLUICE VALVE ON MAIN

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 3367096-010-CA-001.
2. LOCATIONS OF PRESSURE SEWER UNITS ARE SHOWN AS INDICATIVE ONLY. FINAL LOCATIONS TO BE CONFIRMED FOLLOWING STAKEHOLDER CONSULTATION.
3. DETAILS OF ODOUR MITIGATION FOR MANHOLES TO BE FINALISED AT NEXT STAGE OF DESIGN.
4. ALL MANHOLES TO BE ABANDONED SHALL BE BROKEN DOWN 500mm BELOW GROUND AND BACKFILLED WITH A SELF COMPACTING MATERIAL. THE PIPES SHALL BE GROUTED ON PRIVATE PROPERTY AND A CONCRETE PLUG SHALL BE INSTALLED 500mm THICK AT THE END OF THE PIPE TO BE ABANDONED.
5. PRESSURE SEWER LAYOUT NOT SHOWN. PRESSURE SEWER SHOWN ON 3367096-010-CA-005.

www.beca.com

ORIGINAL DRAWING IN COLOUR

WARNING

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	Drg Check	R. SIMPSON	17.12.24	Date
	* Refer to Revision 1 for Original Signature			

Beca

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project:
ROBINS ROAD
WASTEWATER UPGRADES

Title:
WASTEWATER GRAVITY
LAYOUT PLAN SHEET 2

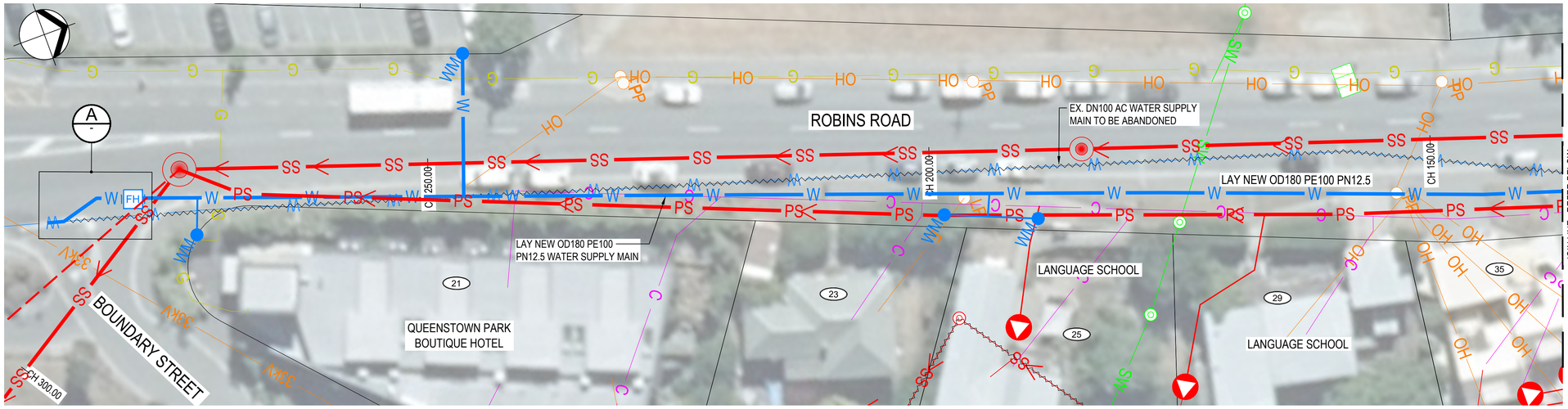
Discipline: CIVIL ENGINEERING

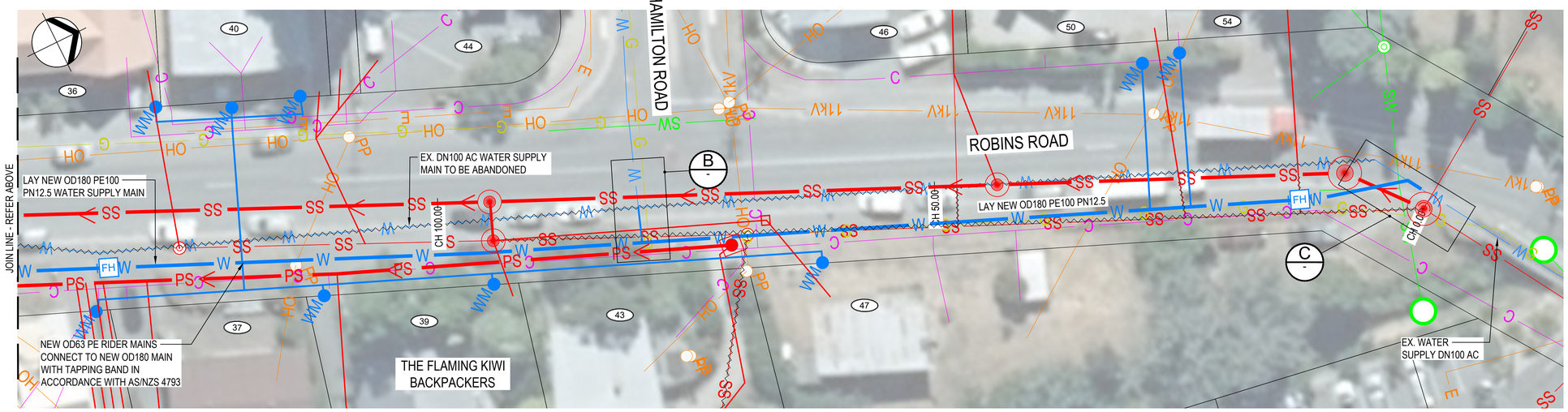
Drawing No.: 3367096-010-CA-003 Rev.: B

Document No. 3367096-010-CA-003.DWG

DO NOT SCALE FOR SET OUT DIMENSIONS

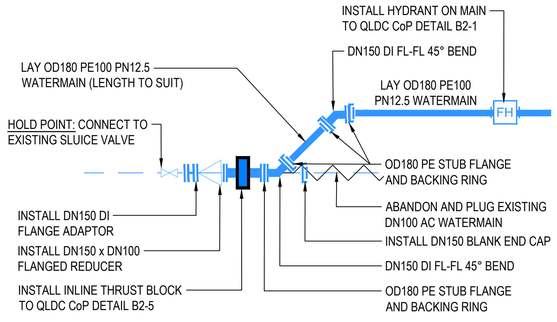
Drawing Plotted: 10 Feb 2025 4:30 pm



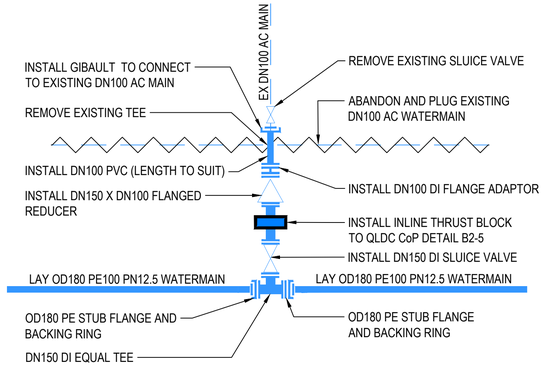


PROPOSED WATER SUPPLY - PLAN

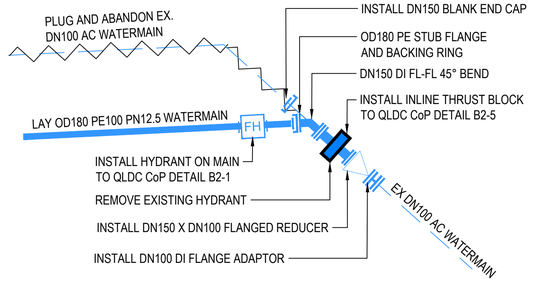
SCALE: 1:250



A ROBINS RD SOUTH
SCALE NTS



B ROBINS RD / HAMILTON RD
SCALE NTS



C ROBINS RD NORTH
SCALE NTS

A3 SCALE 1:500
A1 SCALE 1:250

0 10 20 30 (m)

LEGEND

- PROPERTY BOUNDARY
- EXISTING SERVICES
- SS — GRAVITY SEWER MAIN
- SEWER LATERAL
- W — WATER MAIN
- SW — STORMWATER MAIN
- E — POWER (UNDERGROUND)
- OH — POWER (OVERHEAD)
- 11kV / 33kV — 11kV / 33kV POWER (OVERHEAD & UNDERGROUND)
- G — GAS PIPE
- C — CHORUS
- FO — FIBRE OPTIC
- SEWER / STORMWATER MANHOLE
- STORMWATER SOAKPIT
- STORMWATER OUTLET
- PP / LP — POWER / LIGHT POLE
- PROPOSED SERVICES
- SERVICES TO BE ABANDONED
- SS — GRAVITY SEWER MAIN
- SEWER LATERAL
- SEWER MANHOLE
- PS — PRESSURE SEWER SUBMAIN
- SIMPLEX PRESSURE SEWER UNIT
- PRESSURE SEWER SUBMAIN FLUSHING POINT
- W — NEW WATER SUPPLY MAIN
- NEW WATER SUPPLY SUBMAIN
- WM — WATER METER CONNECTION
- FH — FIRE HYDRANT ON MAIN
- SLUICE VALVE ON MAIN

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 3367096-010-CA-001.
2. FOR WASTEWATER GRAVRITY MAIN PLANS AND DETAILS REFER TO DRAWINGS 3367096-010-CA-003 & 3367096-010-CA-004
3. FOR WASTEWATER PRESSURE MAIN REFER TO DRAWING 3367096-010-CA-005

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* Refer to Revision 1 for Original Signature

Client: QUEENSTOWN LAKES DISTRICT COUNCIL

Project: ROBINS ROAD WASTEWATER UPGRADES

Title: WATER SUPPLY LAYOUT PLAN

Discipline: CIVIL ENGINEERING

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DO NOT SCALE FOR SET OUT DIMENSIONS