

TechnologyOne ECM Document Summary

Printed On 27-Aug-2024

Class	Description	Doc Set Id / Note Id	Version	Date
PUB_ACC	Attachment A - Email from Central Pump Services	8245350	1	09-Aug-2024
PUB_ACC	Attachment B - Water Quality Test Results	8245349	1	09-Aug-2024
PUB_ACC	Attachment C - Email from Don Moir re Wastewater design	8245348	1	09-Aug-2024
PUB_ACC	Attachment D - Water tank locations	8245351	1	09-Aug-2024
PUB_ACC	Attachment E - Rockfall Bund Location	8245352	1	09-Aug-2024
PUB_ACC	Attachment F - Updated floor areas plan	8245353	1	09-Aug-2024
PUB_ACC	Attachment G - Earthworks Plans dated 3.7.24	8245359	1	09-Aug-2024
PUB_ACC	Attachment H - e3 memo re water quality	8245346	1	09-Aug-2024
PUB_ACC	Email from agent - Response to Further Information Request - email 1 of 2 - 08.08.24	8245355	1	09-Aug-2024
PUB_ACC	Email from agent - Response to Further Information Request - email 2 of 2 - 08.08.24	8245360	1	09-Aug-2024

Annemarie Townsley

From: Central Pump Services Limited <barry@centralpumpservices.com >
Sent: Thursday, 8 August 2024 3:28 PM
To: Annemarie Townsley
Subject: Water Test & Pump Test for Macrae
Attachments: 3638832-DWAP-1.pdf

Hi There

Please see attached the results from Hills Lab for the latest water test for Ron Macrae.
A flow test was also performed on the day, results are:

3 Hour Pump Test to waste at 34 L/M
- with a pumping water level of 6.8 with water slightly on the rise.

Static Water Level 2m380
Pumping Water Level 6m800
Total Depth 10m300

Kind Regards,
Alyssa Drake
Administration

Central Pump Services Ltd.

Certificate of Analysis

Page 1 of 4

Client:	Central Pump Services Limited	Lab No:	3638832	DWAPV1
Contact:	Barry Drake	Date Received:	31-Jul-2024	
	C/- Central Pump Services Limited	Date Reported:	05-Aug-2024	
	52 Russell Street	Quote No:		
	Alexandra 9320	Order No:	1433	
		Client Reference:	Macrae	
		Submitted By:	Barry Drake	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:	Macrae 30-Jul-2024 1:00 pm		Aesthetic Values	Maximum Acceptable Values (MAV)
Lab Number:	3638832.1			
Routine Water + E.coli profile Kit				
Escherichia coli	MPN / 100mL	< 1	-	< 1
Routine Water Profile				
Turbidity	NTU	0.10	≤ 5	-
pH	pH Units	6.5	7.0 - 8.5	-
Total Alkalinity	g/m ³ as CaCO ₃	34	-	-
Free Carbon Dioxide	g/m ³ at 25°C	20	-	-
Total Hardness	g/m ³ as CaCO ₃	63	≤ 200	-
Electrical Conductivity (EC)	mS/m	18.7	-	-
Electrical Conductivity (EC)	µS/cm	187	-	-
Approx Total Dissolved Salts	g/m ³	125	≤ 1000	-
Total Arsenic	g/m ³	< 0.0011	-	0.01
Total Boron	g/m ³	0.0152	-	2.4
Total Calcium	g/m ³	21	-	-
Total Copper	g/m ³	0.0136	≤ 1	2
Total Iron	g/m ³	< 0.021	≤ 0.3	-
Total Lead	g/m ³	0.00068	-	0.01
Total Magnesium	g/m ³	2.7	-	-
Total Manganese	g/m ³	0.0021	≤ 0.04 (Staining) ≤ 0.10 (Taste)	0.4
Total Potassium	g/m ³	7.6	-	-
Total Sodium	g/m ³	4.9	≤ 200	-
Total Zinc	g/m ³	0.045	≤ 1.5	-
Chloride	g/m ³	3.8	≤ 250	-
Nitrate-N	g/m ³	4.1	-	11.3
Sulphate	g/m ³	26	≤ 250	-

Note: The Maximum Acceptable Values (MAV) are taken from the 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022', published under the authority of the New Zealand Government-2022. Copies of this publication are available from: <https://www.legislation.govt.nz/regulation/public/2022/0168/latest/whole.html>

The standards set limits for the concentration of determinands in drinking water. The Maximum Acceptable Values (MAVs) for any determinand must not be exceeded at any time.

The Aesthetic Values are taken the publication, 'Aesthetic Values for Drinking Water Notice 2022' issued by the Water Services Regulator ("Taumata Arowai"). Aesthetic values specify or provide minimum or maximum values for substances and other characteristics that relate to the acceptability of drinking water to consumers (such as appearance, taste or odour).

Note that the units: g/m³ are the same as mg/L and ppm.



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

pH/Alkalinity and Corrosiveness Assessment

The pH of a water sample is a measure of its acidity or basicity. Waters with a low pH can be corrosive and those with a high pH can promote scale formation in pipes and hot water cylinders.

The guideline level for pH in drinking water is 7.0-8.5. Below this range the water will be corrosive and may cause problems with disinfection if such treatment is used.

The alkalinity of a water is a measure of its acid neutralising capacity and is usually related to the concentration of carbonate, bicarbonate and hydroxide. Low alkalinities (25 g/m³) promote corrosion and high alkalinities can cause problems with scale formation in metal pipes and tanks.

With the pH and alkalinity levels found, this water could be corrosive towards metal piping and fixtures.

Hardness/Total Dissolved Salts Assessment

The water contains a low amount of dissolved solids and would be regarded as being slightly hard.

Nitrate Assessment

Nitrate-nitrogen at elevated levels is considered undesirable in natural waters as this element can cause a health disorder called methaemaglobinaemia. Very young infants (less than six months old) are especially vulnerable. The 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022' sets a maximum permissible level of 11.3 g/m³ as Nitrate-nitrogen (50 g/m³ as Nitrate).

Nitrate-nitrogen was detected in this water but at such a low level to not be of concern.

Boron Assessment

Boron may be present in natural waters and if present at high concentrations can be toxic to plants.

Boron was found at a low level in this water but would not give any cause for concern.

Metals Assessment

Iron and manganese are two problem elements that commonly occur in natural waters. These elements may cause unsightly stains and produce a brown/black precipitate. Iron is not toxic but manganese, at concentrations above 0.5 g/m³, may adversely affect health. At concentrations below this it may cause stains on clothing and sanitary ware.

Iron was not detected in the water

Manganese was found in this water at a low level.

Treatment to remove iron and/or manganese should not be necessary.

Bacteriological Tests

The Drinking Water Standards for NZ state that there should be no Escherichia coli (E coli) in water used for human consumption. The presence of these organisms would indicate that other pathogens of faecal origin may be present. Results obtained for Total Coliforms are only significant if the sample has not also been tested for E coli.

Escherichia coli was not detected in this sample.

Final Assessment

The parameter pH did NOT meet the guidelines laid down in the 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022' and the 'Aesthetic Values for Drinking Water Notice 2022' issued by the Water Services Regulator ("Taumata Arowai") for water which is suitable for drinking purposes.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	Method Description	Default Detection Limit	Sample No
Routine Water Profile		-	1
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO ₂ D : Online Edition.	1.0 g/m ³ at 25°C	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B : Online Edition.	1 µS/cm	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m ³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m ³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m ³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Nitrate-N	Filtered (if required) sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m ³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Escherichia coli	MPN count using Colilert 18 (Incubated at 35°C for 18 hours) and 97 wells. Analysed at Hill Laboratories - Microbiology; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 9223 B : Online Edition.	1 MPN / 100mL	1

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

Testing was completed between 01-Aug-2024 and 05-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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



Ara Heron BSc (Tech)
Client Services Manager - Environmental

Annemarie Townsley

From: Don Moir <don@moir.co.nz>
Sent: Wednesday, 26 June 2024 1:29 PM
To: Annemarie Townsley
Subject: 24A13 RE: Macrae wastewater system - 832 Malaghans Road

Hi Annemarie

The rising main is being sleeved inside a metal pipe where it is attached to the bridge and this should suffice to avoid freezing.

Regards

from Don Moir
RALPH MOIR LIMITED
REGISTERED PROFESSIONAL SURVEYORS
101 Spey Street, Invercargill NZ
P. 03 217 2597
M. 0274 372 662
don@moir.co.nz

From: Annemarie Townsley <annemarie.townsley@jea.co.nz>
Sent: Wednesday, June 26, 2024 1:26 PM
To: Don Moir <don@moir.co.nz>
Subject: Macrae wastewater system - 832 Malaghans Road

Hi Don,

I've submitted the resource consent application to QLDC for Ron Macrae's house, and the further information request includes the following:

Table 7 of the wastewater design report states "Frosts can be severe and so pipework must be kept 300mm below ground", can the design engineer please confirm if freezing for the section of the wastewater pipe above ground level has been made for this section of the rising main that will be fastened to the bridge. Please clarify how this will be mitigated.

Can you please send me a quick reply confirming that you considered potential freezing of the rising main, and how this can be managed (if needed)?

Thanks,
Annemarie



ANNEMARIE TOWNSLEY
BE(Hons), MRP(Hons), Int.NZPI
planner

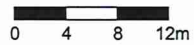
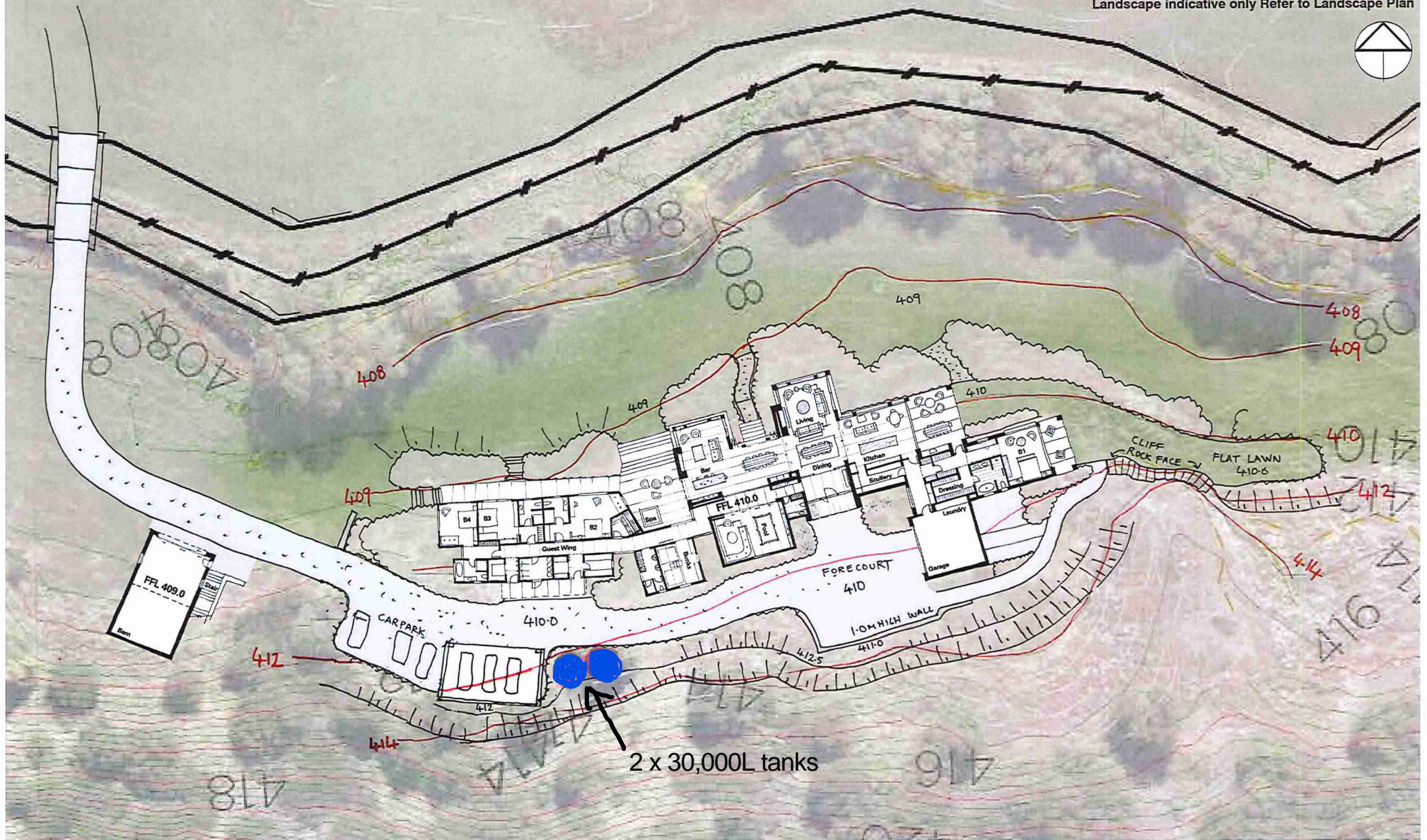
021 187 6575 | 03 450 0009
annemarie.townsley@jea.co.nz | www.jea.co.nz
Level 2, 36 Shotover Street, PO Box 95, Queenstown 9300

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6587-MacRae-Res-S&E-240415

CONCEPT DESIGN

Landscape indicative only Refer to Landscape Plan



Water tank locations

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ISSUED FOR REVIEW - 3.07.24

CLIENT
MacRae

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APPROX ROCK BUND LOCATION LANDSCAPE VIEW MR3

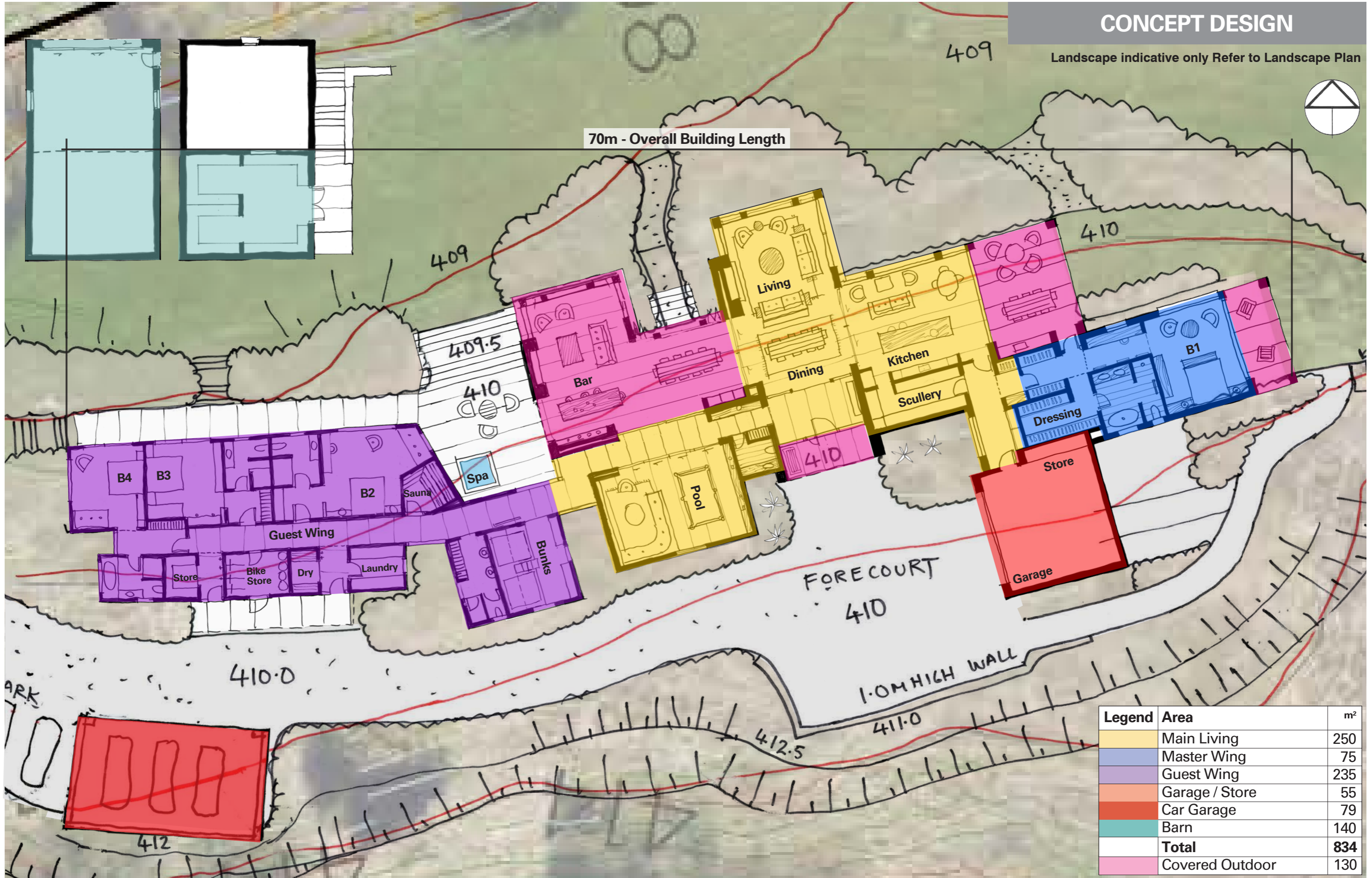
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				-	-	-	23016	05.03
				DRAWN CW	CHECKED CW	DATE 3.07.24	SCALE	NTS
DATUM & LEVEL MT NIC 2000 - NZVD16								REV. -

CONCEPT DESIGN

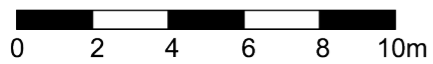
Landscape indicative only Refer to Landscape Plan



70m - Overall Building Length















Legend	Area	m ²
	Main Living	250
	Master Wing	75
	Guest Wing	235
	Garage / Store	55
	Car Garage	79
	Barn	140
	Total	834
	Covered Outdoor	130



Area Plan

EARTHWORKS DEPTH KEY:

	Fill Depth 0.0m to 0.5m		Cut Depth 0.0m to 0.5m
	Fill Depth 0.5m to 1.0m		Cut Depth 0.5m to 1.0m
	Fill Depth 1.0m to 1.5m		Cut Depth 1.0m to 1.5m
	Fill Depth 1.5m to 2.0m		Cut Depth 1.5m to 2.0m
			Cut Depth 2.0m to 2.5m
			Cut Depth 2.5m to 3.0m
			Cut Depth 3.0m to 3.5m
			Cut Depth 3.5m to 4.0m

EARTHWORKS SUMMARY

Areas

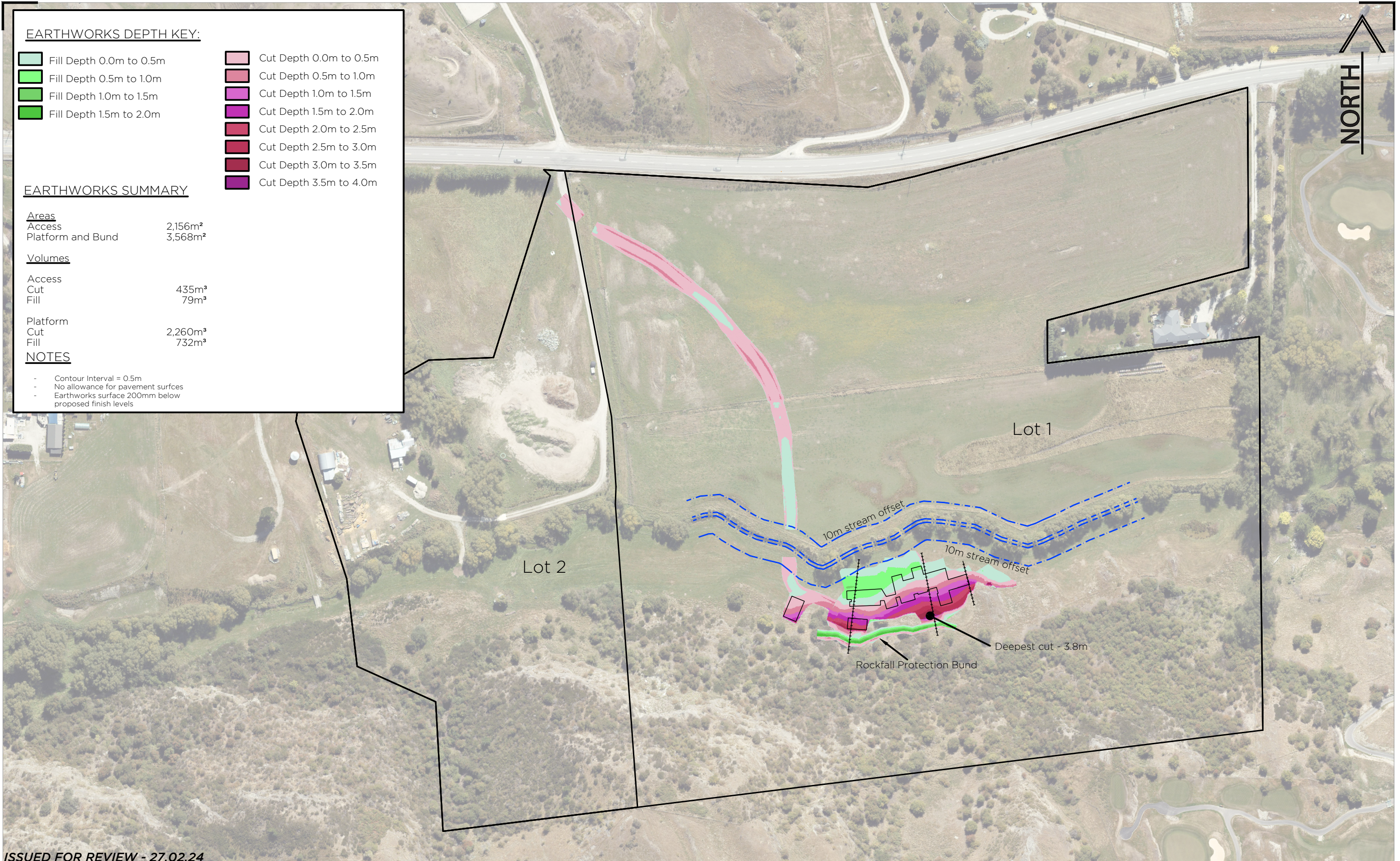
Access	2,156m ²
Platform and Bund	3,568m ²

Volumes

Access	
Cut	435m ³
Fill	79m ³
Platform	
Cut	2,260m ³
Fill	732m ³

NOTES

- Contour Interval = 0.5m
- No allowance for pavement surfaces
- Earthworks surface 200mm below proposed finish levels



ISSUED FOR REVIEW - 27.02.24



JEA
TOWN PLANNERS & SURVEYORS
Level 2, 36 Shetaver Street
PO Box 95, Ōroanui, 9300

CLIENT	MacRae
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**PROPOSED EARTHWORKS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 1 OF 3**

REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF					
C	03.05.24	AMEND EARTHWORKS	MF	DRAWN	CHECKED	DATE	SCALE	
D	3.07.24	SPLIT EARTHWORKS	CW	CW	CW	03.07.24	1:2000m @ A3	
DATUM & LEVEL								REV.
MT NIC 2000 - NZVD16								E

EARTHWORKS DEPTH KEY:

	Fill Depth 0.0m to 0.5m		Cut Depth 0.0m to 0.5m
	Fill Depth 0.5m to 1.0m		Cut Depth 0.5m to 1.0m
	Fill Depth 1.0m to 1.5m		Cut Depth 1.0m to 1.5m
	Fill Depth 1.5m to 2.0m		Cut Depth 1.5m to 2.0m
			Cut Depth 2.0m to 2.5m
			Cut Depth 2.5m to 3.0m
			Cut Depth 3.0m to 3.5m
			Cut Depth 3.5m to 4.0m

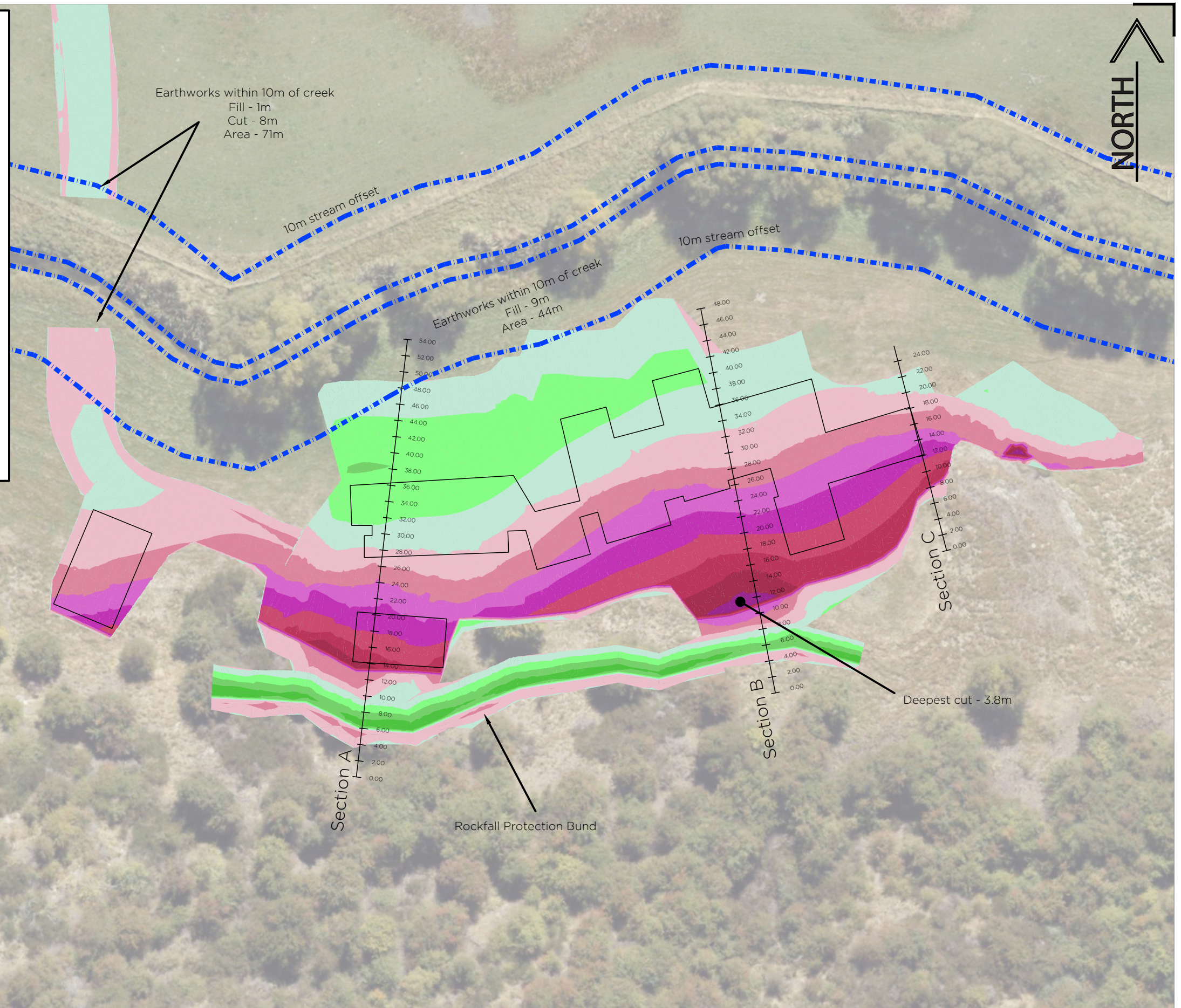
EARTHWORKS SUMMARY

Areas	
Access	2,156m ²
Platform and Bund	3,568m ²

Volumes	
Access	
Cut	435m ³
Fill	79m ³
Platform	
Cut	2,260m ³
Fill	732m ³

NOTES

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- No allowance for pavement surfaces
- Earthworks surface 200mm below proposed finish levels



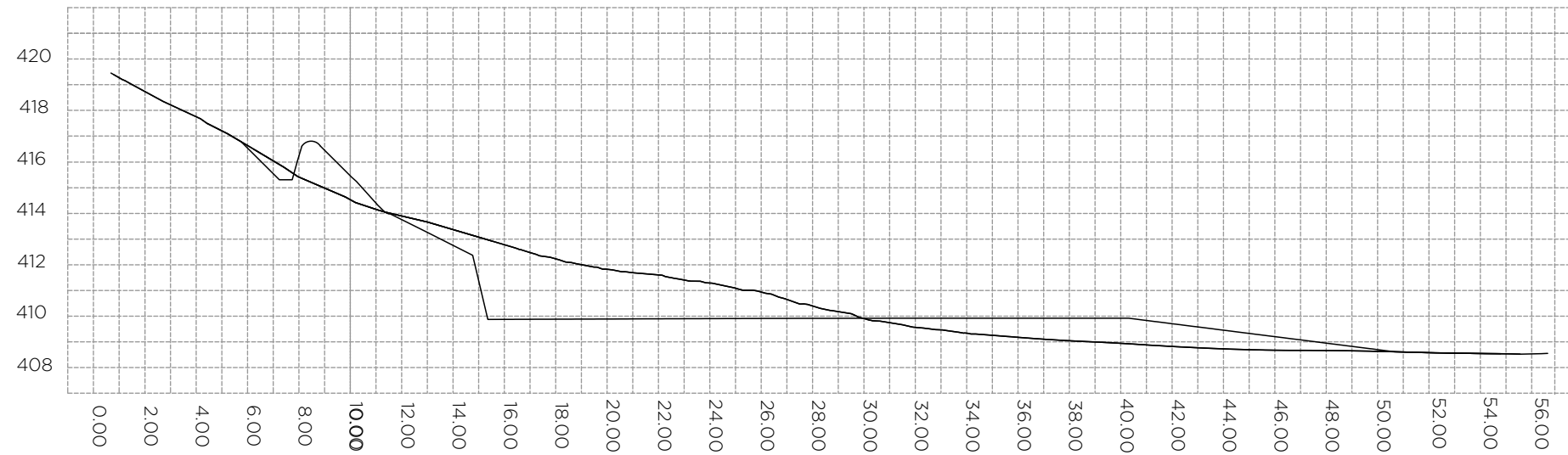
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JECA
TOWN PLANNERS & SURVEYORS
Level 2, 36 Shetaver Street
PO Box 95, Ōroanui, 9300

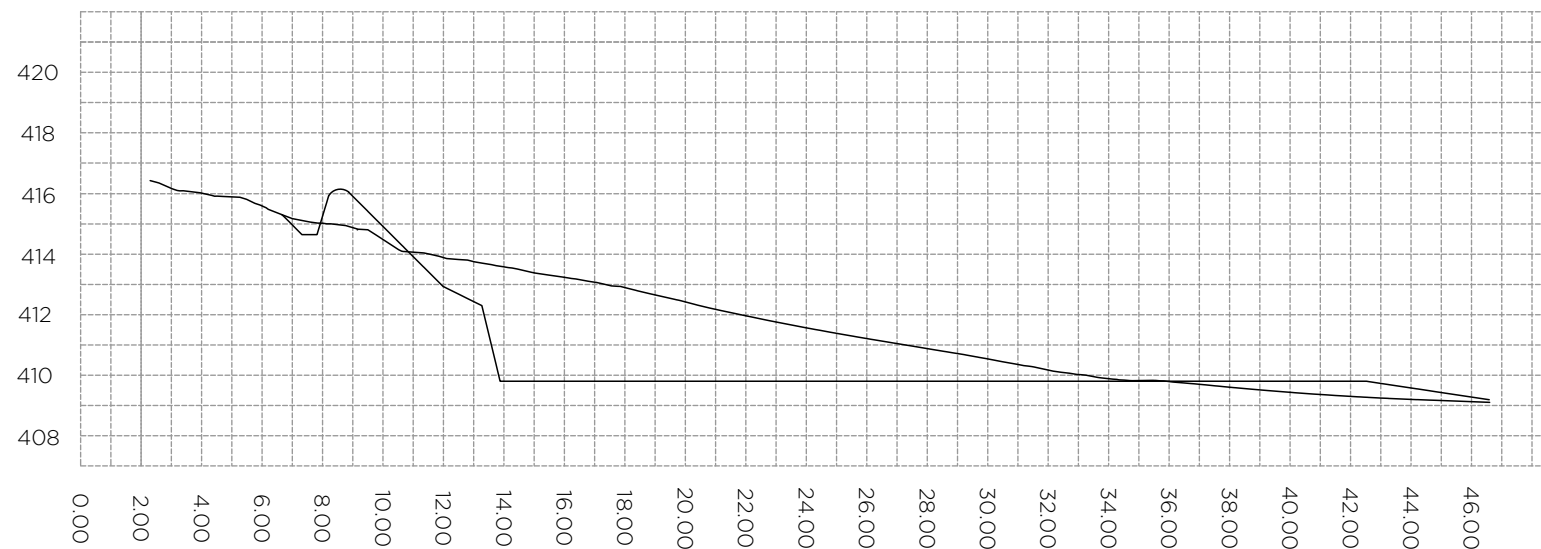
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**PROPOSED EARTHWORKS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 2 OF 3**

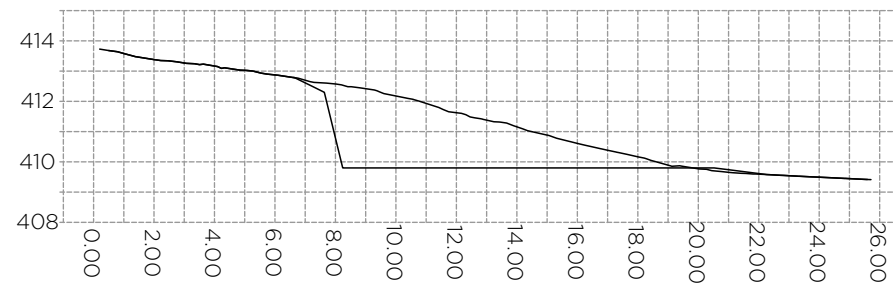
REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF	DRAWN	CHECKED	DATE	SCALE	
C	03.05.24	AMEND EARTHWORKS	MF	CW	CW	03.07.24	1:500m @ A3	
D	3.07.24	SPLIT EARTHWORKS	CW					
DATUM & LEVEL								REV.
MT NIC 2000 - NZVD16								C



SECTION A



SECTION B



SECTION C

ISSUED FOR REVIEW - 27.02.24



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SECTIONS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 3 OF 3

REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF	DRAWN	CW	DATE	SCALE	REV.
C	03.05.24	AMEND EARTHWORKS	MF					
D	19.06.24	CORRECT SECTION LEVELS	CW	CW	CW	03.07.24	1:200 @ A3	D
DATUM & LEVEL MT NIC 2000 - NZVD16								

To: annemarie.townsley@jea.co.nz Ref: 24095
Cc:
From: simon.bloomberg@e3scientific.co.nz
Date: 18 July 2024
Subject: Re: RM240352 – Request for review of water quality improvements
for a subdivision under Policy 24.2.4.2 of the QLDC District Plan

1 Introduction

The owners of 832 Malaghans Road have applied to the Queenstown Lakes District Council (QLDC) to subdivide their section into two separate lots. As the site is located within the Lake Hayes Catchment, policy 24.2.4.2 of the District Plan applies to the subdivision application.

“Policy 24.2.4.2 Restrict subdivision, development and use of land in the Lake Hayes catchment, unless it can contribute to water quality improvement in the catchment commensurate with the nature, scale and location of the proposal.”

The applicant has put together a plan setting out how their proposal will contribute to water quality improvement in the catchment commensurate with the nature, scale and location of the proposal.

2 Review of water quality improvement plan for RM240352

2.1 Onsite wastewater discharge

The AEE states “The system for on-site treatment and disposal of wastewater from the dwelling has been designed to avoid adverse impacts on water quality in the catchment. This will be achieved with a secondary treatment system, the location and design of the land application area, and the planting and harvesting of rye grass to remove nitrogen.”

In my opinion, the Onsite wastewater system has been appropriately designed for a site where a reticulated wastewater network is not currently available.

- The treatment system includes a proprietary advanced secondary treatment designed by Hynds capable of treating high strength domestic wastewater;
- The site and soil assessment by Ralph Moir and Associates appears to be consistent with the ASNZS 1547:2012; and
- The disposal field is sited as far from Mill Creek and the sensitive wetland areas as possible.
- The discharge otherwise meets the permitted activity conditions of the Otago Regional Plan: Water rule 12.A.1.4, except for 12.A.1.4 (b) as the discharge is in the Lake Hayes Catchment. Therefore, consent is required.

The discharge is a new point source discharge of nutrients within the Waiwhakaata / Lake Hayes catchment. The Applicant proposes to use cut and carry practices to remove as much of the nutrients as possible, however, during winter when soils are saturated and cooler temperatures result in lower biological activity and grass growth, less nutrients will be removed. During this time mobile dissolved nutrients (e.g. DRP, NO₃-N) may migrate to the groundwater table, however the distance from the land application system to Mill Creek is such that reasonable mixing should occur. Typically, the high standard of treatment and thickness of soil above the water table will do much to promote nutrient assimilation during most periods of the year.

It is unlikely that the discharge would ever directly impact surface water receptors even if the LAS failed as the distance to the nearest tributary to Mill Creek is significant.

If the reticulated sewer network becomes available to the Malaghans Road site, there should be a requirement from council to connect in. Until then, the Applicant's proposal appears to make the best of the environmental concerns to limit impacts on the Lake Hayes Catchment through appropriate siting and design.

Overall, the proposed on-site treatment and disposal of wastewater is likely to result in a minor increase in nutrients in the catchment which is adequately offset by the proposed cut and carry practices and additionally by the water quality improvement actions such as riparian planting and wetland protection.

2.2 Erosion and Sediment Control and Stormwater Discharge

The proposals erosion and sediment control and stormwater management plans for the construction of a new drive, bridge, building platform excavations and dwelling were peer reviewed by EnviroCo. The peer reviewer found that the plan was suitable for the sensitivity of the site with appropriate mitigation and actions.

Post-construction, the ongoing stormwater discharge will be to ground via soakage. Appropriate testing has been completed to ensure drainage rates are sufficient that overland flow does not occur.

Overall, provided that the proposed erosion and sediment control and stormwater management plans are adhered to, the proposed earthworks and on-site disposal of stormwater will neither improve nor reduce water quality in the catchment.

2.3 Riparian and Wetland Management

The application proposes to collaborate with Mana Tāhuna to undertake the willow removal and riparian planting along Mill Creek as approved within the site under their global ORC consent. The works would be completed within the new lot (Lot 2) prior to a new title being issued – which would guarantee that they actually occur.

The application also proposes some new wetland planting along an existing ephemeral tributary of Mill Creek, and to establish a 'Riparian Management Zone' over Mill Creek throughout the site. This will be referenced in a consent notice condition requiring future owners to manage invasive weed species, and to only plant locally occurring riparian species, within the identified area once the willows have been removed.

With regard to Policy 24.2.4.2, the AEE states that the above approach will contribute to water quality in a way that is commensurate with the establishment of an additional residential dwelling. This is based on the Applicant's understanding that the overall purpose of the Mana Tāhuna works is to improve water quality in the Lake Hayes catchment.

The riparian management zone will effectively intercept overland flow and reduce soil water nutrient losses to Mill Creek. Based on the proposal I agree that the riparian and wetland planting will result in a water quality improvement in the Lake Hayes catchment.

3 Technical comment on the proposed water quality improvements

e3Scientific reviewed application RM240352 and it is our assessment that if the mitigation and actions contained in this proposal are followed, then there would be a positive impact on Lake Hayes catchment water quality that is commensurate with (if not greater than) the nature, scale, and scope of the proposed subdivision and new dwelling construction.

We note that while the application as proposed does achieve Policy 24.2.4.2 there are opportunities available to further improve water quality within the applicant's site, which we can provide further advice on.

If you have any questions regarding the information provided, please contact Simon Bloomberg on 03 409 8664 or via email at simon.bloomberg@e3scientific.co.nz

Yours sincerely,



Simon Bloomberg
Senior Environmental Scientist

From: "Annemarie Townsley" <annemarie.townsley@jea.co.nz>
Sent: Thu, 8 Aug 2024 15:55:43 +1200
To: "Resource Consent" <resourceconsent@qldc.govt.nz>
Cc: "Courtney Briggs" <Courtney.Briggs@qldc.govt.nz>; "Ron Macrae" <ron@cmp.net.nz>
Subject: RM240352 - Macrae - Response to Further Information Request - email 1 of 2
Attachments: Attachment A - Email from Central Pump Services.png, Attachment B - Water Quality Test Results.pdf, Attachment C - Email from Don Moir re ww design.pdf, Attachment D - Water tank locations.pdf, Attachment E - Rockfall Bund Location.pdf, Attachment F - Updated floor areas plan.pdf, Attachment H - e3 memo re water quality.pdf, Further Information Reply 8.8.24.pdf

Good Afternoon,

Please find attached responses to the further information request for RM240352, which Courtney Briggs is processing. (I will send Attachment G separately due to the large file size.)

I am aware that Courtney is on leave until next week, so I am sending the information to this address. We have requested that the application be publicly notified, and now that the further information has been provided, we ask that notification occur as soon as possible.

Kind regards,
Annemarie



ANNEMARIE TOWNSLEY
BE(Hons), MRP(Hons), Int.NZPI
planner

021 187 6575 | 03 450 0009
annemarie.townsley@jea.co.nz | www.jea.co.nz

Level 2, 36 Shotover Street, PO Box 95, Queenstown 9300

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Annemarie Townsley

From: Central Pump Services Limited <barry@centralpumpservices.com>
Sent: Thursday, 8 August 2024 3:28 PM
To: Annemarie Townsley
Subject: Water Test & Pump Test for Macrae
Attachments: 3638832-DWAP-1.pdf

Hi There

Please see attached the results from Hills Lab for the latest water test for Ron Macrae.
A flow test was also performed on the day, results are:

3 Hour Pump Test to waste at 34 L/M
- with a pumping water level of 6.8 with water slightly on the rise.

Static Water Level 2m380
Pumping Water Level 6m800
Total Depth 10m300

Kind Regards,
Alyssa Drake
Administration
Central Pump Services Ltd.

Certificate of Analysis

Page 1 of 4

Client:	Central Pump Services Limited	Lab No:	3638832	DWAPV1
Contact:	Barry Drake C/- Central Pump Services Limited 52 Russell Street Alexandra 9320	Date Received:	31-Jul-2024	
		Date Reported:	05-Aug-2024	
		Quote No:		
		Order No:	1433	
		Client Reference:	Macrae	
		Submitted By:	Barry Drake	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:	Macrae 30-Jul-2024 1:00 pm		Aesthetic Values	Maximum Acceptable Values (MAV)
Lab Number:	3638832.1			
Routine Water + E.coli profile Kit				
Escherichia coli	MPN / 100mL	< 1	-	< 1
Routine Water Profile				
Turbidity	NTU	0.10	≤ 5	-
pH	pH Units	6.5	7.0 - 8.5	-
Total Alkalinity	g/m ³ as CaCO ₃	34	-	-
Free Carbon Dioxide	g/m ³ at 25°C	20	-	-
Total Hardness	g/m ³ as CaCO ₃	63	≤ 200	-
Electrical Conductivity (EC)	mS/m	18.7	-	-
Electrical Conductivity (EC)	µS/cm	187	-	-
Approx Total Dissolved Salts	g/m ³	125	≤ 1000	-
Total Arsenic	g/m ³	< 0.0011	-	0.01
Total Boron	g/m ³	0.0152	-	2.4
Total Calcium	g/m ³	21	-	-
Total Copper	g/m ³	0.0136	≤ 1	2
Total Iron	g/m ³	< 0.021	≤ 0.3	-
Total Lead	g/m ³	0.00068	-	0.01
Total Magnesium	g/m ³	2.7	-	-
Total Manganese	g/m ³	0.0021	≤ 0.04 (Staining) ≤ 0.10 (Taste)	0.4
Total Potassium	g/m ³	7.6	-	-
Total Sodium	g/m ³	4.9	≤ 200	-
Total Zinc	g/m ³	0.045	≤ 1.5	-
Chloride	g/m ³	3.8	≤ 250	-
Nitrate-N	g/m ³	4.1	-	11.3
Sulphate	g/m ³	26	≤ 250	-

Note: The Maximum Acceptable Values (MAV) are taken from the 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022', published under the authority of the New Zealand Government-2022. Copies of this publication are available from: <https://www.legislation.govt.nz/regulation/public/2022/0168/latest/whole.html>

The standards set limits for the concentration of determinands in drinking water. The Maximum Acceptable Values (MAVs) for any determinand must not be exceeded at any time.

The Aesthetic Values are taken the publication, 'Aesthetic Values for Drinking Water Notice 2022' issued by the Water Services Regulator ("Taumata Arowai"). Aesthetic values specify or provide minimum or maximum values for substances and other characteristics that relate to the acceptability of drinking water to consumers (such as appearance, taste or odour).

Note that the units: g/m³ are the same as mg/L and ppm.



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

pH/Alkalinity and Corrosiveness Assessment

The pH of a water sample is a measure of its acidity or basicity. Waters with a low pH can be corrosive and those with a high pH can promote scale formation in pipes and hot water cylinders.

The guideline level for pH in drinking water is 7.0-8.5. Below this range the water will be corrosive and may cause problems with disinfection if such treatment is used.

The alkalinity of a water is a measure of its acid neutralising capacity and is usually related to the concentration of carbonate, bicarbonate and hydroxide. Low alkalinities (25 g/m³) promote corrosion and high alkalinities can cause problems with scale formation in metal pipes and tanks.

With the pH and alkalinity levels found, this water could be corrosive towards metal piping and fixtures.

Hardness/Total Dissolved Salts Assessment

The water contains a low amount of dissolved solids and would be regarded as being slightly hard.

Nitrate Assessment

Nitrate-nitrogen at elevated levels is considered undesirable in natural waters as this element can cause a health disorder called methaemaglobinaemia. Very young infants (less than six months old) are especially vulnerable. The 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022' sets a maximum permissible level of 11.3 g/m³ as Nitrate-nitrogen (50 g/m³ as Nitrate).

Nitrate-nitrogen was detected in this water but at such a low level to not be of concern.

Boron Assessment

Boron may be present in natural waters and if present at high concentrations can be toxic to plants.

Boron was found at a low level in this water but would not give any cause for concern.

Metals Assessment

Iron and manganese are two problem elements that commonly occur in natural waters. These elements may cause unsightly stains and produce a brown/black precipitate. Iron is not toxic but manganese, at concentrations above 0.5 g/m³, may adversely affect health. At concentrations below this it may cause stains on clothing and sanitary ware.

Iron was not detected in the water

Manganese was found in this water at a low level.

Treatment to remove iron and/or manganese should not be necessary.

Bacteriological Tests

The Drinking Water Standards for NZ state that there should be no Escherichia coli (E coli) in water used for human consumption. The presence of these organisms would indicate that other pathogens of faecal origin may be present. Results obtained for Total Coliforms are only significant if the sample has not also been tested for E coli.

Escherichia coli was not detected in this sample.

Final Assessment

The parameter pH did NOT meet the guidelines laid down in the 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022' and the 'Aesthetic Values for Drinking Water Notice 2022' issued by the Water Services Regulator ("Taumata Arowai") for water which is suitable for drinking purposes.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	Method Description	Default Detection Limit	Sample No
Routine Water Profile		-	1
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO ₂ D : Online Edition.	1.0 g/m ³ at 25°C	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B : Online Edition.	1 µS/cm	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m ³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m ³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m ³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Nitrate-N	Filtered (if required) sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m ³	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Escherichia coli	MPN count using Colilert 18 (Incubated at 35°C for 18 hours) and 97 wells. Analysed at Hill Laboratories - Microbiology; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 9223 B : Online Edition.	1 MPN / 100mL	1

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

Testing was completed between 01-Aug-2024 and 05-Aug-2024. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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

A handwritten signature in blue ink, consisting of several overlapping, stylized strokes.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Annemarie Townsley

From: Don Moir <don@moir.co.nz>
Sent: Wednesday, 26 June 2024 1:29 PM
To: Annemarie Townsley
Subject: 24A13 RE: Macrae wastewater system - 832 Malaghans Road

Hi Annemarie

The rising main is being sleeved inside a metal pipe where it is attached to the bridge and this should suffice to avoid freezing.

Regards

from Don Moir
RALPH MOIR LIMITED
REGISTERED PROFESSIONAL SURVEYORS
101 Spey Street, Invercargill NZ
P. 03 217 2597
M. 0274 372 662
don@moir.co.nz

From: Annemarie Townsley <annemarie.townsley@jea.co.nz>
Sent: Wednesday, June 26, 2024 1:26 PM
To: Don Moir <don@moir.co.nz>
Subject: Macrae wastewater system - 832 Malaghans Road

Hi Don,

I've submitted the resource consent application to QLDC for Ron Macrae's house, and the further information request includes the following:

Table 7 of the wastewater design report states "Frosts can be severe and so pipework must be kept 300mm below ground", can the design engineer please confirm if freezing for the section of the wastewater pipe above ground level has been made for this section of the rising main that will be fastened to the bridge. Please clarify how this will be mitigated.

Can you please send me a quick reply confirming that you considered potential freezing of the rising main, and how this can be managed (if needed)?

Thanks,
Annemarie



ANNEMARIE TOWNSLEY
BE(Hons), MRP(Hons), Int.NZPI
planner

021 187 6575 | 03 450 0009
annemarie.townsley@jea.co.nz | www.jea.co.nz
Level 2, 36 Shotover Street, PO Box 95, Queenstown 9300

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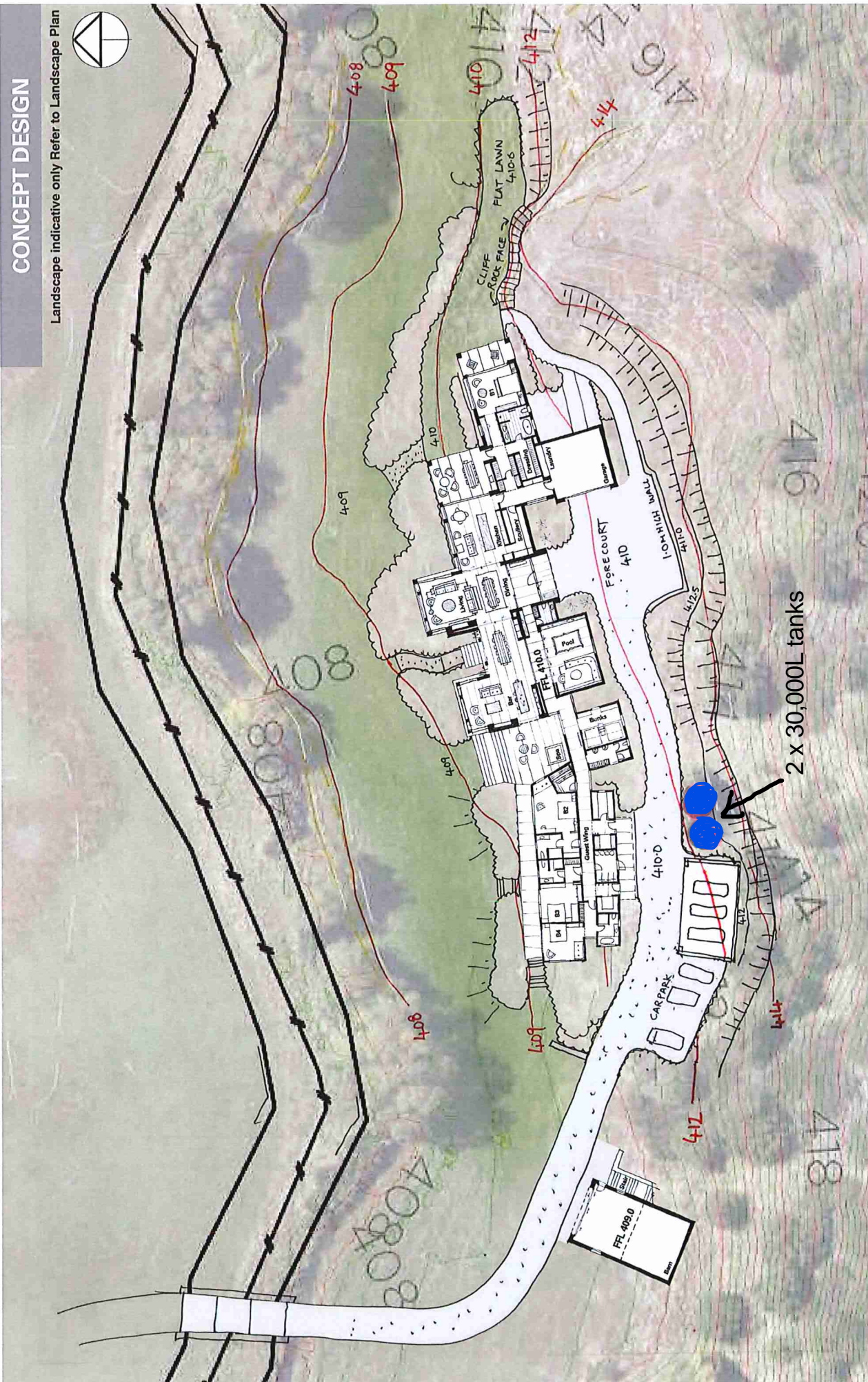
CONCEPT DESIGN

Landscape indicative only Refer to Landscape Plan



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6507-Mal-Res-S6-240115



Water tank locations

MASON & WALES
ARCHITECTS

MACRAE RESIDENCE
832 MALAGHANS ROAD • ARROWTOWN

PRELIMINARY
WORK IN PROGRESS

Project: 6507
Designed by: MASON & WALES
Scale: 1:400 @ A3
15 April 2024

S6
04



c trail

TOP OF BUND

approximate location
new access drive

ISSUED FOR REVIEW - 3.07.24

CLIENT
MacRae

NOTES:
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APPROX ROCK BUND LOCATION
LANDSCAPE VIEW MR3

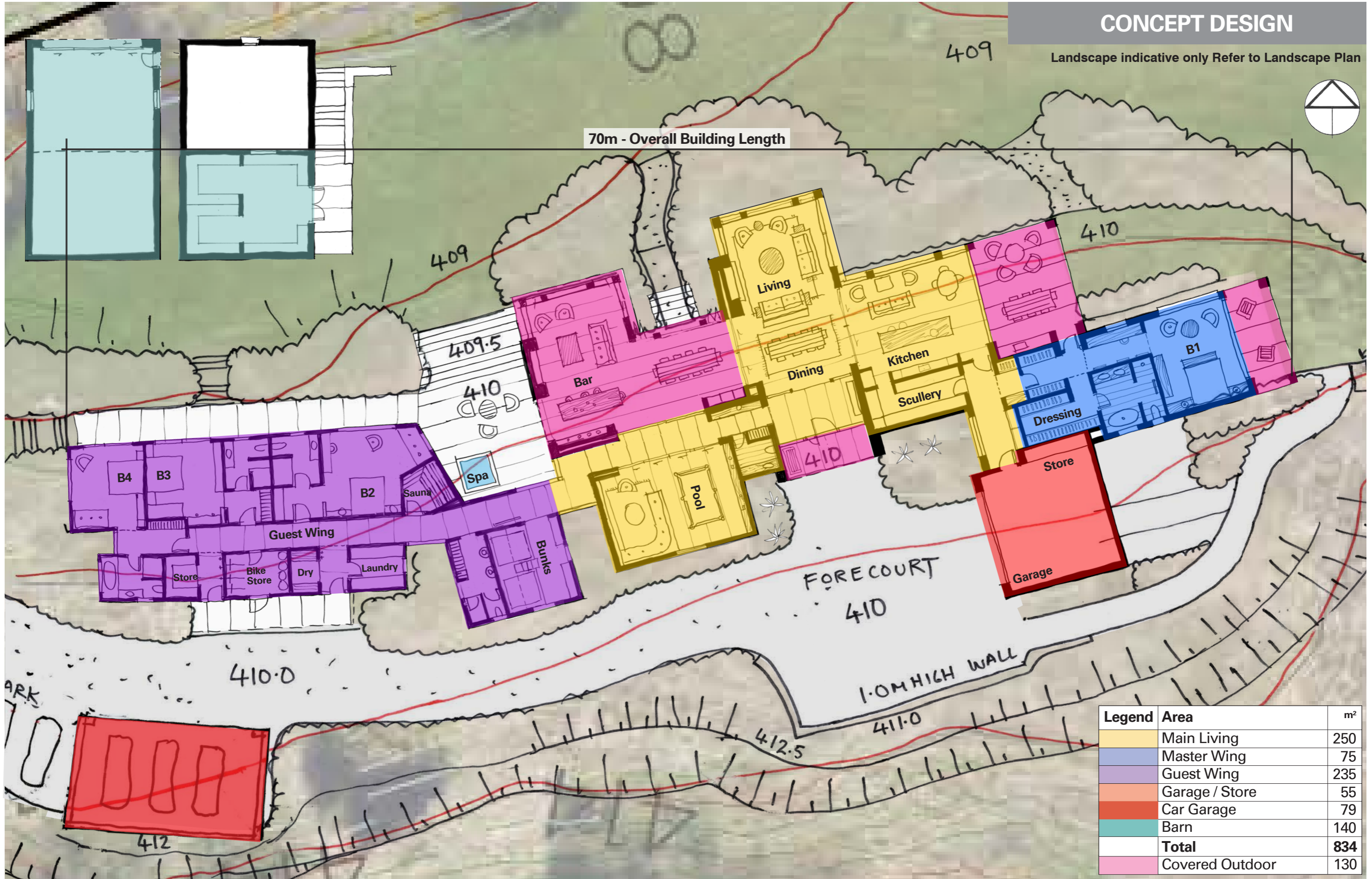
REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
				-	-	-	23016	05.03
				DRAWN	CHECKED	DATE	SCALE	NTS
				CW	CW	3.07.24		
DATUM & LEVEL								REV.
MT NIC 2000 - NZVD16								-

CONCEPT DESIGN

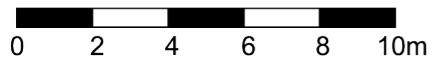
Landscape indicative only Refer to Landscape Plan



70m - Overall Building Length



Legend	Area	m ²
	Main Living	250
	Master Wing	75
	Guest Wing	235
	Garage / Store	55
	Car Garage	79
	Barn	140
	Total	834
	Covered Outdoor	130



Area Plan

To: annemarie.townsley@jea.co.nz Ref: 24095
Cc:
From: simon.bloomberg@e3scientific.co.nz
Date: 18 July 2024
Subject: Re: RM240352 – Request for review of water quality improvements
for a subdivision under Policy 24.2.4.2 of the QLDC District Plan

1 Introduction

The owners of 832 Malaghans Road have applied to the Queenstown Lakes District Council (QLDC) to subdivide their section into two separate lots. As the site is located within the Lake Hayes Catchment, policy 24.2.4.2 of the District Plan applies to the subdivision application.

“Policy 24.2.4.2 Restrict subdivision, development and use of land in the Lake Hayes catchment, unless it can contribute to water quality improvement in the catchment commensurate with the nature, scale and location of the proposal.”

The applicant has put together a plan setting out how their proposal will contribute to water quality improvement in the catchment commensurate with the nature, scale and location of the proposal.

2 Review of water quality improvement plan for RM240352

2.1 Onsite wastewater discharge

The AEE states “The system for on-site treatment and disposal of wastewater from the dwelling has been designed to avoid adverse impacts on water quality in the catchment. This will be achieved with a secondary treatment system, the location and design of the land application area, and the planting and harvesting of rye grass to remove nitrogen.”

In my opinion, the Onsite wastewater system has been appropriately designed for a site where a reticulated wastewater network is not currently available.

- The treatment system includes a proprietary advanced secondary treatment designed by Hynds capable of treating high strength domestic wastewater;
- The site and soil assessment by Ralph Moir and Associates appears to be consistent with the ASNZS 1547:2012; and
- The disposal field is sited as far from Mill Creek and the sensitive wetland areas as possible.
- The discharge otherwise meets the permitted activity conditions of the Otago Regional Plan: Water rule 12.A.1.4, except for 12.A.1.4 (b) as the discharge is in the Lake Hayes Catchment. Therefore, consent is required.

The discharge is a new point source discharge of nutrients within the Waiwhakaata / Lake Hayes catchment. The Applicant proposes to use cut and carry practices to remove as much of the nutrients as possible, however, during winter when soils are saturated and cooler temperatures result in lower biological activity and grass growth, less nutrients will be removed. During this time mobile dissolved nutrients (e.g. DRP, NO₃-N) may migrate to the groundwater table, however the distance from the land application system to Mill Creek is such that reasonable mixing should occur. Typically, the high standard of treatment and thickness of soil above the water table will do much to promote nutrient assimilation during most periods of the year.

It is unlikely that the discharge would ever directly impact surface water receptors even if the LAS failed as the distance to the nearest tributary to Mill Creek is significant.

If the reticulated sewer network becomes available to the Malaghans Road site, there should be a requirement from council to connect in. Until then, the Applicant's proposal appears to make the best of the environmental concerns to limit impacts on the Lake Hayes Catchment through appropriate siting and design.

Overall, the proposed on-site treatment and disposal of wastewater is likely to result in a minor increase in nutrients in the catchment which is adequately offset by the proposed cut and carry practices and additionally by the water quality improvement actions such as riparian planting and wetland protection.

2.2 Erosion and Sediment Control and Stormwater Discharge

The proposals erosion and sediment control and stormwater management plans for the construction of a new drive, bridge, building platform excavations and dwelling were peer reviewed by EnviroCo. The peer reviewer found that the plan was suitable for the sensitivity of the site with appropriate mitigation and actions.

Post-construction, the ongoing stormwater discharge will be to ground via soakage. Appropriate testing has been completed to ensure drainage rates are sufficient that overland flow does not occur.

Overall, provided that the proposed erosion and sediment control and stormwater management plans are adhered to, the proposed earthworks and on-site disposal of stormwater will neither improve nor reduce water quality in the catchment.

2.3 Riparian and Wetland Management

The application proposes to collaborate with Mana Tāhuna to undertake the willow removal and riparian planting along Mill Creek as approved within the site under their global ORC consent. The works would be completed within the new lot (Lot 2) prior to a new title being issued – which would guarantee that they actually occur.

The application also proposes some new wetland planting along an existing ephemeral tributary of Mill Creek, and to establish a 'Riparian Management Zone' over Mill Creek throughout the site. This will be referenced in a consent notice condition requiring future owners to manage invasive weed species, and to only plant locally occurring riparian species, within the identified area once the willows have been removed.

With regard to Policy 24.2.4.2, the AEE states that the above approach will contribute to water quality in a way that is commensurate with the establishment of an additional residential dwelling. This is based on the Applicant's understanding that the overall purpose of the Mana Tāhuna works is to improve water quality in the Lake Hayes catchment.

The riparian management zone will effectively intercept overland flow and reduce soil water nutrient losses to Mill Creek. Based on the proposal I agree that the riparian and wetland planting will result in a water quality improvement in the Lake Hayes catchment.

3 Technical comment on the proposed water quality improvements

e3Scientific reviewed application RM240352 and it is our assessment that if the mitigation and actions contained in this proposal are followed, then there would be a positive impact on Lake Hayes catchment water quality that is commensurate with (if not greater than) the nature, scale, and scope of the proposed subdivision and new dwelling construction.

We note that while the application as proposed does achieve Policy 24.2.4.2 there are opportunities available to further improve water quality within the applicant's site, which we can provide further advice on.

If you have any questions regarding the information provided, please contact Simon Bloomberg on 03 409 8664 or via email at simon.bloomberg@e3scientific.co.nz

Yours sincerely,



Simon Bloomberg
Senior Environmental Scientist



Courtney Briggs

Email: courtney.briggs@qldc.govt.nz

Queenstown Lakes District Council

Shotover Street

Queenstown 9300

FROM **Annemarie Townsley**

MOBILE +64 21 187 6575

EMAIL annemarie.townsley@jea.co.nz

MATTER NO. RM240352 - Macrae

DATE 8 August 2024

Dear Courtney,

This letter responds to your further information request received by email on 26 June 2024 regarding RM240352.

Each of your points is pasted below in italics, followed by the Applicant's response.

Included are the following attachments:

- Attachment A – Water test results
- Attachment B – Water Quality Test Results
- Attachment C – Email from Don Moir re wastewater system
- Attachment D – Plan of water tanks location
- Attachment E – Elevation showing bund
- Attachment F – Updated Floor Plans
- Attachment G – Updated Earthworks Plans
- Attachment H – Ecologist's memo

1. *Is it proposed to upgrade the existing vehicle crossing in accordance with Diagram 8 – Access design (29.14.8.) of Proposed District Plan (PDP)?*

Construction of the existing vehicle crossing onto Malaghans Road was bonded as part of the 224(c) certification process for the underlying subdivision: RM161092. It does not appear that the work was ever completed.

The Applicant would accept a condition of consent requiring the upgrading of the vehicle crossing as part of the current proposal.

2. *Provide information on the measures that will be taken to ensure the continuation of stormwater flows where the proposed new driveway passes over the stormwater channel that runs parallel to the existing driveway.*

A culvert will be placed under the proposed driveway to maintain stormwater flows. (This has already been done at the southern end of the drain where it is crossed by the new trail.)

3. *Please provide more information on the proposed design and timing of the construction of the bridge. It appears that the bridge will have the long-term requirement to enable the safe movement of emergency vehicles to access the firefighting source as well as allowing access for construction vehicles during the earthworks phase. It appears that the bridge will need to be capable of withstanding an axle load of 8.2 tones or have a load bearing capacity of no less than the public roadway serving the property.*

As stated in the AEE (para 72) the bridge will be constructed as part of the subdivision works. This will ensure that physical access is provided to the building platform prior to construction of a dwelling. The bridge will be designed to carry heavy vehicles, including construction vehicles and fire-fighting appliances. It is proposed that it will be constructed from concrete and steel, and finished with timber cladding to give it a more 'rustic' appearance.

4. *Provide information on the proposed signage and traffic management measures on the public trail during earthworks and construction. Please provide information on the long-term signage where the proposed driveway crosses the trail.*

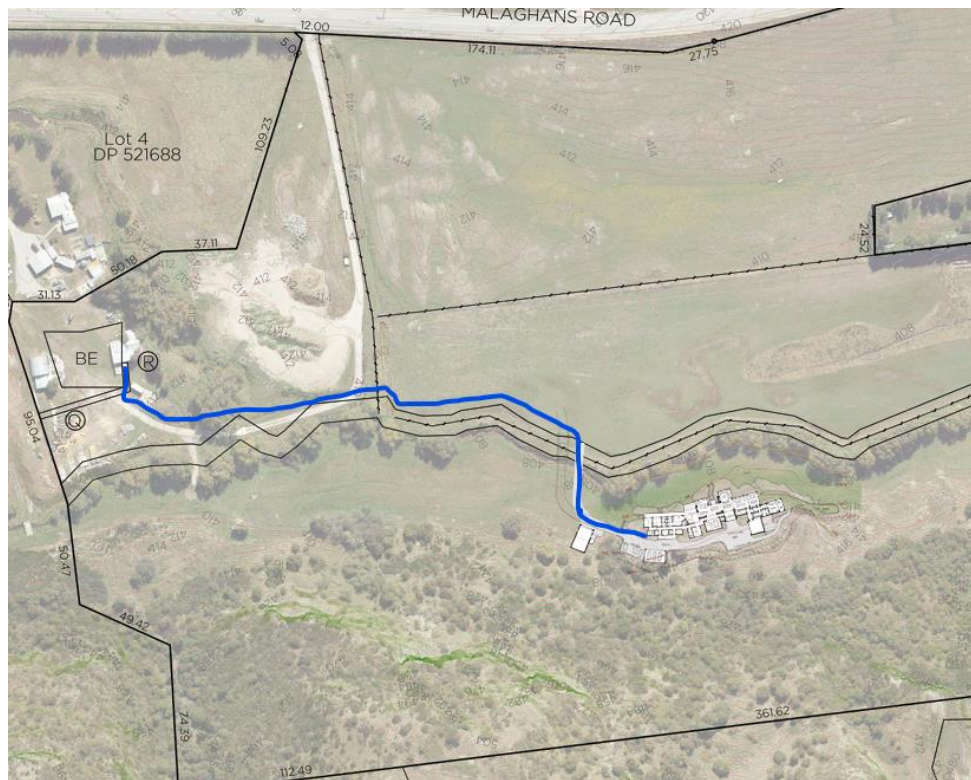
It is anticipated that a traffic management plan would be required to be prepared by the earthworks contractor, which would include any necessary measures at the entrance to the site from Malaghans Road and on the public trail.

It is not proposed that any long-term signage would be erected by the Applicant where the driveway crosses the trail – this situation arises in numerous locations on the wider trail network, including across the existing driveway. Signage will be installed by the Trails Trust as deemed necessary.

5. *Please provide the water supply bore logs and latest test results to confirm that the existing water source servicing the subdivision is of sufficient capacity to service one additional allotment with a minimum of 2,100L day in terms of quantity and quality.*

See attached email from Central Pump Services with the results of a recent pump test (**Attachment A**) and lab testing (**Attachment B**).

6. *Please show the indicative location of water supply reticulation from the source to the location of the proposed building platform, if the water supply pipe is fastened to the bridge similar to the wastewater pipe, please provide some additional information on frost protection measures that will be adopted.*



The water supply pipe from the existing bore to the building platform will be in the approximate location marked up on the plan above. The pipe will be attached to the bridge across Mill Creek. It will be lagged to prevent freezing.

Instead of connecting to the existing bore, the applicant may instead establish a new bore on the southern side of the creek to service the building platform, subject to approval from ORC (as noted in para 59 of the AEE).

7. *Table 7 of the wastewater design report states “Frosts can be severe and so pipework must be kept 300mm below ground”, can the design engineer please confirm if freezing for the section of the wastewater pipe above ground level has been made for this section of the rising main that will be fastened to the bridge. Please clarify how this will be mitigated.*

The wastewater system designer advises that ‘the rising main is being sleeved inside a metal pipe where it is attached to the bridge and this should suffice to avoid freezing’. A copy of his email is attached (**Attachment C**).

8. *Please confirm with suitable evidence demonstrating that the firefighting provisions associated with the existing and proposed building platforms can meet the current firefighting standards. Please show the proposed locations of the firefighting tanks on the site plans.*

Two 30,000 litre water tanks will be located at the rear of the dwelling, at the base of the bank on the eastern side of the garage, adjacent to the driveway. See attached marked-up site plan (**Attachment D**). This will meet the following requirements set out in Rule 25.4.19:

- water storage of at least 45,000 litres with an outlet connection point that can provide 1500L/min (25 L/s) and any necessary couplings;
- a hardstand area with a minimum width of 4.5m and length of 11m located within 6m of the firefighting water supply connection point and capable of supporting a 20 tonne fire service vehicle;
- a connection point for the firefighting water supply located more than 6m and less than 90m from the residential building; and
- access from the property road boundary to the hardstand area capable of accommodating a 20 tonne fire service vehicle.

The fire fighting water supply for the existing building platform on proposed Lot 2 will be assessed at the time a dwelling is constructed on that lot. The current application does not propose any changes to the existing building platform, including access to that platform.

9. *Please provide information on the proposed rockfall bund and show its proposed location behind the house on an elevation.*

As noted in the AEE (refer to para 46), preliminary modelling indicates that an earth bund is likely to be required to protect the building platform from potential rockfall from the slope to the south. The required bund height is estimated to be approximately 1.5m. The bund will be located to follow the contour, and shaped to have rounded edges. The bund will be planted with native grey shrubland species as shown on the Landscape Concept Plan (Appendix 7 to the original application); Geosolve advises that the efficacy of the bund can actually be improved with planting.

The location of the bund has been added by JEA’s surveyor to one of the landscape photomontages – see attached plan (**Attachment E**).

10. *From the information included in the application it appears that it is proposed to construct the residential unit and accessory buildings after 224c, which could be after the standard 5 year land use consent lapse period. To provide certainty of the future built form on proposed Lot 1, is it proposed to include the construction of the proposed residential unit and accessory buildings included in the application plans as a*

consent notice to be completed after 224c? Or to provide flexibility for the future built form, is it proposed to apply for a separate land use consent to construct a residential unit within the building platform and accessory buildings outside the platform? Is a longer lapse period proposed for the land use component of this application?

The application as submitted includes both a subdivision and land use component.

It is proposed to establish a residential building platform as part of the subdivision. The building platform has been designed to fit around a specific house footprint. If the proposed dwelling does not go ahead for some reason, then an alternative dwelling could be constructed but it would still need to fit within the platform, and comply with the relevant design standards for the zone and the proposed consent notice conditions listed in Appendix 4 of the application.

It is the applicant's intention to construct the dwelling and associated accessory buildings proposed in the application for their own use. It is anticipated that construction would commence within five years of consent being granted. The proposed accessory buildings are located outside the building platform, and so once any land use approval lapsed, there would be no ongoing right for a future owner to construct these.

11. *Does the proposed built form contain a secondary kitchen and or laundry and meet the definition of a residential flat?*

No residential flat is proposed. The architect has updated sheet 12 of their plans with additional room labels (see **Attachment F**) so that this is clear. Note that the laundry originally shown in the attached garage has been relocated to the Guest Wing.

12. Provide separate subdivision and land use earthworks volumes and areas. Please clarify the proposed volume of earthworks within the 10m setbacks of Mill Creek.

See attached updated Earthworks Plans by JEA (**Attachment G**).

- Subdivision earthworks (access formation): area = 2,156m², total volume = 514m³
- Land use earthworks (preparation of building platform and rockfall bund): area = 3,568m², total volume = 2,992m³
- Approximate volume of earthworks within 10m of Mill Creek = 18m³ over an area of approximately 115m²

13. *Please provide comment from a suitably qualified and experienced Ecologist on how the proposal will restrict subdivision, development and use of land in the Lake Hayes catchment, unless it can contribute to water quality improvement in the catchment commensurate with the nature, scale and location of the proposal.*

See attached memo from e3 Scientific (**Attachment H**), which includes the following conclusion:

'e3Scientific reviewed application RM240352 and it is our assessment that if the mitigation and actions contained in this proposal are followed, then there would be a positive impact on Lake Hayes catchment water quality that is commensurate with (if not greater than) the nature, scale, and scope of the proposed subdivision and new dwelling construction.'



I trust that this response addresses all your queries. We request that you now proceed with public notification of the application.

Please contact me if I can be of any assistance.

Yours faithfully,

Annemarie Townsley
John Edmonds and Associates Limited

From: "Annemarie Townsley" <annemarie.townsley@jea.co.nz>
Sent: Thu, 8 Aug 2024 15:56:56 +1200
To: "Resource Consent" <resourceconsent@qldc.govt.nz>
Cc: "Courtney Briggs" <Courtney.Briggs@qldc.govt.nz>
Subject: RM240352 - Macrae - Response to Further Information Request - email 2 of 2
Attachments: Attachment G - Earthworks Plans dated 3.7.24.pdf















ANNEMARIE TOWNSLEY
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EARTHWORKS DEPTH KEY:

	Fill Depth 0.0m to 0.5m		Cut Depth 0.0m to 0.5m
	Fill Depth 0.5m to 1.0m		Cut Depth 0.5m to 1.0m
	Fill Depth 1.0m to 1.5m		Cut Depth 1.0m to 1.5m
	Fill Depth 1.5m to 2.0m		Cut Depth 1.5m to 2.0m
			Cut Depth 2.0m to 2.5m
			Cut Depth 2.5m to 3.0m
			Cut Depth 3.0m to 3.5m
			Cut Depth 3.5m to 4.0m

EARTHWORKS SUMMARY

Areas

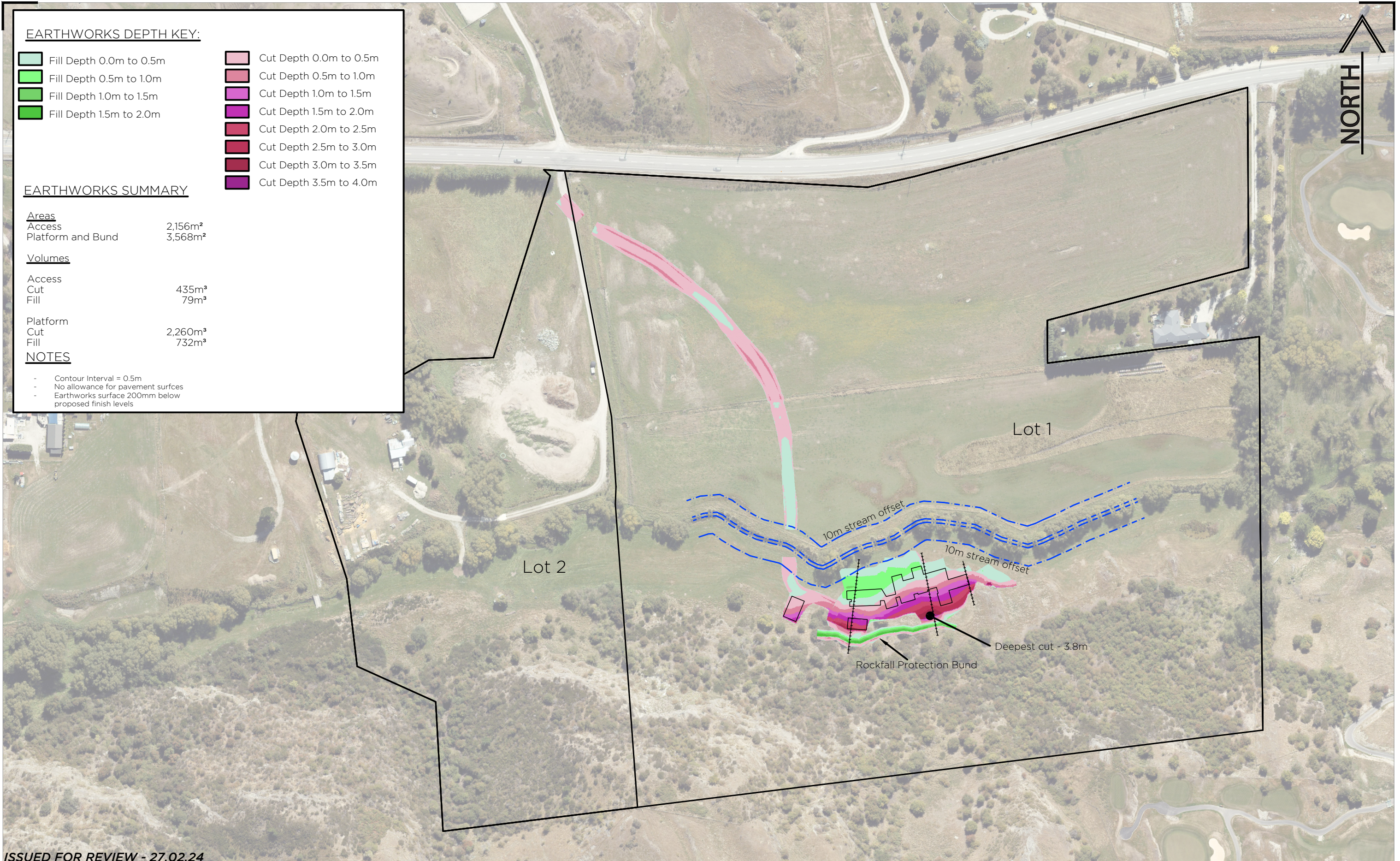
Access	2,156m ²
Platform and Bund	3,568m ²

Volumes

Access	
Cut	435m ³
Fill	79m ³
Platform	
Cut	2,260m ³
Fill	732m ³

NOTES

- Contour Interval = 0.5m
- No allowance for pavement surfaces
- Earthworks surface 200mm below proposed finish levels



ISSUED FOR REVIEW - 27.02.24



JEA
TOWN PLANNERS & SURVEYORS
Level 2, 36 Shetaver Street
PO Box 95, Ōroanui, 9300

CLIENT	MacRae
NOTES:	<ul style="list-style-type: none"> • ALL DIMENSIONS SHOWN ARE IN METERS UNLESS SHOWN OTHERWISE. • CHECK ELECTRONIC DATA AGAINST LATEST HARD COPY VERSION. • COPYRIGHT ON THIS DRAWING IS RESERVED. • THIS PLAN MAY BE SUBJECT TO FINAL SURVEY.

**PROPOSED EARTHWORKS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 1 OF 3**

REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF					
C	03.05.24	AMEND EARTHWORKS	MF	DRAWN	CHECKED	DATE	SCALE	
D	3.07.24	SPLIT EARTHWORKS	CW	CW	CW	03.07.24	1:2000m @ A3	
DATUM & LEVEL								REV.
MT NIC 2000 - NZVD16								E

EARTHWORKS DEPTH KEY:

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Fill Depth 0.5m to 1.0m	Cut Depth 0.5m to 1.0m
Fill Depth 1.0m to 1.5m	Cut Depth 1.0m to 1.5m
Fill Depth 1.5m to 2.0m	Cut Depth 1.5m to 2.0m
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	Cut Depth 3.0m to 3.5m
	Cut Depth 3.5m to 4.0m

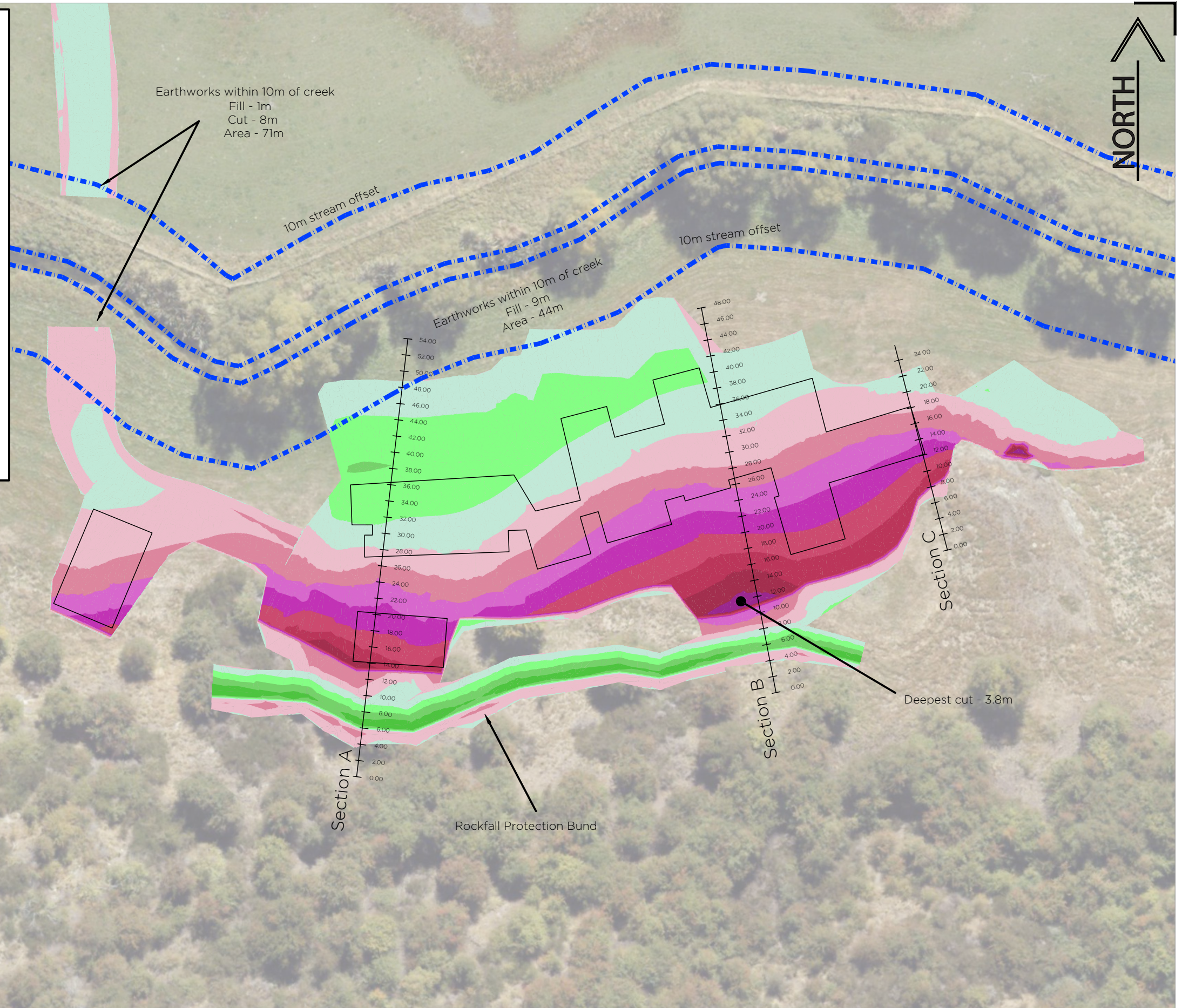
EARTHWORKS SUMMARY

Areas	
Access	2,156m ²
Platform and Bund	3,568m ²

Volumes	
Access	
Cut	435m ³
Fill	79m ³
Platform	
Cut	2,260m ³
Fill	732m ³

NOTES

- Contour Interval = 0.5m
- No allowance for pavement surfaces
- Earthworks surface 200mm below proposed finish levels



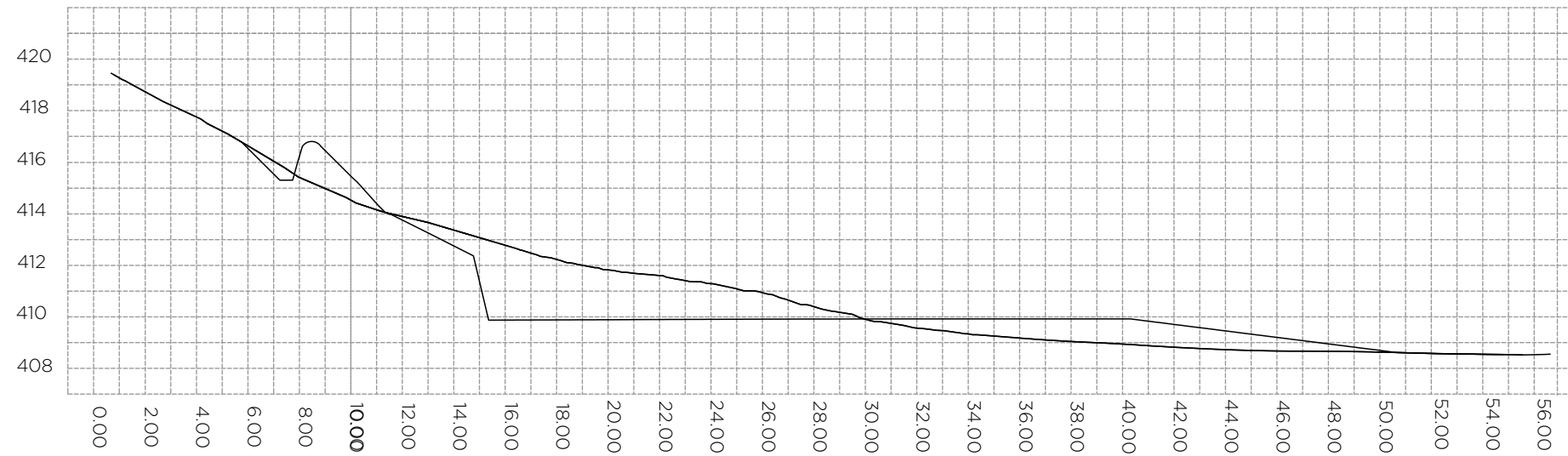
ISSUED FOR REVIEW - 27.02.24

JECA
TOWN PLANNERS & SURVEYORS
Level 2, 36 Shetaver Street
PO Box 95, Ōhāeunui, 9300

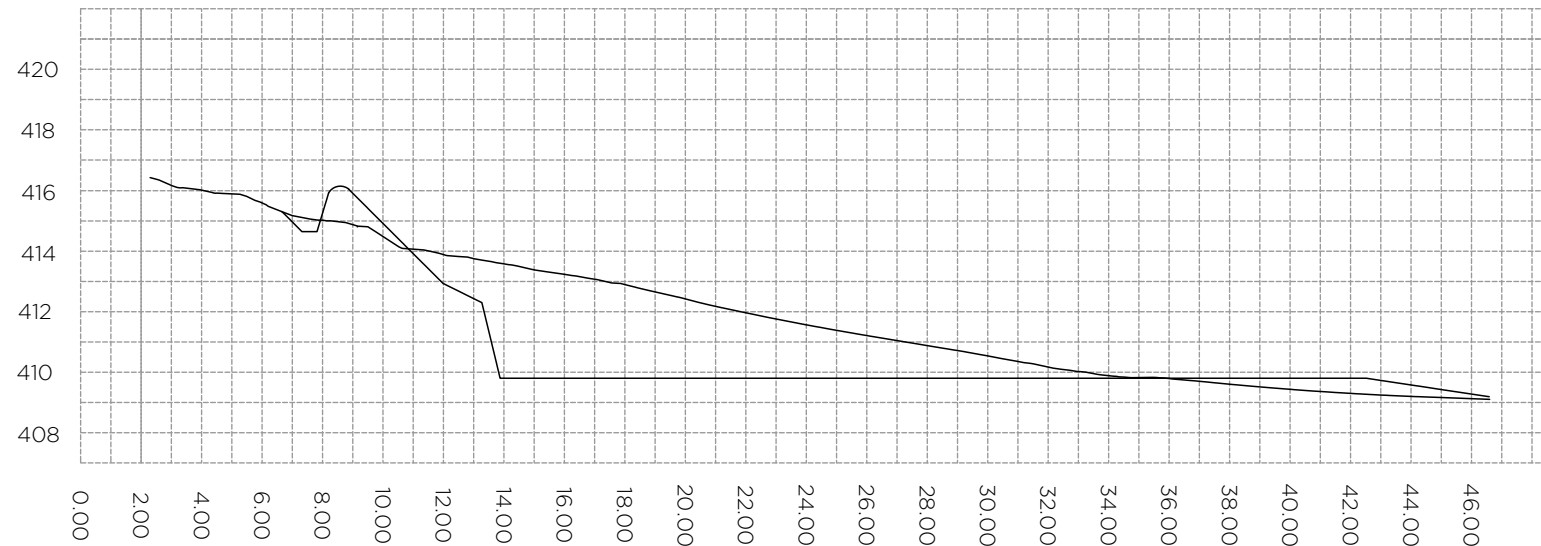
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**PROPOSED EARTHWORKS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 2 OF 3**

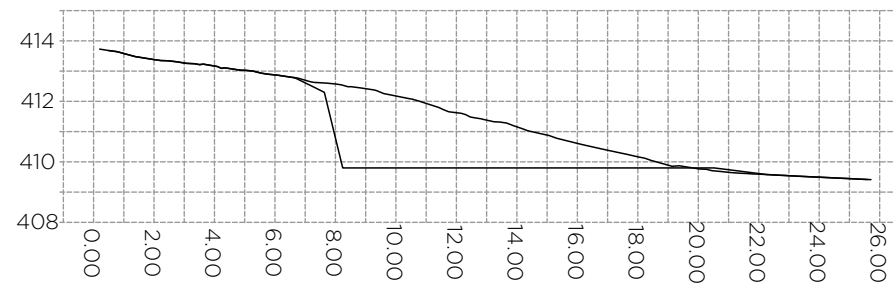
REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF					
C	03.05.24	AMEND EARTHWORKS	MF	DRAWN	CHECKED	DATE	SCALE	
D	3.07.24	SPLIT EARTHWORKS	CW	CW	CW	03.07.24	1:500m @ A3	
DATUM & LEVEL								REV.
MT NIC 2000 - NZVD16								C



SECTION A



SECTION B



SECTION C

ISSUED FOR REVIEW - 27.02.24



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**SECTIONS
2 LOT SUBDIVISION
832 MALAGHANS ROAD - SHEET 3 OF 3**

REV.	DATE	REVISION DETAILS	BY	SURVEYED	SIGNED	DATE	JOB NO.	DRAWING NO.
A	12.04.24	ROCKFALL BUND ADDED	MF	MF	CW	31.05.23	23016	04.01
B	30.04.24	AMEND EARTHWORKS	MF					
C	03.05.24	AMEND EARTHWORKS	MF	DRAWN	CHECKED	DATE	SCALE	
D	19.06.24	CORRECT SECTION LEVELS	CW	CW	CW	03.07.24	1:200 @ A3	
DATUM & LEVEL MT NIC 2000 - NZVD16								REV. D