



DECISIONS OF THE QUEENSTOWN LAKES DISTRICT COUNCIL

CHANGE OF CONDITIONS – SECTION 127

NOTIFICATION UNDER s95A AND s95B AND DETERMINATION UNDER s104

OF THE RESOURCE MANAGEMENT ACT 1991

Applicant:	Arrowsouth Properties Limited
RM reference:	RM210061
Application:	Application under section 127 of the Resource Management Act 1991 (RMA) to change conditions 1, 4 and 9(k) of RM161093 (as varied by RM181358) to provide for an amended trail design
Location:	Lot 103, McDonnell Road, Arrowtown
Legal Description:	Lot 102-103 Deposited Plan 535793 Record of Title 911161
Zoning:	ODP: Arrowtown South (and part Low Density Residential) PDP: Lower Density Suburban Residential (relates to leg in only)
Activity Status:	Discretionary
Decision Date	20 August 2021

SUMMARY OF DECISIONS

1. Pursuant to sections 95A-95F of the Resource Management Act 1991 (**RMA**) the application will be processed on a **non-notified** basis given the findings of Section 5 of the Section 95A and 95B report. This decision is made by Alana Standish, Team Leader, Resource Consents, on 20 August 2021 under delegated authority pursuant to Section 34A of the RMA.
2. Pursuant to Section 104 of the RMA, consent is **GRANTED SUBJECT TO CONDITIONS** outlined in **Section 7.4** of this decision. An updated set of conditions of RM161093 is provided in **Appendix 1** of this decision. The consent can only be implemented if the conditions in Appendix 1 are complied with by the consent holder.
3. The decision to grant consent was considered (including the full and complete records available in Council's electronic file and responses to any queries) by Alana Standish, Team Leader, Resource Consents, under delegated authority pursuant to Section 34A of the RMA.

1. SUMMARY OF PROPOSAL AND SITE DESCRIPTION

Consent is sought to change conditions 1, 4 and 9(k) of RM161093 (as varied by RM181358) to provide for an amended trail design.

The applicant has provided a detailed description of the proposal in Section 2 of the report entitled “*Application for Variation to Resource Consent RM161093 (Lot 103 DP 535793 – McDonnell Road, Arrowtown)*”, prepared by Campbell Hills of C. Hughes & Associates Ltd, and submitted as part of the application (hereon referred to as the applicant’s AEE and attached as Appendix 2). This description is considered accurate and is adopted for the purpose of this report with the following additions:

The ‘boardwalk’ referenced in the AEE proposal description, is an existing structure, however, it is not a consented structure. This application is to change the approved trail design under RM161093, which, in the boardwalk location, was a retained fill structure with handrail. Given that the approved design was not deemed to comply with QLDC *Cycle Trail Design Standards & Specifications*, the design was modified to achieve a Grade 3 standard through the construction of the elevated boardwalk. The applicant has confirmed that the boardwalk was constructed to the same level as the fill structure.

The application states that the revised Trail 1 surface characteristics will consist of a compacted gravel surface with low retaining and timber edging. The proposed steps will be constructed using similar materials to the remainder of the trail, with timber battens along riser edges and compacted gravel between risers. Furthermore, the layout (width, height and depth) of the steps will be in accordance with SNZ HB 8630:2004 and Building Code guidelines. This construction will promote usability and safety, particularly in terms of minimising trip risk and maximising slip resistance. The adjoining timber and wire mesh barrier will also assist usability and safety (being compliant with SNZ HB 8630:2004) and will double as a hand rail (see page 10).

The application seeks to change conditions associated with the Land Use component of RM161093 that relate to the pedestrian and cycleway that connects the Arrowsouth subdivision to Advance Terrace. This is not considered a change to the activity consented under RM161093 and is appropriate to consider as a change to conditions.

Site Description

The site is a roughly rectangular shaped allotment, located on the northeast side of McDonnell Road, Arrowtown. The site topography consists of a uniform, gradually sloping lower plane, and a large escarpment leading up to the existing residential properties on Advance Terrace and Cotter Avenue. The site contains partially constructed pedestrian and cycle way and an elevated wooden boardwalk that is to be removed. The surrounding area is residential with a mix of lots that have and have not yet been built upon.

Relevant Site History

Resource consent RM161093 (granted 3 August 2017) approved a 25 lot subdivision consisting of 20 residential freehold titles, one road, and one stormwater allotment to be vested in Council, three private open space allotments (the balance of the site); and land use consents for the open space management plan associated with the subdivision which included a trail, and for associated earthworks.

Resource consent RM181358 (granted 11 March 2019) approved land use consent for signage associated with the subdivision and a s127 to change conditions 1 and 23(a) of RM161093 to update the scheme plan and allow the Arrowfields waste water network to be a full pressure network.

2. ACTIVITY STATUS

2.1 RESOURCE MANAGEMENT ACT 1991

The proposed activity requires resource consent for the following reason:

- A **discretionary** activity consent pursuant to section 127(3)(a) of the RMA, which deems any application to change or cancel consent conditions to be a discretionary activity. It is proposed to change Conditions 1, 4 and 9(k) of RM161093 (as varied by RM181358) to provide for an amended trail design.

Overall, the application is being considered and processed as a **discretionary** activity under the RMA.

NOTIFICATION DETERMINATION DECISION UNDER SECTIONS 95A AND 95B OF THE RESOURCE MANAGEMENT ACT

3. SECTION 95A – PUBLIC NOTIFICATION

Section 95A of the RMA requires a decision on whether or not to publicly notify an application. The following steps set out in this section, in the order given, are used to determine whether to publicly notify an application for a resource consent.

3.1 Step 1 – Mandatory public notification

The applicant has not requested public notification of the application (s95A(3)(a)).

Public Notification is not required as a result of a refusal by the applicant to provide further information or refusal of the commissioning of a report under section 92(2)(b) of the RMA (s95A(3)(b)).

The application does not involve exchange to recreation reserve land under section 15AA of the Reserves Act 1977 (s95A(3)(c)).

Therefore, public notification is not required by Step 1.

3.2 Step 2 – Public notification precluded

Public notification is not precluded by any rule or national environmental standard (s95A(5)(a)).

The proposal is not:

- a controlled activity; or
- a boundary activity as defined by section 87AAB that is restricted discretionary, discretionary or non-complying;

Therefore, public notification is not precluded (s95A(5)(b)).

3.3 Step 3 – If not precluded by Step 2, public notification is required in certain circumstances

Public notification is not specifically required under a rule or national environmental standard (s95A(8)(a)).

A consent authority must publicly notify an application if notification is not precluded by Step 2 and the consent authority decides, in accordance with s95D, that the proposed activity will have or is likely to have adverse effects on the environment that are more than minor (s95A(8)(b)).

An assessment in this respect is therefore undertaken, and decision made in sections 3.3.1 - 3.3.4 below:

3.3.1 Effects that must / may be disregarded (s95D(a)-(e))

Effects that must be disregarded:

- *Effects on the owners or occupiers of land on which the activity will occur and on adjacent land (s95D(a)).*
- *Trade competition and the effects of trade competition (s95D(d)).*
- *The following persons have provided their **written approval** and as such adverse effects on these parties have been disregarded (s95D(e)).*

Person (owner/occupier)	Address (location in respect of subject site)
David Palmer and Elizabeth Palmer	14 Advance Terrace (north)
Derek Brown and Anna Brown	18 Advance Terrace (north)
Gregory Turner, Sally Turner and Clare Malthus	20 Advance Terrace (east)



Figure 1: Aerial of subject site and surrounds indicating written approvals obtained (yellow stars).

Effects that may be disregarded:

- An adverse effect of the activity if a rule or national environmental standard permits an activity with that effect (s95D(b) – referred to as the “permitted baseline”. The relevance of a permitted baseline to this application is provided in section 3.3.2 below.

3.3.2 Permitted Baseline (s95D(b))

The consent authority **may** disregard an adverse effect of the activity if a rule or national environmental standard permits an activity with that effect. In this case, any variation of consent conditions requires consent as a discretionary activity therefore the permitted baseline is not considered relevant.

3.3.3 Assessment: Effects On The Environment

Taking into account sections 3.3.1 and 3.3.2 above, the following assessment determines whether the proposed activity will have, or is likely to have, adverse effects on the environment that are more than minor that will require public notification (s95A(8)(b)).

The Assessment of Effects provided at pages 9 to 14 of the applicant's AEE is considered accurate. It is therefore adopted for the purposes of this report, with the following additional assessment:

The application has been assessed by Council's Development Engineer, Mr Ockert Vermeulen (see Appendix 3). Mr Vermeulen has accepted the expert opinion in the letter prepared by GeoSolve Ltd and is satisfied that the proposed earthworks are feasible, will not result in any land instability on adjacent sites, and comply with the District Plan requirements. Mr Vermeulen raised no concerns from an engineering perspective and is satisfied that the recommendations within RM161093 remain relevant. Mr Vermeulen's assessment is accepted, and adverse effects in regard to earthworks are considered to be less than minor.

Overall, the amended walkway design is considered to be sympathetic to the site's topography and to maintain the visual amenity of the site and surrounding environment. Council's Parks and Reserves team have engaged Giulio Chapman-Olla of Southern Civil Consulting to review the proposed changes. Mr Chapman-Olla is satisfied that the changes align with advice provided previously and has raised no concerns.

3.3.4 Decision: Effects On The Environment (s95A(8))

On the basis of the above assessment, it is assessed that the proposed activity will not have adverse effects on the environment that are more than minor. Therefore, public notification is not required under Step 3.

3.4 Step 4 – Public Notification in Special Circumstances

There are no special circumstances in relation to this application.

4. LIMITED NOTIFICATION (s95B)

Section 95B(1) requires a decision on whether there are any affected persons (under s95E). The following steps set out in this section, in the order given, are used to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified under section 95A.

4.1 Step 1: certain affected groups and affected persons must be notified

Determination under s95B(2)

The proposal does not affect protected customary rights groups, and does not affect a customary marine title group; therefore limited notification is not required.

Determination under s95B(3)

Limited notification is not required under Step 1 as the proposal is not on or adjacent to, or may affect land subject to a statutory acknowledgement under Schedule 11, and the person to whom the statutory acknowledgement is made is not determined an affected person under section 95E (s95B(3)).

4.2 Step 2: if not required by Step 1, limited notification precluded in certain circumstances

Limited notification is not precluded under Step 2 as the proposal is not subject to a rule in the District Plan or is not subject to a NES that precludes notification (s95B(6)(a)).

Limited notification is not precluded under Step 2 as the proposal is not a controlled activity land use (s95B(6)(b)).

4.3 Step 3: if not precluded by Step 2, certain other affected persons must be notified

If limited notification is not precluded by Step 2, a consent authority must determine, in accordance with section 95E, whether the following are affected persons:

Boundary activity

The proposal is not a boundary activity where the owner of an infringed boundary has provided their approval.

Any other activity

The proposal is not a boundary activity and therefore the proposed activity falls into the ‘*any other activity*’ category (s95B(8)), and the adverse effects of the proposed activity are to be assessed in accordance with section 95E.

4.3.1 Considerations in assessing adverse effects on Persons (S95E(2)(a)-(c))

- a) The consent authority **may** disregard an adverse effect of the activity on a person if a rule or national environmental standard permits an activity with that effect (a “permitted baseline”). Section 3.3.2 above sets out the relevance of the permitted baseline to this application.
- b) The consent authority **must** disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and
- c) The consent authority **must** have regard to every relevant statutory acknowledgement specified in [Schedule 11](#).

4.3.1 [iii] Persons who have provided written approval (s95E(3))

The persons identified in Section 3.3.1 above have provided their **written approval** and as such adverse effects on these parties are disregarded for the purpose of s95E(3).

4.3.2 Assessment: Effects on Persons

Taking into account the exclusions in sections 95E(2) and (3) as set out in section 4.3.1 above, the following outlines an assessment as to whether the activity will have or is likely to have adverse effects on persons that are minor or more than minor:

It is noted that RM161093 was processed on a non-notified basis. The amended walkway design is similar to the approved design, but follows the site topography more closely and requires reduced retaining heights, therefore is considered to be more sympathetic to the site’s topography. When considering the consented design, it is not considered that the proposed changes will result in adverse effects on any persons over and above what has already been approved. Furthermore, proposed landscaping will soften the appearance of the built form as it becomes more established over time.

Overall, no persons are considered to be adversely affected by the proposal.

4.3.3 Decision: Effects on Persons (s95E(1))

In terms of section 95E of the RMA, and on the basis of the above assessment, no person is considered to be adversely affected.

Therefore, limited notification is not required under Step 3.

4.4 Step 4 – Further Notification in Special Circumstances (s95B(10))

Special circumstances do not apply that require limited notification.

5. NOTIFICATION DETERMINATION

For the reasons set out in sections 3 and 4 of this notification decision report, under s95A and s95B of the RMA, the application is to be processed on a non-notified basis.

Prepared by



Danielle Ter Huurne
PLANNER

Decision made by



Alana Standish
RESOURCE CONSENTS TEAM LEADER

DECISION UNDER SECTION 104 OF THE RESOURCE MANAGEMENT ACT

6. S104 ASSESSMENT

This application must be considered in terms of Section 104 of the RMA.

Subject to Part 2 of the RMA, Section 104 sets out those matters to be considered by the consent authority when considering a resource consent application. Considerations of relevance to this application are:

- (a) *any actual and potential effects on the environment of allowing the activity; and*
- (ab) *any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and*
- (b) *any relevant provisions of:*
 - (i) *A national environmental standard;*
 - (ii) *other regulations;*
 - (iii) *a national policy statement;*
 - (iv) *a New Zealand coastal policy statement;*
 - (v) *a regional policy statement or proposed regional policy statement;*
 - (vi) *a plan or proposed plan; and*
- (c) *any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

6.1 EFFECTS ON THE ENVIRONMENT (s104(1)(a)&(ab))

Actual and potential effects on the environment have been outlined in the section 95 report. Conditions of consent can be imposed under s108 of the RMA as required to avoid, remedy or mitigate adverse effects (s104(1)(a)).

6.2 RELEVANT DISTRICT PLAN PROVISIONS (s104(1)(b)(vi))

Operative District Plan

An assessment of the relevant operative objectives and policies is provided on pages 7 and 8 of the Applicant's AEE. This is considered accurate and is adopted for the purpose of this report. The amended walkway design is considered to be more sympathetic to the topography of the site and its appearance will be softened over time as vegetation becomes established. Overall, the proposal is considered to be consistent with the relevant provisions of the ODP.

6.3 PART 2 OF THE RMA

The purpose of the RMA is to promote the sustainable management of natural and physical resources. The proposal is considered to satisfy the sustainable management purpose of Part 2 of the RMA as the proposal will provide for the amended boardwalk design which will provide for the wellbeing of the community, whilst mitigating adverse effects on the environment.

Section 6 of the Act sets out a number of matters of national importance including (but not limited to) the protection of outstanding natural features and landscapes and historic heritage from inappropriate subdivision, use and development. No matters of national importance are relevant to this application.

Section 7 identifies a number of "other matters" to be given particular regard by Council and includes (but is not limited to) Kaitiakitanga, the efficient use of natural and physical resources, the maintenance and

enhancement of amenity values, and maintenance and enhancement of the quality of the environment. It is considered the proposal will maintain amenity values and the quality of the environment.

Section 8 requires Council to take into account the principles of the Treaty of Waitangi. The proposal does not offend against the principles of the Treaty of Waitangi.

Overall, the proposal is considered to meet the purpose and principles of the RMA.

7.0 DECISION ON VARIATION PURSUANT TO SECTION 127 OF THE RMA

Consent is **granted** for the application by Arrowsouth Properties Limited to change Conditions 1, 4 and 9(k) of resource consent RM161093, such that:

1 Conditions 1, 4 and 9(k) of resource consent RM161093 (as varied by RM181358) is amended to read as follows (deleted text struck-through, added text underlined):

1. That the development must be undertaken/carried out in accordance with the following plans:

Queenstown Lakes District Council (revised by C Hughes & Associates Ltd):

- Arrowsouth Properties Ltd – Location Plan, dated February 2016

C Hughes & Associates Ltd:

- Proposed Subdivision of Lot 29 DP 369201 (Sheet 1 – Overlay on Arrowsouth Structure Plan & Indicative Subdivision Layout Plan), Plan No C1212 Issue K (dated 6 March 2019)
- Proposed Subdivision of Lot 29 DP 369201 (Sheet 2 – Proposed Subdivision Layout), Plan No C1212 Issue K (dated 6 March 2019).
- Arrowsouth – Prelim. Engineering Design Rooding Layout & Typical Cross Sections, Plan # C1244_01, Issue B dated 26/10/16
- Arrowsouth – Prelim. Engineering Design Road Longitudinal Sections, Plan # C1244_02, dated October 2016
- ~~Arrowsouth – Prelim. Engineering Design Trails Layout & Typical Cross Section, Plan # C1244_03, Issue D dated 28/02/17~~
- Arrowsouth – Lower Escarpment Detail Existing Ground Profile Sections, Plan # C1256 dated 28 Nov 2016
- ~~Arrowsouth – Prelim. Engineering Design Trail Longitudinal Sections, Plan # C1244_04, Issue B dated 28/02/17~~
- Arrowfields Trails Design Drawings, Trails Layout & Typical Cross Sections, Plan No. C1346_01, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- Arrowfields Trails Design Drawings, Escarpment Trails Longitudinal Sections, Plan No. C1346_02, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- Arrowfields Trails Design Drawings, Creek-side Trails Longitudinal Sections, Plan No. C1346_03, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design, Drawing No. C1471, Revision C, Sheets 1-3, Dated 15/04/21 (Original drawing date April 2020)
- Arrowsouth – Prelim. Engineering Design Services Layout, Plan # C1244_05, Issue B dated 27/10/16
- Arrowsouth – Prelim. Engineering Design Certified Fill Earthworks Layout, Plan # C1244_06, dated February 2017
- ~~Private Open Space Management Plan, updated March 2017 (to be updated in accordance with Condition 22)~~
- Private Open Space Management Plan, updated 2 February 2021
- Overarching Open Space Management Plan, updated March 2017 (to be updated in accordance with Condition 22)

stamped as approved on 5 July 2017, ~~and 11 March 2019, and 20 August 2021 (with the exception of the Private Open Space Management Plan and Overarching Open Space~~

~~Management Plan which are to be updated~~) and the application as submitted, with the exception of the amendments required by the following conditions of consent

4. All trail works shall be carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Cycle Trail Design Standards and Specifications dated 27 August 2015 and subsequent amendments to that document up to the date of issue of any resource consent, with the exception of the "steps with bicycle wheeling ramp" portion that shall be constructed in accordance with drawing C1471 Revision C and as unless otherwise agreed by the Parks and Reserves Manager.

Note: The current standards are available on Council's website via the following link: <http://www.qldc.govt.nz/assets/Uploads/Council-Documents/2015-Full-Council-Agendas/29-October-2015/Item-4/4a-QLDC-Cycle-Trail-Design-Standard-2015-Attachment-A.PDF>

- 9k) The formation of unsealed Trails 1 and 2 across Lot 103 in general accordance with Council standards and as shown in preliminary engineering designs submitted with the application on drawings C1346 Issue A (Sheets 1-3), being the "Arrowfields Trails Design Drawings", and C1471 Revision C (Sheets 1-3), being the "RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design.

Advice note:

- All other conditions of RM161093 shall continue to apply.

Prepared by



Danielle Ter Huurne
PLANNER

Decision made by



Alana Standish
RESOURCE CONSENTS TEAM LEADER

8.0 DEVELOPMENT CONTRIBUTIONS AND ADMINISTRATIVE MATTERS

Local Government Act 2002: Development Contributions

Development contributions are required with respect to RM161093 in accordance with Council's development contribution policy. This section 127 application itself is not considered a "Development" in terms of the Local Government Act 2002 as it will not generate a demand for network infrastructure and reserves and community facilities. That does not change any development contribution requirement under RM161093.

Administrative Matters

The costs of processing the application are currently being assessed and you will be advised under separate cover whether further costs have been incurred.

The Council will contact you in due course to arrange the required monitoring. It is suggested that you contact the Council if you intend to delay implementation of this consent or if all conditions have been met.

This resource consent is not a building consent granted under the Building Act 2004. A building consent must be obtained before construction can begin.

This resource consent must be exercised within five years from the date of this decision subject to the provisions of section 125 of the RMA.

If you have any enquiries, please contact Danielle Ter Huurne on phone (03) 441 0499 or email Danielle.terhuurne@qldc.govt.nz

9.0 APPENDICES LIST

APPENDIX 1 – Updated Consent Conditions RM161093 (as varied by RM181358)

APPENDIX 2 – Applicant's AEE

APPENDIX 3 – Engineering Memo

APPENDIX 4 - Private Open Space Management Plan, updated 2 February 2021

APPENDIX 1 – UPDATED CONSENT CONDITIONS RM161093 (AS VARIED BY RM181358)

General Conditions

1. That the development must be undertaken/carried out in accordance with the following plans:

Queenstown Lakes District Council (revised by C Hughes & Associates Ltd):

- Arrowsouth Properties Ltd – Location Plan, dated February 2016

C Hughes & Associates Ltd:

- Proposed Subdivision of Lot 29 DP 369201 (Sheet 1 – Overlay on Arrowsouth Structure Plan & Indicative Subdivision Layout Plan), Plan No C1212 Issue K (dated 6 March 2019)
- Proposed Subdivision of Lot 29 DP 369201 (Sheet 2 – Proposed Subdivision Layout), Plan No C1212 Issue K (dated 6 March 2019).
- Arrowsouth – Prelim. Engineering Design Rooding Layout & Typical Cross Sections, Plan # C1244_01, Issue B dated 26/10/16
- Arrowsouth – Prelim. Engineering Design Road Longitudinal Sections, Plan # C1244_02, dated October 2016
- Arrowsouth – Lower Escarpment Detail Existing Ground Profile Sections, Plan # C1256 dated 28 Nov 2016
- Arrowfields Trails Design Drawings, Trails Layout & Typical Cross Sections, Plan No. C1346_01, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- Arrowfields Trails Design Drawings, Escarpment Trails Longitudinal Sections, Plan No. C1346_02, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- Arrowfields Trails Design Drawings, Creek-side Trails Longitudinal Sections, Plan No. C1346_03, Issue A dated 25/01/21 (Original drawing date Sept 2018)
- RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design, Drawing No. C1471, Revision C, Sheets 1-3, Dated 15/04/21 (Original drawing date April 2020)
- Arrowsouth – Prelim. Engineering Design Services Layout, Plan # C1244_05, Issue B dated 27/10/16
- Arrowsouth – Prelim. Engineering Design Certified Fill Earthworks Layout, Plan # C1244_06, dated February 2017
- Private Open Space Management Plan, updated 2 February 2021
- Overarching Open Space Management Plan, updated March 2017 (to be updated in accordance with Condition 22)

stamped as approved on 5 July 2017, 11 March 2019 and 20 August 2021 and the application as submitted, with the exception of the amendments required by the following conditions of consent.

2. This consent shall not be exercised and no work or activity associated with it may be commenced or continued until the following charges have been paid in full: all charges fixed in accordance with section 36(1) of the Resource Management Act 1991 and any finalised, additional charges under section 36(3) of the Act.

General

3. All engineering works shall be carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Land Development and Subdivision Code of Practice adopted on 3rd June 2015 and subsequent amendments to that document up to the date of issue of any resource consent.

Note: The current standards are available on Council's website via the following link:
<http://www.qldc.govt.nz>

4. All trail works shall be carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Cycle Trail Design Standards and Specifications dated 27 August 2015 and subsequent amendments to that document up to the date of issue of any resource consent with the exception of the "steps with bicycle wheeling ramp" portion that shall be constructed in accordance with drawing C1471 Revision C and as otherwise agreed by the Parks and Reserves Manager.

Note: The current standards are available on Council's website via the following link: <http://www.qldc.govt.nz/assets/Uploads/Council-Documents/2015-Full-Council-Agendas/29-October-2015/Item-4/4a-QLDC-Cycle-Trail-Design-Standard-2015-Attachment-A.PDF>

To be completed prior to the commencement of any works on-site

5. At least 5 working days prior to commencing work on site the consent holder shall advise the Principal Resource Management Engineer at Council of the scheduled start date of physical works. Compliance with the prior to commencement of works conditions detailed in Conditions (6 to 12) below shall be demonstrated.
6. The owner of the land being developed shall provide a letter to the Principal Resource Management Engineer at Council advising who their representative is for the design and execution of the engineering works and construction works required in association with this development and shall confirm that these representatives will be responsible for all aspects of the works covered under Sections 1.7 & 1.8 of QLDC's Land Development and Subdivision Code of Practice, in relation to this development.
7. Prior to commencing works within the McDonnell Road reserve boundary, the consent holder shall submit a traffic management plan to the Road Corridor Engineer at Council for approval. The Traffic Management Plan shall be prepared by a Site Traffic Management Supervisor. All contractors obligated to implement temporary traffic management plans shall employ a qualified STMS on site. The STMS shall implement the Traffic Management Plan. A copy of the approved plan shall be submitted to the Principal Resource Management Engineer at Council prior to works commencing.
8. Prior to commencing any work on the site the consent holder shall install a construction vehicle crossing, which all construction traffic shall use to enter and exit the site. The crossing shall be located at the proposed Road 01 intersection with McDonnell Road. The minimum standard for this crossing shall be a minimum compacted depth of 150mm AP40 metal that extends 10m into the site. The construction traffic crossing shall be upgraded with the road and intersection formations and improvements.
9. Prior to the commencement of any works on the land being developed the consent holder shall provide to the Queenstown Lakes District Council for review and acceptance, copies of design certificates in the form of Schedule 1A of QLDC's Land Development and Subdivision Code of Practice, specifications, calculations and design plans as is considered by Council to be both necessary and adequate, in accordance with Condition (4), to detail the following engineering works required:
 - a) The provision of a water supply to Lots 1 - 20 in terms of Council's standards and connection policy. This shall include an Acuflo CM2000 as the toby valve and an approved water meter as detailed in QLDC Water Meter Policy (Appendix A), dated August 2015. The costs of the connections shall be borne by the consent holder.
 - b) The provision of a foul sewer connection from Lots 1 - 20 to Council's reticulated sewerage system in accordance with Council's standards and connection policy, which shall be able to drain the buildable area within each lot. The connections shall be designed to reflect either gravity or pressure systems. The costs of the connections shall be borne by the consent holder.

- c) The provision of a 'Low Impact Design' stormwater reticulation and disposal system in general accordance with the application. The system shall include the provision of a connection from all future impervious areas in Lots 1 - 20 to the Council reticulated stormwater disposal system. The system design shall include consideration of an intercepting cut off drain and swale above the buildable areas to Lots 7 – 18 as mitigation against overland flows and the provision of a consent notice protecting the intercepting drain/swale, if incorporated into the designs. Roding swales shall be grassed instead of planted along internal development areas. The low impact design stormwater system shall be able to drain the entire area of each lot. The costs of the connections shall be borne by the consent holder.
- d) The provision of fire hydrants with adequate pressure and flow to service the development with a minimum Class FW2 fire fighting water supply in accordance with the NZ Fire Service Code of Practice for Firefighting Water Supplies SNZ PAS 4509:2008(or superseding standard). Any alternative solution must be approved in writing by the Area Manager for the Central North Otago branch of the New Zealand Fire Service.
- e) The provision of a sealed vehicle crossing that shall be constructed to Lots 1, 4, 6, 7, 12, 18 & 20 to Council's standards. Specifically this shall include compliant breakover angles over any swales.
- f) The formation of a sealed access extending through to the nett area of Lot 4.
- g) The provision of road lighting on in accordance with Council's road lighting policies and standards, including the *Southern Light* lighting strategy. The lighting shall extend from existing McDonnell Road lighting to the intersection with Road 01 and into the proposed development. Any road lighting installed on private roads/rights of way/access lots shall be privately maintained and all operating costs shall be the responsibility of the lots serviced by such access roads. Any lights installed on private roads/rights of way/access lots shall be isolated from the Council's lighting network circuits.
- h) The formation of Road 01 and Road 02, in accordance with Figure E12 of the Land Development and Subdivision Code of Practice, except that the minimum legal road width may be reduced to 12m minimum and indented parking provided adjacent to Lot 102 for 4 vehicles. Each road shall be provided with a 1.5m wide sealed footpath, cul-de-sac turning areas and grassed stormwater swales.
- i) The formation of intersections, in accordance with the latest Austroads intersection design guides. These designs shall be subject to review and acceptance by Council with any associated costs met by the consent holder.
- j) The extension and formation of McDonnell Road kerb and channel (K&C) and sealed footpath located west of the site to across the site frontage and beyond the intersection of proposed Road 1 with McDonnell Road. For clarity both the road, footpath and K&C shall be continuous from existing urban areas.
- k) The formation of unsealed Trails 1 and 2 across Lot 103 in general accordance with Council standards and as shown on drawings C1346 Issue A (Sheets 1-3), being the "Arrowfields Trails Design Drawings", and C1471 Revision C (Sheets 1-3), being the "RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design.
- l) The provision of Design Certificates for all engineering works associated with this subdivision/development submitted by a suitably qualified design professional (for clarification this shall include all Roads, Water, Wastewater and Stormwater reticulation). The certificates shall be in the format of the QLDC's Land Development and Subdivision Code of Practice Schedule 1A Certificate.

10. The consent holder shall install measures to control and/or mitigate any dust, silt run-off and sedimentation that may occur, in accordance with QLDC's Land Development and Subdivision Code of Practice and '*A Guide to Earthworks in the Queenstown Lakes District*' brochure, prepared by the Queenstown Lakes District Council. Specifically, the applicant shall prevent silt from earthworks entering the creek in the form of a cut off drain feeding into a sump with surface water pumped through either a hay or cloth filter prior to being allowed to discharge into the stream. These measures shall be implemented **prior** to the commencement of any earthworks on site and shall be subject to ongoing weekly monitoring reports back to Council. The measures shall remain in place for the duration of the project, until all exposed areas of earth are permanently stabilised.
11. At least 7 days prior to commencing excavations, the consent holder shall provide the Principal Resource Management Engineer at Council with the name of a suitably qualified professional as defined in Section 1.7 of QLDC's Land Development and Subdivision Code of Practice who is familiar with the Geosolve Limited report titled: '*Slope Stability Assessment, Lot 29 DP 369201, McDonnell Road Arrowtown*', dated 21 October 2016 and who shall supervise the track excavations and associated retaining wall constructions and ensure compliance with the recommendations of this report. This engineer shall be responsible for ensuring that temporary retaining is installed wherever necessary to avoid any potential erosion or instability.
12. At least 7 days prior to commencing excavations, the consent holder shall provide the Principal Resource Management Engineer at Council with the name of a suitably qualified geotechnical professional as defined in Section 2 of QLDC's Land Development and Subdivision Code of Practice and who shall supervise the earthworks and fill certification. This shall include the issue of a Completion Report and Schedule 2A certificate to the Principal Engineer for Council on completion of works and prior to subdivision completion. Any remedial works outlined on the Schedule 2A that requires works across lot boundaries shall be undertaken by the consent holder prior to s224(c) of the RMA.

To be monitored throughout earthworks

13. The earthworks, batter slopes and retaining shall be undertaken in accordance with the recommendations of the report by Geosolve Limited report titled: '*Slope Stability Assessment, Lot 29 DP 369201, McDonnell Road Arrowtown*', dated 21 October 2016.
14. The site management controls installed in Condition (10) above shall be monitored for effectiveness on a weekly basis by the consent holder during earthworks and/or immediately following heavy/prolonged rainfall events, in their ability to prevent silt laden stormwater from entering the potable water source,. Should measures not be entirely effective the consent holder shall immediately implement any measures necessary to eliminate further silt laden contaminants from entering the water source. The monitoring shall include a brief email report on system effectiveness with supporting photographs sent through to the Principal Engineer of Council at engineeringapprovals@qldc.govt.nz.
15. The consent holder shall implement suitable measures to prevent deposition of any debris on surrounding roads by vehicles moving to and from the site. In the event that any material is deposited on any roads, the consent holder shall take immediate action, at his/her expense, to clean the roads. The loading and stockpiling of earth and other materials shall be confined to the subject site.
16. No earthworks, temporary or permanent, are to breach the boundaries of the site except for the Council reviewed and accepted works within existing or proposed road reserves and connections to Council infrastructure assets.

To be completed before Council approval of the Survey Plan

17. Prior to the Council signing the Survey Plan pursuant to Section 223 of the Resource Management Act 1991, the consent holder shall complete the following:
- a) All necessary easements shall be shown in the Memorandum of Easements attached to the Survey Plan and shall be duly granted or reserved. All Council services within private land shall be provided with 3m wide service easements in gross.
 - b) The names of all roads, private roads & private ways which require naming in accordance with Council's road naming policy shall be shown on the survey plan.

[Note: the road naming application should be submitted to Council prior to the application for the section 223 certificate]

Amalgamation Conditions

18. The following shall be registered with Land Information New Zealand (CSN XXXXX):
- *"That Lots 102 & 103 hereon be held in the same Computer Freehold Register"*
 - *"That Lot 104 hereon be held as to twelve undivided one-twelfth shares by the owners of Lots 7 - 18 hereon as tenants in common in the said shares and that individual Computer Freehold Registers be issued in accordance therewith"*

To be completed before issue of the s224(c) certificate

19. Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the consent holder shall complete the following:
- a) The submission of 'as-built' plans and information required to detail all engineering works completed in relation to or in association with this subdivision/development at the consent holder's cost. This information shall be formatted in accordance with Council's 'as-built' standards and shall include all Roads (including right of ways and access lots), Water, Wastewater and Stormwater reticulation (including private laterals and toby positions).
 - b) The completion and implementation of all works detailed in Condition (9) above.
 - c) The submission of a Geotechnical Completion Report and Schedule 2A certificate to the Principal Engineer for Council. Any remedial works outlined on the Schedule 2A that requires works across lot boundaries shall be undertaken by the consent holder prior to s224(c) of the RMA.
 - d) The submission of a completion certificate for the completion of the trail in the form of NZS 4404:2010 Schedules 1B & 1C which demonstrates the trail achieves the needs of the Grade 3 trail user unless otherwise agreed by the Parks and Reserves Manager.
 - e) Written confirmation shall be provided from the electricity network supplier responsible for the area, that provision of an underground electricity supply has been made available (minimum supply of single phase 15kva capacity) to the net area of all saleable lots created and that all the network supplier's requirements for making such means of supply available have been met.
 - f) Written confirmation shall be provided from the telecommunications network supplier responsible for the area, that provision of underground telephone services has been made available to the net area of all saleable lots created and that all the network supplier's requirements for making such means of supply available have been met.

- g) The submission of Completion Certificates from the Contractor and the Engineer advised in Condition (9) for all engineering works completed in relation to or in association with this subdivision/development (for clarification this shall include all Roads, Water, Wastewater and Stormwater reticulation). The certificates shall be in the format of a Producer Statement, or the QLDC's Land Development and Subdivision Code of Practice Schedule 1B and 1C Certificate.
- h) All newly constructed foul sewer and stormwater mains shall be subject to a closed circuit television (CCTV) inspection carried out in accordance with the New Zealand Pipe Inspection Manual. A pan tilt camera shall be used and lateral connections shall be inspected from inside the main. The CCTV shall be completed and reviewed by Council before any surface sealing.
- i) The submission of an operation and maintenance manual for the stormwater soakage device that outlines adequate maintenance instructions and frequencies.
- j) The consent holder shall enter into a developer's agreement between the developer and Council. This agreement shall bind the developer to its requirements in relation to the internal stormwater disposal systems. It shall outline to Councils satisfaction the ongoing requirements of the developer to undertake, for a period of five years, the on-going monitoring and maintenance of the internal stormwater disposal systems associated with the subdivision created under RM161093 in accordance with an approved operations and maintenance manual and monitoring of the water quality of discharge from that system. The agreement shall provide for:
 - (i) A maintenance period for the stormwater soakage devices in accordance with an approved operation and maintenance manual that shall extend for a total of five years following 224(c) certification prior to the asset being accepted for maintenance by Council.
 - (ii) Periodic monitoring of water quality at the boundary of the site downstream from the stormwater soakage devices. This shall include 6 monthly tests and/or immediately after 2 storm events each year until the defects period lapses.
 - (iii) Prepare a brief report annually detailing results of monitoring conclusions and present said report to QLDC.
 - (iv) The developer's agreement shall be checked and approved by the Council's solicitors at the consent holder's expense to ensure that all of the Council's interests and liabilities are adequately protected.
- k) All signage shall be installed in accordance with Council's signage specifications and all necessary road markings completed on all public or private roads (if any), created by this subdivision.
- l) Road naming shall be carried out, and signs installed, in accordance with Council's road naming policy.
- m) All earthworked/exposed areas shall be top-soiled and grassed/revegetated or otherwise permanently stabilised.
- n) The consent holder shall remedy any damage to all existing road surfaces and berms that result from work carried out for this consent.
- o) Provide a solicitors undertaking that the land covenant referred to in Condition 24 be registered on Lots 7-18 immediately upon issue of those titles.

20. Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the consent holder shall provide for review a covenant to be registered on Lots 7 – 18 that sets out management responsibilities of those lot owners to ensure the maintenance obligations contained in the consent notice on Lot 104 (owned by them in equal shares) are complied with. The terms of this covenant shall be checked and approved by the Council's solicitors at the consent holder's expense to ensure that a framework is in place requiring the lot owners to comply with the requirements of the consent notice on Lot 104 in a uniform and consistent manner and must include the following essential terms:
- a) Lot 104 shall at all times be held in the ownership of all the Lot Owners as tenants in common of undivided one-twelfth shares.
 - b) The Lot Owners will be the 12 owners of lots 7-18 as shown on the scheme plan.
 - c) The Lot Owners shall be liable to make a fair and reasonable contribution towards the maintenance obligations (as required by the Lot 104 consent notice and resource consent conditions) relating to Lot 104 on a proportionate basis.
 - d) The Lot Owners will all be members of the Owners Group.
 - e) The Owners Group will have the following powers and obligations:
 - (i) To meet as required but at least annually and pay such levies as are required to fund the maintenance obligations as required by the resource consent conditions (through the Private Open Space Management Plans and consent notice on Lot 104).
 - (ii) Elect one or more of the Lot Owners (Owner's Representatives) to determine and collect maintenance levies and engage and pay contractors on behalf of the other Lot Owners to ensure the obligations in the covenant are complied with.
 - (iii) The Owners Representatives must be elected prior to the original developer ceasing maintenance obligations in relation to Lot 104 DP [xxxxx].
 - (iv) These maintenance levies are payable to the Owner's Representatives (if elected) to pay contractors on behalf of the other Lot Owners to ensure the obligations in the covenant are complied with.
 - (v) Levies shall be payable within 21 days of the decision by the Lot Owners (or the Owner's Representatives) to collect the levies from the Lot Owners.
 - (vi) The Lot Owners or Owner's Representatives may elect to open a bank account to hold levies.
 - (vii) The Lot Owners or Owner's Representatives must engage a third party to carry out the maintenance obligations and the Lot Owners are collectively responsible for paying any associated costs.
 - (viii) If levies are not paid the Lot Owners may make claim and take such legal proceedings as are necessary to recover unpaid levies as a civil debt due and not right of set off or dispute or contest such levy shall accrue to the lot owner defaulting on payment when levies are due. Such a lot owner is also responsible for any additional costs, bank fees, charges, interest or otherwise incurred as a result of the short payment.
 - (ix) Where payment by a lot owner in any 12 month period exceeds the costs incurred to carry out the maintenance, the amount of the excess shall stand as a credit to that lot owner.
 - (x) Any dispute between the Lot Owners shall be determined by a simple majority of votes by the Lot Owners.
 - (xi) Where an individual lot owner is responsible for a deliberate act or omission in relation to Lot 104 they shall be responsible for the payment of all costs attributable to that act or omission.
 - f) Lot 104 may be used jointly and severally by the Lot Owners, their families, guests and invitees in such a manner as is consistent with the Arrowsouth Properties Limited Private Open Space Management Plan dated March 2017.

NOTE: The Arrowsouth Properties Limited Private Open Space Management Plan dated March 2017 is to be updated in accordance with Condition 22.

- g) The obligations within the covenant do not take effect until growing season 3 following the establishment of the planting.

Staging

21. The approved Private Open Space Management Plan(s) for Private Open Space Activity Areas E1, E5 and W1 and the Roadside Planting Strip shall be implemented prior to the subdivision receiving certification under section 224(c) of the Act. The term 'Implemented' shall be deemed to be when:
- a) Planting identified within the Private Open Space Management Plan has occurred;
 - b) Fencing identified within the Private Open Space Management Plan of waterways has occurred;
 - c) The trail which traverses any part of the Activity Area or the corresponding Private Open Space Activity Area shall be completed to a suitable standard for public use and its ongoing access for public use is legally secured.
22. Prior to certification pursuant to section 224 of the Resource Management Act 1991 the Consent Holder shall provide to the Manager – Planning Practice an updated Private Open Space Management Plan and Overarching Open Space Management Plan based on the revised scheme plans identified in Condition (1) above.

Ongoing Conditions - Consent Notices

23. The following conditions of the consent shall be complied with in perpetuity and shall be registered on the relevant Titles referred to in this condition by way of Consent Notice pursuant to s.221 of the Act.
- a) At the time a dwelling is constructed on Lots 1 - 20, the owner for the time being will require individual low pressure sewage pumps to discharge wastewater from the lot to the reticulated network. The lot owner shall be responsible for all associated costs for the installation and maintenance of all aspects of the system located within the lot boundary. The final wording of the consent notice instrument shall be checked and approved by the Council's solicitors at the consent holder's expense prior to registration to ensure that all of the Council's interests and liabilities are adequately protected in accordance with the Council's low pressure sewer policy. Council's Resource Management Engineering department can provide guidance regarding the policy as required.
 - b) At the time a dwelling is constructed the owner for the time being shall construct a concrete vehicle crossing to the site to Council's standards and as constructed for Lots 1, 4, 6, 7, 12, 18 and 20. The design of the vehicle crossing shall be subject to approval by Council under a 'Connection to Council Service Application'. The approval should be obtained and construction of the crossing approved by a Council Inspector prior to occupation of the dwelling.
 - c) No direct vehicle access onto McDonnell Road shall be provided from Lots 1, 4, 5, 6 & 20.
 - d) In the event that the Schedule 2A certificate issued under Condition (19) contains limitations or remedial works required to support dwelling development and not cross boundaries, then a consent notice shall be registered on the relevant Computer Freehold Registers. The consent notice condition shall read;
"Prior to any dwelling construction work (other than work associated with geotechnical investigations, the owner for the time being shall submit to Council for certification, plans prepared by a suitably qualified engineer detailing the proposed foundation design, earthworks and/or other required works in accordance with the Schedule 2A certificate attached. All such measures shall be implemented prior to occupation of any building."

- e) Any stormwater cut off drains/swales designed in Condition (9)(c) above that require permanent protection and/or maintenance within the lot boundaries shall be maintained by the individual lot owners. The final wording of the consent notice instrument shall be checked and approved by the Council's solicitors at the consent holder's expense prior to registration to ensure that all of the Council's interests and liabilities are adequately protected.
- f) All private open space areas, building/fencing restriction and landscaping maintenance areas labelled on the plans identified in Condition (1) shall be managed in perpetuity in accordance with the Private Open Space Management Plan and Overarching Open Space Management Plan required under Condition 22.
- g) With regard to Lot 103, all building and earthworks are prohibited within the area shown as POS-E5 on the Structure Plan from the Arrowtown South Special Zone in the Operative District Plan.

Ongoing Conditions – Covenants

24. The following conditions of the consent shall be complied with in perpetuity and shall be registered on the relevant Titles of Lots 7 – 18 upon issue by way of a covenant being entered into in favour of the Queenstown Lakes District Council pursuant to section 108(2) of the Resource Management Act 1991 [volunteered condition]:
- a) Lot 104 shall at all times be held in the ownership of all the Lot Owners as tenants in common of undivided one-twelfth shares.
 - b) The Lot Owners will be the 12 owners of lots 7 - 18 as shown on the scheme plan.
 - c) The Lot Owners shall be liable to make a fair and reasonable contribution towards the maintenance obligations (as required by the Lot 104 consent notice and resource consent conditions) relating to Lot 104 on a proportionate basis.
 - d) The Lot Owners will all be members of the Owners Group.
 - e) The Owners Group will have the following powers and obligations:
 - (i) To meet as required but at least annually and pay such levies as are required to fund the maintenance obligations as required by the resource consent conditions (through the Private Open Space Management Plans and consent notice on Lot 104).
 - (ii) Elect one or more of the Lot Owners (Owner's Representatives) to determine and collect maintenance levies and engage and pay contractors on behalf of the other Lot Owners to ensure the obligations in the covenant are complied with.
 - (iii) The Owners Representatives must be elected prior to the original developer ceasing maintenance obligations in relation to Lot 104 DP [xxxxx].
 - (iv) These maintenance levies are payable to the Owner's Representatives (if elected) to pay contractors on behalf of the other Lot Owners to ensure the obligations in the covenant are complied with.
 - (v) Levies shall be payable within 21 days of the decision by the Lot Owners (or the Owner's Representatives) to collect the levies from the Lot Owners.
 - (vi) The Lot Owners or Owner's Representatives may elect to open a bank account to hold levies.
 - (vii) The Lot Owners or Owner's Representatives must engage a third party to carry out the maintenance obligations and the Lot Owners are collectively responsible for paying any associated costs.
 - (viii) If levies are not paid the Lot Owners may make claim and take such legal proceedings as are necessary to recover unpaid levies as a civil debt due and not right of set off or dispute or contest such levy shall accrue to the lot owner defaulting on payment when levies are due. Such a lot owner is also responsible for any additional costs, bank fees, charges, interest or otherwise incurred as a result of the short payment.

- (ix) Where payment by a lot owner in any 12 month period exceeds the costs incurred to carry out the maintenance, the amount of the excess shall stand as a credit to that lot owner.
 - (x) Any dispute between the Lot Owners shall be determined by a simple majority of votes by the Lot Owners.
 - (xi) Where an individual lot owner is responsible for a deliberate act or omission in relation to Lot 104 they shall be responsible for the payment of all costs attributable to that act or omission.
- f) Lot 104 may be used jointly and severally by the Lot Owners, their families, guests and invitees in such a manner as is consistent with the Arrowsouth Properties Limited Private Open Space Management Plan dated March 2017.
- g) The obligations within the covenant do not take effect until growing season 3 following the establishment of the planting.

Accidental Discovery Protocol

25. If the consent holder:

- a) discovers koiwi tangata (human skeletal remains), waahi taoka (resources of importance), waahi tapu (places or features of special significance) or other Maori artefact material, the consent holder shall without delay:
 - (i) notify Council, Tangata whenua and Heritage New Zealand Pouhere Taonga and in the case of skeletal remains, the New Zealand Police.
 - (ii) stop work within the immediate vicinity of the discovery to allow a site inspection by the Heritage New Zealand Pouhere Taonga and the appropriate runanga and their advisors, who shall determine whether the discovery is likely to be extensive, if a thorough site investigation is required, and whether an Archaeological Authority is required.

Any koiwi tangata discovered shall be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to its removal or preservation. Site work shall recommence following consultation with Council, the New Zealand Pouhere Taonga, Tangata whenua, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.

- b) discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder shall without delay:
 - (i) stop work within the immediate vicinity of the discovery or disturbance and;
 - (ii) advise Council, the Heritage New Zealand Pouhere Taonga and in the case of Maori features or materials, the Tangata whenua and if required, shall make an application for an Archaeological Authority pursuant to the New Zealand Pouhere Taonga Act 2014 and;
 - (iii) arrange for a suitably qualified archaeologist to undertake a survey of the site.

Site work may only recommence following consultation with Council.

Earthworks Condition

26. Hours of operation for earthworks, shall be:

- Monday to Saturday (inclusive): 8.00am to 6.00pm.
- Sundays and Public Holidays: No Activity

In addition, no heavy vehicles are to enter or exit the site, and no machinery shall start up or operate earlier than 8.00am. All activity on the site is to cease by 6.00pm.

Advice Notes

1. This consent triggers a requirement for Development Contributions, please see the attached information sheet for more details on when a development contribution is triggered and when it is payable. For further information please contact the DCN Officer at QLDC.
2. The consent holder is advised to obtain all necessary consent from the Otago Regional Council, if any.
3. The consent holder is advised that any retaining walls, including stacked stone and gabion walls, proposed in this development which exceeds 1.5m in height or walls of any height bearing additional surcharge loads will require Building Consent, as they are not exempt under Schedule 1 of the Building Act 2004.
4. Prior approval via a Connection to Council Services for a Temporary Water Take is required if Council's water supply is to be utilised for dust suppression during earthworks. This shall include the use of a backflow prevention device to prevent contamination of Council's potable water supply.
5. Future lot-owners are advised to contact the developer to determine the installation requirements for the on-lot pressure sewer system components.

For Your Information

Monitoring

The conditions in your decision will advise if monitoring is required. To assist with compliance of your resource consent, and to avoid your monitoring deposit being used before your development starts, please complete the "[Notice of Works Starting Form](#)" and email to the Monitoring Planner at RCMonitoring@qldc.govt.nz

Environmental Management Plan

Please be aware of your requirements to appropriately manage environmental effects associated with your activity. Site management means having adequate controls in place on your site. This will ensure compliance is achieved and harmful by-products of construction activities do not damage the environment or cause nuisance to neighbours. We've provided some [advice](#) to help you mitigate any possible adverse effects that may be generated on your site as a result of construction related activities.

Engineering Acceptance

You may also have conditions that require you to apply for Engineering Acceptance. To apply, please complete the [Engineering Acceptance Application Form](#) and submit to engineeringapprovals@qldc.govt.nz. Further information regarding Engineering Acceptance can be found [here](#).

Development Contribution

If this decision requires a development contribution (DC) charge, we will be sending a notice in due course. To answer questions such as what is a DC charge, when a DC charge is triggered and timing of payments, this information is available [here](#).

If you wish to make a DC estimate calculation yourself, please use this [link](#). Full details on current and past policies can be found [here](#).

APPENDIX 2 – APPLICANT’S AEE

C. HUGHES & ASSOCIATES LTD

Surveying and Resource Management • Central Otago



Our Ref: 5479

Please reply to our Cromwell office

15 April 2021

Queenstown Lakes District Council
Private Bag 50072
Queenstown

Attention: Alana Standish (Team Leader Resource Consents)

Cromwell

17A Murray Tce
PO Box 51 T 03 4450376
Cromwell 9342 F 03 4450375
cromwell@chasurveyors.co.nz

Wanaka

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Directors: Matthew Suddaby
Jack Lister
Campbell Hills

CSNZ THE CONSULTING
SURVEYORS
OF NEW ZEALAND
A DIVISION OF THE NEW ZEALAND INSTITUTE OF SURVEYORS

Dear Alana,

Application for Variation to Resource Consent RM161093
(Lot 103 DP 535793 – McDonnell Road, Arrowtown)
Applicant: Arrowsouth Properties Limited

We forward to Queenstown Lakes District Council (QLDC), for its consideration and consent, an application for variation of resource consent RM161093 (which has previously been varied by RM181358), in accordance with Section 127 of the Resource Management Act 1991 (RMA).

This variation application is associated with the land use component of the resource consent and the subdivision consent has already been given effect to. The variation is related to a specific portion of the Arrowsouth trail network that is currently occupied by an elevated timber platform/boardwalk, being the length of 'Trail 1' between chainage 286 and chainage 324 (Boardwalk). The Boardwalk is located to the southwest of 18 Advance Terrace in Arrowtown, near the top of the escarpment leading up to Advance Terrace and in the southeast corner of the Arrowsouth Properties Ltd development site (Lot 103 DP 535793 – with legal frontage onto McDonnell Road, Arrowtown). The site/Boardwalk location is annotated on Figure 1 below.

This application has been prepared in response to concerns/complaints QLDC received from neighbours, and subsequent QLDC discussions regarding the existing Boardwalk.

Following a meeting between Arrowsouth Properties and the concerned neighbours (including legal representatives) in June 2020, and a subsequent meeting between Arrowsouth Properties, QLDC, and legal representatives and consultants in July 2020, the appropriate pathway forward has been agreed. This involves removal of the existing Boardwalk and construction of an alternative trail formation, with a gravel surface and a short section of steps with bicycle wheeling

ramp; including a low timber retaining wall with timber barrier, as previously consented/constructed elsewhere along Trail 1.

This application provides an assessment of the actual or potential effects of the proposed alternative trail formation, in the context of:

- the trail consented in RM161093, including the other/lower parts of Trail 1, which have been consented and have already been partially constructed; and
- for completeness, the original/unmodified portion of the site.

An assessment of potential effects associated with removal of the Boardwalk, and comparisons against the constructed Boardwalk, are also provided as part of this application.

Please refer to the following attached documentation as part of this application:

- The '**RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design**' plan set, which details what is intended for construction in place of the boardwalk (elevated platform).
- The '**Arrowfields Trails Design Drawings**' plan set, providing up to date drawings for the entire Arrowsouth trail network.
- The updated '**Private Open Space Management Plan** prepared by Rough and Milne Landscape Architects.¹

Please also refer to the RM161093 application documentation and consent decision, in conjunction with this variation application, for relevant detail relating to the site and the consented development.



Figure 1. Site/Boardwalk Location

¹ Please note, no updates to the Overarching Open Space Management Plan have been required.

1. BACKGROUND

1.1 QLDC District Plan

The QLDC Operative District Plan Arrowtown South Special Zone Objectives, Policies and Rules (including the associated Structure Plan) set the requirements, and provide the context, for any subdivision in the Arrowtown South Special Zone. This is the framework that guided preparation of the original Arrowsouth Properties Ltd resource consent application, and which the application was extensively assessed against.

A key component and goal of the RM161093 consent application preparation and assessment was acknowledging the District Plan requirement (established through extensive Environment Court proceedings prior to Plan Change 39) to create “... a network of walking trails” in accordance with the Zone Purpose². This is achieved through the District Plan by way of a requirement for any subdivision to include an Overarching Open Space Management Plan that identifies “the location of a proposed trail as shown indicatively on the Structure Plan” and a Private Open Space Management Plan or Plans that ensure “implementation of the trail shown on the structure plan and confirmed through the Overarching Open Space Management Plan, and provision for public access through an easement in gross.”³ The relevant assessment matters in relation to the trail network are as follows:

Section 12.32.6.2i(f)

Whether the Overarching Open Space Management Plan identifies an appropriate location for the proposed trail, taking account of and if necessary achieving a balance between the following:

- *the guidance provided by the Structure Plan as to the general route*
- *the desirability and safety of the proposed route for mountain biking and pedestrian use, meeting national standards in terms of grade and condition*
- *the need to minimise adverse effects resulting from earthworks and other modifications to the escarpment that traverses the Zone*
- *adjacent landowner privacy*
- *the provision of panoramic views available for public enjoyment*

Section 12.32.6.2ii(e)

Whether the trail as confirmed by the Overarching Open Space Management Plan is to be secured through appropriate legal means, such as an easement.

In relation to the Structure Plan guidance for the trail network (with respect to the first assessment matter under Section 12.32.6.2i(f) noted above), it is noteworthy that the Structure Plan shows and anticipates a trail between numbers 18 and 20 Advance Terrace (in the southeast corner of the site) and around the southwest extent of number 20 (on the face of the POS-E1 escarpment). Whilst the Structure Plan does not show or directly anticipate a connection from this location down the POS-E1 escarpment to the Residential Activity Area, it does anticipate a connection between the Residential Activity Area and Cotter Avenue (up the POS-E1 escarpment at the northern end of the subdivision site). Unfortunately it was not

² QLDC Operative District Plan Section 12.32.1 (Arrowtown South Zone Rules – Zone Purpose)

³ QLDC Operative District Plan Section 12.32.3.2 (Arrowtown South Zone Rules – Controlled Activities)

technically or legally possible to establish the trail connection shown on the Structure Plan between the Residential Activity Area and Cotter Avenue⁴, and it was for this reason that the trail connection was designed and consented to connect to Advance Terrace (utilising the access strip between numbers 18 and 20 Advance Terrace). As the trail is consented in its current location, and this application does not propose to materially alter that location, this information is purely by way of background and has already been assessed in terms of effects in RM161093.

1.2 QLDC Cycle Trail Design Standards & Specifications

The QLDC *Cycle Trail Design Standards & Specifications* document provides guidance for design and construction of public trails in the region so that these meet community needs and minimise QLDC maintenance costs. This document is broadly aligned with the *New Zealand Cycle Trail Design Guide*, but has slightly stricter guidance in terms of gradient and finish, and it only provides three levels of grading (technical specification), being Grades 1, 2 and 3.

The QLDC *Cycle Trail Design Standards & Specifications* were extensively referenced in the process of preparing the original Arrowsouth Properties Ltd resource consent application, as well as during the subsequent QLDC assessment processes.

Whilst the preliminary trail design submitted as part of the original resource consent application did incorporate a section of steps near 18 and 20 Advance Terrace (at the top of the escarpment leading up to Advance Terrace), this design was not acceptable to QLDC for the reason that it did not comply with the *Cycle Trail Design Standards & Specifications*. Because of this, the design was modified to achieve a Grade 3 standard and this ultimately resulted in construction of the elevated Boardwalk.

2. THE PROPOSAL

As outlined above, the applicant is requesting a consent variation to allow for removal of the existing Boardwalk and construction of an alternative trail formation in its place; a trail more subtle on the terrace face. The proposed alternative formation is a gravel surface with a short section of steps and an adjoining bicycle wheeling ramp; including a low timber retaining wall with timber barrier (as previously consented/constructed elsewhere along Trail 1).

The proposed trail design is as shown and noted on the attached drawings (Drawing No. C1471, Sheets 1-3), and the existing/consented elevated Boardwalk level is depicted on Sheet 2 (the Longitudinal Section, with tabulated height differences) to aid understanding of the change in level between the consented and proposed surfaces. Sheet 3 of the drawing set is an Indicative Perspective View of the proposed curved steps with bicycle wheeling ramp, with reference to the perspective viewpoint shown on Sheet 1. This Indicative Perspective View is a

⁴ Due to longitudinal grades far exceeding the requirements in the QLDC *Cycle Trail Design Standards & Specifications*, and no legal frontage onto Cotter Avenue (or right of way easement over the adjoining property).

simple 3D concept purely to aid understanding of the intended layout, and it is not a detailed or accurate depiction of the proposed surfaces/finishes.

No other alterations to the consented or completed works are proposed beyond those required for removal of the Boardwalk and construction of the alternative formation shown on the C1471 drawing set.

The requested changes to existing RM161093 Consent Conditions are as outlined below, including changes to the plans listed in Condition 1, and the Condition 4 and 9(k) wording.

Please replace the **Condition 1** plans as follows:

...

C Hughes & Associates Ltd:

- *Proposed Subdivision of Lot 29 DP 369201 (Sheet 1 – Overlay on Arrowsouth Structure Plan & Indicative Subdivision Layout Plan), Plan No C1212 Issue K (dated 6 March 2019)*
- *Proposed Subdivision of Lot 29 DP 369201 (Sheet 2 – Proposed Subdivision Layout), Plan No C1212 Issue K (dated 6 March 2019).*
- *Arrowsouth – Prelim. Engineering Design Roading Layout & Typical Cross Sections, Plan # C1244_01, Issue B dated 26/10/16*
- *Arrowsouth – Prelim. Engineering Design Road Longitudinal Sections, Plan # C1244_02, dated October 2016*
- ~~*Arrowsouth – Prelim. Engineering Design Trails Layout & Typical Cross Section, Plan # C1244_03, Issue D dated 28/02/17*~~
- *Arrowsouth – Lower Escarpment Detail Existing Ground Profile Sections, Plan # C1256 dated 28 Nov 2016*
- ~~*Arrowsouth – Prelim. Engineering Design Trail Longitudinal Sections, Plan # C1244_04, Issue B dated 28/02/17*~~
- *Arrowfields Trails Design Drawings, Trails Layout & Typical Cross Sections, Plan No. C1346_01, Issue A dated 25/01/21 (Original drawing date Sept 2018)*
- *Arrowfields Trails Design Drawings, Escarpment Trails Longitudinal Sections, Plan No. C1346_02, Issue A dated 25/01/21 (Original drawing date Sept 2018)*
- *Arrowfields Trails Design Drawings, Creek-side Trails Longitudinal Sections, Plan No. C1346_03, Issue A dated 25/01/21 (Original drawing date Sept 2018)*
- *RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design, Drawing No. C1471, Revision C, Sheets 1-3, Dated 15/04/21 (Original drawing date April 2020)*
- *Arrowsouth – Prelim. Engineering Design Services Layout, Plan # C1244_05, Issue B dated 27/10/16*
- *Arrowsouth – Prelim. Engineering Design Certified Fill Earthworks Layout, Plan # C1244_06, dated February 2017*
- ~~*Private Open Space Management Plan, updated March 2017 (to be updated in accordance with Condition 22)*~~
- *Private Open Space Management Plan, updated 2 February 2021*
- ~~*Overarching Open Space Management Plan, updated March 2017 (to be updated in accordance with Condition 22)*~~
- *Overarching Open Space Management Plan, updated September 2017*

stamped as approved on 5 July 2017, ~~and 11 March 2019~~ and [insert] (with the exception of the Private Open Space Management Plan and Overarching Open Space Management Plan which are to be updated) and the application as submitted, with the exception of the amendments required by the following conditions of consent.

Please change **Condition 4** as follows (or similar):

All trail works shall be carried out in accordance with the Queenstown Lakes District Council's policies and standards, being QLDC's Cycle Trail Design Standards and Specifications dated 27 August 2015 and subsequent amendments to that document up to the date of issue of any resource consent, with the exception of the "steps with bicycle wheeling ramp" portion that shall be constructed in accordance with drawing C1471 Revision C and as unless otherwise agreed by the Parks and Reserves Manager.

Please change **Condition 9(k)** as follows (or similar):

The formation of unsealed Trails 1 ~~and 2-4~~ across Lot 103 in general accordance with Council standards and as shown in ~~preliminary engineering designs submitted with the application on drawings C1346 Issue A (Sheets 1-3), being the "Arrowfields Trails Design Drawings", and C1471 Revision C (Sheets 1-3), being the "RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design.~~

Please note, Trails 1-4 have always been required and shown on the plans (see the previously approved Preliminary Engineering Design plans), but the Condition wording did not acknowledge this.

As indicated in relation to Condition 1 above, a new Private Open Space Management Plan updated January 2021, accompanies this AEE. The new Private Open Space Management Plan is amended where indicated in red text and in yellow highlight. By way of summary, the amendments relate to the reduction in height of the proposed retaining wall (from up to 2.75m to up to 1.1m) and other more minor changes relating to the width of timber edging and type of surface formation (crusher dust etc).

The above noted differences have triggered a request for a variation to the RM161093 Resource Consent, so it is these aspects for which variation is sought.

3. DISTRICT PLAN CONSIDERATIONS

The site is part of the 'Arrowtown South Special Zone' under the Operative Queenstown Lakes District Plan. The specific provisions relating to trails in this zone are outlined in Section 1.1 above and this application is for variation of the land use component of the RM161093 Resource Consent; being a **discretionary** activity in accordance with Section 127 of the RMA.

4. ASSESSMENT OF EFFECTS ON THE ENVIRONMENT (AEE)

In accordance with Section 127 of the RMA, sections 88 – 121 apply as if (relevantly) references to the resource consent or activity were references only to the change or cancellation of a condition and the effects of that change or cancellation respectively. As such, in accordance with Section 104, and subject to

Part 2, of the RMA, any actual or potential effects of the proposed activity / change on the environment sought in this application must be considered / assessed against any actual or potential effects existing on the basis of the activity consented under RM161093, as well as the relevant provisions of any national environmental standard, national or regional policy statement, or any plan or proposed plan. Furthermore, Schedule 4 of the RMA notes the information required in, and matters that must be addressed by, an assessment of environmental effects. The below sections provide the appropriate assessment of the actual or potential effects of the proposed alternative trail formation, in the context of:

- the trail consented in RM161093, including the other/lower parts of Trail 1, which have been consented and have already been partially constructed; and
- for completeness, the original/unmodified site.

An assessment of potential effects associated with removal of the Boardwalk, and comparisons against the constructed Boardwalk, are also provided as part of this application.

4.1 District Plan

The QLDC Operative District Plan is the primary guiding document with respect to the proposed/revised trail formation and associated earthworks.

The proposed activity, in the Arrowtown South Special Zone, requires consent as a **discretionary** activity pursuant to Section 127 of the RMA. The appropriate assessment against the relevant Objectives, Policies, and Assessment Matters in Chapter 12 (Special Zones) of the Operative District Plan is provided below.

Objectives and Policies

The Objectives and Policies under Section 12.31.4 provide guidance for the design and formation of trails in the Arrowtown South Special Zone. Those that are relevant are outlined and considered below.

Policy 1.1. To provide for development within the Arrowtown South Special Zone that is based upon a Structure Plan that:

- ...
- *integrates with the existing character and sense of place in Arrowtown;*
- ...

The proposed and partially constructed Arrowtown South trail network will connect the new residential development with the existing residential areas in the southern corner of Arrowtown. The trail network will also provide connections to existing and future trails in the area to guarantee future connectivity and neighbourhood integration. The proposed alternative upper Trail 1 formation will provide for the anticipated connectivity, which is aligned as much as possible with the Structure Plan guidance, whilst also minimising the impacts on adjoining property owners and the existing character of the Advance Terrace neighbourhood.

Objective 2. To manage and enhance the biodiversity values, physical features, landscape and amenity values of the Zone.

Policy 2.1. To ensure that development within the Arrowsouth South Special Zone:

- *recognises and responds to the landscape features of the Zone including avoiding development on the escarpment face;*
- *protects and enhances biodiversity and natural values;*
- *harmonises with the shape of the underlying landform;*
- ...

The proposed alternative upper Trail 1 formation is aligned with the natural landform as closely as possible so as to preserve and enhance the character and value of the escarpment and the wider area. Views of the modified escarpment will be minimised over time, as the native revegetation will effectively screen the low level retaining walls and trail barriers.

Policy 2.2. To ensure that public trails are established and formed:

- *To and along the stream, on its eastern side;*
- *Connecting the stream trail with Advance Terrace, and with Centennial Avenue around the toe of the ridge; and to the Arrowsouth golf course to the south; and*
- *Where possible, using existing formed trails on the steeper faces.*

A functional network of public trails is proposed and partially constructed. The proposed alternative upper Trail 1 formation will provide a suitable connection between the stream trail (and the new McDonnell Road residential development) and Advance Terrace. This will be achieved without compromising the privacy or amenity values of the adjoining properties/residents, by nestling the trail into the natural landform and the proposed native planting. As outlined in Section 1.1 above, it is not possible to utilise the existing farm track that runs up the escarpment at the northern end of the development site; however the trail connection to Advance Terrace has been designed in a sympathetic manner to minimise modifications to the escarpment (particularly in terms of how the escarpment is viewed from outside the site).

Policy 2.6. To protect, restore and enhance the natural and ecological values associated with the escarpment and watercourses that traverse the Zone.

As noted above, the proposed alternative upper Trail 1 formation is aligned with the natural landform as closely as possible, so it will preserve and enhance the character and value of the escarpment and the wider area. Views of the modified escarpment will be minimised over time, as the native revegetation will have the ability to effectively screen the low level retaining walls and trail barriers.

Assessment Matters

The Assessment Matter under Section 12.32.6.2i(f) of the Operative District Plan provides guidance for the design and formation of trails in the Arrowtown South Special Zone as outlined below.

Whether the Overarching Open Space Management Plan identifies an appropriate location for the proposed trail, taking account of and if necessary achieving a balance between the following:

- *the guidance provided by the Structure Plan as to the general route*
- *the desirability and safety of the proposed route for mountain biking and pedestrian use, meeting national standards in terms of grade and condition*
- *the need to minimise adverse effects resulting from earthworks and other modifications to the escarpment that traverses the Zone*
- *adjacent landowner privacy*
- *the provision of panoramic views available for public enjoyment*

In relation to the above assessment matter as a whole, it is worth noting that the 'location' of the proposed/revised trail formation is essentially the same as the location of the trail consented pursuant to RM161093 (**Consented Trail**), albeit that the proposed/revised formation is very slightly downhill of, and at a significantly lower level than, the Consented Trail. The slight deviation in horizontal alignment is necessary to provide the space required for the curvilinear steps, with a sufficient radius being required to facilitate the wheeling of bikes up/down the proposed ramp that adjoins the steps.

The following points provide consideration of the individual assessment matters (in the order they are listed above and in the District Plan):

- The indicative trail alignments shown on the Structure Plan (as required by the Environment Court decision in relation to Plan Change 39) were acknowledged and reflected in the preliminary trails drawings that were approved as part of the RM161093 Consent. The difficulties with an escarpment trail connection to Cotter Avenue (as indicatively shown on the Structure Plan) were well documented during the pre-application (and pre-decision) consultation with QLDC; with the major impediments being the complete lack of legal access onto Cotter Avenue and the steepness of the historic farm track over which the Structure Plan shows an indicative trail. As explained above, this necessitated a change from the Structure Plan with the original consenting to Advance Terrace. With the exception of the slight, and reasonably imperceptible, deviation of horizontal alignment noted above (which is less than one metre off the original/constructed position), the escarpment trail alignments in this proposal have not been altered from what was originally consented. Furthermore, the slight deviation will provide more separation of the trail from the adjoining properties, thereby assisting with a reduction in potential adverse effects on adjoining owners/residents.
- The escarpment trail routes and gradients were heavily dictated by the difficult topography (steep escarpment slope) and the limited potential

for access onto Advance Terrace / Cotter Avenue; with the narrow access strip between 18 and 20 Advance Terrace being the only legal access route, and the existing shallow underground services, at the escarpment end of this strip, being a limiting factor in terms of the ability for the trail to transition between the escarpment and the upper terrace.

The proposed inclusion of steps with an adjoining bicycle wheeling ramp provides a functional solution to the difficult transition onto the upper terrace. Whilst the steps do not satisfy the Grade 3 trail standard (as applicable/achievable elsewhere on the escarpment), and they will not be particularly desirable from a mountain biking perspective, they are very short (less than 6 metres in length along the trail) and the adjoining bicycle ramp will provide a suitable and safe means of moving bikes between the escarpment and the upper terrace. The steps will also serve as a calming device for cyclists/bikers, reducing travelling speeds and likelihood of collisions and injuries, particularly as they will be required to dismount and walk.

As noted above, the revised Trail 1 surface characteristics (to replace the Boardwalk) will be as partially constructed elsewhere on the escarpment (as previously approved by QLDC). These will consist of a compacted gravel surface with low retaining and timber edging. The proposed steps will be constructed using similar materials to the remainder of the trail, with timber battens along riser edges and compacted gravel between risers. Furthermore, the layout (width, height and depth) of the steps will be in accordance with SNZ HB 8630:2004 and Building Code guidelines. This construction will promote usability and safety, particularly in terms of minimising trip risk and maximising slip resistance. The adjoining timber and wire mesh barrier will also assist usability and safety (being compliant with SNZ HB 8630:2004) and will double as a hand rail.

- Earthworks and other modifications to the escarpment have been kept to the absolute minimum necessary to provide the required trail connections (expected by the QLDC District Plan) and satisfy the QLDC *Cycle Trail Design Standards & Specifications*. The revised/alternative design for the upper portion of Trail 1 follows the same pattern/scale of modification that has been employed for other (consented) parts of the escarpment trails, with low level retaining and minor cut batters. Furthermore, the proposed section of steps will allow the completed trail surface to follow the natural ground surface as closely as possible. This minimalistic approach will not only limit potential for adverse visual effects, but it will also minimise potential for slope instability and ongoing maintenance. The steps will be constructed using visually recessive gravel and timber materials, and these materials will visually fade and blend into the landscape as they weather. Overall the proposed alternative trail design will result in far less modification of the escarpment relative to the impact of the Consented Trail and the constructed Boardwalk. Potential for adverse effects associated with the proposed modification will be avoided/reduced as much as possible through the minimalistic and sympathetic design approach.

There is a chance that low level retaining along the site boundary, at or below the permitted 0.5 metre height (as shown/noted on the attached C1471 'General Layout' drawing), may be constructed to provide a

suitable temporary working width/area for the trail retaining wall construction (for machinery movement), but this will be removed or buried to form the permanent and planted cut batter.

- Adjacent landowner privacy will be noticeably improved (when compared to the Consented Trail) as a result of the proposed alterations to the upper portion of Trail 1. The revised trail surface (incorporating the steps) will be at a significantly lower level than the Consented Trail and existing surface level of the Boardwalk; with the level along the trail centreline being closely aligned with the natural ground surface level. The significant lowering of the trail surface is clearly illustrated on the attached Longitudinal Section (Sheet 2 of the 'Alternative Upper Trail 1 Design' – Drawing C1471), which shows and tabulates the elevated Boardwalk surface level (being the same as the Consented Trail), and the revised design surface level. A projection of the approximate lower finished floor level of the dwelling on 18 Advance Terrace is also shown for comparison purposes. Whilst the trail formation, and ultimately the trail users, will be easily visible from the boundaries with the adjoining properties due to the nature of the topography, the alternative trail formation will be difficult to see from many parts of the nearby dwellings. It is expected that portions of the escarpment trails, and the trail users themselves, will be visible from more elevated (upper floor) parts of some of the dwellings, but the trail and users certainly won't be in the forefront of the views out from these dwellings. Furthermore, the escarpment planting (as shown on, and required by, the attached updated Private Open Space Management Plan) will screen all views of the trails over time. Similarly, this planting will screen views from the escarpment trails into the adjoining properties. The use of landscaping in this manner to mitigate privacy effects was accepted in RM161093, and we consider it remains an appropriate mitigation method when considering the reduced scale of the revised proposal.

Whilst the portion of Trail 1 between 18 and 20 Advance Terrace (on the upper terrace, from the proposed steps through to the Advance Terrace footpath) is obviously in close proximity to, and at a similar level as, the adjoining dwellings, this was always anticipated as part of the trail network for the Arrowtown South Special Zone (being shown on the Structure Plan in the District Plan). The effects of the existence of a trail on the natural landscape were therefore assessed as part of the Operative District Plan formation (subject to Environment Court scrutiny) and scrutiny at the time the original consent was granted. The position and height of the trail in this area is governed by the existing topography and has been constructed to sit within the topography. It is important to note that there has been no known objection to this part of the trail, and the transition from the escarpment to this upper terrace part has been designed (with steps) in such a way that the trail will quickly drop out of sight when viewed from the directly adjacent Advance Terrace properties; thereby maximising neighbours' privacy.

- The proposed alternative upper Trail 1 design will still provide panoramic views for users of the trail. These views will obviously be from a lower level compared with the views from the Consented Trail,

but they will still be expansive without adversely impacting views from the adjoining properties.

The District Plan Section 12.32.6.2i(f) text (leading into the individual assessment matters considered above) acknowledges that establishment of a suitable trail may be a balancing act between the individual assessment matters. This has certainly been the case for the escarpment trail, and particularly for the portion at the transition onto the upper terrace at the top of the escarpment, where the importance of the third and fourth matters has become obvious. This proposal and assessment is considered to provide an appropriate weighting of the assessment matters, with special focus on minimising adverse effects on the landscape and amenity/privacy resulting from modifications to the escarpment.

The proposed trail earthworks and other modifications to the upper portion of the escarpment (in the position of the elevated Boardwalk that is intended to be removed) are at a similar or lesser scale to what has already been consented and constructed. Whilst the proposed earthworks are “associated with a subdivision that has both resource consent and engineering approval” and are therefore considered to be exempt from the earthworks limits under the Section 12.32.5.1(vii) site standards), it is considered important to quantify the proposed change:

- The additional earthworks volume, including all topsoil stripping, cut and fill to subgrade, and trail gravel fill will be approximately 47m³. This is substantially less than the 200m³ limit in site standard 12.32.5.1(vii)(1)(a).
- The additional earthworks area will be approximately 90m². This is less than the 200m² limit in site standard 12.32.5.1(vii)(1)(b).
- The additional earthworks will not be within 7m of a water body and are not expected to expose groundwater, cause artificial drainage of any groundwater aquifer, or cause temporary ponding of any surface water in terms of site standards 12.32.5.1(vii)(1)(c) and (d).
- The maximum height of any cut or fill associated with the additional earthworks will be 0.5 and 0.8 metres respectively; with the cut being on the northern/neighbours’ side of the trail. These cut and fill heights are compliant in terms of site standard 12.32.5.1(vii)(2), which permits up to 2.4 metres of cut and 2.0 metres of fill.
- All appropriate environmental protection measures will be employed during the proposed earthworks/construction, in accordance with site standard 12.32.5.1(vii)(3). These include prompt planting of exposed soil, erosion and sediment control, and dust suppression.
- No archaeological or heritage sites have been discovered during the trail construction works to date. With respect to site standard 12.32.5.1(vii)(4), in the unlikely event that something is discovered during the proposed earthworks and construction for the alternative trail formation, the typical accidental discovery protocol will be followed.

The directly related and applicable earthworks assessment matters are considered below:

12.32.6.2(xiii)(1) Environmental Protection Measures

With respect to environmental protection measures, the additional earthworks site is located on the upper portion of the escarpment, well clear of the unnamed creek and any other water bodies (including groundwater – given the elevation of the escarpment). The well vegetated area below the earthworks site, coupled with the cut-off swale alongside Trail 3 on the valley floor, will continue to provide suitable sediment/erosion control and prevent adverse effects associated with stormwater overland flow. Wetting of exposed soil and fill material during excavation and construction may be required to control dust generation (depending on soil moisture content), and all works will be completed as quickly as possible to minimise duration of any adverse effects. The previously provided GeoSolve Slope Stability Assessment remains relevant and will continue to be referenced/applicable throughout the proposed construction.

12.32.6.2(xiii)(2) Effects on landscape and visual amenity values

With respect to effects on landscape and visual amenity values, the proposed alternative trail formation will be as broadly intended in the Arrowtown South Special Zone Structure Plan, and consistent with the nature and scale of the consented trail construction elsewhere on the escarpment. As outlined above, the alternative trail formation (with low retaining and a section of steps where required in place of the Boardwalk) will significantly reduce the visual impact of the trail on the landscape. The proposed trail formation/earthworks (including the section of steps) has been designed to fit the natural landform as closely as possible, with a narrow trail width (as consented and designed/formed elsewhere on the escarpment) and a balance of cut to fill either side of the trail. This will ensure that the visual quality and character/amenity value of the landscape is preserved as much as possible whilst still satisfying the District Plan trail requirements.

The replacement of the Boardwalk with a trail formation that is sympathetic to the topography, and does not obviously protrude above the natural landform, will maintain the natural character and amenity values of the landscape and the adjoining properties. This more sympathetic formation (at a much lower height than the Consented Trail) will also be more easily screened by the adjacent native revegetation, with planting to be completed following completion of the trail.

12.32.6.2(xiii)(3) Effects on adjacent sites

The proposed trail earthworks and retaining have been designed in accordance with QLDC engineering standards and are of such a minor extent and height, with suitable clearance from adjoining property boundaries, that there are not expected to be any adverse effects on adjoining properties.

There is a chance that low level retaining along the site boundary, at or below the permitted 0.5 metre height (as shown/noted on the attached

C1471 'General Layout' drawing), may be constructed to provide a suitable temporary working width/area for the trail retaining wall construction (for machinery movement), but this will be removed or buried to form the permanent and planted cut batter.

Whilst the formed trail will alter the natural surface drainage pattern across the escarpment, the intent of the design is to minimise the impact on this natural drainage and avoid concentration of stormwater as much as possible. This is achieved by allowing stormwater flow across the trail surface, which will then either discharge directly off the top of the retaining wall and continue down the escarpment in a uniform manner, or be collected by the retaining wall panel drainage and be discharged onto the escarpment via outlet pipes at short and regular intervals. There will be no increased risk of stormwater inundation or a raised water table impacting the adjoining properties due to the escarpment trail being located below these properties.

12.32.6.2(xiii)(4) General amenity values

The general amenity values of the neighbourhood will be maintained as much as possible, both during trail construction and in the long term. This will be achieved by maintaining fixed (consented) operating hours during construction, avoiding prolonged periods of heavy machinery noise and vibration, and mitigating dust generation, particularly through the use of water application. Whilst elevated noise and vibration levels are expected during removal of the elevated Boardwalk and excavation of the replacement retaining wall post holes, these adverse effects will be short term in nature. Furthermore, the effects will be minimised by the elevation difference between the trail position and the nearby Advance Terrace properties, particularly due to the sharp change in slope at the top of the escarpment, which is expected to act as a form of acoustic barrier. Landscape and visual amenity effects are addressed above, and it is reiterated that the variation reduces landscape and visual amenity effects of the Consented Trail, and aligns the effects with those generally anticipated in the Structure Plan and through the original consent (RM161093).

12.32.6.2(xiii)(4) Impacts on sites of cultural heritage value

There are no known sites of cultural, archaeological or heritage value in the vicinity of the trail construction area.

4.2 National Environmental Standards & National Policy Statements, Regional Policy Statements, Regional Plans

The proposed variation to the trail formation has been considered with respect to the National Environmental Standards and National Policy Statements that are currently in force.

With respect to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health, whilst the trail formation will involve reasonably significant earthworks, these will be at a similar scale to what has been consented and completed elsewhere on the escarpment pursuant to RM161093. Furthermore, there are no known areas or sources of contamination in

the vicinity of the trail and there have been no discoveries during any of the other site works completed to date.

None of the other National Environmental Standards or National Policy Statements are considered to be of any particular relevance to the proposal and, and such, the proposal is considered to be consistent with these documents.

4.3 Regional Policy Statements & Regional Plans

The only specifically relevant provisions in the Partially Operative Otago Regional Policy Statement 2019 relate to Objectives 4.5 and 5.1, as outlined below:

4.5 *Urban growth and development is well designed, reflects local character and integrates effectively with adjoining urban and rural environments*

5.1 *Public access to areas of value to the community is maintained or enhanced*

One of the policies under Objective 4.5 focusses on “designing for public access”. Whilst the proposed alternative trail structure does incorporate a section of steps, thereby restricting accessibility to some degree, it is important to ensure that the trail connections are established in some form; and the steps will allow the trail formation to be nestled into the landscape, thereby maintaining character and amenity.

With respect to Objective 5.1, the alternative trail formation will enhance the quality of the environment (particularly in the context of the Consented Trail and existing Boardwalk structure) and will provide a valuable pedestrian/cycle connection between McDonnell Road and Cotter Avenue / Advance Terrace residential areas.

None of the Otago Regional Plans that are currently in force are of particular relevance to the proposed trail alteration. As such, the variation proposal is considered to be consistent with any provisions/requirements in these documents.

4.4 Part 2 of the RMA

An assessment against Part 2 of the RMA is not strictly required for this variation, given the district plan provisions which apply were subjected to a thorough analysis against Part 2 by the Environment Court.

However, for completeness, a brief assessment is provided. The assessment considers the purpose of the RMA, as stated in Part 2 (Section 5), along with the relevant matters in Sections 6, 7, and 8.

The purpose (Section 5), matters of national importance (Section 6) and the principles of the Treaty of Waitangi (referred to in Section 8) are upheld by the proposed variation to the trail.

The directly relevant ‘Other matters’ in Section 7 are:

(b) *efficient use and development of natural and physical resources.*

- (c) ***maintenance and enhancement of amenity values.***
 (f) ***maintenance and enhancement of the quality of the environment.***

The scale/height of the proposed/revised trail formation (with steps) is in keeping with the scale/height of trail formation generally anticipated in the Structure Plan and consented elsewhere along the trail through RM161093. It is less than the scale of the Consented Trail and Boardwalk, and similar to walkways elsewhere on the major escarpment. It has been designed to maintain the original landform as much as possible. The impact of the proposed formation on amenity values and the quality of the environment will be greatly reduced in relation to the Consented Trail and constructed Boardwalk and, ultimately, once the escarpment planting is established, it will be very difficult to perceive the presence of the escarpment trail from areas above (neighbouring properties) or below the site. This is well illustrated and outlined in the attached revised Private Open Space Management Plan, and the significant height difference between the Consented Trail surface and the proposed/revised trail surface is clearly shown and tabulated on the attached longitudinal section (drawing C1471, sheet 2).

Whilst removal of the existing Boardwalk, and construction of the alternative formation (low retaining wall and section of steps with a barrier/balustrade) will have some short term effects with respect to noise and vibration, these effects are not expected to have a significant impact on adjoining properties/owners. Furthermore, the ongoing positive effects on neighbourhood amenity/privacy and environmental quality associated with the alternative trail formation will far outweigh any short terms construction related effects.

Overall, the proposed trail activity/variation is considered to be consistent with the purposes and principles of Part 2.

5. CONSULTATION & NON-NOTIFICATION

On the basis of the above assessment of effects we do not consider formal consultation, or any form of notification, to be required in association with this variation application. This is particularly the case given that the proposed trail earthworks and formation is fully compliant with the relevant District Plan standards.

Nevertheless, Arrowsouth Properties Ltd (and their consultants) wish to maintain a positive relationship with the directly adjoining property owners, particularly to ensure that their concerns and desires are appropriately addressed. As such, following the meeting between Arrowsouth Properties and the concerned neighbours (including legal representatives) in June 2020, a copy of this variation application (including all associated plans) has been provided to the relevant directly adjoining property owners and they have been invited to comment and/or provide affected person's approval.

Section 127(4) of the RMA states:

“For the purposes of determining who is adversely affected by the change or cancellation, the consent authority must consider, in particular, every person who—

*(a) made a submission on the original application; and
(b) may be affected by the change or cancellation.”*

Because the original RM161093 application was non-notified there are no submitters who require consideration in relation to this aspect of the notification test.

Furthermore, the above assessment of effects indicates that the effects of the proposed change (replacement of the elevated Boardwalk with low retaining and steps) are going to be less than the effects consented under RM161093. When considered against the Consented Trail itself, those effects are predominantly positive in terms of impacts on adjoining land owners and the general public; with only minor short term adverse effects associated with the unavoidable construction activity. When considered against the original/unmodified site, the effects are generally anticipated in accordance with the effects of a trail required by the Operative District Plan Structure Plan.

As a result, notification of this variation application is not required in accordance with the RMA, but it is worth re-iterating that consultation with adjoining owners is ongoing and their feedback is being sought in response to this application

6. SUMMARY

This application has been prepared in response to concerns/complaints QLDC received from neighbours, and subsequent QLDC discussion, that the constructed Boardwalk is considered to be outside the scope of what was consented (as the Consented Trail) under RM161093.

An appropriate alternative trail formation has been agreed following consultation with the concerned neighbours and QLDC, and this consent variation application seeks to enable the proposed construction.

The proposal is clearly depicted/described on the attached plans, and this application provides a thorough assessment of the actual or potential difference in effects between the proposal (being a trail with low timber retaining and a short sections of steps/bicycle ramp) and:

- the trail consented in RM161093, including the other/lower parts of Trail 1, which have been consented and have already been partially constructed; and
- for completeness, the original/unmodified site.

This application also draws on the fact that the proposal has much lesser effects on landscape, visual amenity and privacy than the Boardwalk.

In consideration of all of the above, the overall adverse effects associated with the proposed alternative trail formation are considered to be less than minor. Whilst there will be some obvious short term adverse effects associated with removal of the elevated Boardwalk and construction of the alternative trail formation, these adverse effects are far outweighed by the long term positive effects of the alternative trail formation. Effects relating to the construction of the alternative

Application for Variation to Resource Consent RM161093 – Arrowsouth Properties Limited

trail are also anticipated given the Operative District Plan requirements for its construction.

We trust the information provided satisfies Council's requirements and that this application to vary RM161093 under Section 127 of the RMA can be assessed promptly and without notification.

Yours Sincerely,
C Hughes and Associates



Campbell Hills
Director & Licensed Cadastral Surveyor

Email: campbell@chasurveyors.co.nz

Attached: Application Form (Form 10)
Record of Title (911161)
C1471 'RM161093 Arrowsouth Properties Alternative Upper Trail 1 Design' Rev C drawings
C1346 'Arrowfields Trails Design Drawings', Issue A (dated 25/01/21)
Arrowsouth Private Open Space Management Plan (Updated 2 February 2021)
Email from GeoSolve

APPENDIX 3 – ENGINEERING MEMO

Earthworks

Minimal earthworks are required in addition to that consented under RM161093 and falls within the permitted volumes and depth of cut and fill as per site standard rules of the ODP and PDP. I adopt the assessment provided by Council land development engineer for the underlying consented earthworks and provide the following assessment for the additional works required.

The works entail fill of approximately 47m³ to form the new portion of the track. The applicant provided a letter from GeoSolve Ltd that did not raise any concern in regards to stability of the proposed works. I accept the expert opinion provided by GeoSolve and as such I am satisfied that the proposed works will not result in any land instability on neighbouring lots provided the recommended conditions are applied. The proposed batter angles are also similar to that assessed and consented under RM161093 and the applicant proposes to utilise coconut erosion control matting to minimise any erosion of the batter slopes.

The applicant also proposes the construction of a low-level retaining wall along the boundary of 18 Northview Terrace with maximum height of 0.5m. Retaining of equal to or less than 0.5m is permitted and as such complies with District Plan requirements.

Overall, I am satisfied that the earthworks are feasible and that the recommendations under the underlying resource consent RM161093 remain relevant to this consent/variation. As such, I do not deem it necessary to provide any additional recommendations.

Prepared by:



Ockert Vermeulen
LAND DEVELOPMENT ENGINEER

Reviewed by:



Michael Wardill
TEAM LEADER: ENGINEERING

APPENDIX 4 - PRIVATE OPEN SPACE MANAGEMENT PLAN, UPDATED 2 FEBRUARY 2021



Arrowsouth
Private Open Space
Management Plan

Prepared by:

rough & milne landscape architects

In collaboration with Lane Neave and CHA Surveyors Ltd

For Arrowsouth Properties Ltd
Updated 2 February 2021

CONTENTS

INTRODUCTION	... 4
VISUAL AMENITY VALUES	... 5
PUBLIC TRAILS	... 6
OVERARCHING VISION	... 6
POS E1 - ESCARPMENT	... 8
POS E5 - OUTCROP	... 14
POS P3 - PASTURES	... 20
POS W1 - WATERWAY	... 24
RPS - ROADSIDE PLANTING STRIP	... 30
SUMMARY	... 36

Disclaimer

Rough and Milne Landscape Architects endeavours to ensure that the information in this publication is accurate and current. However we do not accept liability for any error or omission.

This publication is intended to provide the best possible guidance to Arrowsouth Properties Ltd, with regard to establishing and maintaining private open space areas within the Arrowtown South Special Zone. However, the information is provided as a general guidance only and is not intended as a substitute for specific advice. Rough and Milne Landscape Architects takes no responsibility for the accuracy of this information, its completeness or fitness for purpose.

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Print version: Print in A4 portrait format, double sided (colour). Bind on long edge

INTRODUCTION

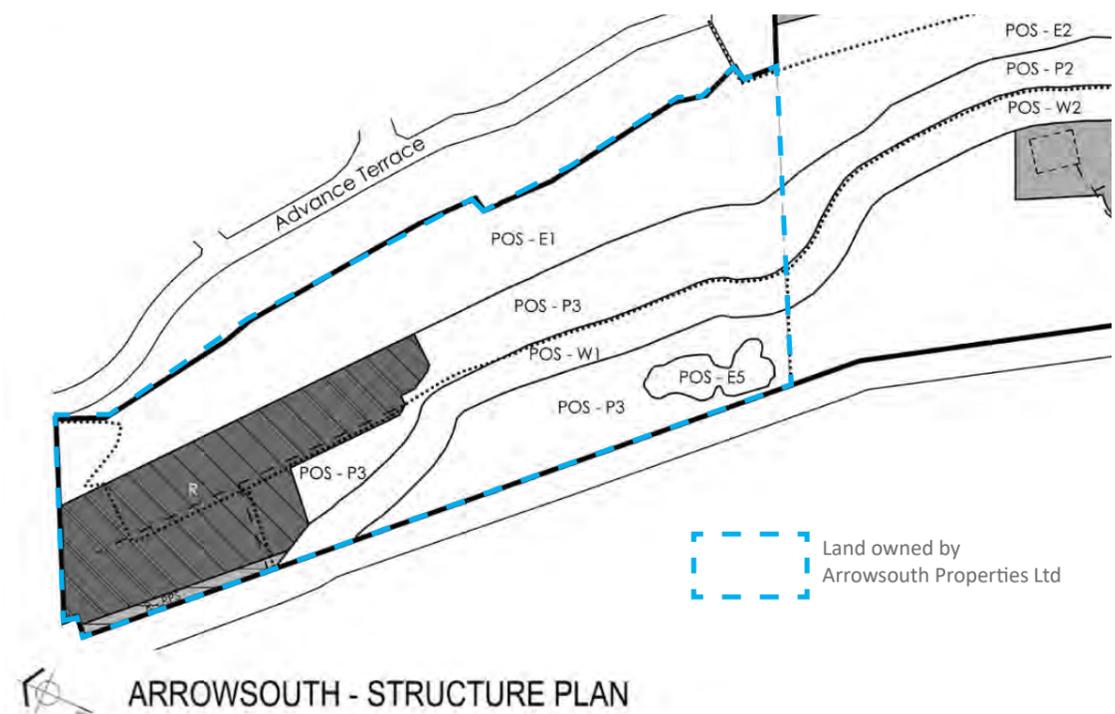
The objective of the Private Open Space Management Plan (POSMP) is to outline a strategy for establishing, re-vegetating and maintaining Private Open Space (POS) areas within land owned by Arrowsouth Properties Ltd, within the Arrowtown South Special Zone.

It is intended that the POSMP will inform the current land owner and future residents of the vision and strategy for regenerating and managing each area of POS. The areas are named in the Structure Plan (and in this document) as follows:

- POS-E1 | Escarpment
- POS-E5 | Outcrop
- POS-P3 | Pastures
- POS-W1 | Waterway
- RPS | Roadside Planting Strip

This comprehensive management plan details the Escarpment, Waterway and Pasture private open spaces, as well as the Roadside Planting Strip (RPS), and outlines a strategy for each, including:

- a public track plan, showing the location of public tracks and construction methods
- site preparation, including weed and pest management, stock and rabbit fencing, as well as indicative costs
- a revegetation strategy, including plant species and densities, a programme for planting as well as indicative costs
- a maintenance and ongoing management plan, including a programme that addresses allocation of responsibilities, timing of maintenance and indicative costs



VISUAL AMENITY VALUES



The land owned by Arrowsouth Properties Ltd is a long, reasonably narrow strip of gently rolling land defined by the toe of the escarpment and McDonnell Road. The landscape is characterised by rural farmland with grazed pasture, exotic tree planting, a spring fed stream, a small wetland area and a few rocky outcrops. This landscape unit is accessed and viewed by public from McDonnell Road. Existing dwellings located at the top of the escarpment also overlook the lower level.

Despite being dominated by invasive weeds, the site, in its location on the edge of Arrowtown, is valued for its visual amenity associated with the site's rural, open, verdant character, and the presence of wilding deciduous trees which are characteristic of Arrowtown in Autumn.

Although the overall master plan will alter the character of the landscape, the intention of the

plan is to protect and enhance visual amenity of the site, while introducing ecological values at the same time. While an area of housing at the northern end of the site will compromise some of the open space character, the southern end of the site will be retained as open pastures, the addition of extensive native planting will improve the site's naturalness. Native birds and other wildlife will be encouraged to habitat in the area. Established public tracks will increase the recreational values associated with the site.

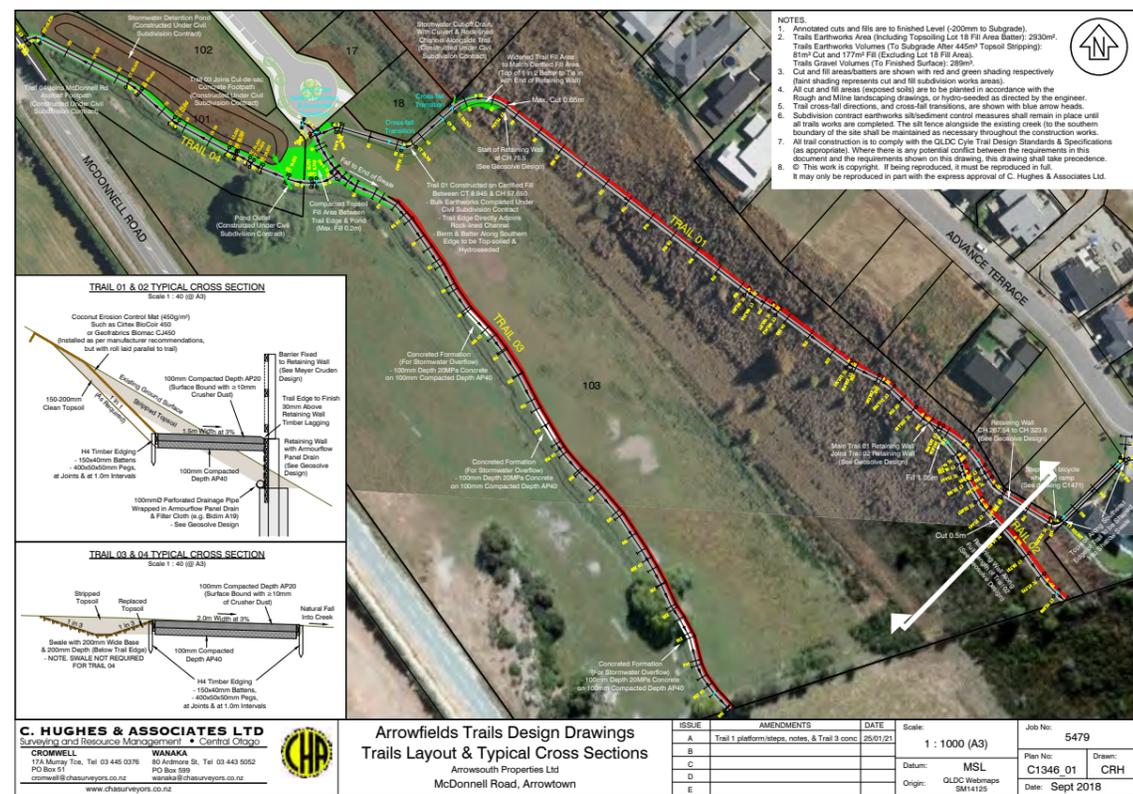
The visual amenity values will change from those associated with the rural landscape to values more closely associated with the natural landscape. The overall vision will not only improve visual amenity values, but will introduce ecological and recreational values to the site as well.

PUBLIC TRAILS

VISION

As per the District Plan rules, public access will be established through parts of the site that connect on to the wider pedestrian and cycle path network throughout Arrowtown. A 1.5m wide gravel track a will be established on the escarpment to connect foot and cycle paths on McDonnell Rd with Advance Tce above the escarpment. A second track will split off near the top of the track which will one day be connected to the wider track network on the escarpment. A 2m wide gravel track will meander beside the waterway to allow public to access to the enhanced stream environment.

TRACK SET OUT PLAN (CHA LTD)



Revised 12/12/19:
Revision pertains to substitution of retained structure with timber boardwalk

Revised 21/01/21
Revised trail layout

TRACK CONSTRUCTION

Tracks beside the waterway are to be 2m wide compacted gravel paths, **constructed with 40mm timber edging, 200mm compacted base course, bound with 10mm of crusher dust on surface.**

The proposed escarpment paths have been designed to meet Grade 3 standard wherever possible. However, there is a section near the top of the escarpment where steps are required. These steps do not comply with the Grade 3 standard. The escarpment paths will be no more than 1.5m wide, have a compacted gravel surface, and cut batters which will be no more than 1m in height. **In some sections a retained pathway up to approximately 1.1m (as per engineer recommendation) is required to achieve the Grade 3 standard.**

INDICATIVE CROSS SECTION SHOWING VISUAL SCREENING OF TRACK RETAINING WITH NATIVE PLANTING



Revised 12/12/19:
Revision pertains to substitution of retained structure with timber boardwalk

Revised 21/01/21:
Track construction and approximate retained height amended

Revised 02/02/21:
Path exception for Grade 3 standard

POS-E1 | ESCARPMENT

VISION

The vision for the escarpment is to create a self sustaining native shrub land. Plants selected for revegetation are typical to the Wakatipu Basin and hardy to local conditions to ensure the best success rate of planting. In time, the shrubland will attract native fauna and provide enhanced visual, ecological and recreational amenity for nearby residents. The escarpment shall be cleared and kept free of invasive weed species such as broom, gorse and briar, as well as being free from animal pests such as rabbits and hares.

LOCATION PLAN



Photograph of the existing escarpment, which was sprayed in March 2014

REVEGETATION STRATEGY



- Deciduous Tree Clusters:**
- Acer 'Autumn Blaze'* | Autumn Blaze Maple
 - Fraxinus angustifolia 'Raywoodii'* | Claret Ash
 - Quercus robur 'Fastigiata'* | Upright Oak
 - Tilia cordata* | Small Leaved Lime

POS-E1 | ESCARPMENT

TRACK CONSTRUCTION

TRACK CONSTRUCTION

Set out (according to surveyor's plans) and construct the 1.5m wide public tracks traversing the escarpment using earth moving machinery. Ensure cuts and batters are no greater than 1m in height. **To ensure this, install a 0.5-1.1m retaining structure (to be approved by engineer) on the downhill side of the track where necessary. Install 200mm compacted base course, bound with 10mm of crusher dust on surface.** Hydroseed or plant out all bare earth as soon as possible following track construction.

Revised 12/12/19:
Revision pertains to substitution of retained structure with timber boardwalk

Revised 21/01/21:
Revision pertains to installation of 0.5-1.1m retained structure instead of boardwalk

SITE PREPARATION

CLEARING WEEDS

The escarpment was sprayed in March of 2014, so only requires mulching of larger dead woody material and an additional spray to kill new broom seedlings which have re-grown since the original spray. Smaller dead weeds can remain in place to provide shelter and protection to new native seedlings.

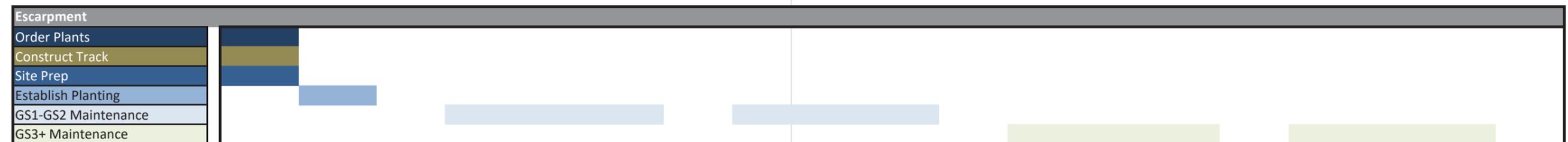
RABBIT AND STOCK EXCLUSION

It is recommended that a rabbit and stock proof fence is installed around the perimeter of the escarpment revegetation area. Timber step styles with cycle ramps or spring loaded gates should be installed where the fence crosses the public track. Once the fence is in place, intensive rabbit eradication within the fenced area should be carried out by a pest eradication professional (either shooting, pindone poisoning or other method).

INDICATIVE PROGRAMME

Table NOT revised for 12/12/19 or 21/01/21 revision

2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter
GROWING SEASON			GROWING SEASON															
	PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON	



POS-E1 | ESCARPMENT

INDICATIVE PLANT SCHEDULE

Code	Botanical Name	Common Name	Grade	Spacing	Quantity
Ac 'AB'	Acer 'Autumn Blaze'	autumn blaze maple	BR	as shown	7
Ar s	Aristotelia serrata	wineberry	DRT	3000	143
Au r	Austroderia richardii	toetoe	DRT	1500	308
Ca bu	Carex buchananii	buchanans sedge	DRT	700	3336
Ca pe	Carmichaelia petriei	native broom	DRT	1500	572
Ch ri	Chionochloa rigida	snow tussock	DRT	900	846
Ch ru	Chionochloa rubra	red tussock	DRT	1000	1280
Co a	Cordyline australis	cabbage tree	DRT	3000	219
Co c	Coprosma crassifolia	thick-leaved mikimiki	DRT	1500	143
Co co	Corokia cotoneaster	korokio	DRT	1500	76
Co p	Coprosma propinqua	coprosma	DRT	1500	308
Co ri	Coprosma rigida	mingimingi	DRT	1500	572
Co ru	Coprosma rugosa	coprosma	DRT	1500	308
Co v	Coprosma virescens	taupata	DRT	1500	572
Di t	Discaria toumatou	matagouri	DRT	1500	572
Fr a 'R'	Fraxinus angustifolia 'Raywoodii'	claret ash	BR	as shown	14
Fu f	Fuscopora fusca	red beech	DRT	3000	143
Fu s	Fuscopora solandri	black beech	DRT	3000	143
Gr l	Griselinia littoralis	kapuka/broadleaf	DRT	3000	572
He s	Hebe salicifolia	koromiko	DRT	3000	76
Le cu	Leonohebe cupressoides	Fragrant hebe	DRT	1500	304
Le s	Leptospermum scoparium	manuka	DRT	1500	219
Oi bu	Olearia bullata	Olearia bullata	PB5	1500	304
Oi fr	Olearia fragrantissima	fragrant tree daisy	DRT	3000	76
Oi l	Olearia lineata	tree daisy	DRT	3000	76
Oi od	Olearia odorata	scented tree daisy	DRT	3000	143
Oz l	Ozothamnus leptophyllus	cottonwood	DRT	1500	304
Ph al	Phyllocladus alpinus	mountain toatoa	DRT	3000	219
Ph c	Phormium cookianum	mountain flax	DRT/PB5	1500	860/96
Pi eu	Pittosporum eugenioides	lemonwood	DRT	3000	143
Pi t	Pittosporum tenuifolium	kohuhu	DRT/PB5	1500	476/96
Pl r	Plagianthus regius	ribbonwood	DRT/1.2m	3000	103/40
Po c	Poa cita	silver tussock	DRT	700	1832
Qu r 'F'	Quercus robur 'Fastigiata'	upright oak	BR	as shown	7
So m	Sophora microphylla	kowhai	DRT	3000	308
Ti c	Tilia cordata	small leaved lime	BR	as shown	9
					15825

NOTE:

Spacings are shown in millimeters

DRT = Deep Root Trainer grade. Similar size plants come in other grade descriptions such as RX90, V150/V130 or 285cc/310cc, depending on availability. These grades are also acceptable.

PB5 = Plant Bag 5 grade or 3L pot.

BR = Bare Root Stock - also known as Open Ground (OG) stock.

1.2m = 1.2m high native tree sapling

INDICATIVE COSTS (SCHEDULE)

Estimate of reveg costs: Main Escarpment (POS E1)	qty	unit	rate	Site prep + ordering	Plant establishment	GS1 Maintenance	GS2 Maintenance	GS3+ Maintenance by Primary Land Owner*	GS3+ Maintenance by each resident*
Total POS area (incl track and planting)	2.353	ha							
Total area as part of Private Lots (ha) (46.5% of total area)	1.012	ha							
Tree felling and mulching^^	30	ea	\$ 110.00	\$ 3,300					
Pre-plant weed spraying (monthly Oct - April)	2.353	ha	\$ 1,000.00	\$ 14,118	\$ 7,059				
Rabbit + stock fencing	1135	lm	\$ 19.00	\$ 21,565					
Initial rabbit eradication (shooting)	6	hr	\$ 60.00	\$ 360					
Ongoing rabbit control (monitoring and poisoning)	2.353	ha	\$ 420.00	\$ 988		\$ 988	\$ 988	\$ 988	
DRT plant supply (50% to order, 50% when delivered)	15556	ea	\$ 3.30	\$ 25,667	\$ 25,667				
PB5 plant supply (50% to order, 50% when delivered)	192	ea	\$ 8.80	\$ 845	\$ 845				
BRS tree supply (50% to order, 50% when delivered)	37	ea	\$ 25.00	\$ 463	\$ 463				
1.2m native sapling supply (50% to order, 50% when delivered)	40	ea	\$ 40.00	\$ 800	\$ 800				
Set out and planting of DRT grade plants	15556	ea	\$ 3.30		\$ 51,335				
Set out and planting of PB5 grade plants	192	ea	\$ 8.80		\$ 1,690				
Set out, planting and staking of BRS trees and 1.2m saplings	77	ea	\$ 25.00		\$ 1,925				
Wool mulch collars	15825	ea	\$ 2.00		\$ 31,650				
GS1-GS2 Maintenance^		year	\$ 3,693.48			\$ 3,693	\$ 3,693		
GS3+ Maintenance~		year	\$ 2,216.09					\$ 1,186	\$ 86
Total				\$ 68,106	\$ 121,433	\$ 4,682	\$ 4,682	\$ 2,174	\$ 86
Total per hectare				\$ 28,944	\$ 51,608	\$ 1,990	\$ 1,990	\$ 1,620	\$ 1,019
Total per m2				\$ 2.89	\$ 5.16	\$ 0.20	\$ 0.20	\$ 0.16	\$ 0.10

All figures are GST exclusive

Notes and Assumptions:

All costs and figures are indicative only and are subject to further refinement

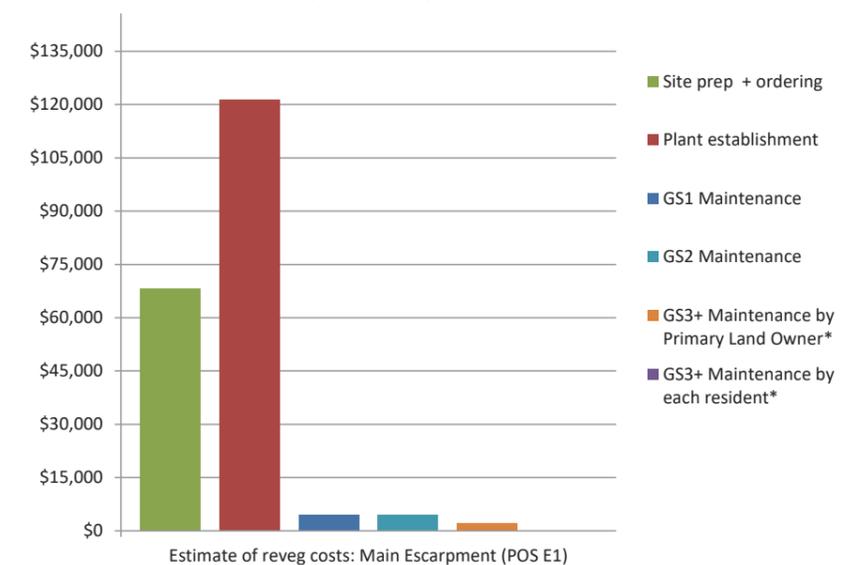
*GS3+ costs shown are an average per year for ongoing maintenance (expected to taper)

^^ worked out at 2hrs labour @\$55/hr per tree

^ worked out as 5% of (total cost to plant less cost of mulch collars). Includes herbicide spray and plant replacement

~worked out as 3% of (total cost to plant less cost of mulch collars). Includes herbicide spray and plant replacement

INDICATIVE COSTS (GRAPH)



POS-E5 | OUTCROP

VISION

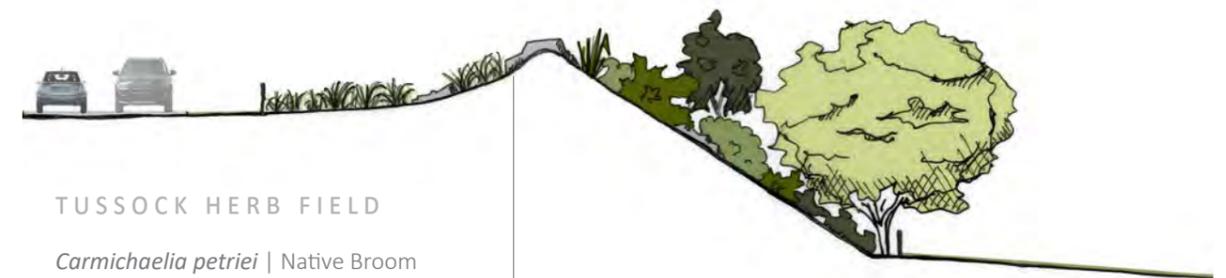
The schist outcrop on the lower plane has potential to be an attractive feature of the site (one visible from McDonnell Road), but is presently obscured with broom and gorse, and infested with rabbits. The long term enhancement goal for the outcrop is to remove the gorse and broom to reveal the schist formations and revegetate the area surrounding it with native vegetation that will encourage native birds, lizards and invertebrates to habitate there.

PLAN



Photograph of the existing outcrop, which is currently dominated by weed species

REVEGETATION STRATEGY



TUSSOCK HERB FIELD

- Carmichaelia petriei* | Native Broom
- Chionochloa rigida* | Snow Tussock
- Chionochloa rubra* | Red Tussock
- Festuca novae-zelandiae* | Tawny Tussock
- Melicytus alpinus* | Porcupine shrub
- Olearia bullata* | Shrubby Olearia

ROCKY OUTCROP

- Carmichaelia petriei* | Native Broom
- Chionochloa rigida* | Snow Tussock
- Chionochloa rubra* | Red Tussock
- Coprosma propinqua* | Mikimiki
- Coprosma rugosa* | Coprosma
- Discaria toumatou* | Matagouri
- Festuca novae-zelandiae* | Tawny Tussock
- Griselinia littoralis* | Broadleaf
- Melicytus alpinus* | Porcupine shrub
- Myrsine australis* | Matipo
- Olearia arborescens* | Tree Daisy
- Olearia bullata* | Shrubby Olearia
- Phormium cookianum* | Mountain Flax
- Pittosporum eugenoides* | Lemonwood
- Sophora microphylla* | Sth Island Kowhai

POS-E5 | OUTCROP

SITE PREPARATION

CLEARING WEEDS

The outcrop is presently infested with woody weeds such as gorse and broom and a scattering of exotic trees. To clear, these weeds will need to be sprayed or cut down and poisoned. Once dead, larger shrubs and trees can be mulched on site while smaller weeds can be left in place to provide shelter and protection to native seedlings.

RABBIT AND STOCK EXCLUSION

It is recommended that a rabbit and stock proof fence is installed around the perimeter of the revegetation area. Once the fence is in place, intensive rabbit eradication within the fenced area should be carried out by a pest eradication professional (either shooting or pindone poisoning).

REVEGETATION

ORDER PLANTS

Plants could take up to 18 months to grow from seed to a size that can be planted out, so it's important to give nurseries plenty of time to contract-grow the required number of plants. It is recommended that planting is carried out in one planting season.

SET OUT AND PLANT

Set out plant sites by using colour coded dazzle. Spot spray rank grass 1m around each planting site using a 'z' pattern (if necessary). Seedlings should be planted in a hole that is twice the size of the root ball and at a base-of-stem depth of 20-50mm below the soil surface (this will help direct water to the roots when it rains). Install combi guards (including felt collar) to each plant at time of planting.

MAINTENANCE

GROWING SEASONS (GS) 1 & 2

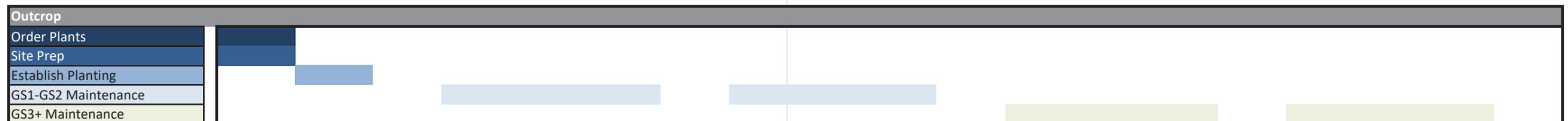
Maintenance will include monthly visits from a contractor during Oct - March to spot spray weeds, monitor and replace dead plants and monitor rabbits. A growing season is considered to be the period between the last frost in Spring and the first frost in Autumn.

GROWING SEASONS (GS) 3 & THEREAFTER

Maintenance will begin to taper as plants become established and weeds are less likely to strangle plants. Maintenance during the third to fifth growing season will include bi-monthly visits to spot spray weeds, monitor and replace dead plants and monitor/control rabbits. Following that, maintenance should taper to twice per year and finally once per year.

INDICATIVE PROGRAMME

2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter
GROWING SEASON			GROWING SEASON															
	PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON	



POS-E5 | OUTCROP

INDICATIVE PLANT SCHEDULE

Code	Botanical Name	Common Name	Grade	Spacing	Quantity
Ca pe	Carmichaelia petriei	native broom	DRT	1500	165
Ch ri	Chionochloa rigida	snow tussock	DRT	900	64
Ch ru	Chionochloa rubra	red tussock	DRT	1000	64
Co p	Coprosma propinqua	coprosma	DRT	1500	101
Co ru	Coprosma rugosa	coprosma	DRT	1500	101
Di t	Discaria toumatou	matagouri	DRT	1500	101
Fe nz	Festuca novae-zelandiae	tawny tussock	DRT	700	64
Gr l	Griselinia littoralis	kapuka/broadleaf	DRT	3000	101
Me a	Melicytus alpinus	porcupine shrub	DRT	800	244
My a	Myrsine australis	Matapo	DRT	1500	101
Ol a	Olearia arborescens	tree daisy	DRT	3000	25
Ol bu	Olearia bullata	Olearia bullata	PB5	1500	165
Ph c	Phormium cookianum	mountain flax	DRT	1500	101
Pi eu	Pittosporum eugeniodes	lemonwood	DRT	3000	25
So m	Sophora microphylla	kowhai	DRT	3000	25
					1447

NOTE:

Spacings are shown in millimeters

DRT = Deep Root Trainer grade. Similar size plants come in other grade descriptions such as RX90, V150/V130 or 285cc/310cc, depending on availability. These grades are also acceptable.

BR = Bare Root Stock - also known as Open Ground (OG) stock.

INDICATIVE COSTS (SCHEDULE)

Estimate of costs: Outcrop (POS E5)	qty	unit	rate	Site prep + ordering	Plant establishment	GS1 Maintenance	GS2 Maintenance	GS3+ Maintenance by Primary Land Owner*
Total POS area (all planted)	0.2265	ha						
Tree felling and mulching^^	15	ea	\$ 110.00	\$ 1,650				
Pre-plant weed spraying (monthly Oct - April)	0.2265	ha	\$ 1,000.00	\$ 1,359				
Rabbit + stock fencing	218	lm	\$ 19.00	\$ 4,142				
Initial rabbit eradication (shooting)	3	hr	\$ 60.00	\$ 180				
Ongoing rabbit control (monitoring and poisoning)~	0.2265	ha	\$ 420.00			\$ 95	\$ 95	\$ 95
DRT Plant supply (50% to order, 50% when delivered)	1447	ea	\$ 3.30	\$ 2,388	\$ 2,388			
Set out and planting	1447	ea	\$ 3.30		\$ 4,775			
Wool mulch collars	1447	ea	\$ 2.00		\$ 2,894			
GS1-GS2 Maintenance^	1	year	\$ 333			\$ 333	\$ 333	
GS3+ Maintenance~	1	year	\$ 200					\$ 200
Total				\$ 9,719	\$ 10,057	\$ 428	\$ 428	\$ 295
Total per hectare				\$ 42,908	\$ 44,400	\$ 1,889	\$ 1,889	\$ 1,302
Total per m2				\$ 4.29	\$ 4.44	\$ 0.19	\$ 0.19	\$ 0.13

All figures are GST exclusive

Notes and Assumptions:

All costs and figures are indicative only and are subject to further refinement

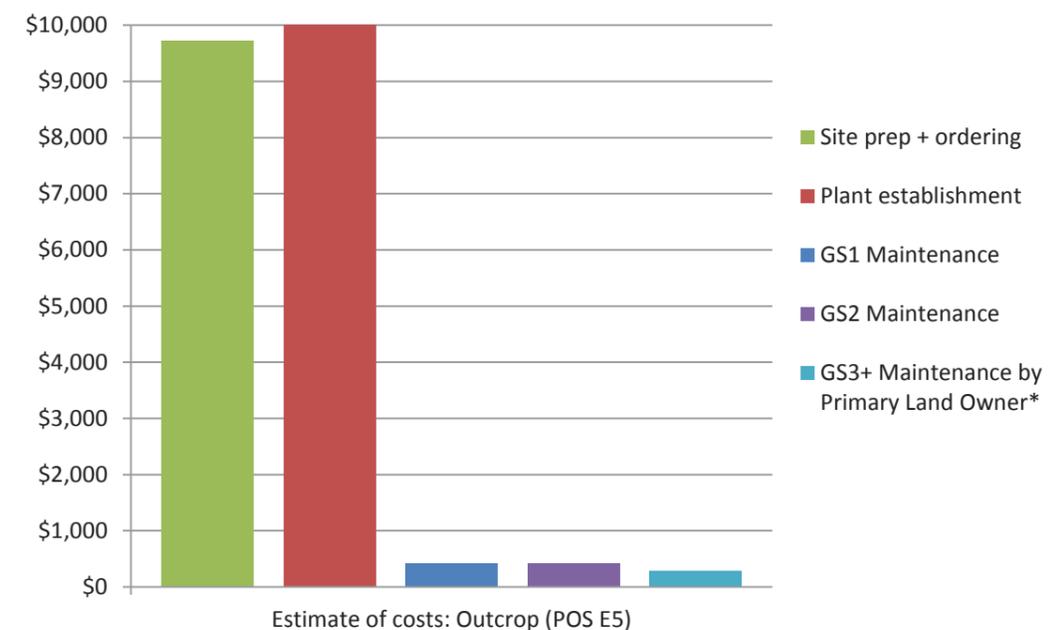
*GS3+ costs shown are an average per year for ongoing maintenance (expected to taper)

^^ worked out at 2hrs labour @\$55/hr per tree

^ worked out as 5% of (total cost to plant less cost of mulch collars). Includes herbicide spray and plant replacement

~worked out as 3% of (total cost to plant less cost of mulch collars). Includes herbicide spray and plant replacement

INDICATIVE COSTS (GRAPH)



POS-P3 | PASTURE

VISION

The flatter area on the lower plane is characterised by open, grazed pasture with a scattering of exotic trees and herbaceous pasture weeds. The long term enhancement goal for the pasture open space areas is to maintain the open character by continuing to graze the area, but to enhance visual amenity and ecological health by managing weed species. Rabbit populations would also be monitored and controlled.

LOCATION PLAN



Photograph of the existing pastoral area

TRACK CONSTRUCTION

Set out (according to surveyor's plans) and construct a 1.5m wide public track that links the cul-de-sac head with the escarpment trail. Install 40mm timber edging and 200mm of compacted basecourse, bound with 10mm of crusher dust on surface.

Revised 21/01/21:
Revision pertains to construction of trail

SITE PREPARATION

CLEARING WEEDS

The pastoral area is presently infested with a scattering of broom seedlings and a few exotic trees. To clear weeds, they will need to be sprayed or hand pulled, and trees cut down and mulched, their stumps poisoned.

RABBIT CONTROL

Intensive rabbit eradication should be carried out in the surrounding area by a pest eradication professional (either shooting or pindone poisoning).

STOCK FENCING

Post and wire stock fencing is to be erected between the escarpment and waterway fences, beside the newly constructed path. This is to contain stock which are to graze the pastures and provide clear separation between public and private areas.

REVEGETATION

ORDER PLANTS

Bare root stock saplings are only available in winter when trees are dormant. Be sure to factor this in when sourcing and ordering.

SET OUT AND PLANT

Set out trees according to the plant plan. Prepare a 750x750mm tree pit, backfilled with a good quality topsoil and compost mix. Plant sapling in tree pit and stake according to best practice.

MAINTENANCE

GROWING SEASONS (GS) 1 & 2

Maintenance will include monthly visits from a contractor during Oct - March to spot spray weeds and monitor rabbits.

GROWING SEASONS (GS) 3 & THEREAFTER

Maintenance will begin to taper as weed seedlings are less likely to germinate. Maintenance during the third to fifth growing season will include bi-monthly visits to spot spray weeds, and monitor/control rabbits. Following that, maintenance will taper further to twice per year and finally once per year.

POS-P3 | PASTURE

INDICATIVE COSTS (SCHEDULE)

Estimate of costs: Pastures (POS P3)	qty	unit	rate	GS1 Site Prep + Planting	GS2 Maintenance	GS3+ Maintenance by Primary Land Owner*
Total POS area	2.889	ha				
Stock fencing (in addition to fencing around reveg areas)	61	lm	\$ 15.00	\$ 915		
Weed spraying (monthly Oct - April)	2.889	ha	\$ 800.00	\$ 13,867		
BRS tree supply	15	ea	\$ 25.00	\$ 375		
Planting and staking	15	ea	\$ 25.00	\$ 375		
Initial Rabbit eradication	3	hr	\$ 60.00	\$ 180		
GS2 Maintenance^	2.889	ha	\$ 400.00		\$ 2,311	
GS3+ Maintenance~	2.889	ha	\$ 400.00			\$ 1,155.60
Total				\$ 15,712	\$ 2,311	\$ 1,156
Total per hectare				\$ 5,439	\$ 800	\$ 400
Total per m2				\$ 0.54	\$ 0.08	\$ 0.04

Notes and Assumptions:

All costs and figures are indicative only and are subject to further refinement

*GS3+ costs shown are an average per year for ongoing maintenance (expected to taper)

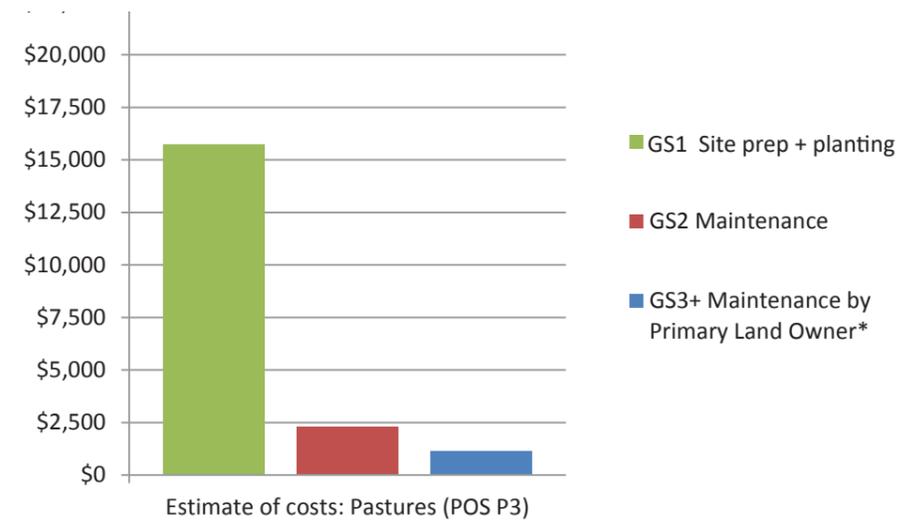
Maintenance of pasture areas includes grazing of stock or cutting of grass for hay at no additional

^ provisional sum for spot spray twice per year + mowing of area not grazed

~ provisional sum for spot spray once per year + mowing of area not grazed

All figures are GST exclusive

INDICATIVE COSTS (GRAPH)



INDICATIVE PROGRAMME

2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter
GROWING SEASON			GROWING SEASON			GROWING SEASON			GROWING SEASON			GROWING SEASON						
	PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON	

Pastures	2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
Initial weed spray	█																		
Construct Track	█																		
Establish Planting		█																	
GS1 -GS2 Maintenance				█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
GS3+ Maintenance													█	█	█	█	█	█	█

POS-W1 | WATERWAY

VISION

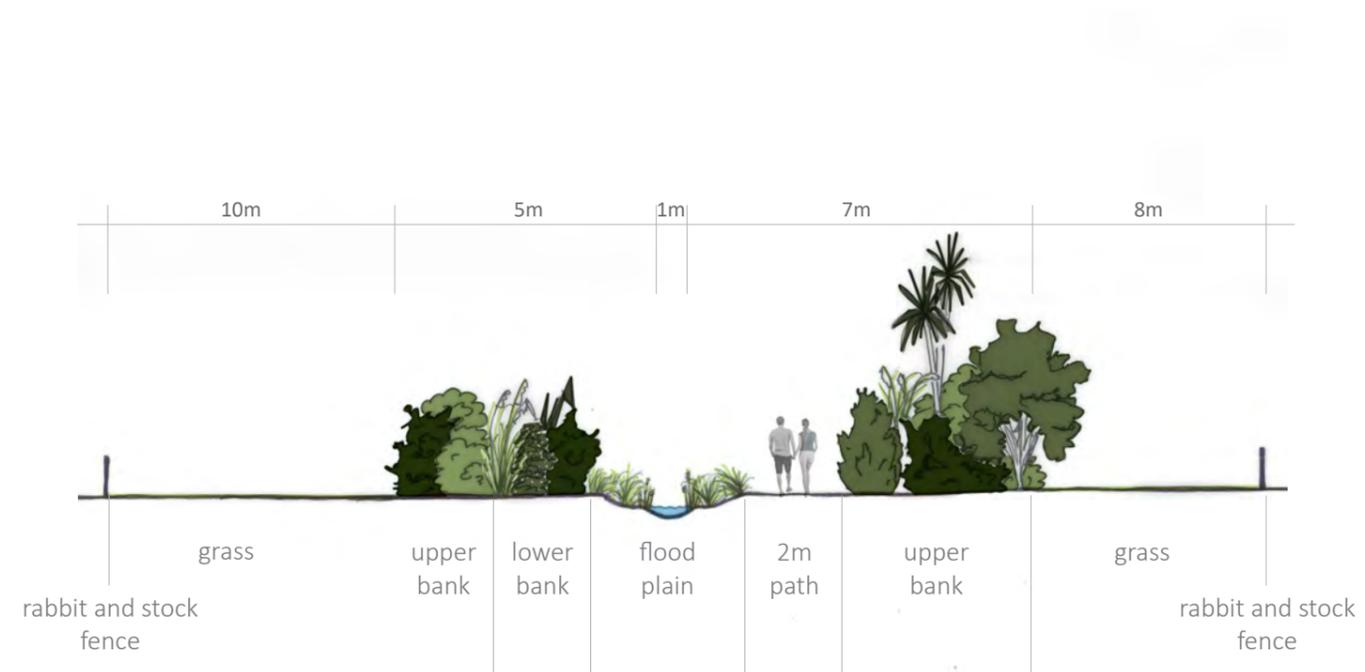
A spring-fed stream (approx 1m wide) flows in a south-eastern direction from a culvert outlet beneath McDonnell Road near the the north west corner of the site across the lower plane. The stream is currently unfenced to stock and suffers from pugging and erosion within the flood zone leaving it in poor ecological health. The long term enhancement goal is to revegetate the stream margin with native riparian planting that will improve the ecological health and amenity of the stream. Riparian planting will assist with water quality, provide habitat for wildlife and reintroduce a native seed source to the area.

LOCATION PLAN



Photograph of the existing stream which has suffered significant stock damage (pugging)

REVEGETATION STRATEGY



FLOOD PLAIN

- Carex buchananii* | Buchanans Sedge
- Carex secta* | Pukoi
- Carex sinclairii* | Sinclair's Sedge
- Chionochloa rubra* | Red Tussock
- Juncus edgariae* | Wiwi

LOWER BANK

- Austroderia richardii* | Toetoe
- Chionochloa rubra* | Red Tussock
- Coprosma propinqua* | Coprosma
- Coprosma rugosa* | Coprosma
- Coprosma virescens* | Taupata
- Olearia bullata* | Shrubby Olearia
- Olearia odorata* | Tree Daisy
- Phormium tenax* | Harakeke

UPPER BANK

- Austroderia richardii* | Toetoe
- Carmichaelia petrei* | Native Broom
- Chionochloa rubra* | Red Tussock
- Cordyline australis* | Cabbage Tree
- Coprosma crassifolia* | Thick-Leaved Mikimiki
- Coprosma propinqua* | Coprosma
- Coprosma rugosa* | Coprosma
- Coprosma virescens* | Taupata
- Discaria toumatou* | Matagouri
- Halocarpus bidwillii* | Bog Pine
- Leonohebe cupressoides* | Cypress Hebe
- Leptospermum scoparium* | Manuka
- Olearia lineata* | Tree Daisy
- Phyllocladus alpinus* | Mountain Toatoa
- Pittosporum tenuifolium* | Kohuhu
- Sophora microphylla* | Kowhai

POS-W1 | WATERWAY

TRACK CONSTRUCTION

Set out (according to surveyor's plans) and construct a 2m wide public track that meanders beside the waterway on it's north eastern bank. **Install 40mm timber edging and 200mm of compacted basecourse, bound with 10mm crusher dust on surface.** Install spring gates where the path crosses the rabbit proof fence.

Revised 21/01/21:
Revision pertains to construction of trail

SITE PREPARATION

CLEARING WEEDS

The riparian edge is presently devoid of any substantial weeds, except for a cluster of crack willow trees. These trees will need to be felled, mulched and their stumps poisoned. Any other herbaceous weeds should be hand pulled or sprayed.

RABBIT AND STOCK EXCLUSION

A rabbit and stock proof fence is to be installed 15m either side of the stream, as per the structure plan rules. Once the fence is in place, if necessary, rabbit eradication within the fenced area should be carried out by a pest eradication professional (either shooting or pindone poisoning) although it is unlikely any rabbits will be trapped within the confines of the fence.

REVEGETATION

ORDER PLANTS

Plants could take up to 18 months to grow from seed to a size that can be planted out, so it's important to give nurseries plenty of time to contract-grow the required number of plants. It is recommended that planting is carried out in one planting season.

SET OUT AND PLANT

Set out plant sites according to the indicative plant plan by using colour coded dazzle. Spot spray rank grass 1m around each planting site using a 'z' pattern (if necessary). Seedlings should be planted in a hole that is twice the size of the root ball and at a base-of-stem depth of 20-50mm below the soil surface (this will help direct water to the roots when it rains). Install combi guards (including felt collar) to each plant at time of planting.

MAINTENANCE

GROWING SEASONS (GS) 1 & 2

Maintenance will include monthly visits from a contractor during Oct - March to spot spray weeds, monitor and replace dead plants, and monitor rabbits. A growing season is considered to be the period between the last frost in Spring and the first frost in Autumn.

GROWING SEASONS (GS) 3 & THEREAFTER

Maintenance will begin to taper as plants become established and weeds are less likely to strangle plants. Management of planting within Lot 101 of the POS-W1 is to be handed over to QLDC at the end of the second growing season. Maintenance during the third to fifth growing season will include bi-monthly visits to spot spray weeds, monitor and replace dead plants and monitor/control rabbits. Following that, maintenance will taper to twice per year and finally once per year to monitor weeds.

INDICATIVE PROGRAMME

Table NOT revised for 21/01/21 revision

	2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022	
	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	
	GROWING SEASON			GROWING SEASON			GROWING SEASON			GROWING SEASON			GROWING SEASON							
		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		
Waterway																				
Order Plants																				
Construct Track																				
Site Prep																				
Establish Planting																				
GS1-GS2 Maintenance																				
GS3+ Maintenance																				

POS-W1 | WATERWAY

INDICATIVE PLANT SCHEDULE

Code	Botanical Name	Common Name	Grade	Spacing	Quantity
Au r	Austroderia richardii	toetoe	DRT	1500	160
Ca bu	Carex buechananii	buchanans sedge	DRT	700	223
Ca pe	Carmichaelia petriei	native broom	DRT	1500	76
Ca s	Carex secta	pukoi	DRT	900	138
Ca si	Carex sinclairii	sinclair's sedge	DRT	700	223
Ch ru	Chionochloa rubra	red tussock	DRT	1000	486
Co a	Cordyline australis	cabbage tree	DRT	3000	10
Co c	Coprosma crassifolia	thick-leaved mikimi	DRT	1500	76
Co p	Coprosma propinqua	coprosma	DRT	1500	160
Co ru	Coprosma rugosa	coprosma	DRT	1500	160
Co v	Coprosma virescens	taupata	DRT	1500	160
Di t	Discaria toumatou	matagouri	DRT	1500	76
Ha bi	Halocarpus bidwillii	bog pine	DRT	1500	76
He s	Hebe salicifolia	koromiko	DRT	3000	76
Ju e	Juncus edgariae	wiwi	DRT	900	138
Le cu	Leonohebe cupressoides	Fragrant hebe	DRT	1500	76
Le s	Leptospermum scoparium	manuka	DRT	1500	18
OI bu	Olearia bullata	Olearia bullata	PB5	1500	84
OI l	Olearia lineata	tree daisy	DRT	3000	18
OI od	Olearia odorata	scented tree daisy	DRT	3000	19
Ph al	Phyllocladus alpinus	mountain toatoa	DRT	3000	10
Ph t	Phormium tenax	harakeke	DRT	1500	84
Pi t	Pittosporum tenuifolium	kohuhu	DRT	1500	76
So m	Sophora microphylla	kowhai	DRT	3000	10
					2633

NOTE:

Spacings are shown in milimeters

DRT = Deep Root Trainer grade. Similar size plants come in other grade descriptions such as RX90, V150/V130 or 285cc/310cc, depending on availability. These grades are also acceptable.

BR = Bare Root Stock - also known as Open Ground (OG) stock.

INDICATIVE COSTS (SCHEDULE)

Estimate of costs: Waterway (POS W1)	qty	unit	rate	Site prep + ordering	Plant establishment	GS1 Maintenance	GS2 Maintenance	GS3+ Maintenance by primary land owner*	GS3+ Maintenance by QLDC*
Total POS area	0.7737	ha							
Total planting area	0.343	ha							
Total grass area	0.4307	ha							
Total area of POS W1 to be vested in QLDC (39.35% of total area)	0.3042	ha							
Pre-plant weed spraying (monthly Oct - April)	0.7737	ha	\$ 500.00	\$ 2,321					
Tree felling and mulching^^	12	ea	\$ 115.00	\$ 1,380					
Rabbit + stock fencing (15m either side of waterway)	738	lm	\$ 19.00	\$ 14,022					
Ongoing rabbit control (monitoring and poisoning)	0.343	ha	\$ 420.00			\$ 144	\$ 144	\$144	
DRT Plant supply (50% to order, 50% when delivered)	2633	ea	\$ 3.30	\$ 4,344	\$ 4,344				
Planting and setout	2633	ea	\$ 3.30		\$ 8,689				
Wool mulch collars	2633	ea	\$ 2.00		\$ 5,266				
GS1-GS2 Maintenance^ (includes mowing grass in fenced area)	1	year	\$ 2,005.59			\$ 2,006	\$ 2,006		
GS3+ Maintenance~ (includes mowing grass in fenced area)	1	year	\$ 1,763.35					\$1,069	\$694
Total				\$ 22,068	\$ 18,299	\$ 2,150	\$ 2,150	\$1,214	\$694
Total per hectare				\$ 28,522	\$ 53,351	\$ 2,778	\$ 2,778	\$ 2,585	\$ 2,281
Total per m2				\$ 2.85	\$ 5.34	\$ 0.28	\$ 0.28	\$ 0.26	\$ 0.23

All figures are GST exclusive

All costs and figures are indicative only and are subject to refinement

GS = Growing Season

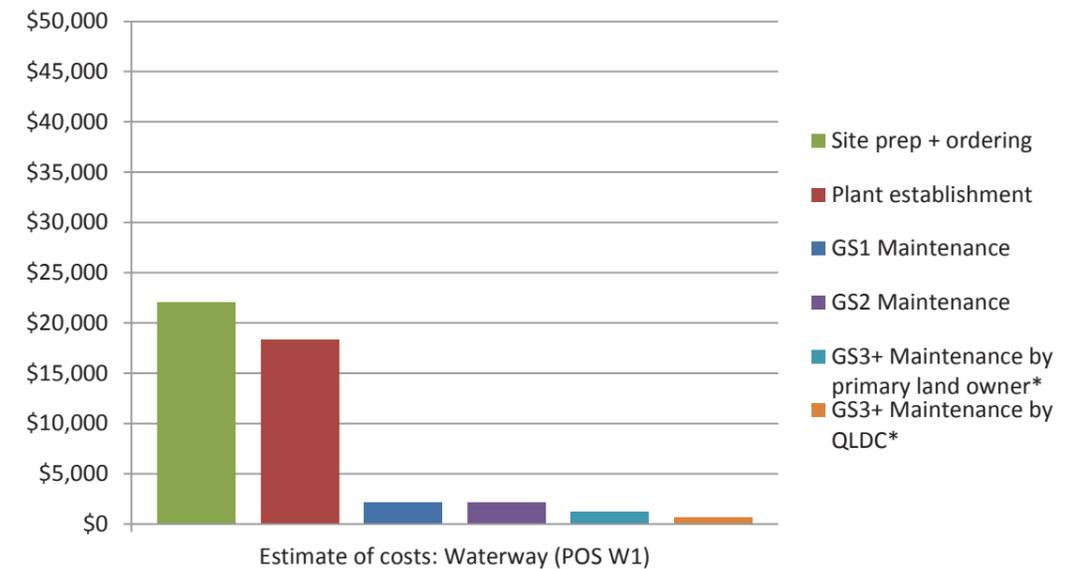
*GS3+ costs shown are an average per year for ongoing maintenance (expected to taper)

^^ worked out at 2hrs labour @\$55/hr per tree

^worked out as 5% of (total cost to plant less cost of mulch collars) + \$1400 per year for mowing grass. Includes herbicide spray and plant replacement

~worked out as 3% of (total cost to plant less cost of mulch collars) + \$1400 per year for mowing grass. Includes herbicide spray and plant replacement

INDICATIVE COSTS (GRAPH)



RPS | ROADSIDE PLANTING STRIP

VISION

A 6m strip of land beside McDonnell Road at the north western-most corner of the site is presently on the edge of pasture lands but will one day exist between the road and new residential development. The long term enhancement goal for this strip is to establish native planting that will contribute to softening and blending the proposed residential development with the wider area.

LOCATION PLAN



Photograph of the existing roadside

REVEGETATION STRATEGY



ROADSIDE PLANTING

- Coprosma crassifolia* | Thick-Leaved Coprosma
- Corokia cotoneaster* | Wire-Netting Bush
- Coprosma virescens* | Green Coprosma
- Olearia odorata* | Scented Tree Daisy
- Phormium cookianum* | Mountain Flax
- Pittosporum eugenoides* | Lemonwood
- Pittosporum tenuifolium* | Kohuhu

RPS | ROADSIDE PLANTING STRIP

SITE PREPARATION

CLEARING WEEDS

The roadside is presently infested with broom seedlings and rank grass which will require spraying prior to planting.

RABBIT EXCLUSION

Rabbit netting may be applied to the existing roadside boundary fence, although it is proposed that plants are also protected from rabbits using individual combi guards around each plant. Rabbit control will be dealt with through rabbit eradication programmes in other POS areas.

REVEGETATION

ORDER PLANTS

Plants could take up to 18 months to grow from seed to a size that can be planted out, so it's important to give nurseries plenty of time to contract-grow the required number of plants. It is recommended that planting during one planting season.

SET OUT AND PLANT

Set out plant sites by using colour coded dazzle. Spot spray rank grass 1m around each planting site using a 'z' pattern (if necessary). Seedlings should be planted in a hole that is twice the size of the root ball and at a base-of-stem depth of 20-50mm below the soil surface (this will help direct water to the roots when it rains). Install combi guards (including felt collar) to each plant at time of planting.

MAINTENANCE

GROWING SEASONS (GS) 1 & 2

Maintenance will include monthly visits from a contractor during Oct - March to spot spray weeds, monitor and replace dead plants and monitor rabbits.

GROWING SEASONS (GS) 3 & THEREAFTER

Maintenance will begin to taper as plants become established and weeds are less likely to strangle plants. Residents will take over maintenance of the planting on their own lots following the second growing season. Maintenance during the third to fifth growing season will include bi-monthly visits to spot spray weeds, monitor and replace dead plants and monitor/control rabbits. Following that, maintenance will taper to twice per year and finally once per year to monitor weeds.

INDICATIVE PROGRAMME

2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter	spring	summer	autumn	winter
GROWING SEASON			GROWING SEASON															
	PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON		PLANTING SEASON	

Roadside	2017/18	2018	2018	2018	2018/19	2019	2019	2019	2019/20	2020	2020	2020	2020/21	2021	2021	2021	2021/22	2022	2022
Order Plants																			
Site Prep																			
Establish Planting																			
GS1-GS2 Maintenance																			
GS3+ Maintenance																			

RPS | ROADSIDE PLANTING STRIP

INDICATIVE PLANT SCHEDULE

Code	Botanical Name	Common Name	Grade	Spacing	Quantity
Co c	Coprosma crassifolia	thick-leaved mikimiki	PB3	1500	101
Co co	Corokia cotoneaster	korokio	PB3	1500	101
Co v	Coprosma virescens	taupata	PB3	1500	101
OI od	Olearia odorata	scented tree daisy	PB3	3000	25
Ph c	Phormium cookianum	mountain flax	PB3	1500	101
Pi eu	Pittosporum euginiodes	lemonwood	PB3	3000	25
Pi t	Pittosporum tenuifolium	kohuhu	PB3	1500	25
					479

NOTE:

Spacings are shown in millimeters

PB3 = Plant Bag size 3, same as 2L pot size

INDICATIVE COSTS (SCHEDULE)

Estimate of costs: Roadside (RPS)	qty	unit	rate	Site prep + ordering	Plant establishment	GS1 Maintenance	GS2 Maintenance	GS3+ Maintenance by each resident*
Total POS area (all planting)	0.0726	ha						
Total area as part of residential Lots (100% of POS area)	0.0726	ha						
Pre-plant weed spraying (monthly Oct - April)	0.0726	ha	\$ 1,000.00	\$ 436				
PB3 Plant supply (50% to order, 50% when delivered)	479	ea	\$ 5.50	\$ 1,317	\$ 1,317			
Planting and setout	479	ea	\$ 5.50		\$ 2,635			
Combi Guards^^	479	ea	\$ 3.00		\$ 1,437			
GS1-GS2 Maintenance	1	year	\$ 191.60			\$ 192	\$ 192	
GS3+ Maintenance	1	year	\$ 114.96					\$ 23
Total				\$ 1,753	\$ 5,389	\$ 192	\$ 192	\$ 23
Total per hectare				\$ 24,144	\$ 74,225	\$ 2,639	\$ 2,639	\$ 1,583
Total per m2				\$ 2.41	\$ 7.42	\$ 0.26	\$ 0.26	\$ 0.16

Notes and Assumptions:

All costs and figures are indicative only and are subject to refinement

GS = Growing Season

PB3 grade plants are specified on the roadside strip to speed establishment

*GS3+ costs shown are an average per year for ongoing maintenance (expected to taper)

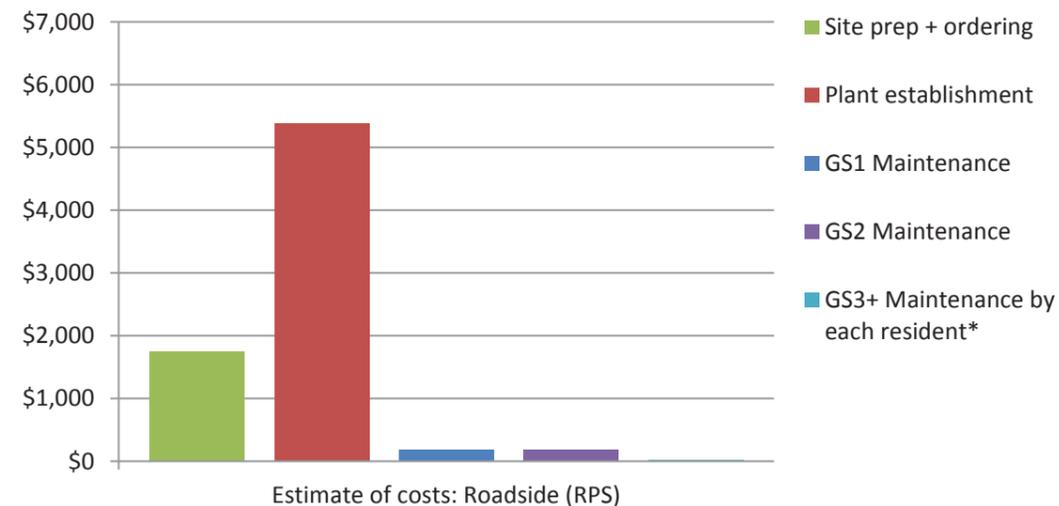
^worked out as 5% of (total cost to plant less cost of combi guards). Includes herbicide spray and plant replacer

~worked out as 3% of (total cost to plant less cost of combi guards). Includes herbicide spray and plant replacer

^^Combi guards provide rabbit and weed protection in the absence of a rabbit exclusion fence

All figures are GST exclusive

INDICATIVE COSTS (GRAPH)



SUMMARY

TOTAL PLANT SCHEDULE

Code	Botanical Name	Common Name	Grade	Spacing	Quantity
Ac 'AB'	Acer 'Autumn Blaze'	autumn blaze maple	BR	as shown	7
Ar s	Aristotelia serrata	wineberry	DRT	3000	143
Au r	Austroderia richardii	toetoe	DRT	1500	468
Ca bu	Carex buechananii	buechanans sedge	DRT	700	3559
Ca pe	Carmichaelia petriei	native broom	DRT	1500	813
Ca s	Carex secta	pukoi	DRT	900	138
Ca si	Carex sinclairii	sinclair's sedge	DRT	700	223
Ch ri	Chionochloa rigida	snow tussock	DRT	900	910
Ch ru	Chionochloa rubra	red tussock	DRT	1000	1830
Co a	Cordyline australis	cabbage tree	DRT	3000	229
Co c	Coprosma crassifolia	thick-leaved mikimiki	DRT	1500	320
Co co	Corokia cotoneaster	korokio	DRT	1500	177
Co p	Coprosma propinqua	coprosma	DRT	1500	569
Co ri	Coprosma rigida	mingimingi	DRT	1500	572
Co ru	Coprosma rugosa	coprosma	DRT	1500	569
Co v	Coprosma virescens	taupata	DRT	1500	833
Di t	Discaria toumatou	matagouri	DRT	1500	749
Fe nz	Festuca novae-zelandiae	tawny tussock	DRT	700	64
Fr a 'R'	Fraxinus angustifolia 'Raywoodii'	claret ash	BR	as shown	14
Fu f	Fuscospora fusca	red beech	DRT	3000	143
Fu s	Fuscospora solandri	black beech	DRT	3000	143
Gr l	Griselinia littoralis	kapuka/broadleaf	DRT	3000	673
Ha bi	Halocarpus bidwillii	bog pine	DRT	1500	76
He s	Hebe salicifolia	koromiko	DRT	3000	152
Ju e	Juncus edgariae	wiwi	DRT	900	138
Le cu	Leonohebe cupressoides	Fragrant hebe	DRT	1500	380
Le s	Leptospermum scoparium	manuka	DRT	1500	237
Me a	Melicytus alpinus	porcupine shrub	DRT	800	244
My a	Myrsine australis	Matapo	DRT	1500	101
Oi a	Olearia arborescens	tree daisy	DRT	3000	25
Oi bu	Olearia bullata	Olearia bullata	PB5	1500	553
Oi fr	Olearia fragrantissima	fragrant tree daisy	DRT	3000	76
Oi l	Olearia lineata	tree daisy	DRT	3000	94
Oi od	Olearia odorata	scented tree daisy	DRT	3000	187
Oz l	Ozothamnus leptophyllus	cottonwood	DRT	1500	304
Ph al	Phyllocladus alpinus	mountain toatoa	DRT	3000	229
Ph c	Phormium cookianum	mountain flax	DRT/PB5	1500	986/96
Ph t	Phormium tenax	harakeke	DRT	1500	84
Pi eu	Pittosporum eugenoides	lemonwood	DRT	3000	193
Pi t	Pittosporum tenuifolium	kohuhu	DRT/PB5	1500	577/96
Pl r	Plagianthus regius	ribbonwood	DRT/1.2m	3000	103/40
Po c	Poa cita	silver tussock	DRT	700	1832
Qu r 'F'	Quercus robur 'Fastigiata'	upright oak	BR	as shown	7
So m	Sophora microphylla	kowhai	DRT	3000	343
Ti c	Tilia cordata	small leaved lime	BR	as shown	24
					20399

NOTE:

Spacings are shown in millimeters

DRT = Deep Root Trainer grade. Similar size plants come in other grade descriptions such as RX90, V150/V130 or 285cc/310cc, depending on availability. These grades are also acceptable.

BR = Bare Root Stock - also known as Open Ground (OG) stock.

TOTAL COST ESTIMATE

			Arrowsouth Properties Ltd	
Private Open Space (POS)	Rate*	Unit	Area	Est Cost*
Escarpment (POS E1, E2, E3)	\$ 84,531	ha	2.353	\$ 198,903
Outcrop (POS E5, E6)	\$ 91,086	ha	0.2265	\$ 20,631
Waterway (POS W1, W2, W3)	\$ 87,430	ha	0.7737	\$ 67,644
Pastures (POS P1, P2, P3)	\$ 6,239	ha	2.889	\$ 18,023
Roadside (RPS)	\$ 103,647	ha	0.0726	\$ 7,525
Total		ha	6.3148	\$ 312,726

Notes and Assumptions:

* Rates and estimated costs are indicative only and GST exclusive. They are based on a more detailed preliminary costing for POS areas on Arrowsouth Properties Ltd land and include site prep, fence construction, rabbit control, revegetation and maintenance for the first two growing seasons.

ARROWSOUTH PROPERTIES LTD - LOCATION PLAN

QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:
RM210061

Friday, 20 August 2021

28

Meadow Park

Resort - Millbrook

SUBDIVISION SITE

Zone boundary follows ridgeline

Parcel boundaries derived from New Zealand Core Records System Vector Data (Corax) obtained from LINZ under the LINZ Licence Agreement

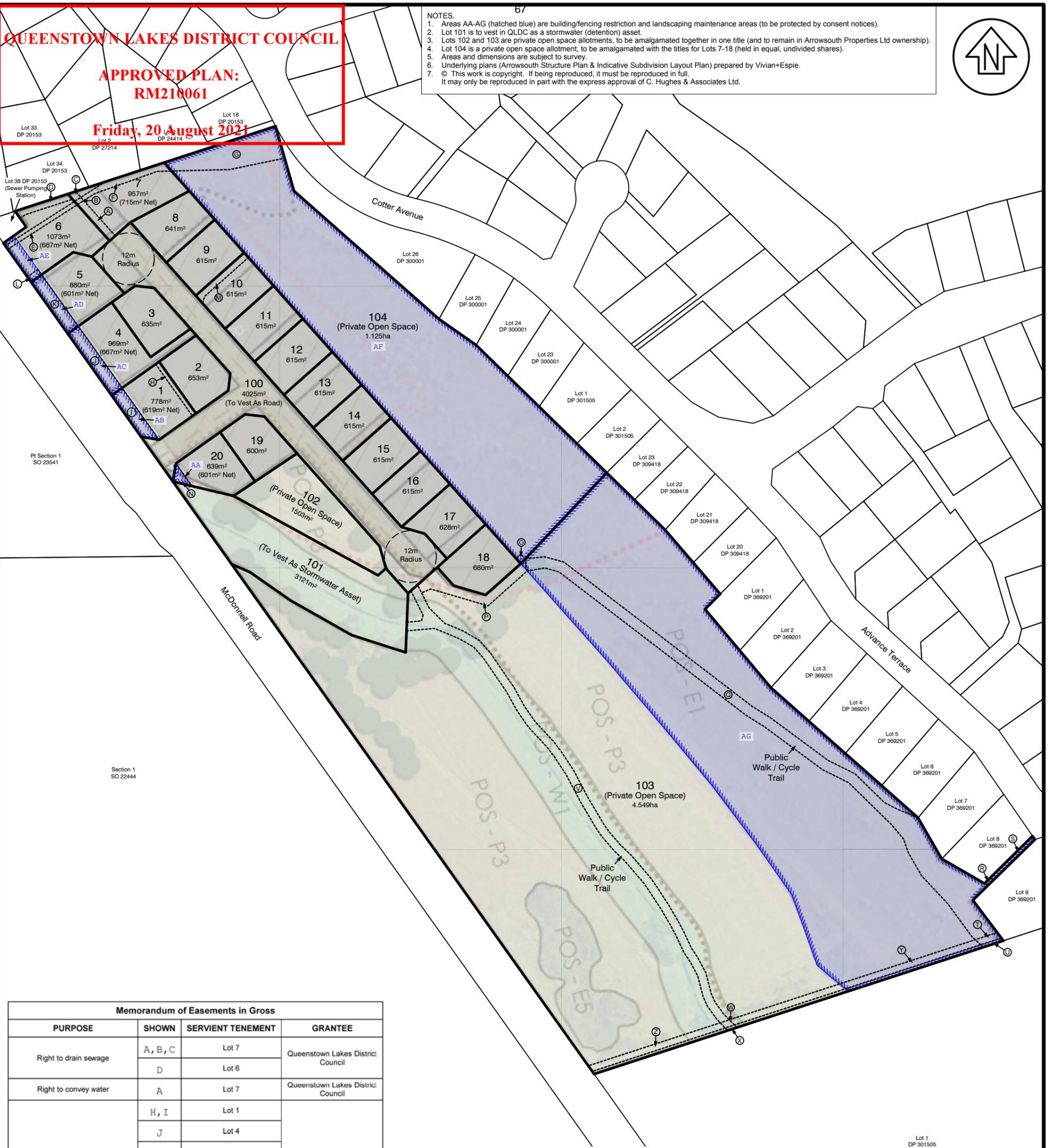
QUEENSTOWN LAKES DISTRICT COUNCIL

**APPROVED PLAN:
RM210061**

Friday, 20 August 2021

NOTES:

1. Areas AA-AG (hatched blue) are building/fencing restriction and landscaping maintenance areas (to be protected by consent notices).
2. Lot 101 is to vest in QLDC as a stormwater (detention) asset.
3. Lots 102 and 103 are private open space allotments, to be amalgamated together in one title (and to remain in Arrowsouth Properties Ltd ownership).
4. Lot 104 is a private open space allotment, to be amalgamated with the titles for Lots 7-18 (held in equal, undivided shares).
5. Areas and dimensions are subject to survey.
6. Underlying plans (Arrowsouth Structure Plan & Indicative Subdivision Layout Plan) prepared by Vivian+Espie.
7. © This work is copyright. If being reproduced, it must be reproduced in full. It may only be reproduced in part with the express approval of C. Hughes & Associates Ltd.



Memorandum of Easements in Gross			
PURPOSE	SHOWN	SERVIENT TENEMENT	GRANTEE
Right to drain sewage	A, B, C	Lot 7	Queenstown Lakes District Council
	D	Lot 6	
Right to convey water	A	Lot 7	Queenstown Lakes District Council
Right to drain water	H, I	Lot 1	Queenstown Lakes District Council
	J	Lot 4	
	K	Lot 5	
	L	Lot 6	
	M	Lot 10	
	N	Lot 20	
	O	Lot 104	
Right of way (public access)	P, Q, R, S, T, U, V, W, X	Lot 103	Queenstown Lakes District Council

Schedule of Existing Easements in Gross			
PURPOSE	SHOWN	SERVIENT TENEMENT	CREATED BY
Right to convey water	E	Lot 6	T5011355.7
	B, F	Lot 7	
	G	Lot 104	
Right to drain sewage and water	R	Lot 103	E17095612.8
Right to convey sewage	T, W, Y, Z	Lot 103	T909861.4

**Proposed Subdivision of Lot 29 DP 369201
(Sheet 1 - Overlay on Arrowsouth Structure Plan & Indicative Subdivision Layout Plan)**

Arrowsouth Properties Ltd
McDonnell Road, Arrowtown

C. HUGHES & ASSOCIATES LTD
Surveying and Resource Management • Central Otago



ISSUE	AMENDMENTS	DATE
F	Lot 102/103 Amalgamation Note & Emt F	28/02/17
G	Areas Re-calculated	13/04/17
H	Bdys & Areas Adjusted & Net Areas Added	21/04/17
I	Lots 7-18 & 104, Areas, Dimensions, Notes	19/05/17
J	Easements Revised	18/02/19
K	Easements Revised	6/03/19

Scale: 1 : 1750 (A3)
Datum: -
Origin: -

Job No: 5479
Plan No: C1212
Drawn: CRH
Date: June 2016

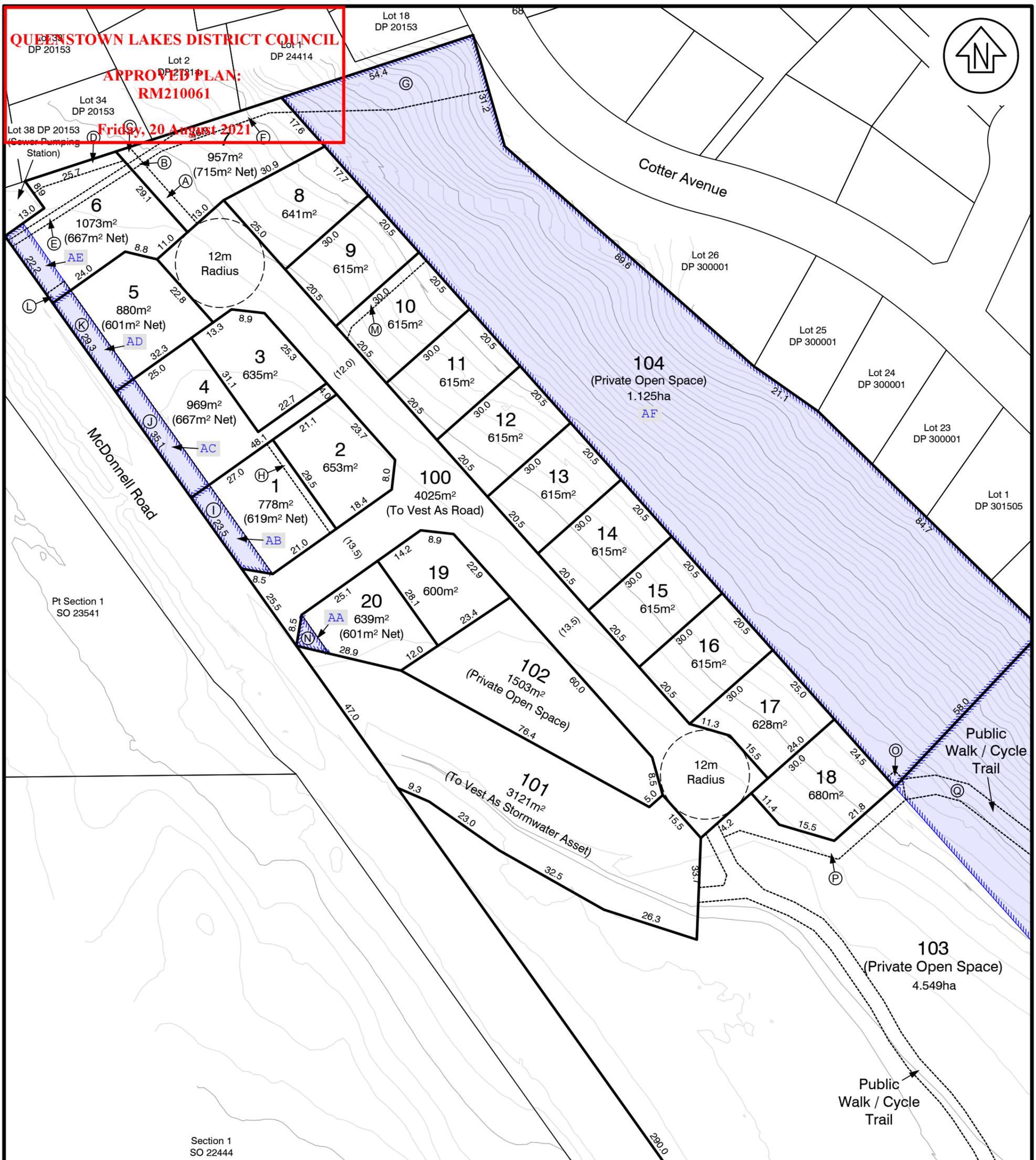
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S:\12\Jobs\40155005479 McDonnell Rd Arrowtown\Docs\Plans

Document Set ID: 6022065
Version: 1, Version Date: 00/08/2020



- NOTES.
1. Areas AA-AG (hatched blue) are building/fencing restriction and landscaping maintenance areas (to be protected by consent notices).
 2. Lot 101 is to vest in QLDC as a stormwater (detention) asset.
 3. Lots 102 and 103 are private open space allotments, to be amalgamated together in one title (and to remain in Arrowsouth Properties Ltd ownership).
 4. Lot 104 is a private open space allotment, to be amalgamated with the titles for Lots 7-18 (held in equal, undivided shares).
 5. Areas and dimensions are subject to survey.
 6. Contour Interval: 5.0m Major, 1.0m Minor.
 7. Underlying plans (Arrowsouth Structure Plan & Indicative Subdivision Layout Plan) prepared by Vivian+Espie.
 8. © This work is copyright. If being reproduced, it must be reproduced in full. It may only be reproduced in part with the express approval of C. Hughes & Associates Ltd.

Proposed Subdivision of Lot 29 DP 369201
(Sheet 2 - Proposed Subdivision Layout)

Arrowsouth Properties Ltd
McDonnell Road

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ISSUE	AMENDMENTS	DATE
F	Lot 102/103 Amalgamation Note & Emt F	28/02/17
G	Areas Re-calculated	13/04/17
H	Bdys & Areas Adjusted & Net Areas Added	21/04/17
I	Lots 7-18 & 104, Areas, Dimensions, Notes	19/05/17
J	Easements Revised	18/02/19
K	Easements Revised	6/03/19

Scale:
1 : 1000 (A3)

Datum: -

Origin: -

Job No:
5479

Plan No:
C1212

Drawn:
CRH

Date: **June 2016**

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Existing Roadside
Drainage Area
Shaped into Swale
and Planted/Grassed

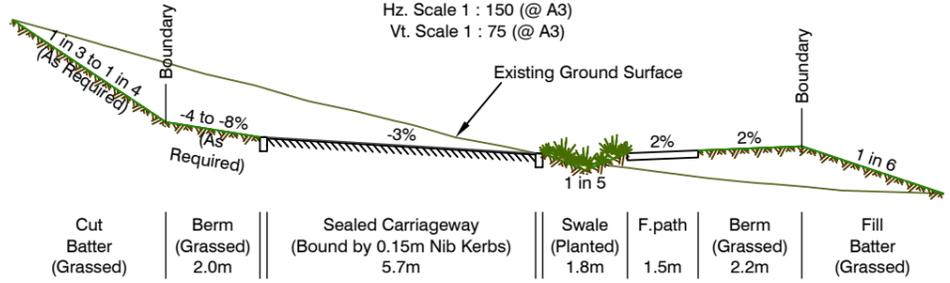
Pedestrian
Walkway

McDonnell Road

Cotter Avenue

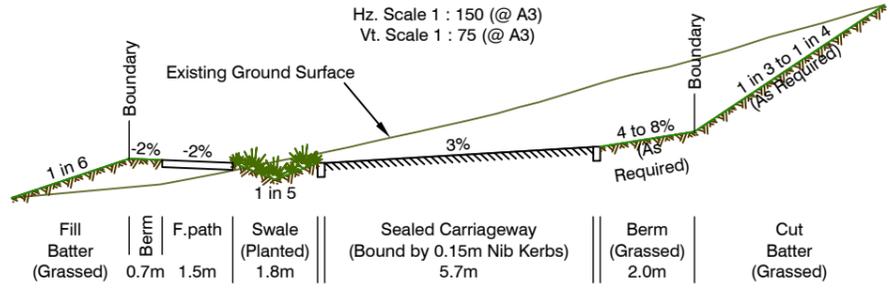
ROAD 01 TYPICAL CROSS SECTION

HZ. Scale 1 : 150 (@ A3)
VT. Scale 1 : 75 (@ A3)



ROAD 02 TYPICAL CROSS SECTION

HZ. Scale 1 : 150 (@ A3)
VT. Scale 1 : 75 (@ A3)



- NOTES.**
1. NOT FOR CONSTRUCTION.
 2. Contour Interval: 5.0m Major, 1.0m Minor
 3. Cut and fill batters are shown with transparent red and green hatch.
 4. Annotated cuts and fills are to finished level (-0.2m to Subgrade)
 5. Roading Earthworks Area 6390m² (including McDonnell Road swales and walkways)
Roading Earthworks Volumes (to subgrade after 1170m² topsoil stripping): 1490m³ Cut and 500m³ Fill.
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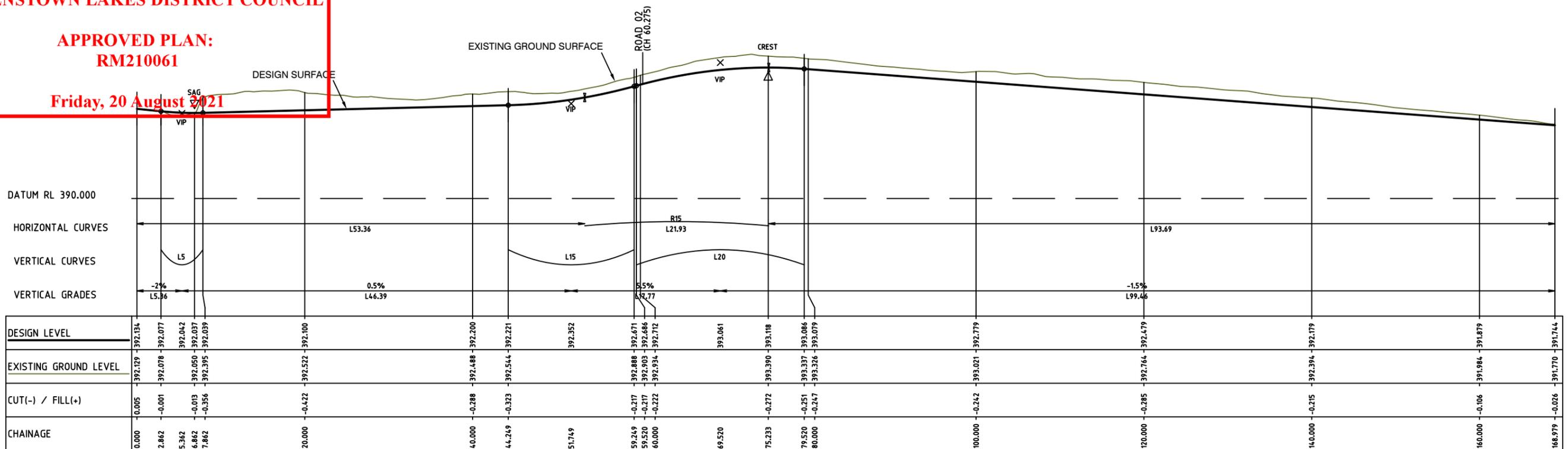


**Arrowsouth - Prelim. Engineering Design
Roading Layout & Typical Cross Sections**

Arrowsouth Properties Ltd
McDonnell Road, Arrowtown

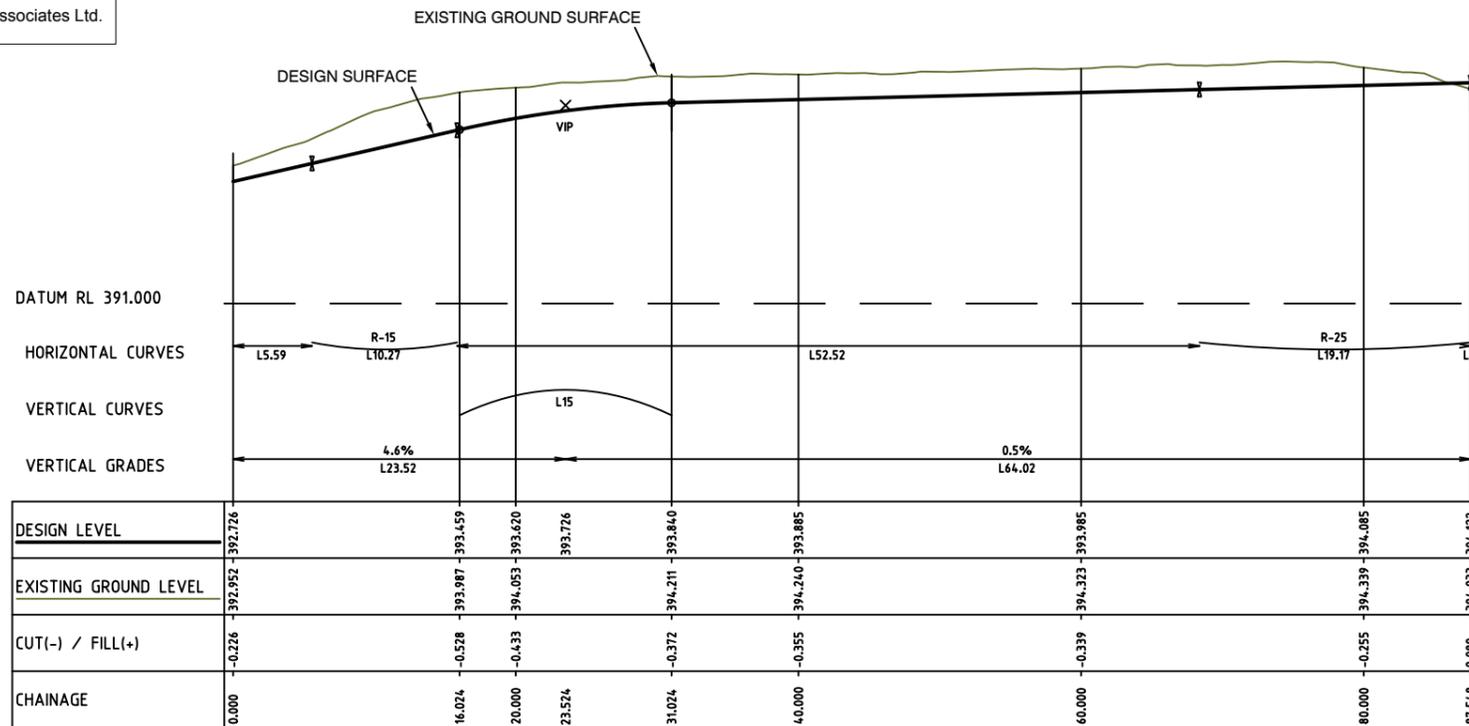
ISSUE	AMENDMENTS	DATE
A	Cut/Fill Batters & Earthworks Volumes/Area	12/10/16
B	Lots 101 and 102	28/10/16
C		
D		
E		

Scale: 1 : 750 (A3)	Job No: 5479
Datum: MSL	Plan No: C1244_01
Origin: EFPG	Drawn: CRH
Date: October 2016	



ROAD 01 - LONGITUDINAL SECTION
HORIZ. 1:500 VERT. 1:100

NOTES.
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ROAD 02 - LONGITUDINAL SECTION
HORIZ. 1:500 VERT. 1:100

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Arrowsouth - Prelim. Engineering Design
Road Longitudinal Sections
Arrowsouth Properties Ltd
McDonnell Road, Arrowtown

ISSUE	AMENDMENTS	DATE
A		
B		
C		
D		
E		

Scale: AS SHOWN (@ A3)	Job No: 5479
Datum: MSL	Plan No: C1244_02
Origin: EFPG	Drawn: CRH
Date: October 2016	

QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:

RMP10061

Friday, 20 August 2021

Existing Wastewater Pump Station

Proposed Connection to Existing QLDC Water Main

Cotter Avenue



LEGEND

- Wastewater Gravity Main
- Wastewater Manhole
- Wastewater Pumping Main
- Stormwater Mudtank
- Stormwater Mudtank Connection
- Stormwater Gravity Main
- Stormwater Manhole
- Water Main

- NOTES.
1. Lots 1, 2, and 12-20 to pump into wastewater pressure mains using individual private pumps.
 2. Stormwater swales are proposed along the low side of carriageways (shown hatched green).
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--	--

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Arrowsouth - Prelim. Engineering Design Services Layout
 Arrowsouth Properties Ltd
 McDonnell Road, Arrowtown

ISSUE	AMENDMENTS	DATE
A	Water Rider Main Position & Easements	13/10/16
B	Stormwater Main Positions & Lots 101/102	27/10/16
C		
D		
E		

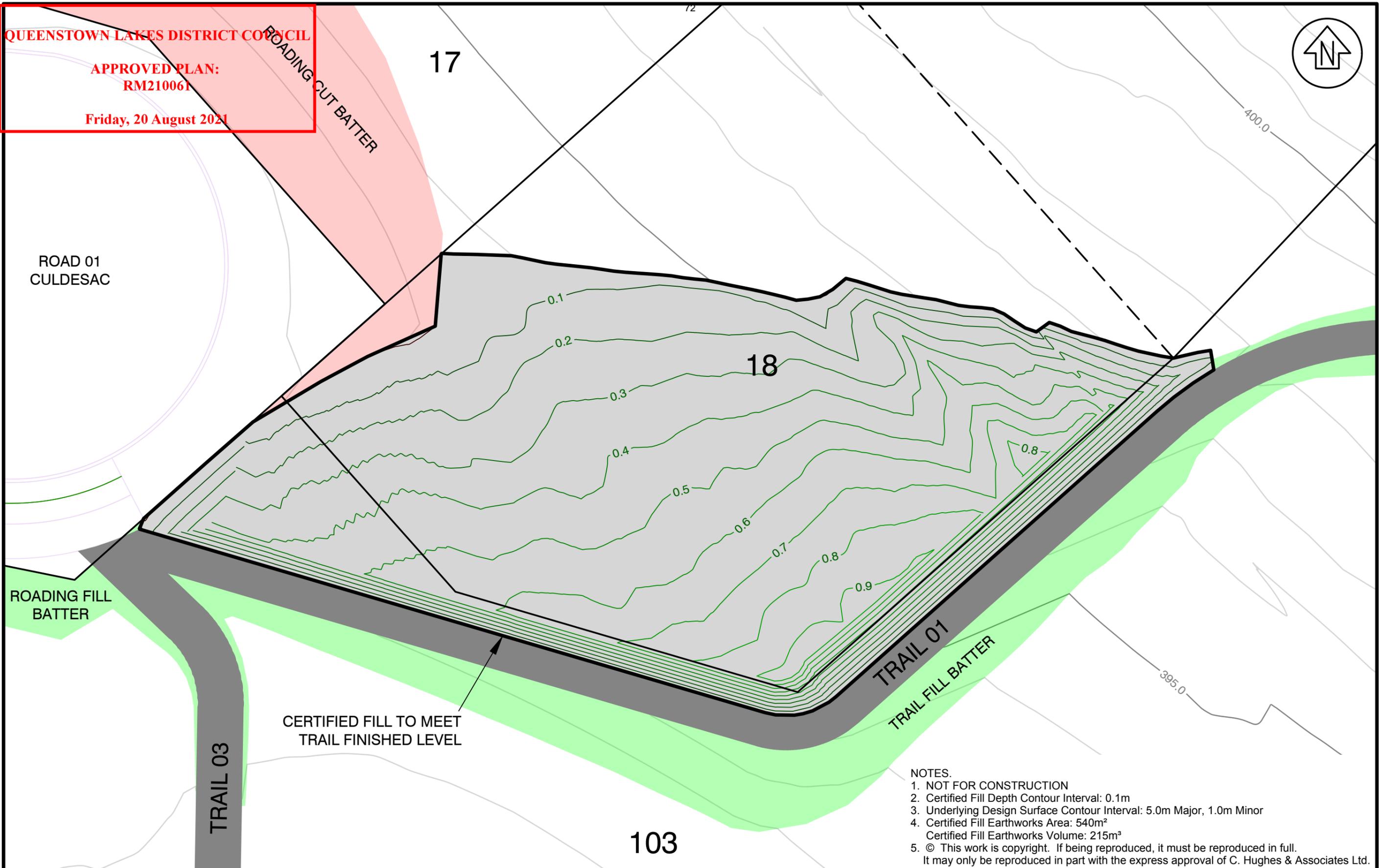
Scale: 1 : 750 (A3)
 Datum: MSL
 Origin: EFPG

Job No: 5479
 Plan No: C1244_05
 Drawn: CRH
 Date: October 2016

QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:
RM210061

Friday, 20 August 2021



- NOTES.
1. NOT FOR CONSTRUCTION
 2. Certified Fill Depth Contour Interval: 0.1m
 3. Underlying Design Surface Contour Interval: 5.0m Major, 1.0m Minor
 4. Certified Fill Earthworks Area: 540m²
Certified Fill Earthworks Volume: 215m³
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Arrowsouth - Prelim. Engineering Design
Certified Fill Earthworks Layout

Arrowsouth Properties Ltd
McDonnell Road, Arrowtown

ISSUE	AMENDMENTS	DATE
A		
B		
C		
D		
E		

Scale: 1 : 150 (A3)

Datum: MSL

Origin: EFPG

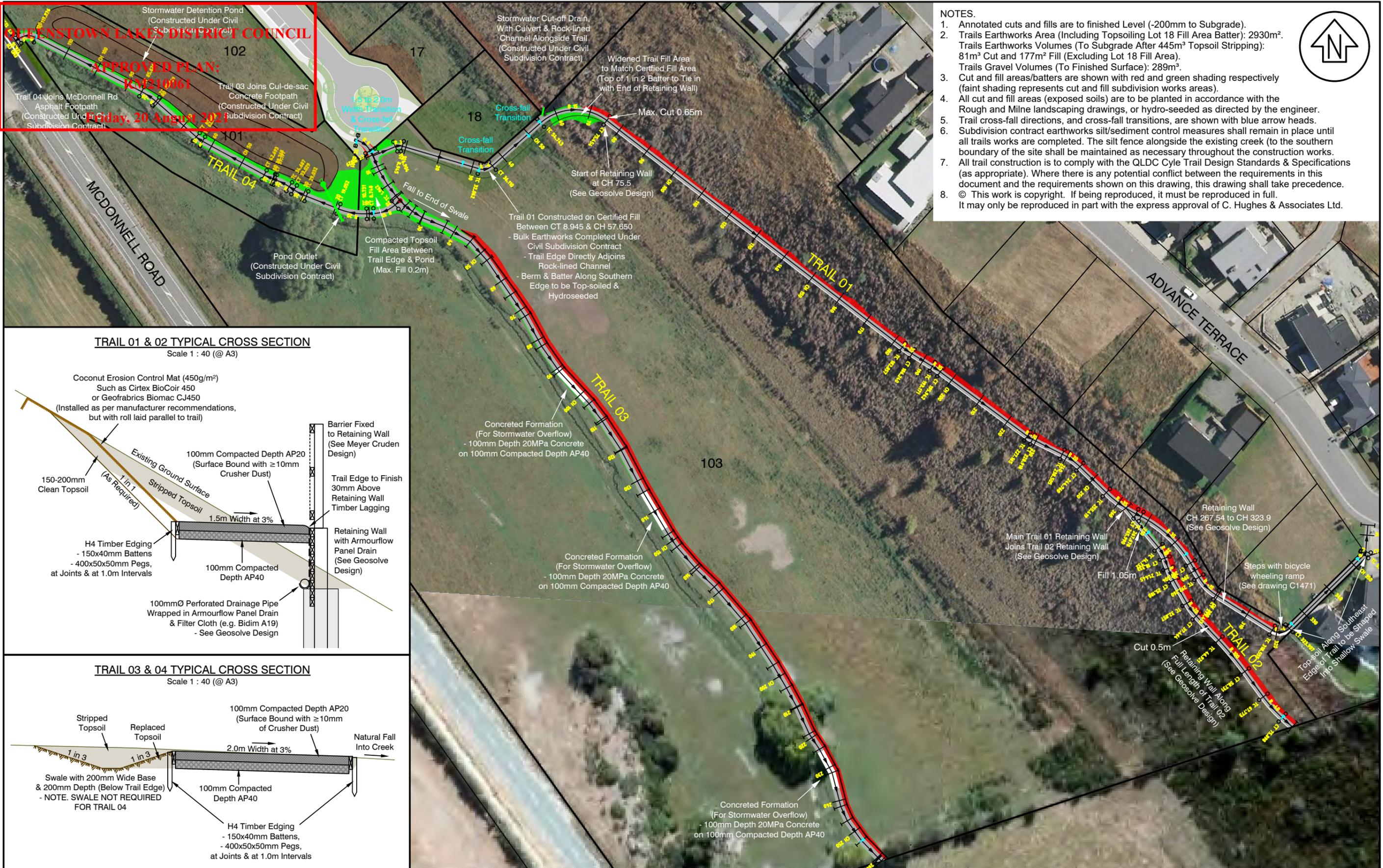
Job No: 5479

Plan No: C1244_06

Date: February 2017

Drawn: CRH

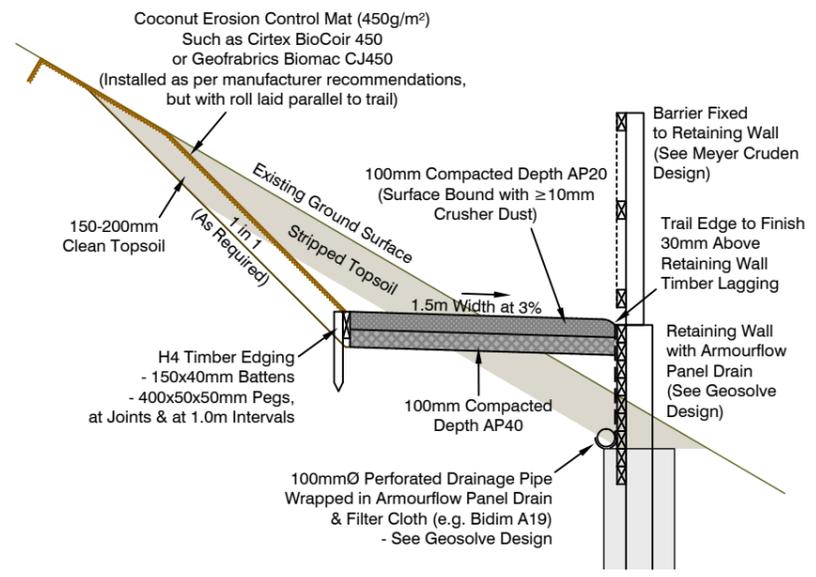
QUEENSTOWN LAKE DISTRICT COUNCIL
APPROVED PLAN:
 PLAN 10861
 Friday, 20 August 2015



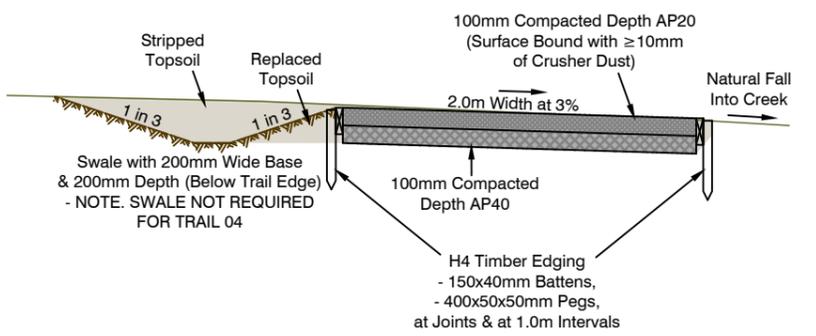
- NOTES.**
- Annotated cuts and fills are to finished Level (-200mm to Subgrade).
 - Trails Earthworks Area (Including Topsoiling Lot 18 Fill Area Batter): 2930m².
 Trails Earthworks Volumes (To Subgrade After 445m³ Topsoil Stripping):
 81m³ Cut and 177m³ Fill (Excluding Lot 18 Fill Area).
 Trails Gravel Volumes (To Finished Surface): 289m³.
 - Cut and fill areas/batters are shown with red and green shading respectively (faint shading represents cut and fill subdivision works areas).
 - All cut and fill areas (exposed soils) are to be planted in accordance with the Rough and Milne landscaping drawings, or hydro-seeded as directed by the engineer.
 - Trail cross-fall directions, and cross-fall transitions, are shown with blue arrow heads.
 - Subdivision contract earthworks silt/sediment control measures shall remain in place until all trails works are completed. The silt fence alongside the existing creek (to the southern boundary of the site shall be maintained as necessary throughout the construction works.
 - All trail construction is to comply with the QLDC Cyle Trail Design Standards & Specifications (as appropriate). Where there is any potential conflict between the requirements in this document and the requirements shown on this drawing, this drawing shall take precedence.
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TRAIL 01 & 02 TYPICAL CROSS SECTION
 Scale 1 : 40 (@ A3)



TRAIL 03 & 04 TYPICAL CROSS SECTION
 Scale 1 : 40 (@ A3)



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Arrowfields Trails Design Drawings
Trails Layout & Typical Cross Sections

Arrowsouth Properties Ltd
 McDonnell Road, Arrowtown

ISSUE	AMENDMENTS	DATE
A	Trail 1 platform/steps, notes, & Trail 3 conc	25/01/21
B		
C		
D		
E		

Scale:	1 : 1000 (A3)	Job No:	5479
Datum:	MSL	Plan No:	C1346_01
Origin:	QLDC Webmaps SM14125	Drawn:	CRH
		Date:	Sept 2018

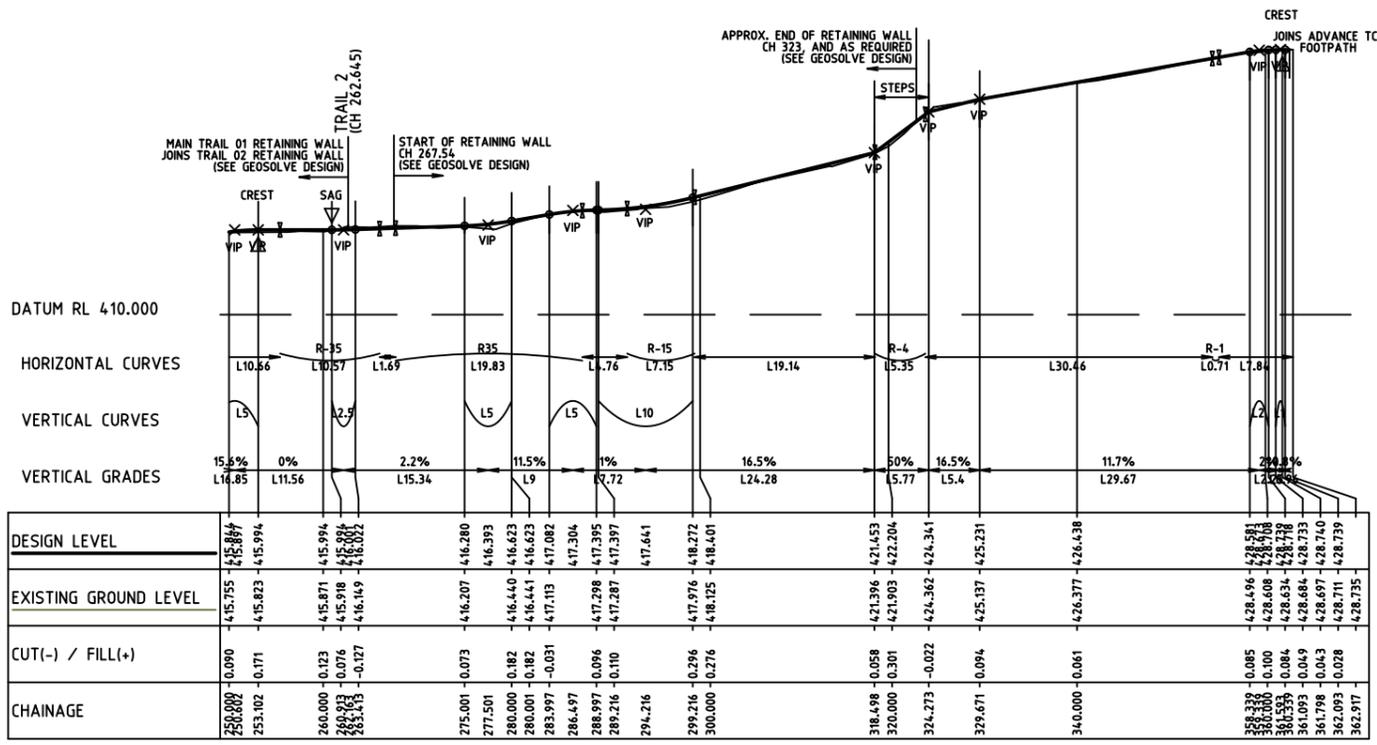
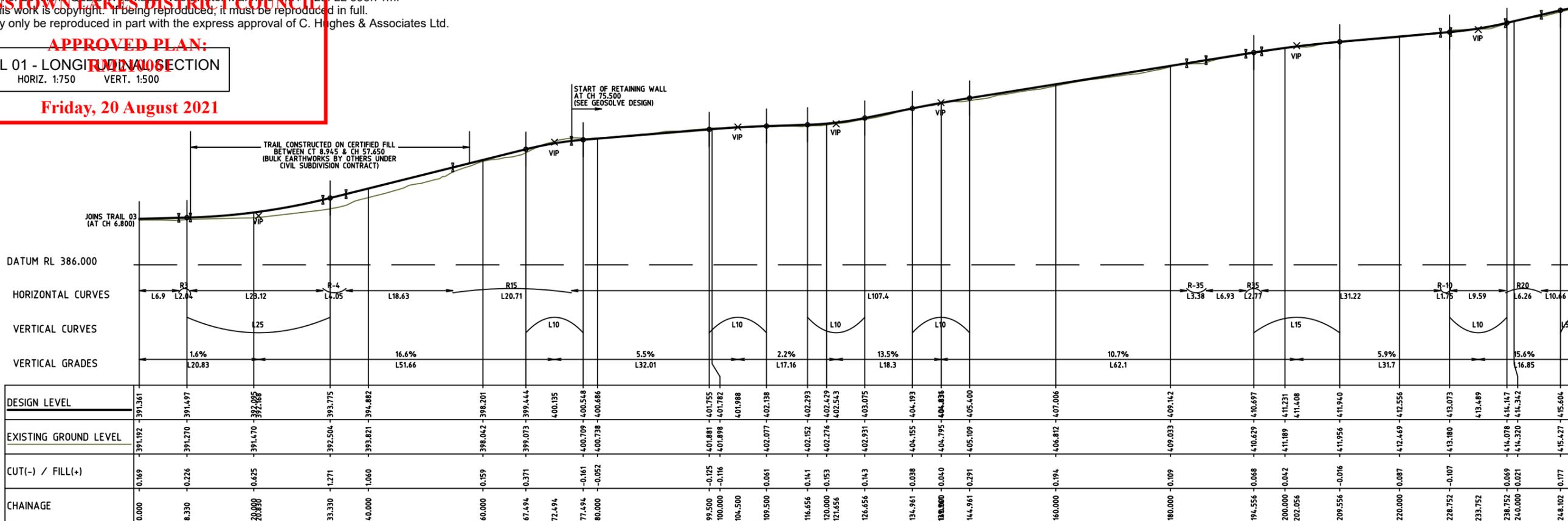
NOTES.

- Origin of Levels is QLDC Webmaps Wastewater Manhole SM14125: LL 393.71m.
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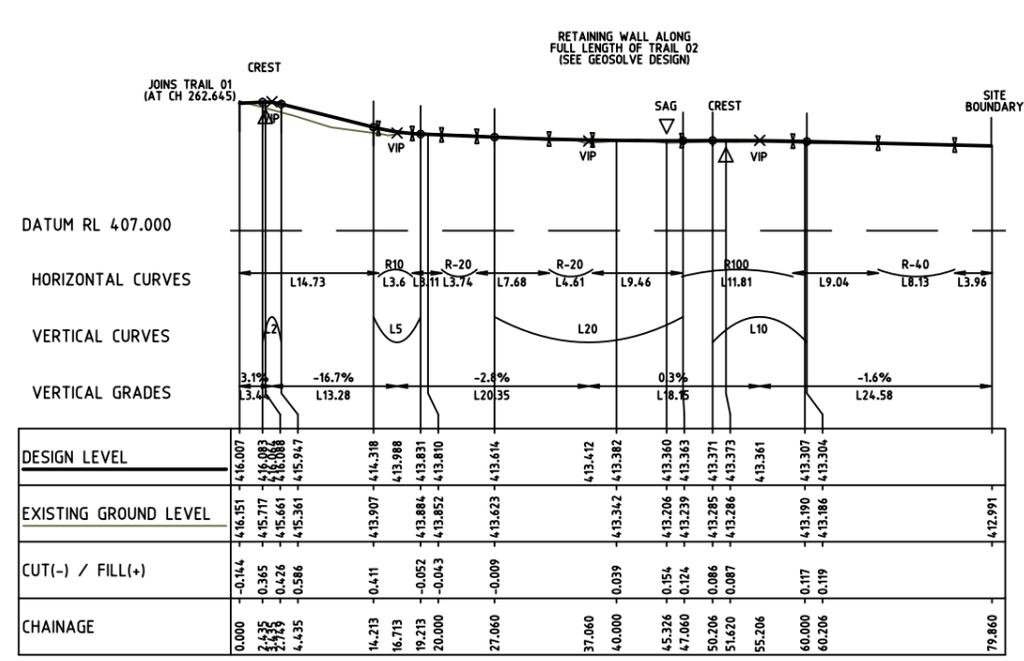
APPROVED PLAN:

TRAIL 01 - LONGITUDINAL SECTION
 HORIZ. 1:750 VERT. 1:500

Friday, 20 August 2021



TRAIL 02 - LONGITUDINAL SECTION
 HORIZ. 1:750 VERT. 1:500



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Arrowfields Trails Design Drawings
Escarpment Trails Longitudinal Sections

Arrowsouth Properties Ltd
 McDonnell Road

ISSUE	AMENDMENTS	DATE
A	Alter levels, remove platform, add steps	25/01/21
B		
C		
D		
E		

Scale: **As Shown (At A3)**

Datum: **MSL**

Origin: **QLDC Webmaps SM14125**

Job No: **5479**

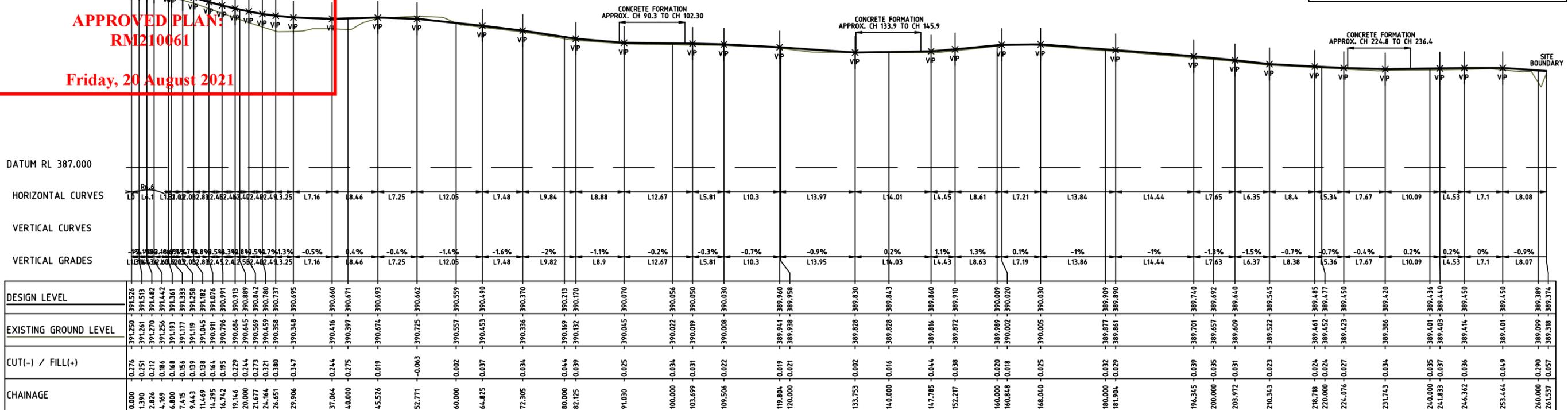
Plan No: **C1346_02**

Drawn: **CRH**

Date: **Sept 2018**

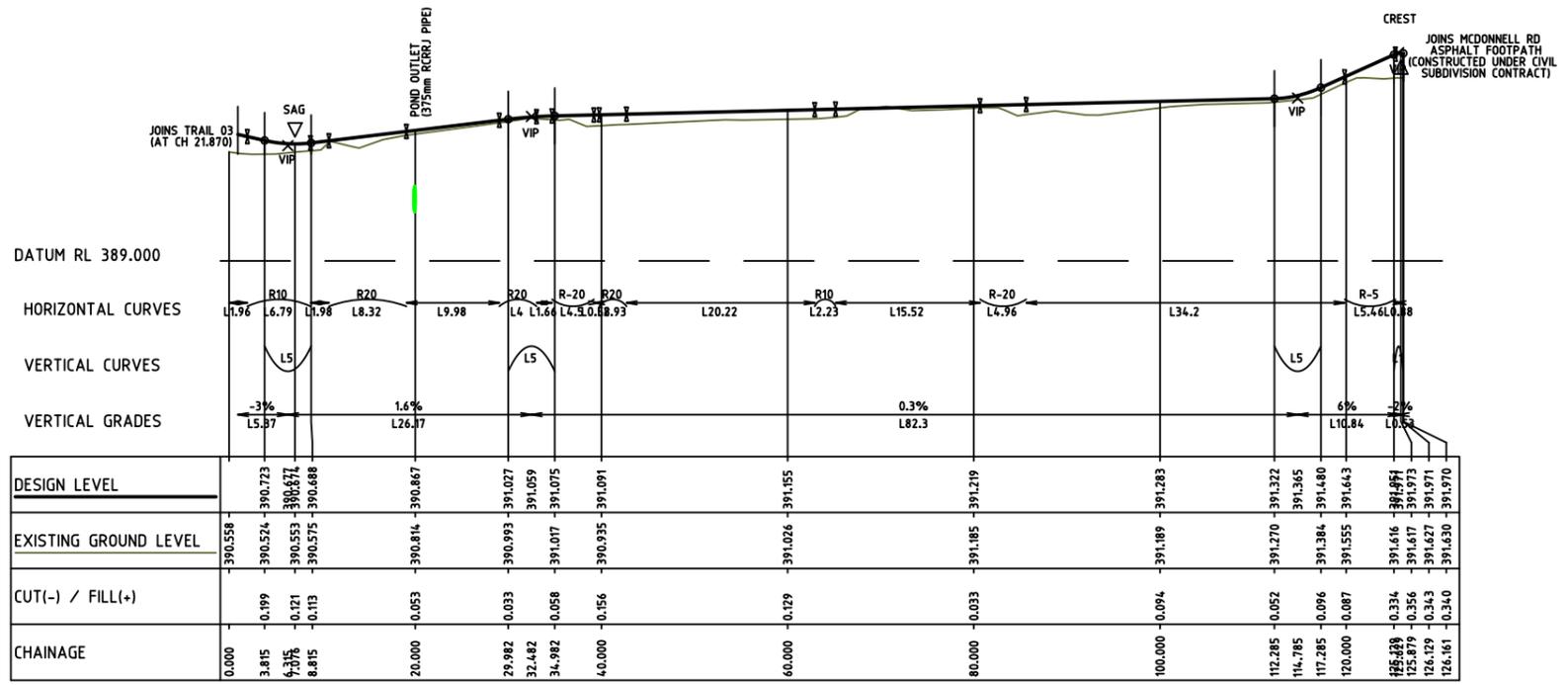
QUEENSTOWN LAKES DISTRICT COUNCIL
 APPROVED PLAN:
 RM210061
 Friday, 20 August 2021

TRAIL 03 - LONGITUDINAL SECTION
 HORIZ. 1:750 VERT. 1:100



TRAIL 03 - LONGITUDINAL SECTION
 HORIZ. 1:750 VERT. 1:100

TRAIL 04 - LONGITUDINAL SECTION
 HORIZ. 1:750 VERT. 1:100



NOTES:
 1. Origin of Levels is QLDC Webmaps Wastewater Manhole SM14125: LL 393.71m.
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Arrowfields Trails Design Drawings
 Creek-side Trails Longitudinal Sections

Arrowsouth Properties Ltd
 McDonnell Road

ISSUE	AMENDMENTS	DATE
A	Remove culverts, add concrete formation	25/01/21
B		
C		
D		
E		

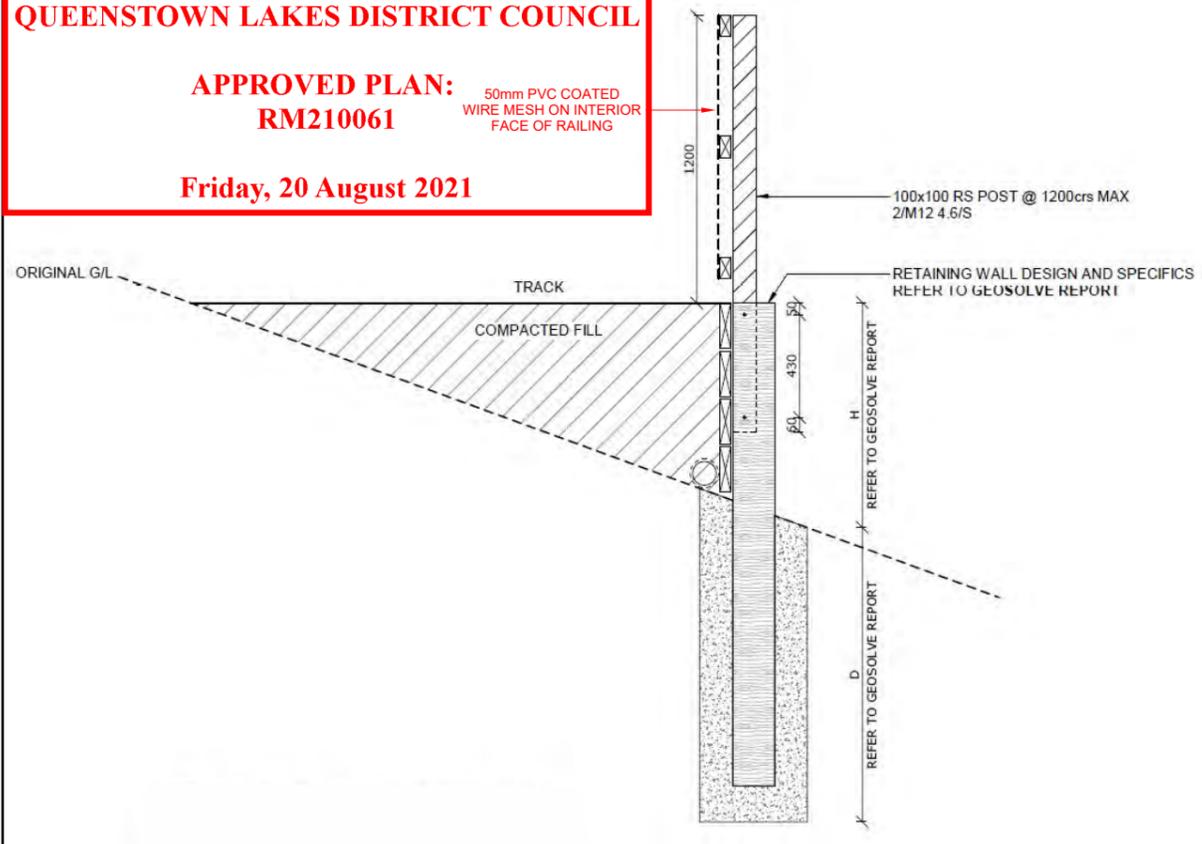
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Datum:	MSL	Plan No:	C1346_03
Origin:	QLDC Webmaps SM14125	Drawn:	CRH
		Date:	Sept 2018

QUEENSTOWN LAKES DISTRICT COUNCIL

**APPROVED PLAN:
RM210061**

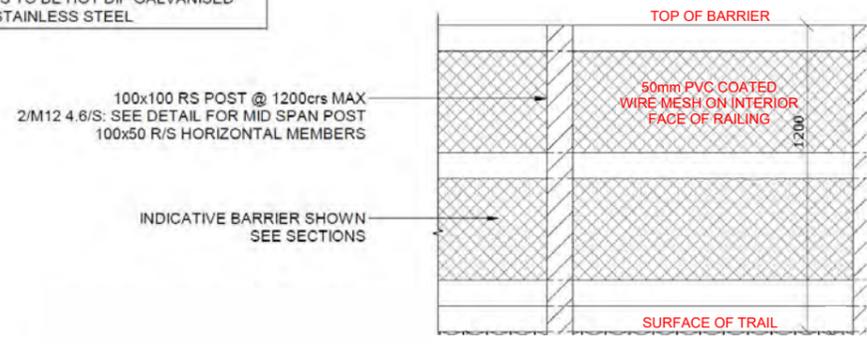
50mm PVC COATED
WIRE MESH ON INTERIOR
FACE OF RAILING

Friday, 20 August 2021



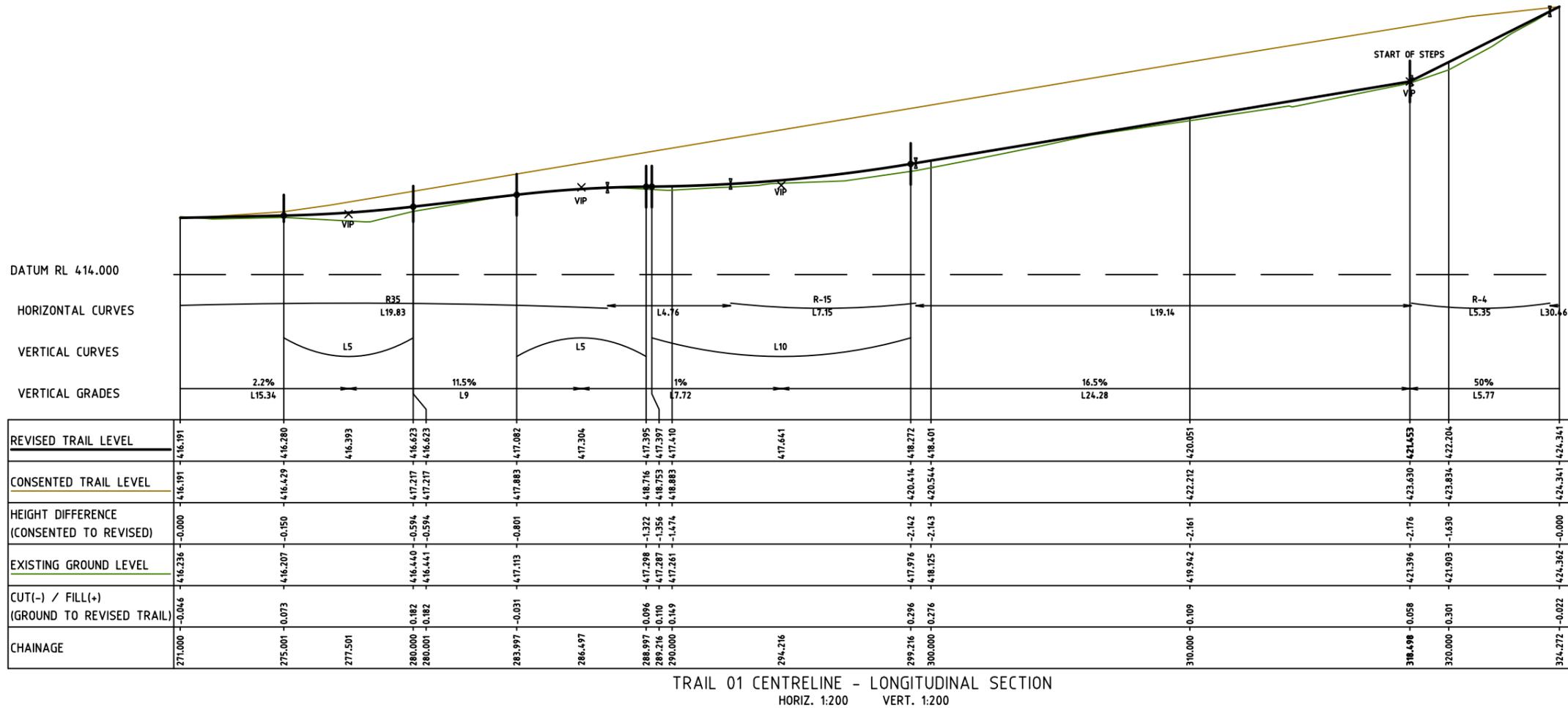
NOTE:

*ALL TIMBER TO BE MINIMUM H3.2 & SG8
*ALL FIXINGS TO BE STAINLESS STEEL
*BOLTS TO BE HOT DIP GALVANISED
*S/S: STAINLESS STEEL



18 ADVANCE TCE - APPROX. LOWER FFL

18 ADVANCE TCE - APPROX. LOWER FFL



TRAIL 01 CENTRELINE - LONGITUDINAL SECTION
HORIZ. 1:200 VERT. 1:200

NOTES:

- Elevated platform to be removed & gravel trail with low level retaining wall & barrier to be constructed (as constructed elsewhere along Trails 01 & 02) with section of steps & bicycle wheeling ramp
- Timber & wire mesh barrier projects up 1200mm above surface of trail (above top of retaining wall)
- Construction specs for steps with bicycle wheeling ramp as follows:
 - Bicycle wheeling ramp formed using 500mm width, 200-300mm depth 20MPa concrete on 100mm compacted depth AP40, with 150mm wide half round wheeling channel (with 4.4m curve radius)
 - Bicycle wheeling ramp to comply with Section 8.4 of the Austroads Guide to Road Design Part 6A
 - H4 timber edging around internal curve at 3.2m radius, formed using 200x50mm batten & 600x50x50mm pegs
 - Steps formed using 200x50mm H4 timber battens along riser edges (fixed onto edging batten & using 600x50x50mm H4 pegs either side), 100mm compacted depth AP40 & 100mm compacted depth AP20 (bound with 10mm crusher dust)
 - Step tread width 1000mm, depth 290-380mm (along edges), & riser height 180mm
 - Bicycle wheeling ramp kerb height 75mm (minimum) above steps

REVISION	AMENDMENTS	DATE
B	For Consent. Revised terminology. M C Eng barrier diag	9/04/21
C	For Consent	15/04/21

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Project:
**RM161093 Arrowsouth Properties
Alternative Upper Trail 1 Design**

Title:
Sections

FOR CONSENT

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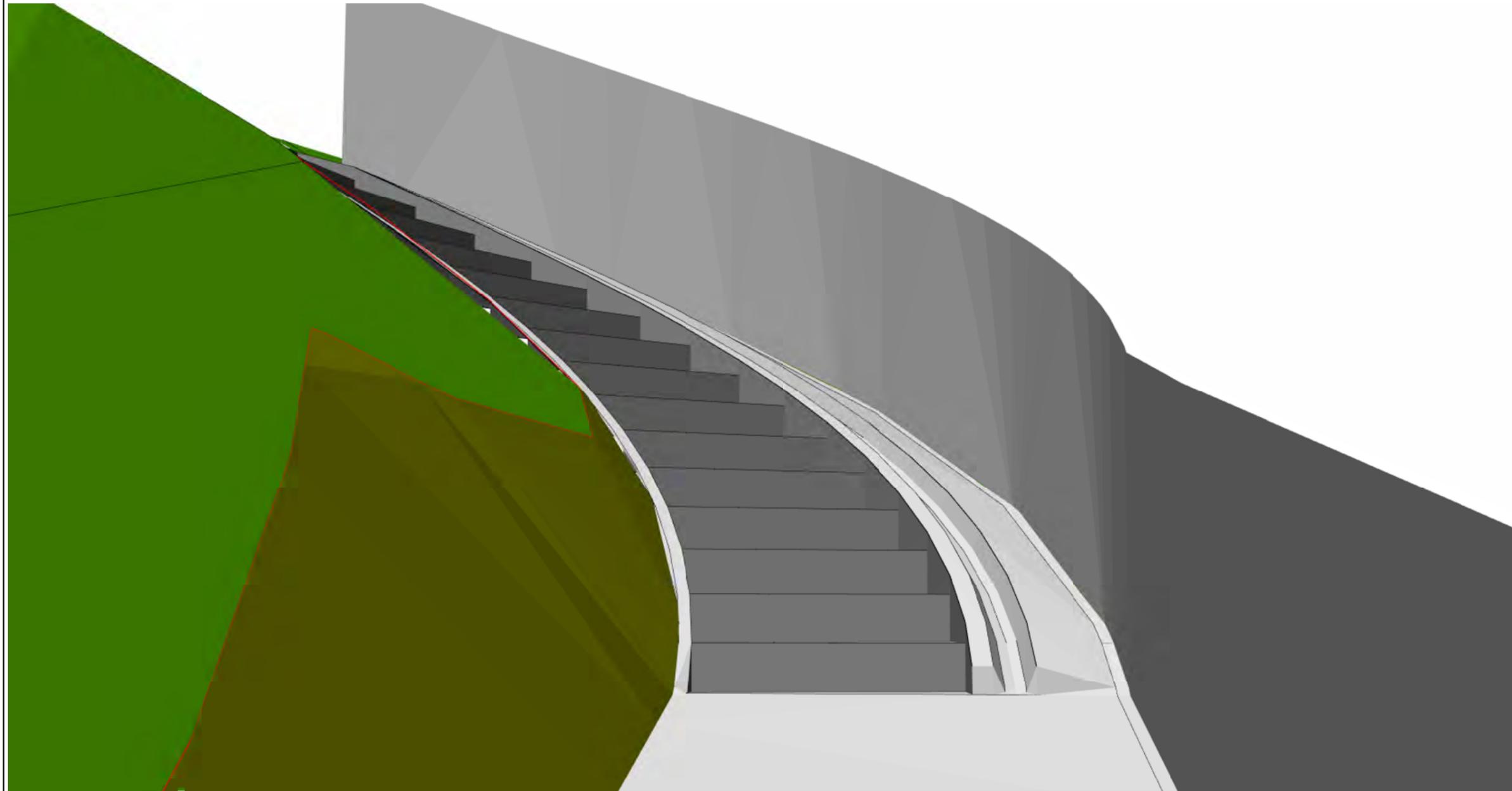
Scale: **AS SHOWN (A3)**

Job No: 5479	Drawn By: CRH	Datum: MSL
Drawing No: C1471	Sheet No: 2	Revision: C
Date Created: April 2020		

QUEENSTOWN LAKES DISTRICT COUNCIL

**APPROVED PLAN:
RM210061**

Friday, 20 August 2021



NOTES:

1. Elevated platform to be removed & gravel trail with low level retaining wall & barrier to be constructed (as constructed elsewhere along Trails 01 & 02) with section of steps & bicycle wheeling ramp
2. Timber & wire mesh barrier projects up 1200mm above surface of trail (above top of retaining wall)
3. Construction specs for steps with bicycle wheeling ramp as follows:
 - Bicycle wheeling ramp formed using 500mm width, 200-300mm depth 20MPa concrete on 100mm compacted depth AP40, with 150mm wide half round wheeling channel (with 4.4m curve radius)
 - Bicycle wheeling ramp to comply with Section 8.4 of the Austroads Guide to Road Design Part 6A
 - H4 timber edging around internal curve at 3.2m radius, formed using 200x50mm batten & 600x50x50mm pegs
 - Steps formed using 200x50mm H4 timber battens along riser edges (fixed onto edging batten & using 600x50x50mm H4 pegs either side), 100mm compacted depth AP40 & 100mm compacted depth AP20 (bound with 10mm crusher dust)
 - Step tread width 1000mm, depth 290-380mm (along edges), & riser height 180mm
 - Bicycle wheeling ramp kerb height 75mm (minimum) above steps

REVISION	AMENDMENTS	DATE
B	For Consent	9/04/21
C	For Consent	15/04/21

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Project:
**RM161093 Arrowsouth Properties
Alternative Upper Trail 1 Design**

Title:
Indicative Perspective View

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Scale: NOT TO SCALE

Job No: 5479	Drawn By: CRH	Datum: MSL
Drawing No: C1471	Sheet No: 3	Revision: C
		Date Created: April 2020