



DECISIONS OF THE QUEENSTOWN LAKES DISTRICT COUNCIL

NOTIFICATION UNDER s95A AND s95B AND DETERMINATION UNDER s104

OF THE RESOURCE MANAGEMENT ACT 1991

Applicant:	Cardrona Valley Infrastructure Limited
RM reference:	RM191367
Application:	Application under Section 88 of the Resource Management Act 1991 (RMA) to construct a water treatment utility consisting of a reservoir settling pond, water holding tanks, treatment buildings, plant, all associated incidental structures, and for associated earthworks and construction of an access road
Location:	Cardrona Valley Road, Cardrona
Legal Description:	Lots 3 7-8 Deposited Plan 21223 and Lot 1-8, 10-12 Deposited Plan 446161 and Section 6, 8- 9 SO 459975 held on Record of Title 768581
Zoning:	ODP: Rural General, Mount Cardrona Station Special Zone – Activity Areas 6c (Southern Commonage) and 7b (Heritage) PDP: Rural
Activity Status:	Discretionary
Decision Date	15 June 2020

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 this report. This decision is made by Sarah Gathercole, Senior Planner, on 15 June 2020 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 **Appendix 1** of this decision imposed pursuant to Section 108 of the RMA. This consent can only be implemented if the conditions in Appendix 1 are complied with by the consent holder. 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 Sarah Gathercole, Senior Planner, as delegate for the Council.

1. SUMMARY OF PROPOSAL AND SITE DESCRIPTION

Consent is sought to construct a reservoir settling pond, water holding tanks, treatment buildings, access construction and all associated incidental structures, and for associated earthworks that breach volume, cut depth, distance to boundary, and proximity to water bodies.

The applicant has provided a description of the proposal, the site and locality and the relevant site history in Sections 1.0 – 1.5 of the report entitled “Cardrona Valley Infrastructure Limited, Mount Cardrona Station Special Zone Utility – Water Reservoir And Infrastructure Land Use Consent”, prepared by Karen Hanson of Clarke Fortune McDonald, 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:

Definition of the proposal

For completeness, the proposal is considered to be a ‘utility’ and is not ‘development’ or a ‘building’ as defined by the Operative District Plan (ODP). The definition of a utility for the treatment of water includes ‘structures’, which for water treatment logically includes water tanks, but does not include earthworks or the access road. Earthworks and construction of the access road are considered to be ‘associated works’ that are not defined as ‘development’:

Utility – means structures, facilities, plant and equipment for the treatment of water.

Structure – means any building, equipment device or other facility made by people and which is fixed to land and includes any raft.

Development – excludes any utility, the construction or alteration of any pipeline or associated works on land that is not otherwise subject to development.

The Proposed District Plan (PDP) does not include a definition of development. The proposed earthworks within the Rural Zone can therefore be considered development under the PDP where relevant.

While the application site is predominantly located within the Mount Cardrona Station Special Zone (MCSZ) Activity Area 7b (Heritage), part of the proposed access road crosses into Activity Area 6c (Southern Commonage). Some earthworks are located within the ODP Rural General / PDP Rural Zone.

MCSZ Activity Area 6c – M4 Mitigation

The water reservoir access road through Activity Area 6c will pass through an area identified on Structure Plan D – Mitigation, Earthworks and Planting Plan as M4 – Pringles Bdy Planting. This area (M4) is required to be mounded and planting with native grasses, low tussocks and shrub species prior to commencement of development occurring on-site (Zone Standard 12.22.4.2(vi)). The intention for the M4 area is to screen development within the zone from properties along Pringles Creek. The utility is not considered ‘development’ that would require the M4 mitigation to be undertaken. The access road in this location is not ‘development’, as it is associated with the utility, but it does require a resource consent as it is not a road located on the Structure Plan (Rule 12.22.2.3(iv)). The applicant confirmed that where the access road crosses the M4 mitigation it would not create a ‘viewshaft’ from adjoining properties as it was amended to add an ‘s’ bend (refer Figure 1 below). The applicant further confirmed that the access road will not otherwise affect the ability to form and plant out the M4 mitigation when this is required.

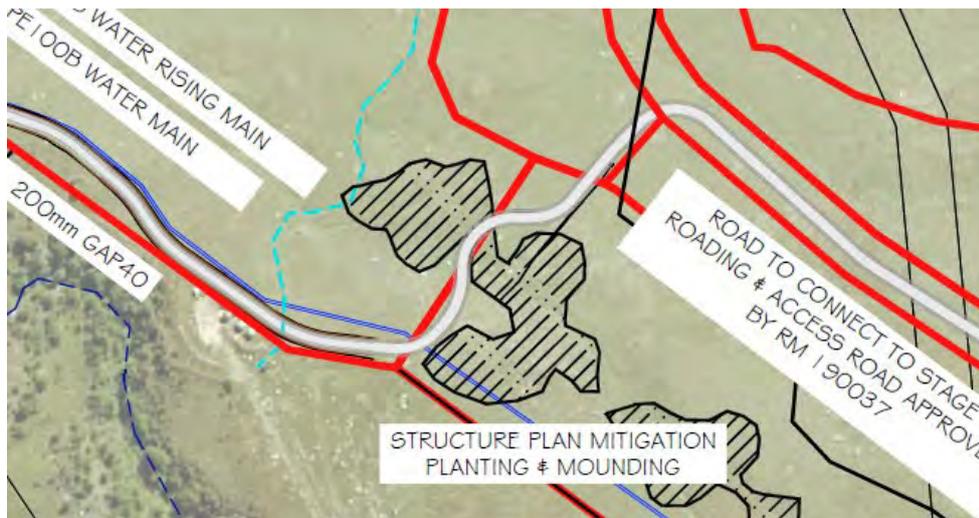


Figure 1 – access road (white) and M4 mitigation (black hashed areas)

MCSZ Key Pedestrian Linkages

The wider site includes a public Right of Way (pedestrian access) easement marked 'K' on the title plan. The easement has not been formed. The proposed access road will cross this easement and it will overlap with Key Pedestrian Linkages shown on Structure Plan C – Public Access Easements & Walkways/Cycleways (refer Figure 2 below). All of Activity Area 7b is shown as a Public Easement in Gross on Structure Plan C. The applicant confirms that the easement and key pedestrian linkages are currently unformed and unmarked routes which will be formed (and relocated if needed) when the final trail network is completed when the zone is developed. In the meantime, the proposed access road for the utility will not hinder the continued use of the easement corridor, and will not prevent the key pedestrian linkages from being formed.

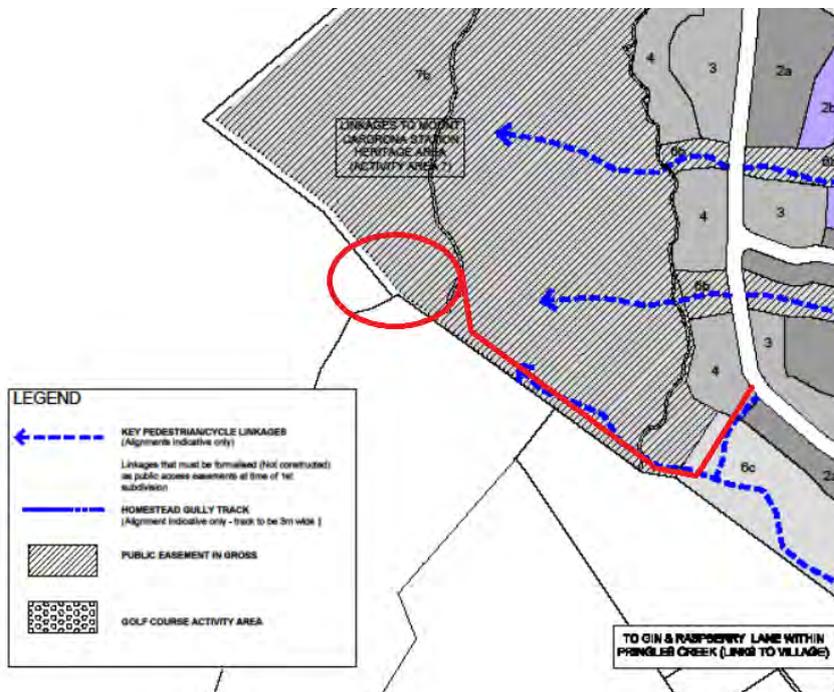


Figure 2 – Key Pedestrian Linkages (blue), approximate location of water reservoir and access road in marked up in red

Heritage water races

MCSZ Activity Area 7b (Heritage) was established to protect the Walter Littles and Cardrona Company water races. The Walter Littles water race passes through the zone below the reservoir and the Cardrona Company water race is located close to the proposed reservoir. The water races are not listed in Part 13 (ODP – Heritage) or Chapter 26 (PDP – Historic Heritage) but are recorded archaeological sites and are protected by the MCSZ provisions and Condition b) of Consent Notice 9238838.3, registered on the title, which states:

Protection of Water Races

b) The existing water races and their markings are to be managed and maintained on a continuing basis in accordance with the Management Plan at such time as the plan is approved by Council.

Both races will be culverted by the access road with minimal works required. The applicant provided an Archaeological Assessment Addendum (2020) and Archaeological Authority (granted 21 February 2020). The Authority applies to works associated with a proposed golf course and housing development within the zone and includes the water reservoir and access road. Heritage New Zealand confirmed that the Authority is applicable to the application site and works.

A third water race or water take passes through the site where the reservoir will be situated. It is understood that this water race/take was established by a previous landowner c.1970s to irrigate barley that was grown on the terrace at that time. This water race/take connects Pringles Creek with the Cardrona Company historic water race. Evidence of this 'modern' water race/take is annotated in marked up plans within the heritage report that is referenced in Zone Standard 12.22.4.2 (x): Mount Cardrona Station Addendum November 2016 (Arch Hill Heritage Report No. 165). The heritage report does not recommend protecting, managing or maintaining this 'modern' water race/take. It is therefore considered that this water race/take is not subject to the Zone Standard or Consent Notice 9238838.3, Condition b), and may be removed by the proposed works.

Ecology

The applicant provided an Ecological Values Report (2006) for the MCSZ and an Addendum (2016) prepared for a golf course proposal. The reports describe the application site and most of the zone as pastureland composed primarily of exotic grasses and herbs with a scattering of small, common native herbs and tufts of hard tussock (*Festuca novae-zelandiae*). The reports conclude that there are no intact natural ecological communities remaining in the study area, and recommendations were made in regard to restoration as part of the MCSZ development.

Other additional Information

The applicant provided a cross-section illustrating the view from the nearest residential unit on Lot 6 DP 344432 towards the tanks, and cross-sections detailing cut and fill in proximity to site boundaries. The applicant confirmed that the earthworks would exceed 20m³ within 7m of Pringles Creek. The overflow channel extends to the creek but will connect with the existing farm track formation where it enters the stream at the end so minimal earthworks are required in this location. The applicant confirmed that it is likely that approximately 9m³ of earthworks for the proposed overflow channel construction will be within 5m of Pringles Creek.

The applicant confirmed that nearby existing water tanks are part of a separate water scheme and are not located on the applicant's property; the tanks are on a Gin and Raspberry Lane property Lot 11 DP 304819.

The applicant confirmed that (in addition to the water tanks noted in the AEE) exterior colours of associated plant (e.g. cabinets, storage sheds) would be recessive with a LRV between 5-20%; and no exterior lighting is proposed.

Site and locality

The site is on an alluvial fan that slopes down to the south east and contains ephemeral streams and Pringles Creek. A more detailed description of the site and locality is contained within Council's consultant landscape architect, Mr Richard Denney's report (sections 3-6).

Site history

Resource consent RM190037 was granted on 16 December 2019 to undertake earthworks for the construction of an access road and secondary access road and to establish signage. The proposed reservoir access road will connect with the RM190037 road via a road connection shown on the MCSZ Structure Plan.

Resource consent RM161043 was granted on 9 December 2016 to undertake horse trekking tours with up to 22 participants, associated signage, and consent for a change of use on a potential HAIL site.

2. ACTIVITY STATUS

The proposal requires consent for the following reasons:

2.1 OPERATIVE DISTRICT PLAN (ODP)

The subject site is zoned Rural General and Mount Cardrona Station Special Zone – Activity Areas 6c (Southern Commonage) and 7b (Heritage) in the ODP and the proposed activity requires resource consent for the following reasons:

Mount Cardrona Station Special Zone

- A **controlled** activity pursuant to Rule 12.22.2.2(iii) for earthworks for the purposes of access roads and utilities that exceed 200m³ in volume within a 12 month period and expose an area of bare soil greater than 400m². It is proposed to undertake a total of 15,980m³ of earthworks (8,030m³ cut and 7,860m³ fill) over an area of 1.4ha. Matters over which control is reserved:
 - Sediment control
 - Dust control
 - Site rehabilitation and landscaping
 - Effects of golf course construction on natural landform
- A **discretionary** activity pursuant to Rule 12.22.2.3(iv) for Access Roads in Activity Area 6c and 7b. It is proposed to construct an access road (that is not identified within Structure Plan A) from the reservoir to connect with the road approved by RM190037.
- A **discretionary** activity pursuant to Rule 12.22.2.3(ix) for any permanent road and permanent infrastructure proposed to be constructed prior to the subdivision to create the site(s) for that activity.

For completeness it is noted that utilities are not 'development' or 'buildings' as defined by the ODP that would trigger any other rules within this zone.

Rural General

- A **restricted discretionary** activity pursuant to Rule 22.3.2.3(a) for a breach of Standard 22.3.3(i)(a) of Table 22.1 for exceeding the maximum volume of earthworks, which is 1000m³. It is proposed to undertake cut 1,870m³ and fill 90m³ (total volume 1,960m³).

The matters in respect of which Council has reserved discretion are:

- (i) The nature and scale of the earthworks
- (ii) Environmental protection measures
- (iii) Remedial works and revegetation

- (iv) The effects on landscape and visual amenity values
- (v) The effects on land stability and flooding
- (vi) The effects on water bodies
- (vii) The effects on cultural and archaeological sites
- (viii) Noise.

2.2 PROPOSED DISTRICT PLAN

Council notified its decisions on Stage 1 of the Proposed District Plan (PDP) on 7 May 2018, and notified its decisions on Stage 2 of the PDP on 21 March 2019. The subject site is part zoned Rural by the PDP Stage 1. It is noted that the MCSZ has not been included in the PDP. The proposed activity requires resource consent under the PDP for the following reasons:

Rules that have legal effect but are not yet treated as operative are:

Chapter 25 – Earthworks

- A **restricted discretionary** activity pursuant to Rule 25.4.1 for a breach of Standard 25.5.11 of Table 25.3 as the area of contiguous earthworks will be 1.4ha, which will exceed both 2,500m² where the slope is 10° or greater, and 10,000m² where the slope is less than 10°.
- A **restricted discretionary** activity pursuant to Rule 25.4.1 for a breach of Standard 25.5.14.2 of Table 25.3 as the earthworks may discover any feature or archaeological material that predates 1900.
- A **restricted discretionary** activity pursuant to Rule 25.4.1 for a breach of Standard 25.5.15 of Table 25.3 as the maximum cut is greater than 2m. It is proposed to undertake earthworks cut up to 4.6m in depth.
- A **restricted discretionary** activity pursuant to Rule 25.4.1 for a breach of Standard 25.5.18 of Table 25.3 for a breach of setback from boundaries. It is proposed to undertake earthworks adjoining the site boundary with cut batters that will have a maximum batter slope angle of 1:2 (vertical: horizontal).
- A **restricted discretionary** activity pursuant to Rule 25.4.1 for a breach of Standard 25.5.19 of Table 25.3 for earthworks over 5m³ within 10m of a water body. It is proposed to undertake approximately 9m³ of earthworks within 5m of Pringles Creek for the proposed overflow channel construction.
- A **restricted discretionary** activity pursuant to Rule 25.4.2 for a breach of Standard 25.5.6 of Table 25.3 for exceeding the maximum volume of earthworks, which is 1000m³. It is proposed to undertake cut 1,870m³ and fill 90m³ (total volume 1,960m³).

For all restricted discretionary earthworks activities Council's discretion shall be restricted to the following matters:

- Soil erosion, generation and run-off of sediment.
- Landscape and visual amenity.
- Effects on infrastructure, adjacent sites and public roads.
- Land stability.
- Effects on water bodies, ecosystem services and biodiversity.
- Cultural, heritage and archaeological sites.
- Nuisance effects.
- Natural Hazards.
- Functional aspects and positive effects.

Standards 25.5.6 and 25.5.15 are not directly under Appeal, however, Rules 25.4.1, 25.4.2 and 25.3.2.9 are under Appeal [ENV-2019-CHC-057, ENV-2019-CHC-058, ENV-2019-CHC-076, ENV-2019-CHC-085, ENV-2019-CHC-089, ENV-2019-CHC-091, ENV-2019-CHC-094, ENV-2019-CHC-095]

Council notified Stage 3a of the PDP on 19 September 2019 and Stage 3b of the PDP was notified on 31 October 2019. Stages 3a and 3b do not contain any rules with immediate legal effect which are relevant to the proposal.

A Consent Order on Chapter 33 (Indigenous Vegetation & Biodiversity) was issued on 25 March 2020. For completeness it is noted that the application site is not alpine and does not contain any Significant Natural Areas. Given the findings of the MCSZ ecological reports discussed in Section 1 of this report, indigenous vegetation clearance would be restricted to any scattered individual plants within the application site (e.g. native herbs or hard tussock, *Festuca novae-zelandiae*). As such, the proposal would not trigger any of the (amended) rules within Chapter 33.

2.4 NATIONAL ENVIRONMENTAL STANDARD FOR ASSESSING AND MANAGING CONTAMINANTS IN SOIL TO PROTECT HUMAN HEALTH 2011 (“NES”)

Based on the Preliminary & Detailed Site Investigation prepared by David Consulting Group on behalf of Mt Cardrona Station Limited, the piece of land to which this application relates is not a HAIL site, and therefore the NES does not apply.

2.5 ACTIVITY STATUS SUMMARY

Overall, the application is considered to be:

- a **discretionary** activity under the ODP;
- a **restricted discretionary** activity under the PDP; and

As per the above, the application is therefore being processed and considered as a **discretionary** activity.

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)).

3.2 Step 2 – Public notification precluded

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

It is noted that elements of the proposal are subject to non-notification rules under the ODP:

- Controlled activities within the MCSZ (earthworks for utilities) under Rule 12.22.3(i)
- Earthworks within the Rural General Zone under Rule 22.3.2.6(i) and (ii)

The proposal is not:

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

Therefore, public notification is not precluded by Step 2.

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 it 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 made in section 3.3.1 – 3.3.4 below:

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

Effects that must be disregarded:

- A: *Effects on the owners or occupiers of land on which the activity will occur and on adjacent land (s95D(a)).*
- B: *Trade competition and the effects of trade competition (s95D(d)).*
- C: *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)
Mount Cardrona Station Limited	Owner of application site

Effects that may be disregarded:

- D: *An adverse effect of the activity if a rule or national environmental standard permits an activity with that effect (s95D(b), a permitted baseline assessment is undertaken (if applicable) 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.

Operative District Plan

The applicant's AEE includes a description of permitted utility activities and permitted activities within Activity Area 7b and the Rural General Zone, which is accepted. Permitted activities within Activity Area 6c are similarly restricted to minimal earthworks and farming activities.

The permitted baseline under the ODP in regard to utilities and associated earthworks is considered to be of relevance to this application and will be applied.

Proposed District Plan

Relevant permitted activities in the Rural Zone are restricted to planting, fencing and earthworks, within specific standards.

The permitted baseline under the PDP is considered to be of little relevance to this application and will not be applied.

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 section 2.0 of the applicant's AEE, is considered accurate. It is therefore adopted for the purpose of this report, along with the following further assessment that takes into account reports from the Council's Consultant Landscape Architect, Mr Richard Denney and Council's Resource Management Engineer, Ms Lyn Overton. Mr Denney's report is adopted in part and Ms Overton's report is adopted for the purpose of this report.

Earthworks

Earthworks within the MCSZ

Within the MCSZ, the earthworks associated with the utility and the access road require a controlled activity consent, with control reserved to sediment control, dust control, site rehabilitation and landscaping, and effects of golf course construction on natural landform. Notwithstanding these matters of control, the assessment matters for earthworks are broader and have been applied (12.22.5(xxii)), noting that the activity is discretionary overall.

Matter of control: sediment control, dust control
Assessment matter: Environmental Protection Measures

Ms Overton observes that the proposed earthworks required for the water intake structure and the overflow structures will require earthworks within 5m of Pringles Creek. At the time these works are undertaken, Ms Overton considers that the applicant will need to ensure that appropriate site management measures are in place to avoid contaminating the water within Pringles Creek as the properties within Pringles Creek Road are also using Pringles Creek as their water supply.

The applicant's AEE anticipates a condition of consent requiring implementation of the Construction Management Plan (which is part of the application) and works to be undertaken in accordance with Council Code of Practice. This is accepted, and it is also considered that 'high risk' Environmental Management Plan conditions should be imposed, given the substantial volume and area of earthworks and proximity to Pringles Creek. The applicant's GeoSolve geotechnical report recommends that sediment control be put in place as there is a high risk of the fine silts entering Pringles Creek.

The applicant accepts the conditions.

It is therefore considered that adverse effects in regard to sediment and dust control, and Environment Protection Measures, will be less than minor.

Matter of control: site rehabilitation and landscaping
Assessment matter: Effects on landscape and visual amenity values

Mr Denney has applied part of his assessment based on the ODP assessment matters for utilities (17.3.2). As the water reservoir utility itself is permitted by Part 17, these assessment matters are not relevant. Mr Denney's report is, however, considered equally applicable to the assessment matters for earthworks.

Mr Denney concludes that that the adverse effects on the visual amenity and character of the surrounding landscape would be moderate to high, and recommended a more natural vegetated context to the site to visually contain the development and integrate it into the broader landscape to mitigate such effects.

Mr Denney reviewed the proposed planting and noted that it is suitably informal in nature, but has low species diversity, and includes species that are not consistent with species found naturally in Pringles Creek. Mr Denney considers the proposed planting would conflict with natural vegetation patterns to a moderate to low degree, and therefore recommends that the planting is amended to increase plant species diversity, use species that are evident in the Pringles Creek catchment, and increase the planting density and extent to follow natural patterns and to support the visual mitigation of the development. Mr Denney's assessment and recommended conditions are accepted.

The application includes proposed finishes of the water tanks (*Ironsand*) and Mr Denney recommends conditions in regard to design controls for ancillary plant and structures. Mr Denney's recommended conditions are accepted. While the recommended conditions relate to the (permitted) utility structures and facilities, the design controls are considered essential in mitigating adverse visual effects as a result of the proposed permanent landform changes associated with the earthworks.

It is proposed to undertake earthworks adjoining the site boundary with cut batters that will have a maximum batter slope angle of 1:2 (vertical: horizontal). Ms Overton is satisfied that there will be no adverse effects on the stability of the wider area as a result due to the proposed gradient of the finished slope.

Ms Overton has reviewed the GeoSolve report provided with the application, and accepts the report and all recommendations, including locating the reservoir at least 20m from the toe of the mapped landslide area.

The applicant accepts the conditions.

Overall, subject to recommended conditions, including an amended landscape plan, adverse effects in regard to site rehabilitation and landscaping, and landscape and visual amenity values, are considered to be less than minor.

Assessment matter: General amenity values

Access to the site is not gained through residential areas. The applicant's Construction Management Plan details how deposition of sedimentation, dust, noise and traffic controls will be managed to mitigate adverse effects on amenity values.

Natural ground levels will be altered, with conditions requiring site rehabilitation and landscaping to mitigate adverse effects on amenity values.

Overall, it is considered that general amenity values will be maintained, and adverse effects in this regard will be less than minor.

Assessment matter: Impacts on sites of cultural heritage value

As discussed in Section 1 above, the applicant has an Authority to undertake works that will affect the water races. Heritage New Zealand considered that anything the applicant can do to avoid damage to the water races is preferable, although it was also noted that the Archaeological Assessment describes the races affected by the access road as being in relatively poor condition. The applicant intends to culvert the water races with minimal works required, which will result in minimal impacts on heritage sites.

It is therefore considered that adverse effects in relation to heritage will be less than minor.

Earthworks within the Rural General Zone / Rural Zone

In regard to the ODP and PDP assessment matters for earthworks within the Rural General / Rural zoned part of the site, it is considered that the assessment and recommendations above can be applied and need not be repeated.

Earthworks summary

Given all of the above, provided an amended landscape plan is submitted and approved and subject to recommended conditions proposed or agreed to by the applicant (thereby forming part of the proposal), it is considered that adverse effects in regard to earthworks will be no more than minor.

Access Road

Ms Overton is satisfied that there is sufficient area for maintenance staff for parking at the proposed site, and recommends that all parking and vehicle manoeuvring areas are constructed to Council standards.

Access to the site is from Cardrona Valley Road. The access and intersection from Cardrona Valley Road to the top of the terrace was recently approved under RM190037. The applicant intends to extend the access from the RM190037 road to the reservoir with a 3m wide gravel formation, which through the centre of the zone will follow the road network identified on the MCSZ Structure Plan.

Ms Overton is satisfied that the gradient of the access road will be less than 1(V):6(H) due to the topography, and recommends an appropriated condition to ensure that the access is constructed to Council standards and includes the provision for stormwater disposal.

As described in Section 1 of this report, the access road will pass through an area identified on the MCSZ Structure Plan for future mitigation, earthworks and planting. The access road will not prevent this mitigation from being established when required. Ms Overton confirmed that the 's' bend design would be satisfactory.

The MCSZ assessment matters for Access Roads in Activity Areas 6 and 7 have been considered in the applicant's AEE. In summary, the access road is of a rural character and has been designed and located to ensure earthworks are minimised.

As noted in Section 1 of this report, the proposed access road will not hinder use of the pedestrian easement registered on the title, and will not prevent the MCSZ key pedestrian linkages from being formed. Adverse effects in regard to pedestrian access are considered to be less than minor.

Ms Overton's assessment and recommendations are accepted.

The applicant accepts the conditions.

Given all of the above, it is considered that adverse effects in regard to the access road will be less than minor.

Services

The site is not currently serviced. Ms Overton recommends conditions in regard to water treatment design, and power and telecoms connections underground.

The applicant accepts the conditions.

It is therefore considered that adverse effects in regard to services are less than minor.

Natural hazards

Ms Overton notes that the site is at risk from the Nevis-Cardrona Fault System, a young active composite alluvial fan and is possibly susceptible to liquefaction. There is also a landslide risk identified above the site. Ms Overton has reviewed the GeoSolve report and makes no recommendations in regard to natural hazards, other than supervision of works in accordance with the GeoSolve recommendations.

The applicant accepts the condition.

It is therefore considered that adverse effects in regard to natural hazards are less than minor.

Heritage

As discussed above, the applicant has an Authority to undertake works that will affect the historic water races. Notwithstanding that the water races are in poor condition in this location, the applicant intends to culvert the water races with minimal works required for the access road, which will minimise adverse effects on heritage values.

Given the above, adverse effects associated with heritage values are considered to be less than minor.

Summary

The above assessment has determined the proposed reservoir utility and associated earthworks and access road are feasible and that adverse effects can be appropriately mitigated through conditions of consent, which have been accepted by the applicant. Overall, any adverse effects on the environment will be appropriately mitigated and managed and will be no more than minor.

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)).

It is noted that elements of the proposal are subject to non-notification rules under the ODP:

- Controlled activities within the MCSZ (earthworks for utilities) under Rule 12.22.3(i)
- Earthworks within the Rural General Zone under Rule 22.3.2.6(i) and (ii)

Limited notification is not precluded under Step 2 as the proposal is not a controlled activity, and/or is not a prescribed activity (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 / Prescribed activity

The proposal is not a boundary activity where the owner of an infringed boundary has not provided their approval, **and** the proposal is not a prescribed activity under (s95B(7)).

Any other activity

As limited notification is not required under s95B(7), 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. In this case the permitted baseline is found within section 3.3.2 above and will be applied.
- 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 [ii] 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:

Cardrona Alpine Resort

The ski field access road passes by the site further upslope to the north and west. The ski field access road is also used during summer for mountain biking and other offseason activities. The works will be visible downslope from the road. The utility will be located in part of the MCSZ that is not intended for development; however, views of the utility would nonetheless be within the context of the MCSZ and existing intermittent development within Cardrona. While the MCSZ is yet to be developed, it would eventually provide a backdrop of built form within which the utility would sit when viewed from upslope. Overall, it is considered that adverse effects from the reservoir utility on views enjoyed from users of the ski field access road, and any distant views from the ski field, would be less than minor.

10 Curtis Road – Lot 6 DP 344432 & Lot 1 DP 433836 (Roberts)

The residential unit on this property is separated from the reservoir by approximately 325m. The works will be visible in the northerly outlook from the residential unit, which provides a view towards Mt Cardona that is highly natural in character and devoid of buildings. In addition, the earthworks will be undertaken very close to the boundary and will breach distance to boundary requirements.

Mr Denney considers that the proposed mounding and planting would assist in diminishing views of the tanks, but potential glare from the roof would degrade the enjoyment, visual amenity and landscape character from this property. The proposed low density of planting would not be effective in avoiding adverse effects on this property and further planting is recommended to screen the tanks from view. Mr Denney recommends non-reflective finishes to avoid glare, no lighting, any solar panels to be ground based and not visible outside the site, and an amended landscape plan to be submitted that includes a cluster of no less than 7 Mountain beech and mixed indigenous plants to block views of the tanks from this residential unit. As discussed in section 3.3.3 above, the applicant has agreed to these conditions.

In regard to the earthworks on the boundary, this part of the property is rural in nature and contains a section of Pringles Creek as separation from the residential unit. Ms Overton is satisfied that there will be no adverse effects on the neighbouring property as a result due to the proposed gradient of the finished slope (1:2). It is therefore considered the earthworks will not impinge on rural residential activities and associated adverse effects on owners and occupiers would be less than minor.

Overall, given these mitigation measures, the proposal will not significantly impede views or enjoyment of rural residential activities. As such, adverse effects on owners and occupiers of this property are considered to be less than minor.

Gin and Raspberry Lane

Due to the separation distance of approximately 440m and topography (especially Pringles Creek), the proposed tanks and earthworks will not be readily visible from the residential unit on Lot 11 DP 304819, which adjoins the application site. The access road will pass close to boundary with this site, but similarly will be difficult to see from the residential unit. The entire proposal will not impede any views of the landscape or enjoyment of rural residential activities.

The proposal, including access road, will not be readily visible from the residential units on properties further down Gin and Raspberry Lane, and as such will not impede any views or enjoyment of rural residential activities. As discussed in Section 1 above, the access road will not affect the ability to form and plant out the M4 mitigation when this is required.

Overall, adverse effects on owners and occupiers of these properties are considered to be less than minor.

Horse trekking - Backcountry Saddles Expeditions Ltd

As noted in section 1 above, a horse trekking route approved by RM161043 passes through the application site. The reservoir works will block this route, but there is an approved alternative further north. The applicant advises that the horse trekking operation will use an alternative crossing point further up Pringles Creek and notes that the horse trekking operations use of the land forms part of a private commercial arrangement with Mt Cardrona Station (the landowner). The applicant further states that the horse trekking company is aware of the proposed development and will just adjust their routes to respond to any works on the site. The applicant's advice is accepted. It is possible that the horse trekking company may require a variation to RM161043 to identify a new route to avoid the reservoir. Notwithstanding this, the proposal will not prevent the horse treks from being undertaken, as there are alternative approved routes. Overall, adverse effects on this occupier are considered to be less than minor.

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 Limited Notification in Special Circumstances (s95B(10))

Special circumstances do not apply that require limited notification.

5. OVERALL NOTIFICATION DETERMINATION

In reliance on the assessment undertaken in sections 3 and 4 above, the application is to be processed on a non-notified basis.

6. S104 ASSESSMENT

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

Actual and potential effects on the environment have been outlined in section 3 and 4 of this 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

The relevant objectives and policies are contained within Parts 12 (Mount Cardrona Station Special Zone, MCSZ) and 22 (Earthworks) of the ODP.

The assessment provided at Section 3.0 of the applicant's AEE is considered accurate and is adopted for the purpose of this report, with the following additional assessment.

Policy 4.5 - To ensure that development occurs in accordance with the Structure Plan.

For completeness it is noted that the proposed access road is not shown on Structure Plans A – D. As noted in Section 1 above, the access road is works associated with the utility and is not 'development'. As such, this policy does not apply.

4.14 – Within Activity Area 6:

- *To provide for formal and informal public recreation activities and pedestrian trails;*
- *To ensure that activities do not create nuisance effects such as noise, odour or obtrusive lighting.*

The proposed access road for the utility will not hinder the continued use of the unformed easement corridor, and will not prevent the key pedestrian linkages from being formed when required.

The utility, earthworks, and access road will not result in nuisance effects such as noise, odour or obtrusive lighting.

Overall, the proposal is considered to be not inconsistent with policy 4.14.

4.15 Within Activity Area 7:

- *To provide for the protection of heritage features within the Zone, and the protection of the open space surrounding the Village.*
- *To enable public pedestrian access through the area while ensuring the safe operation of farming and other rural activities, providing for ecological enhancement, and protecting the water races.*
- *To ensure that the natural values of the escarpment west of Cardrona Road are maintained and enhanced by suitable revegetation and by avoiding buildings in Activity Area 7a.*

The applicant has an Authority to undertake works that will affect the historic water races. The water races will be culverted with minimal works required, which will protect the heritage features of the zone.

As noted above, the proposed access road for the utility will not hinder the continued use of the unformed easement corridor, and will not prevent the key pedestrian linkages from being formed when required.

Overall, the proposal is considered to be consistent with policy 4.15.

Proposed District Plan

The relevant objectives and policies are contained within Chapters 3 (Strategy Direction), 6 (Landscapes and Rural Character) and 25 (Earthworks) of the PDP.

3.2.1.9 Infrastructure in the District that is operated, maintained, developed and upgraded efficiently and effectively to meet community needs and to maintain the quality of the environment.

6.3.12 Recognise that subdivision and development is inappropriate in almost all locations in Outstanding Natural Landscapes and on Outstanding Natural Features, meaning successful applications will be exceptional cases where the landscape or feature can absorb the change and where the buildings and structures and associated roading and boundary changes will be reasonably difficult to see from beyond the boundary of the site the subject of application.

6.3.16 Maintain the open landscape character of Outstanding Natural Features and Outstanding Natural Landscapes where it is open at present.

25.2.1 Objective – Earthworks are undertaken in a manner that minimises adverse effects on the environment, protects people and communities, and maintains landscape and visual amenity values.

25.8.10 Functional aspects and positive effects

25.8.10.1 Whether the earthworks are necessary for the functional or operational requirements of infrastructure, including network utility installation, repair or maintenance.

The earthworks associated with the proposed water treatment utility can be undertaken in a manner that minimises erosion, land instability, and sediment generation, and will minimise adverse effects on the Outstanding Natural Landscape (ONL). The earthworks associated with the utility will contribute towards community needs while mitigating adverse effects on visual amenity values and the open landscape character of the surrounding ONL.

Overall, the proposal is considered to be consistent with the relevant objectives and policies of the PDP.

6.3 PART 2 OF THE RMA

The purpose of the RMA is to promote the sustainable management of natural and physical resources.

The proposed reservoir utility, with associated earthworks and construction of an access road, will provide for future development to occur within the Mount Cardrona Station Special Zone and wider Cardrona Valley, and will enable individuals and communities to provide for their economic and social well-being. Conditions of consent will ensure the works are undertaken in a way which appropriately avoids and mitigates any adverse effects on the environment.

In respect to s6(f) Historic Heritage, the applicant has an Authority to undertake works that will affect the historic water races. The water races will be culverted with minimal works required. Therefore, it is considered the archaeological sites and historic heritage values will be appropriately protected from inappropriate development.

Overall, it is considered the proposal promotes sustainable management and is keeping with the purpose and principles of the RMA.

6.4 DECISION ON RESOURCE CONSENT PURSUANT TO SECTION 104 OF THE RMA

Consent is **granted** to construct a reservoir settling pond, water holding tanks, treatment buildings, access construction and all associated incidental structures, and for associated earthworks subject to the conditions outlined in *Appendix 1* of this decision report imposed pursuant to Section 108 of the RMA.

7.0 DEVELOPMENT CONTRIBUTIONS AND ADMINISTRATIVE MATTERS

Local Government Act 2002: Development Contributions

This proposal 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.

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 Rosalind Devlin on email roz.devlin@qldc.govt.nz.

Report prepared by

Decision made by



Rosalind Devlin
CONSULTANT PLANNER

Sarah Gathercole
SENIOR PLANNER

APPENDIX 1 – Consent Conditions
APPENDIX 2 – Applicant's AEE
APPENDIX 3 – Landscape Report
APPENDIX 4 – Engineering Report

APPENDIX 1 – CONSENT CONDITIONS

General Conditions

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

Clarke Fortune McDonald:

- 'Mt Cardrona Station Water Scheme – Overall Layout, Drawing No. E002 Sheet 001 Rev B' dated 03.06.2020
- 'MCS Water Scheme Stilling Pond & Tank Site Earthworks, Drawing No. E002 Sheet 002' dated 03.06.2020
- 'MCS Water Scheme Stilling Pond Section Views, Drawing No. E002 Sheet 003' dated 03.06.2020
- 'MCS Water Scheme Stilling Pond Section Views, Drawing No. E002 Sheet 004' dated 03.06.2020
- 'MCS Water Scheme Stilling Pond Section Views, Drawing No. E002 Sheet 005' dated 03.06.2020
- 'MCS Water Scheme Treatment Plant and Tank Layout, Drawing No. E002 Sheet 006' dated 03.06.2020
- 'MCS Water Scheme Tank Site Section Views, Drawing No. E002 Sheet 007' dated 03.06.2020
- 'MCS Water Scheme Tank Site Section Views, Drawing No. E002 Sheet 008' dated 03.06.2020
- 'MCS Water Scheme Access Road Details, Drawing No. E002 Sheet 010' dated 03.06.2020
- 'MCS Water Scheme Section View from Lot 6 DP 344432 Platform, Drawing No. E002 Sheet 011' dated 03.06.2020
- 'Mt Cardrona Water Scheme 500m³ Water Tank Detail'

stamped as approved on 15 June 2020

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.
3. The consent holder is liable for costs associated with the monitoring of this resource consent under Section 35 of the Resource Management Act 1991.

Landscaping

4. The Landscape Plan submitted with the application shall be amended by an ecologist / landscape architect / landscape designer with ecological planting experience and shall be resubmitted to council for certification prior to works beginning on site. The plan shall be amended to achieve the following:
 - a) The extent of area of earth fill outside of the security fenced area as shown on the submitted earthworks drawing *MCS Water Scheme Stilling Pond & Tank Site Earthworks Dwg No. E002 Sheet 2* shall be planted with indigenous plants of the following species planted at no greater than 1.0m apart, and of an even species mix:

Plagianthus regius
Aristotelia fruiticosa
Corokia cotoneaster
Coprosma propinqua
C. rugosa
C. virescens
C. rigida

Discaria toumatou
Hoheria lyalli
Myrsine divaricate
Oleria odorata
Grislinea littoralis

with *Fuscospora cliffortoides* (Mountain Beech) planted in five clusters of 5 or 7 plants at 1.5m centres in selected south facing slopes.

- b) To include the extent of area of planting as shown on the submitted MCS landscape plan that are outside the areas of fill as required as noted above, and to be planted with the species and at the density as noted above.
 - c) To ensure a cluster of no less than 7 Mountain beech and mixed indigenous plants from the list above is planted to the west of the western tank to block views of the tanks from the existing residential unit on Lot 6 DP 344432.
 - d) To illustrate on the plan the location of post and wire farm fencing with rabbit proof netting to be installed to exclude stock, rabbits and hares from planting areas. All planting areas must fully enclosed and exclude any gates.
 - e) To identify on the plan that all planted areas shall have a drip irrigation system installed or similar, to ensure all planted areas are irrigated for the first three years of establishment from the date of planting.
 - f) All planting shall be naturalistic ecological planting and avoid any straight rows.
 - g) Include a detailed planting schedule showing botanical names, grades, density and quantities for each species to be planted. All plants shall be planted at a revegetation grade with a height no less than 30cm (above ground height), and all beech shall be planted at a PB5 or larger with a height of no less than 50cm.
5. All planting, stock and pest protection fencing, and irrigation identified on the certified landscape plan shall be implemented and certified by council as completed within 6 months from the completion of earthworks and installation of the water tanks. All planting shall have a slow release fertiliser applied, and the full extent of planted areas shall have an organic mulch applied to a depth adequate to suppress weeds and retain moisture. All plants shall be confirmed in writing that they have been supplied by a plant nursery that has eco-sourced plants from the 'Lakes' ecological region.
 6. All certified landscape works thereafter shall be maintained in accordance with the plan as a closed canopy and the stock and pest protection fencing maintained. Irrigation shall be operated and maintained for a period of three years following completion of planting to ensure healthy growth of plants. If any tree or plant shall die or become diseased it shall be replaced within 12 months.
 7. All areas of earthworks (that are not to be planted), including side castings from the access road, and areas of cut and fill shall be re-sown in grass with a greater than a 50% brown-top content consistent with the surrounding landscape within three months of completion of the earthworks and shall be maintained to achieve a healthy and continuous sward of grass.
 8. The access road to the site shall be gravel with a carriageway of a maximum width of 3m. There shall be no concrete kerbs and channels. All drainage shall be grassed swales only.
 9. The earthworks for the water intake pipe trench to Pringles Creek shall be backfilled and reinstated to natural ground levels. The inlet pipeline works shall exclude the removal of any native vegetation.

Design Controls

10. All built and installed elements including security fences, cabinets, machinery, pumps, and the water tanks shall be of colours and materials of a dark grey or olive-green colour with a light reflectivity value (LRV) of between 7% and 15%. Colouring may include mixed shades within the above range. All selected colours and materials shall be submitted to council for certification prior to installation. Samples may be requested for certification.
11. The water tanks shall be of a non-reflective surface that does not create glare or metallic sheen and shall be of a matt finish, and/or include measures that eliminate glare or sheen such as a grassed roof, or non-reflective covers. Samples of selected materials and colours, and /or alternative treatments that eliminate glare effects shall be submitted to council for certification prior to installation.
12. Lighting shall not be installed within any part of this development. (Excluding lighting for emergency maintenance purposes)
13. Any installation of solar panels shall be ground based only and shall not be visible from beyond the security fenced site boundary.
14. All security fencing around site shall be standard post and wire, and/or mesh to a height of no more than 2.5m. All posts to be coloured or otherwise treated to achieve the above colour controls (Condition 10).

Engineering

General

15. All engineering works, in 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 May 2018 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:

<https://www.qldc.govt.nz/services/resource-consents/land-developments-and-subdivisions>

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

16. The owner of the land being developed shall provide a letter to the Manager of Resource Management Engineering 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.
17. Prior to commencing any work on the site 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 to ensure that neighbouring sites remain unaffected from earthworks. These measures shall be implemented **prior** to the commencement of any earthworks on site and shall remain in place for the duration of the project, until all exposed areas of earth are permanently stabilised.
18. At least 7 days prior to commencing excavations, the consent holder shall provide the Manager of Resource Management Engineering at Council with the name of a suitably qualified geo-professional as defined in Section 1.7 of QLDC's Land Development and Subdivision Code of Practice who is familiar with the GeoSolve Ltd report (dated September 2019, GeoSolve Ref: 190229) and who shall supervise the excavation/earthworks/fill procedures and ensure compliance with the recommendations of this report. This engineer shall continually assess the condition of the excavation and shall be responsible for ensuring that temporary retaining is installed wherever necessary to avoid any potential erosion or instability.

19. Prior to commencing works on the site, the consent holder shall obtain 'Engineering Review and Acceptance' from the Queenstown Lakes District Council for development works to be undertaken and information requirements specified below. The application shall include all development items listed below unless a 'partial' review approach has been approved in writing by the Manager of Resource Management Engineering at Council. The 'Engineering Review and Acceptance' application(s) shall be submitted to the Manager of Resource Management Engineering at Council for review, prior to acceptance being issued. At Council's discretion, specific designs may be subject to a Peer Review, organised by the Council at the applicant's cost. The 'Engineering Review and Acceptance' application(s) shall include copies of all specifications, calculations, design plans and Schedule 1A design certificates as is considered by Council to be both necessary and adequate, in accordance with Condition (15), to detail the following requirements:
- a) The provision of a water storage and water treatment facility to provide potable water for future Mount Cardrona Village development within Lot 9 DP 446161 and Lot 2 DP 445633 in accordance with Council standards. The designs shall include related intake structures, reticulation, and monitoring systems and demonstrate an ability for possible future vesting with the QLDC.
 - b) The provision of an access way to the development that complies with the guidelines provided for in QLDC's Land Development and Subdivision Code of Practice. The access shall have a minimum formation standard of 150mm compacted AP40 with a 3.0m minimum carriageway width. Provision shall be made for stormwater disposal from the carriageway.
 - c) The construction of all vehicle manoeuvring and car parking areas to Council's standards. Provision shall be made for stormwater disposal from all impermeable surfaces.
 - d) The provision of Design Certificates for all engineering works associated with this development submitted by a suitably qualified design professional (for clarification this shall include all Roads and Water reticulation). The certificates shall be in the format of the QLDC's Land Development and Subdivision Code of Practice Schedule 1A Certificate.
20. At least 15 working days prior to any works commencing on site the Consent Holder shall submit an Environmental Management Plan (EMP) to Council's Monitoring and Enforcement Team for review and acceptance **HOLD POINT 1**. This document must be prepared by a Suitably Qualified and Experienced Person. The EMP shall be in accordance with the principles and requirements of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans* and specifically shall address the following environmental elements as specified in the guidelines:
- a) Administrative Requirements
 - (i) Weekly site inspections
 - (ii) Monthly environmental reporting
 - (iii) Independent audit by Suitably Qualified and Experienced Person
 - (iv) Notification and management of environmental incidents
 - (v) Records and registers
 - (vi) Environmental roles and responsibilities of personnel (including nomination of Principal Contractor)
 - (vii) Site induction
 - b) Operational Requirements
 - (i) Erosion and sedimentation (including Erosion and Sediment Control Plan) (to be prepared by a Suitably Qualified and Experienced Person)
 - (ii) Water quality
 - (iii) Dust
 - (iv) Cultural heritage
 - (v) Indigenous vegetation clearance
 - (vi) Chemical and fuel management
 - (vii) Waste management

The EMP (and any sub-plans e.g. ESCP described below) shall also be consistent with any recommendations outlined in the GeoSolve Geotechnical Report (Mt Cardrona Station - Reservoir, Cardrona, GeoSolve Ref: 190229, September 2019).

21. Prior to ground-disturbing activities on the initial stage of works or any subsequent new stage of works, the Consent Holder shall engage an Appropriately Qualified Person to prepare and submit an Erosion and Sediment Control Plan (ESCP) to Council's Monitoring and Enforcement Team for review and acceptance. This plan shall be a sub-plan of the overarching EMP and must be prepared in accordance with the requirements outlined on pages 13 – 18 in *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*. These plans must be updated when:
 - a) The construction program moves from one Stage to another; or
 - b) Any significant changes have been made to the construction methodology since the original plan was accepted for that Stage; or
 - c) There has been an Environmental Incident and investigations have found that the management measures are inadequate.
22. Prior to commencing ground-disturbing activities, the Consent Holder shall nominate an Environmental Representative for the works program in accordance with requirements outlined on pages 9 and 10 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*.
23. Prior to commencing ground disturbing activities, the Consent Holder shall ensure that all staff (including all sub-contractors) involved in, or supervising, works onsite have attended an Environmental Site Induction in accordance with the requirements on page 8 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*.
24. Prior to bulk earthworks operations (and vegetation clearance) for the initial stage or any subsequent new stage of works, the Consent Holder must install erosion and sediment controls in accordance with the ESCP as well as provide As-built documentation for these controls by Suitably Qualified and Experienced Person **HOLD POINT 2**. It is noted that earthworks required to construct environmental management controls are allowed to commence once Council has provided notice that **HOLD POINT 1** has been met.

To be monitored throughout earthworks

25. The earthworks, batter slopes and site management shall be undertaken in accordance with the recommendations of the report by GeoSolve Ltd (dated September 2019, GeoSolve Ref: 190229).
26. 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.
27. No earthworks that are not authorised by this consent, temporary or permanent, are to breach the boundaries of the site.
28. All works shall be undertaken in accordance with the most current version of the EMP as accepted as suitable by Council.
29. The EMP shall be accessible on site at all times during work under this consent.
30. The Consent Holder shall establish and implement document version control. Council shall be provided with an electronic copy of the most current and complete version of the EMP at all times.

31. The Consent Holder shall develop and document a process of periodically reviewing the EMP as outlined on page 6 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*. No ground disturbing activities shall commence in any subsequent stage of development until an EMP has been submitted and deemed suitable by Council 's Monitoring and Enforcement Team.
32. The Consent Holder shall undertake and document weekly and Pre and Post-Rain Event site inspections as outlined on pages 10 and 11 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*.
33. A SQEP shall monitor the site monthly to ensure that the site is complying with its EMP, identify any new environmental risks arising that could cause an environmental effect and suggest alternative solutions that will result in more effective and efficient management. This must include a specific audit by the SQEP of the effectiveness of the ESCP. The outcome of these inspections should be included in the Monthly Environmental Report referred to Condition (34) below.
34. The Consent Holder shall complete and submit exception reporting to QLDC in the form of a monthly environmental report. The monthly environmental report shall be submitted to QLDC's Regulatory Department within five (5) working days of the end of each month.
35. In accordance with page 9 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*, where any Environmental Incident where the EMP has failed leading to any adverse environmental effects offsite occurs the Consent Holder shall:
 - a) Report to QLDC details of any Environmental Incident within 12 hours of becoming aware of the incident.
 - b) Provide an Environmental Incident Report to QLDC within 10 working days of the incident occurring as per the requirements outlined in Section 3.3.1 of *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*.
36. Environmental records are to be collated onsite and shall be made available to QLDC upon request; immediately if the request is made by a QLDC official onsite and within 24 hours if requested by a QLDC officer offsite. Records and registers to be managed onsite shall be in accordance with the requirements outlined on page 14 of the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*.
37. Any Discharge (refer definition in the *Queenstown Lakes District Council's Guidelines for Environmental Management Plans*) that leaves the site shall comply with the Water Quality Discharge Criteria outlined on page 19 of the *Guideline*.

On completion of earthworks

38. On completion of the earthworks, 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 (19) above.
 - c) The submission of Completion Certificates from both the Contractor and Engineer advised in Condition (16) for all engineering works completed in relation to or in association with this subdivision/development (for clarification this shall include all Roads and Water infrastructure). 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.

- d) Any power supply or wired telecommunications connections to the treatment plant shall be underground from existing reticulation and in accordance with any requirements and standards of the network provider.
 - e) All earthworked areas shall be top-soiled and revegetated or otherwise permanently stabilised.
 - f) The consent holder shall remedy any damage to all existing road surfaces and berms that result from work carried out for this consent.
39. In the event that the Engineering Acceptance issued under Condition (19) contains ongoing conditions or requirements associated with the installation, ownership, monitoring and/or maintenance of any infrastructure subject to Engineering Acceptance, then at Council's discretion, a Covenant in Gross (or other alternative legal instrument acceptable to Council) shall be registered on the relevant Records of Title detailing these requirements for the lot owner(s). The final form and wording of the document shall be checked and approved by 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. The applicant shall liaise with the Subdivision Planner and/or Manager of Resource Management Engineering at Council in respect of the above. All costs, including costs that relate to the checking of the legal instrument by Council's solicitors and registration of the document, shall be borne by the applicant.

[Note: This condition is intended to provide for the imposition of a legal instrument for the performance of any ongoing requirements associated with the ownership, monitoring and maintenance of any infrastructure within this development that have arisen through the detailed engineering design and acceptance process, to avoid the need for a consent variation pursuant to s.127 of the Resource Management Act].

Advice Notes

1. Should archaeological material be discovered during site works, any work affecting the material must cease and the Heritage New Zealand Pouhere Taonga must be contacted (Dunedin office phone 03 477 9871).
2. The consent holder is advised that Building Consent may be required for the construction of the water reservoirs.
3. The consent holder is advised to obtain any necessary consents from the Otago Regional Council for the water supply.

**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

ATTACHMENT [A]

Information & Assessment of Environmental Effects

Cardrona Valley Infrastructure Limited

***MOUNT CARDRONA STATION SPECIAL ZONE
UTILITY – WATER RESERVOIR AND INFRASTRUCTURE***

Land Use Consent

December 2019

Prepared by: Karen Hanson



CLARK FORTUNE MCDONALD & ASSOCIATES
REGISTERED LAND SURVEYORS, LAND DEVELOPMENT & PLANNING CONSULTANTS



1.0 A DETAILED DESCRIPTION OF THE PROPOSAL

1.1 Site Description

The subject site is a hillside farm block which extends from the west of the Cardrona Village. It is known as the Mount Cardrona Station Special Zone. It is a diverse site, primarily used for grazing. The zone covers approximately 133 hectares and rises up to a terrace above the Cardrona Valley Road where it further extends to meet the Cardrona Ski field access road to the west. The site is shown in figure 1 below.

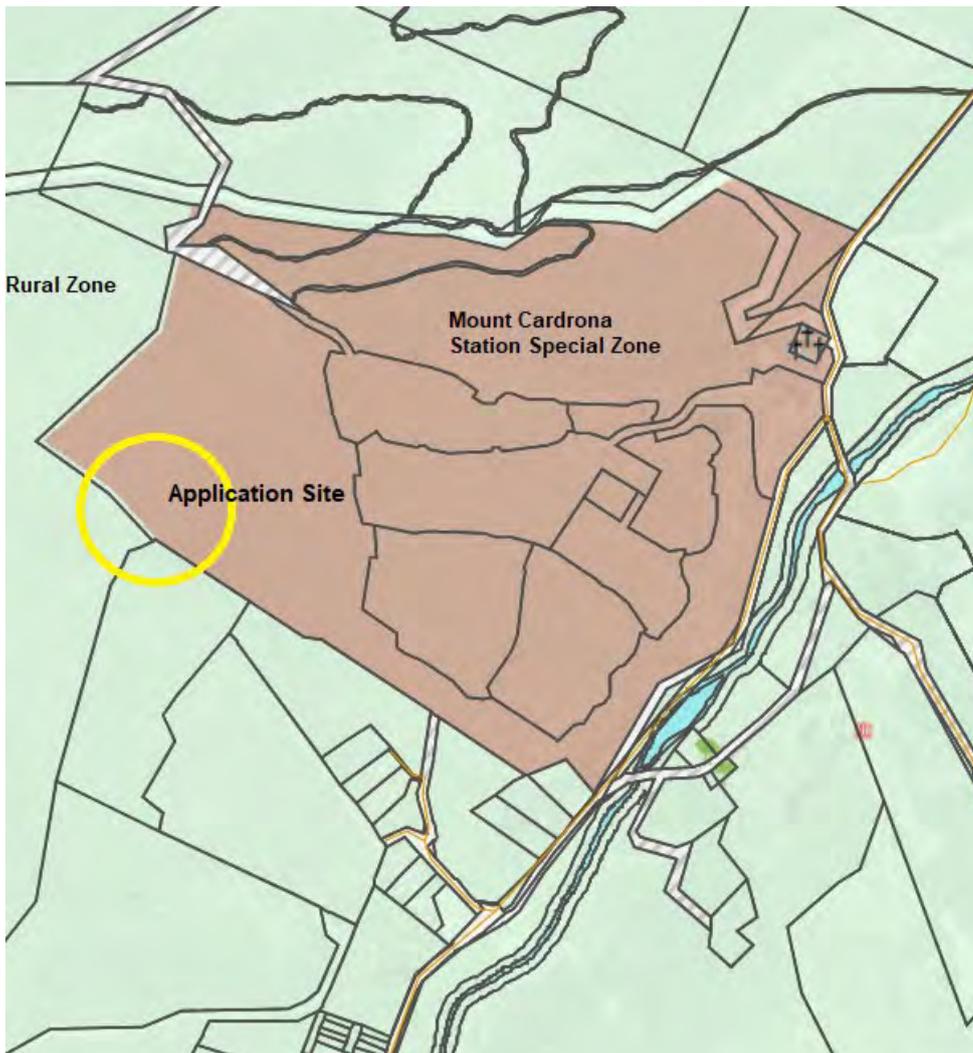


Figure 1: Mt Cardrona Station Special Zone

The site is legally described as Lots 1 – 8 and 10 DP 446161 and Section 6, 8 and 9 SO 459975 and contained in Certificate of Title 768581.



Part of the site includes the rural land adjoining to the south west. Earthworks will extent into this adjoining farmland. The adjoining site is a farm block legally described as Lot 3 DP 512956 being approximately 237 hectares in area and contained in Certificate of Title 791084.

A number of private covenants are registered on the above titles, these are described as follows:

Land Covenant 5246992.7; Relates to water scheme agreements.

Land Covenant, 8079074.1: Relates to a number of non-objection clauses.

Land Covenant, 8079074.2: Relates to a number of non-objection clauses.

Land Covenant 8100093.8: Relates to a number of non-objection clauses.

Land Covenant 8920006.5: Relates to a non-objection clause and vesting of roads.

Land Covenant 8920006.10: Relates to building works only.

Land Covenant 9244805.2: Relates to a non-objection clauses pertaining to subdivision, land transfer and water scheme agreements.

Land Covenant 9011626.2: Relates to the provision of servicing infrastructure with the neighbouring property.

The following consent notices are also registered on the above titles:

Consent Notice 8574798.6 – The consent notice relates to the construction of a dwelling house and is not relevant to this current application.

Consent Notice 9238838.3 – The consent notice relates to servicing infrastructure and a requirement to service the sites at the time of future development. This application will enable the construction of the water supply scheme to allow for the provision of water to the boundary of new allotments at the time of future development.

A copy of the title and associated documents are included as Attachment [B] to this application.



The applicant is a different entity from the land owner. An affected party approval form from the land owner being Mt Cardrona Station Limited is included as Attachment [M] to this application.

1.2 Site History

The site was subject to a similar application in 2006 where consent was approved in relatively the same location for the construction of a reservoir and water treatment building and to undertake associated earthworks. This consent was approved on 28th February 2007. An extension to time was granted on 20th December 2010 extending the lapse date until 20th December 2015. A copy of the relevant consents are included as Attachment [C] to this application.

1.3 Proposal Outline

Land use consent is sought to construct a reservoir stilling pond with a holding capacity of 5,000m³ to service the fully developed Mt Cardrona Station Special Zone and Cardrona Village. Associated with the stilling pond are two above ground holding tanks each with a capacity of 500m³, water treatment infrastructure, weir and all associated pipelines and in ground facilities.

Full design plans for the reservoir construction including all associated structures, pipework and earthworks are provided in the detailed plans included as Attachments [D] and [J] to this application.

The applicant has been working directly with the Queenstown Lakes District Council. It is understood that the water scheme (comprising the site, water reservoir, tank farm and treatment structures) has the ability to accommodate and expand as necessary to also supply the existing Cardrona Village and wider catchment potable water requirements. This is subject to QLDC assessing the water scheme suitability and entering into an appropriate developer agreement.

1.3.1 Reservoir, Earthworks and Landscaping

The reservoir stilling pond is located on the western terrace to the north of the Pringles Creek gully. Water to fill the reservoir is via a take from Pringles Creek. A water permit is held with the Otago Regional Council and included as Attachment [E] to this application.



The reservoir stilling pond is located below natural ground level. The earthworks required for the construction of the stilling pond, excavation for the holding tanks, access road and landscape mounding are detailed as follows:

Mount Cardrona Station Special Zone

Cut:	8,030m ³
Fill:	7,860m ³
Area:	1.41 ha
Max cut:	5.7m
Max Fill:	5.1m

Rural Zone

Cut:	1,870m ³
Fill:	90m ³
Area;	1,700m ²
Max cut:	4.6m
Max fill:	1.4m

Earthworks plans are included as Attachment [D] to this application.

A geological report from Geosolve for the construction activities is included as Attachment [F] to the application. A number of recommendations are made in that report and the applicant volunteers those recommendations to be secured by way of consent condition.

All material will remain on site. A Construction Management Plan is included as Attachment [G] to this application.

Material excavated for the construction will be used directly on site to create mounding on the downward slope and visual screening. Landscape planting is proposed as part of the proposal. A landscape planting plan is included as Attachment [H] to this application.

All plant species have been selected from the Mount Cardrona Design Guidelines as included in Attachment [L]. Plants at the time of planting will be at least 1.0m in height and will exceed 2.0m at maturity. All planting will be irrigated to enhance survival rates and growth. Landscape planting has been designed in conjunction with the proposed earthworks mounding to provide visual screening of the water infrastructure.



1.3.2 Water Tanks, Treatment and Pumping Infrastructure

The application includes the construction of two water tanks, treatment and pumping infrastructure. The proposed tanks have a diameter of approximately 12m and will sit at a height of 6.75 m. The tanks are constructed from steel and completed in a powder coated Ironsand colour. Design plans of the tanks are included as Attachment [I] to this application.

This application includes water treatment and pumping infrastructure. This consists of a series of pipework and filtering systems. The infrastructure plans are included as Attachment [J].

Earthworks are required for the placement of the water tanks and treatment infrastructure and will be undertaken in conjunction with the earthworks for the reservoir construction. The associated volumes are discussed in section 1.3.1 above. Landscaping is also proposed with details provided above and design plans included as Attachment [H] to this application.

1.3.3 Other Incidental Structures and Access

Access to the site will be from the residentially zoned land located to the east and yet to be development. Access to the residential development area will be formed as part of Stage 1 of subdivision. Access to the zone is from an approved intersection off the Cardrona Valley Road. An all weather metalled access track will be formed from the residential area of the zone to the reservoir site. The proposed location and earthworks requirements for construction are provided on the plans included as Attachment [D]. The access is primarily for the use of service vehicles.

1.4 Statutory Provisions

1.4.1 Part 17 Utilities: Operative District Plan

Correspondence from the Queenstown Lakes District Council has confirmed that the Proposed District Plan Utilities Chapter (Chapter 30) is not relevant to the Mount Cardrona Station Special Zone as the zone has not been included as part of the review process.

The Operative District Plan provision set for Utilities (Part 17) is therefore relevant and is considered below:



The Operative District Plan defines **Utility** to have the following meaning:

Means the systems, services, structures and networks necessary for operating and supplying essential utilities and services to the community including:

- c. storage facilities, pipes and necessary incidental structures and equipment for the supply and drainage of water or sewage;*
- e. structures, facilities, plant and equipment for the treatment of water;*

The reservoir stilling pond, holding tanks, treatment and pumping facility and all associated infrastructure are considered Utilities under the above definition and are to be considered under Chapter 17: *Utilities* of the Operative District Plan.

General Provision 17.2.2 of the Utilities Rules states the following:

The rules contained in this Section take precedence over any other rules that may apply to utilities in the District Plan, unless specifically stated to the contrary.

The Mount Cardrona Station Special zone does not include provisions that relate to Utilities (this excludes earthworks which are discussed in section 1.4.2 below). However, the zone provisions do include restrictions on buildings specifically applicable to the Activity Area 7 of this application site.

Therefore, consideration to the Operative District Plan provisions as they apply to the proposed infrastructure and the definition of 'Building' is set out below.

The Operative District Plan defines **Building** to have the following meaning

BUILDING *Shall have the same meaning as in the Building Act 1991, but does not include:*

- Fences or walls of 2m in height or less above ground level or retaining walls or 2m in height or less below ground level, not used for a sign or for any purpose other than as a fence, retaining wall or wall.*



- Structures less than 5m² in area and in addition less than 2m in height above ground level.

Section 9 of the Building Act 1991 states the following:

9 Building: what it does not include

*In this Act, **building** does not include—*

- (a) *a NUO system, or part of a NUO system, that—*
 - (i) *is external to the building; and*
 - (ii) *is connected to, or is intended to be connected to, the building to provide for the successful functioning of the NUO system in accordance with the system's intended design and purpose;*

The Interpretation section of the Building Act sets out the following:

NUO system means a system owned or controlled by a network utility operator

network utility operator means a person who—

- (d) *undertakes or proposes to undertake the distribution of water for supply (including irrigation); or*

Two water holding tanks, the treatment and pumping facility and all associated infrastructure are proposed within Activity Area 7b. The water tanks, treatment and pumping facility and associated infrastructure are part of an NUO system that will be external to the residential buildings which they ultimately will connect to, and that will enable the successful functioning of the NUO System, in accordance with the systems intended design and purpose. The NUO system will be owned and controlled by a Network Utility Operator who proposes to undertake the distribution of water for supply to the residentially zoned land and eventually the Cardrona Village.

In accordance with the Operative District Plan the water tanks, treating and pumping facility and all associated infrastructure are not considered as a 'building' however, they do fall within the definition of a 'Utility' and are to be considered under the provisions for Part 17: Utilities of the Operative District Plan.

In accordance with the Operative District Plan the proposed security fencing will not extend 2m in height above ground level. The treatment facility does not fall under the definition for 'building' however, it is considered under Part 17 Utilities.



17.2.3.1 Permitted Activities

*Any utility which is not defined as a Controlled or Discretionary or Non Complying Activity in Rules 17.2.3.2 and 17.2.3.3 is a **Permitted Activity***

17.2.3.3 Discretionary Activities

vi Any utility, except overhead conductors lines and supporting structures (including minor upgrading), which does not comply with one or more of the following site standards shall be a Discretionary Activity with the exercise of the Council's discretion being confined to the matter(s) specified in the standard(s) not complied with.

17.2.5 Site Standards

i Setback from boundaries

Where the utility is a building of more than 10m² ground floor area, or is a building, mast, tower or support structure over 6m in height above ground level, it shall be set back from all Rural-Lifestyle, Rural Residential, Residential, Remarkables Park, Resort, Visitor and Township Zone boundaries, and the street boundary, by a distance not less than 50% of the height of the structure.

The proposed Utility is not considered a Building and is not located within the zones listed above.

ii Landscaping

Landscaping shall be established to mitigate the visual effects of buildings, structures and access, to ensure they are integrated with the surrounding environment when viewed from adjoining sites and public places. Landscaping shall include planting with trees or shrubs of at least one metre which at maturity reach a height of at least 2m and shall be maintained or replaced.

Landscaping is proposed as part of this application.

Species have been selected from the approved planting list contained in the Mount Cardrona Design Guidelines. Species have been selected that will grow to over 2.0m in height. The applicant volunteers a consent condition that all planting must be over 1.0m in



height at the time of planting. The applicant also volunteers a condition that irrigation is established at the time of planting.

Planting has been specifically located to screen the facility when viewed from the adjoining site and public places.

The applicant volunteers a condition of consent that any plant shall be replaced within the next planting season should it die or become diseased.

iii Height

Any part of a building or structure, other than masts and antennas for any telecommunication, navigation or meteorological communication facility which exceeds the maximum height permitted for buildings of the zone in which it is located.

The Utility is not considered a building however the proposed infrastructure would fall under the definition of 'Structure' as set out in the Operative District Plan which states: *Means any building, equipment device or other facility made by people and which is fixed to land and includes any raft.*

All components of the facility are made by man and will be fixed to the land.

There is no height provision for buildings or structures within Activity Area 7b of the District Plan. Consent is not considered to be required for a height breach.

iv Colour

Any visible part of utility shall be finished with low reflective colours derived from the background landscape and which blend into the surrounding environment.

The proposed tanks are to be powder coated in colour Ironsand, being a darker grey colour and naturally recessive in the receiving environment. All associated infrastructure is typically grey in colour being the pipework and concrete facilities. The applicant volunteers a condition of consent requiring all components to be completed in a green, grey or brown colour with a reflectivity value not exceeding 25%.



The proposed Utility is not defined as a Controlled, Discretionary or Non Complying Activity. The proposal meets the relevant Site Standards listed above. Overall, the proposal is considered a Permitted Activity under the provisions of the Utilities section of the Operative District Plan.

However, the Utilities section of the District Plan is silent on the earthworks requirements for the proposal.

Earthworks for the reservoir storage facility and for placement of the treatment infrastructure and tanks has been applied for separately under the provisions for the Mount Cardrona Station Special Zone and Rural Zone.

1.4.2 Part 12 Mount Cardrona Station Special Zone: Operative District Plan

The site is located within the Mt Cardona Station Special Zone, Activity Area 7b of the operative District Plan and partly within the Rural Zone.

Earthworks volumes as they apply to each of the zones are detailed in section 1.3.1 above.

Accordingly, land use consent is required as follows:

12.22.2.2 Controlled Activities

iii. Earthworks that are for the purposes of:

- *Access roads*
- *Underground car parks*
- *Walkways*
- *Construction and maintenance of the golf course and related ground works including access and irrigation storage and reticulation*
- *Farm tracks and bridle paths*
- *Utilities*
- *Mitigatory earthworks as shown on Structure Plan D*
- *Construction of buildings*

and that:



- exceed a volume of 200m³ per site (within a 12 month period); or
- expose an area of bare soil greater than 400m² in area within that site (within a 12 month period) where the average depth is greater than 0.5m; or
- are undertaken within 7m of a water body.

Matters over which control is reserved:

- *Sediment control*
- *Dust control*
- *Site rehabilitation and landscaping*

Land use consent is required as a Controlled Activity for the earthworks associated with the utility and access road construction.

12.22.2.3 Discretionary Activities

iv. Access Roads in Activity Areas 6 and 7 and Carparking in Activity Area 6a except:

- *Roads identified within Structure Plan A.*
- *Underground car parks.*

The application includes the formation of an access road for service vehicles to the reservoir and infrastructure site. Land use consent is required as a discretionary activity. No car parking is proposed.

ix. Any:

- ***building*** (and associated roading, parking and other related and ancillary activities) for any purpose
- ***permanent road***
- ***permanent infrastructure***

proposed to be constructed prior to the subdivision to create the site(s) for that activity.

This application is for the construction of servicing infrastructure including an access road for the purpose of servicing the zone. This application is being made prior to the Bulk Title and Stage 1 subdivision consents to enable construction of infrastructure for



servicing the Mount Cardrona Station Zone and Cardrona Village to proceed independently and prior to subdivision. Land use consent is required as a discretionary activity.

1.4.3 Part 22 Earthworks (Rural General Zone): Operative District Plan

Chapter 22 – Earthworks – Rules

22.3.3 Site Standards

i Volume of Earthworks

The maximum total volume of earthworks (m³) shall not exceed that specified in Table 22.1. (Rural General Zone – 1,000m³)

ii Height of cut and fill and slope

(a) Rural General Zone, Rural Visitor Zone and Gibbston Character Zone:

(ii) All cuts and batters shall be laid back such that their angle from the horizontal is no more than 65 degrees.

Earthworks volumes and extents are provided for in section 1.3.1 above. Land use consent is required for the earthworks activity in the Rural General zone as set out in the provisions above.

1.4.4 Weighting - Queenstown Lakes District Council District Plan(s)

Strategic Directions - Chapters 3-6

Strategic Chapters 3-6 remain subject to appeals, sufficiently so, that it is considered that Part 4 (District Wide) of the ODP is the dominant provision set for the assessment of the current application.

Earthworks - Chapter 25

Earthworks, Chapter 25 decisions version was released 21st March 2019 and the appeal period closed 7th May 2019 where some 75 appeals have been received and some 10 of



these seek relief in relation to the text of Chapter 25. Due to the ambit of these appeals, limited (if any), weighting can be applied to the relevant provisions of Chapter 25 and Part 22 of the ODP remains the dominant provision set in relation to earthworks.

Energy & Utilities – Chapter 30

The Energy & Utilities Chapter 30 was released as part of Stage 1 of the District Plan and is subject to a number of appeals.

Mount Cardrona Station Special Zone was not included as part for the District Plan review. Council have advised that the existing operative provision for Utilities being Part 17 apply to Mount Cardrona Station Special Zone.

Summary

The relevant provisions contained in the ODP are considered to be the dominant provision set alongside ODP Parts 4 District Wide, Part 12 Special Zone and Part 22 Earthworks for assessment of the current application.

1.4.5 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2012

All applications for resource consent need to be determined if they apply under the 'National Environmental Standard for Assessing and Managing Contaminates in Soil to Protect Human Health' (NES).

Under these regulations, land is considered to be actually or potentially contaminated if an activity or industry on the Hazardous Activities or Industries List (HAIL) has been, or is more likely than not to have been, undertaken on that land. Therefore, the NES only applies to land that is potentially or actually affected by contaminants because of its historical and/or current use and the types of activities previously undertaken on the site. The land use history is therefore the trigger for determining whether the land is considered by the NES. For all of the land subject to this consent application the following applies:

- [1] This site has historically been used for farming purposes including the grazing of sheep and the cutting of hay. No area of land within the site has not been used, or is currently been used, for any of those activities listed in the HAIL.



- [2] There are no records on Council files for any of this site to potentially be considered under any of those activities listed within the HAIL.
- [3] Based on the records for which our office retains of the land and surrounding land, there is no knowledge or records that may suggest any activity listed within the HAIL have taken place.
- [4] A Preliminary Site Investigation has been undertaken by Davis Consulting and concludes that it is highly unlikely that there is a risk to human health associated with the proposed activities. A copy of the Report is included as Attachment [K] to this application.

Overall, based on the probabilities it is more likely than not that the land subject to this application is not a contaminated site. It is highly unlikely that there would be a risk to human health. The land for which resource consent is being sought is not considered as being HAIL land under sub-clause (7) section 5 of the NES. Accordingly, consent is not required.

1.5 Classes of activities

A number of instruments are registered on the title for the subject property and these are contained in Attachment [B] and are discussed in section 1.1 above.

2.0 ASSESSMENT OF THE ACTIVITIES EFFECT ON THE ENVIRONMENT

2.1 If it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:

It is considered that the proposal will not result in any significant adverse effect on the environment. Alternative locations have been considered and the location proposed is considered the most appropriate.



2.2 An assessment of the actual or potential effect on the environment of the activity:

2.2.1 Permitted Baseline

Permitted Activities in Activity Area 7b of the Special Zone and the Rural General Zone are limited and are primarily restricted to farming type activities. The Permitted Activity status for Utilities is set out in detail in section 1.4.1 above.

2.2.2 Any physical effect on the locality, including any landscape and visual effects

The applicant has been in consultation with the Queenstown Lakes District Council for a number of years in relation to this development. The Plan Change process that created the zone thoroughly considered and assessed the physical effect on locality, including landscape and visual effects. That assessment is not repeated here but rather the applicant is guided by the resulting provisions of the District Plan.

The site has already been considered and consented for the construction of a utility in this location. At this time the site was zoned Rural General and within an Outstanding Natural Landscape. The zoning of the site has since this time come into effect where the threshold for enabling such activities to occur has reduced with the District Plan provisions enabling such facilities to be considered and constructed for the purpose of developing the zone.

District Plan assessment matters are considered in detail below and where necessary, conditions of consent have been volunteered by the applicant as further mitigation to ensure the proposal aligns with the overall outcomes intended for the zone.

Based upon the above, any adverse effects in terms of locality, landscape and visual effects have already been considered acceptable and where temporary construction effects can be managed through conditions of resource consent.

2.2.3 Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects

Only positive effects are anticipated through the provision of a water supply for the future residential community of Mt Cardrona Station and the Cardrona Village.



2.2.4 Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity

These matters were thoroughly addressed as part of the Plan Change process. However, as a result several District Plan provisions require management practices to be put in place at the first stage of development. Those matters will be required to be addressed at such time as Stage 1 subdivision consent is lodged for the development within the zone.

2.2.5 Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations

As above.

2.2.6 Any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants

The proposal does not include the discharge of contaminants.

2.2.7 Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations

A geological report has been included as Attachment [F] to this application. The proposed activity does not include the use of hazardous substances or installations.

2.3 If the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment that are likely to arise from such use:

Refer to Part 2.2.7 above.

2.4 If the activity includes the discharge of any contaminant, a description of—
(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
(ii) any possible alternative methods of discharge, including discharge into any other receiving environment:

Refer to Part 2.2.6 above.



2.5 A description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:

Actual and potential adverse effects of the proposal have been considered in Part 2.2 and Part 5.0 below. A number of conditions of consent have been detailed throughout the application document including compliance with the Construction Management Plan included as Attachment [G] to this application. Landscaping is also proposed as part of the proposal in accordance with the Landscape Planting plans included as Attachment [H].

2.6 Identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:

The proposed activity is being undertaken on land owned by Mt Cardrona Station Limited (MCSL). MCSL are also the majority land owner of the surrounding farm land. Affected Party Approval from MCSL is included as Attachment [M] to this application.

Development of this nature is anticipated in the zone by virtue of the proceeding residential development that will take place under the zone provisions.

Appropriate design solutions have been included in the consent application. The applicant has also volunteered consent conditions throughout the application document. Providing suitably worded conditions of consent are incorporated into the consent decision, any potential affects can be appropriately avoided, remedied and mitigated.

Overall, there are no other persons or parties that are considered to be affected by the current proposal.

2.7 If the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:

No monitoring above or beyond standard consent conditions is considered necessary.

2.8 If the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).



The proposed activity will not have any adverse effect on the exercise of a protected customary right.

3.0 OPERATIVE DISTRICT PLAN: OBJECTIVES AND POLICIES ASSESSMENT

3.1 Mount Cardrona Station Special Zone: Part 12

12.21.2 Objectives and Policies

Objective 1 – Sustainable Management

The Zone provides for a community that minimises its effects on the environment and provides for the social and economic wellbeing of the people living within.

Policies:

Sustainable management in the context of the Zone is made up of the following components:

1.1 *Ecological sustainability*

To encourage the planting of species that are suited to the climate and landscape, needing little maintenance. Where possible, encourage the planting of species that are indigenous to the area so that they attract indigenous flora and reflect the past ecological structure of the Valley.

The application includes implementation of landscape planting and where species have been identified through the Mount Cardrona Design Guidelines as being suitable for the area.

1.5 *Sustainable infrastructure provision*

To ensure that infrastructure supporting the Village has minimal impacts on the natural functioning of the environment through:

- *Minimising water takes and disposal of waste;*
- *Designing infrastructure systems to have the capacity to meet changes in demand.*

A dual water take from Pringles Creek and Cardrona River has been approved to service the zone. The Otago Regional Council permit has been secured for the take.

The infrastructure has been designed to meet the full developed capacity for the zone.



1.7 Sustainable growth management

To create a Zone that provides for future growth of the Queenstown Lakes District in a contained location, avoiding inappropriate urban sprawl and providing a critical mass that enables effective infrastructure provision.

The water infrastructure has been designed to service the full capacity of the zone and expansion to service the Cardrona Village.

Objective 4 - Spatial Planning and Design

A coherent site layout that provides a heart to the Village, and creates a legible, safe, attractive and efficient environment with a strong character and identity that reflects its unique location.

Policies:

4.5 *To ensure that development occurs in accordance with the Structure Plan.*

4.15 *Within Activity Area 7:*

- *To provide for the protection of heritage features within the Zone, and the protection of the open space surrounding the Village.*
- *To enable public pedestrian access through the area while ensuring the safe operation of farming and other rural activities, providing for ecological enhancement, and protecting the water races.*
- *To restrict buildings other than those associated with the provision of access to the surrounding recreational activities.*
- *To ensure that the natural values of the escarpment west of Cardrona Road are maintained and enhanced by suitable revegetation and by avoiding buildings in Activity Area 7a.*

This proposal does not divert from the anticipate zone outcomes. The proposed infrastructure is required to effectively service the zone with a secured water supply. The location and design is sympathetic to the site and will not impeded on the wider use and values of the zone. Such infrastructure is anticipated where housing development is approved to progress.

Objective 7 - Infrastructure

Long term environmental sustainability of the Village and its surrounds.

Policies:



Water management

7.8 *As far as practicable, to retain and where possible enhance the natural water courses and wetlands within the Zone.*

The water take is located outside of the zone, regardless the natural water course and wetlands of the zone and wider environment will not be disturbed by the current design and proposal.

3.2 Earthworks: Part 22

Objective 1

Enable earthworks that are part of subdivision, development, or access, provided that they are undertaken in a way that avoids, remedies or mitigates adverse effects on communities and the natural environment.

Policies:

1.1 *Promote earthworks designed to be sympathetic to natural topography where practicable, and that provide safe and stable building sites and access with suitable gradients.*

Finished levels will be shaped to be undulating and appear natural.

1.2 *Use environmental protection measures to avoid, remedy or mitigate adverse effects of earthworks.*

A Construction Management Plan forms part of this application. The works will be undertaken in accordance with the Construction Management Plan and Council Code of Practice. This can be secured by appropriately worded conditions of resource consent.

1.3 *Require remedial works and re-vegetation to be implemented in a timely manner.*

Landscaping and revegetation is proposed. A standard condition requiring implementation of the landscape plan and re-grassing of all exposed surfaces is anticipated.



1.4 *Avoid, remedy or mitigate the long term adverse effects of unfinished projects.*

The infrastructure is required to be constructed to enable servicing of the zone and completion prior to Stage 1 of subdivision and issuing of 224c.

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

The proposal is to enable construction of the servicing infrastructure for the zone. It will result in positive effects contributing to the social and economic wellbeing of the Cardrona community.

Objective 2

Avoid, remedy or mitigate the adverse effects of earthworks on rural landscapes and visual amenity areas.

Policies:

2.1 *Avoid, where practicable, or remedy or mitigate adverse effects of earthworks on Outstanding Natural Features and Outstanding Natural Landscapes.*

2.2 *Avoid, where practicable, or remedy or mitigate adverse visual effects of earthworks on visually prominent slopes, natural landforms and ridgelines.*

2.3 *Ensure cuts and batters are sympathetic to the line and form of the landscape.*

2.4 *Ensure remedial works and re-vegetation mitigation are effective, taking into account altitude and the alpine environment.*

Earthworks within the Rural Zone have minimized as much as practically possible. The proposed works will appear as part of the larger extent of works taking place in the adjoining zone. Visually prominent slopes, landforms and ridgelines have been avoided. Cuts and batters have been graded to appear natural and will be re-vegetated where possible.



Objective 3

Ensure earthworks do not adversely affect the stability of land, adjoining sites or exacerbate flooding.

Policies:

- 3.1 *Ensure earthworks, in particular,*
- *cut, fill and retaining,*
 - *do not adversely affect the stability of adjoining sites.*
- 3.2 *Ensure earthworks do not cause or exacerbate flooding, and avoid, remedy or mitigate the adverse effects of de-watering.*
- 3.3 *Avoid the adverse effects of earthworks on steeply sloping sites, where land is prone to erosion or instability, where practicable. Where these effects cannot be avoided, to ensure techniques are adopted that remedy or mitigate the potential to decrease land stability.*

Affected Party approval from the landowner is included as Attachment [M]. A geotechnical report has been included as part of this application. Recommendations in that report are anticipated to form part of the overall consent conditions and associated mitigation measures.

Objective 6

Maintain or improve water quality of rivers, lakes and aquifers.

Policies:

- 6.1 *Avoid the adverse effects of earthworks in close proximity to water bodies, where practicable. Where these cannot be avoided, ensure that sediment control techniques are put in place to avoid, remedy or mitigate sediment run-off.*
- 6.2 *Avoid earthworks adversely affecting water aquifers including the Hawea Basin, Wanaka Basin, Cardrona alluvial ribbon and Wakatipu Basin aquifers and other lesser aquifers.*



The applicant anticipates a condition of consent requiring implementation of the Construction Management Plan and works to be undertaken in accordance with Council Code of Practice.

The Otago Regional Council have approved a water take from Pringles Creek.

3.3 District Wide: Part 4

4.2 Landscape and Visual Amenity

4.2.5 Objective and Policies

Objective:

Subdivision, use and development being undertaken in the District in a manner which avoids, remedies or mitigates adverse effects on landscape and visual amenity values.

Policies:

2 Outstanding Natural Landscapes (District-Wide/Greater Wakatipu)

- (a) *To maintain the openness of those outstanding natural landscapes and features which have an open character at present.*
- (b) *To avoid subdivision and development in those parts of the outstanding natural landscapes with little or no capacity to absorb change.*
- (c) *To allow limited subdivision and development in those areas with higher potential to absorb change.*
- (d) *To recognise and provide for the importance of protecting the naturalness and enhancing amenity values of views from public roads.*

An area of the proposed earthworks of the reservoir encroach into the Rural Zone. The reservoir has been designed to appear natural and will be completed with contoured ground levels and re-vegetation of the site will take place.



The majority of the works are located in the Special Zone, the works in the Rural Zone will only appear as part of the larger development on site.

The proposed works will not diminish the openness of the rural landscape by any degree. The rural land is located directly adjoining the Special Zone and has the ability to absorb the proposed works and will not appear out of context in the wider environment.

The site will be contoured and revegetated to appear natural and maintain the current levels of visual amenity.

10. Utilities

To avoid, remedy or mitigate the adverse effects of utilities on the landscapes of the district by:

- *avoiding siting utilities in outstanding natural landscapes or features in the Wakatipu Basin (except on Slope Hill in the vicinity of the current utilities)*
- *encouraging utilities to be sited away from skylines, ridgelines, prominent locations, and landscape features*
- *encouraging utilities to be co-located wherever possible*
- *encouraging utilities to be located along the edges of landforms and vegetation patterns*
- *encouraging or requiring the alignment and/or location of utilities to be based on the dominant lines in the landscape*
- *requiring that structures be as unobtrusive as is practicable with forms appropriate for the landscape and finished in low reflective colours derived from the background landscape*
- *requiring that transmission lines (where technically and economically feasible) be placed underground.*

The site is not located in the Outstanding Natural Landscape of the Wakatipu Basin.

The site is not located on a skyline, ridgeline or prominent location. The applicant has made an endeavour through the engineering design process to co-locate all components of the water infrastructure in one locality.



There are no distinctive vegetation patterns or landforms in the vicinity. Rather a relatively flat area of the site has been chosen for the placement of the infrastructure this, minimises the quantity and effects of earthworks and enables the components of the infrastructure to be co-located.

Materials and colours of the tanks and treatment facilities have been chosen that are characteristic of the colours found in the vicinity and are of low reflectivity. Proposed landscaping and appropriate contouring of earthworks with ensure facilities are screened and any visual effects are appropriately mitigated.

4.0 SUMMARY: OBJECTIVES AND POLICIES

The proposed development has been appropriately located and designed to ensure any effects have been addressed through design solutions and further conditions of consent are volunteered that relate to site management and completion. Overall the proposal is considered consistent with the relevant Objectives and Policies of the Operative District Plan.

5.0 OPERATIVE DISTRICT PLAN: ASSESSMENT CRITERIA

5.1 Assessment Matters Part 12: Mount Cardrona Station Special Zone

viii. Discretionary Activity - Access Roads in Activity Areas 6 and 7 and Car parking in Activity Area 6a

The extent to which:

- (a) The car parking and access is necessary in order to enable public access to the open space areas;*
- (b) The effects from hard surfaces can be avoided through use of permeable material;*
- (c) The car park and access areas are rural in character;*
- (d) Landscaping is used to mitigate adverse effects;*
- (e) Earthworks are minimised through appropriate site location and design.*

No car parking is proposed. Access is required for service vehicles to the water infrastructure plant.



The access will be an all weather gravel access road, being rural in character.

Exposed surfaces will be revegetated as soon as practically possible. This can be secured by a condition of resource consent.

The access has been designed and located to ensure earthworks are minimised.

xxiv. Discretionary activity – Rule 12.22.2.3(ix) – activities prior to subdivision of the site to accommodate that activity:

- (a) *Future efficient subdivision and development is not compromised by inappropriately located development.*
- (b) *The proposal is supported by a natural hazards assessment prepared by a suitably qualified professional engineer*
- (c) *Compliance with the Mount Cardrona Station Design Guidelines (2017).*

The proposed facility is appropriately located and sized to service the full capacity of the developed Mount Cardrona Station Zone and Cardrona Village.

The application includes a geological assessment report included as Attachment [F] to this application.

The Design Guidelines are not specific in their relation to the construction of infrastructure. However, proposed planting is consistent with the requirements of the Design Guidelines.

xxii. Controlled Activity and Site Standard – Earthworks

The assessment matters as they apply to Part 22: Earthworks are similar in detail as those included as Past 12 for the Mount Cardrona Special Zone. Rather than repeat the information here, the matters have been considered in tandem as they form one application and are discussed below.

1. Environmental Protection Measures

- (a) *Whether and to what extent proposed sediment/erosion control techniques are adequate to ensure that sediment remains on-site.*



- (b) *Whether the earthworks will adversely affect stormwater and overland flows, and create adverse effects off-site.*
- (c) *Whether earthworks will be completed within a short period, reducing the duration of any adverse effects.*
- (d) *Where earthworks are proposed on a site with a gradient >18.5 degrees (1 in 3), whether a geotechnical report has been supplied to assess the stability of the earthworks.*
- (e) *Whether appropriate measures to control dust emissions are proposed.*
- (f) *Whether any groundwater is likely to be affected, and any mitigation measures are proposed to deal with any effects.*

NB: Any activity affecting groundwater may require resource consent from the Otago Regional Council.

The proposal is considered to be consistent with the criteria above for the following reasons:

- The proposed works are necessary for the construction of water supply infrastructure that is intended for the zone.
- The finished works will be sympathetic to the natural topography with appropriate contouring to ensure the site appears in a natural state.
- All earthworks will be undertaken in accordance with the Construction Management Plan and Council Code of Practice.
- No material is required to be transported to or from the site as part of the proposal;
- Effects associated with dust emission, noise and vibration are considered to be adequately mitigated by conditions of consent.
- The proposed utilities are not located within a defined overland flow path;
- The proposed design has been assessed by a Geotechnical Engineer and the recommendations made in the report are anticipated to form conditions of consent.



2. Effects on landscape and visual amenity values

- (a) *Whether the scale and location of any cut and fill will adversely affect:
- the visual quality and amenity values of the landscape;
- the natural landform of any ridgeline or visually prominent areas;
- the visual amenity values of surrounding sites*
- (b) *Whether the earthworks will take into account the sensitivity of the landscape.*
- (c) *The potential for cumulative effects on the natural form of existing landscapes.*
- (d) *The proposed rehabilitation of the site.*

The proposal is considered to be consistent with the criteria above for the following reasons:

- Effects on landscape and visual amenity values have been considered as part of this application and where no adverse effects are to result;
- The proposed works are not located on a ridgeline and will not be visually prominent from a public place.
- Rehabilitation is proposed through appropriate planting.

3. Effects on adjacent sites:

- (a) *Whether the earthworks will adversely affect the stability of neighbouring sites.*
- (b) *Whether the earthworks will change surface drainage, and whether the adjoining land will be at a higher risk of inundation, or a raised water table.*
- (c) *Whether cut, fill and retaining are done in accordance with engineering standards.*



The applicant is the owner of the adjoining land. A Geotechnical Report has been completed and the proposed location is considered acceptable. Works will be completed in accordance with Council Code of Practice.

4. General amenity values

- (a) *Whether the removal of soil to or from the site will affect the surrounding roads, and neighbourhood through the deposition of sediment, particularly where access to the site is gained through residential areas.*
- (b) *Whether the activity will generate noise, vibration and dust effects, which could detract from the amenity values of the surrounding area.*
- (c) *Whether natural ground levels will be altered.*
- (d) *Whether the golf course construction will generally maintain the natural contours of the land*

No material is to be transported off site. Works will be completed in accordance with the Construction Management Plan and Councils Code of Practice. Natural ground level will be altered to provide for the facility but not to an extent that it effects general amenity values of the wider environment.

5. Impacts on sites of cultural heritage value:

- (a) *Whether the subject land contains a recorded archaeological site, and whether the NZ Historic Places Trust has been notified.*

The applicant anticipates a general accidental discovery condition of consent.

6.0 RESOURCE MANAGEMENT ACT 1991 SECTION 104

The proposal will not result in any actual or potential adverse effect on the environment that is more than minor and that cannot otherwise be mitigated through appropriately worded conditions of resource consent.

The proposal is not considered contrary to the relevant Objectives and Policies of the District Plan.



7.0 RESOURCE MANAGEMENT ACT 1991: PART II

The proposal will provide the applicant for future development opportunities which align with the Mount Cardrona Station Special Zone requirements. Future development will promote sustainable management of natural and physical resources within the site, whilst ensuring that social, economic, and cultural well-being is provided for. The proposal will avoid, remedy, and mitigate adverse effects of activities on the environment.

Overall, the proposal is in keeping with the purpose and principles of the RMA.

AEE prepared by **Karen Hanson**
CLARK FORTUNE MCDONALD & ASSOCIATES

December 2019



ATTACHMENT [B]..... Certificates of Title and Encumbrances

ATTACHMENT [C]..... Reservoir Consents

ATTACHMENT [D].....Reservoir Earthworks and Layout Design Plans

ATTACHMENT [E].....Water Permit ORC

ATTACHMENT [F]..... Geotechnical Report

ATTACHMENT [G]..... Construction Management Plan

ATTACHMENT [H]..... Landscape Planting Plan

ATTACHMENT [I]..... Tank Design Plans

ATTACHMENT [J]..... Treatment Infrastructure Design Plans

ATTACHMENT [K]..... NES Report

ATTACHMENT [L].....MCS Design Guidelines

ATTACHMENT [M].....Affected Party Approval

APPENDIX 3 – LANDSCAPE REPORT

LANDSCAPE REPORT: RM191367, Cardrona Valley Infrastructure Ltd

TO: Roz Devlin, Planner Consultant, Queenstown Lakes District Council

FROM: Richard Denney, Landscape Architect, DLA.

DATE: 22nd April 2020

INTRODUCTION

1. An application has been received for resource consent for construction of a reservoir settling pond, water holding tanks, treatment buildings, access road construction and associated structures at a site off the Cardrona Valley Road, Cardrona. The subject property is legally described as Section 6 SO 459975 and Lot 3 DP 512956. In terms of the Queenstown Lakes District Council District Plan (the District Plan) the site straddles the boundary of the *Mt Cardrona Station Special Zone (MCSSZ)* and the *Rural General* zone. Within the Proposed District Plan (PDP) the site is zoned *MCSSZ* and *Rural* zone. I understand from council's planner that the status of the activity is discretionary.

PROPOSAL

2. The proposal is detailed within the submitted Assessment of Environmental Effects (AEE). In summary the following is proposed - installation, operation and maintenance of:
 - A reservoir settling pond with a holding capacity of 5000m³. The pond would be cut into ground with a bund up to 5.1m in height formed on the eastern side. Security fencing would enclose the pond, with a stone rip margin at the water level. A stone rip rap outlet overflow would be formed to the southwest leading towards Pringles creek. The pond would be filled by a proposed buried water line fed by an intake located approximately 800m upstream in the Pringles creek bed.
 - Installation of two 500m³ tanks (6.75m height, 12m diameter and coloured *Ironsand* a dark grey colour with a light reflectivity value (LRV) of 8%). The tanks would sit within a small gravelled yard, with cabinets, pipes and pumping infrastructure installed within an 8m by 10m concrete pad adjacent. The tank yard area would be fenced with security fencing with an earth bund up 3.5m in height formed on the eastern side of the yard
 - Earthworks for the above
 - 8030m³ of cut, 7860m³ of fill, max cut 5.7m, max fill 5.1m (MCSSZ)
 - 1870m³ of cut, 90m³ of fill, max cut 4.6m and 1.4m fill.
 - Formation of 3m wide metalled access road approximately 550m in length from the residential activity area within the MCSSZ downslope and up to the site. Earthworks measures not included.
 - Landscape planting of an informal belt of grey shrubland (*Coprosma propinqua*, *C.rugosa*) and specimen Mountain Beech and Kohuhu around the perimeter of the tank yard, and four smaller clusters around the proposed pond. The balance of areas of earthworks would be grassed.

LANDSCAPE AND SITE DESCRIPTION

3. The site is located on the lower valley slopes of Mt Cardrona (1936masl) within the Cardrona valley. The lower slopes are generally depositional landforms of alluvial fans with a number of streams forming shallow gullies and feeding into the Cardrona River below. The landscape is dominated by open grassland, predominately exotic pasture on the lower slopes merging into increasing native tussock and ground hugging subalpine plant communities upslope. Scattered

mixed native and exotic scrub occupies the gully systems. The overall landscape has an open character and a high degree of openness due to the very few buildings beyond the residential area of the Cardrona village and fringes. The natural landform is highly legible from the valley floor to the mountain tops. The landscape is part of the mountain landscapes of the district where the large natural landforms dominates and processes that have shaped the landscape are clearly evident. The landscape mantle has been modified by farming and historic gold mining activity with an open pastoral character, scattered exotic trees, water races and sluiced gullies. The broad scale and open nature of the valley is dramatic with extensive views to the north towards the upper Clutha basin and the ranges either side of the valley. The landscape is scenic high country and has a farming and gold mining history that adds a layer of historic and cultural interest. The landscape is part of the Outstanding Natural Landscape (ONL) of the Cardrona Valley.

4. The site is located on the edge of a wide open gentle slope that is currently grazed and used for a commercial horse trekking operation, and is partly within a shallow gully of Pringles Creek originating from the upper slopes within the Cardrona Ski field. The proposed pond and tank yard would sit just near the toe of an escarpment to the west and upslope of the open slope, and near the edge of Pringles Creek gully at an altitude close to 640masl. Two historic water races cross the site, with the upper one passing adjacent to the lower part of the tank yard and pond. The water races are shallow indentations following the contour across the open slope with water flowing through the upper race observed on the site visit.
5. The overflow outlet structures would extend into the lower gully terrace of Pringles Creek, with a buried intake pipe extending up the lower gully terrace for approximately 800m upstream. This gully is a mix of open grassland and scrubland on a lower gully terrace with thick predominately native scrub within the steeper margins of the incised creek.



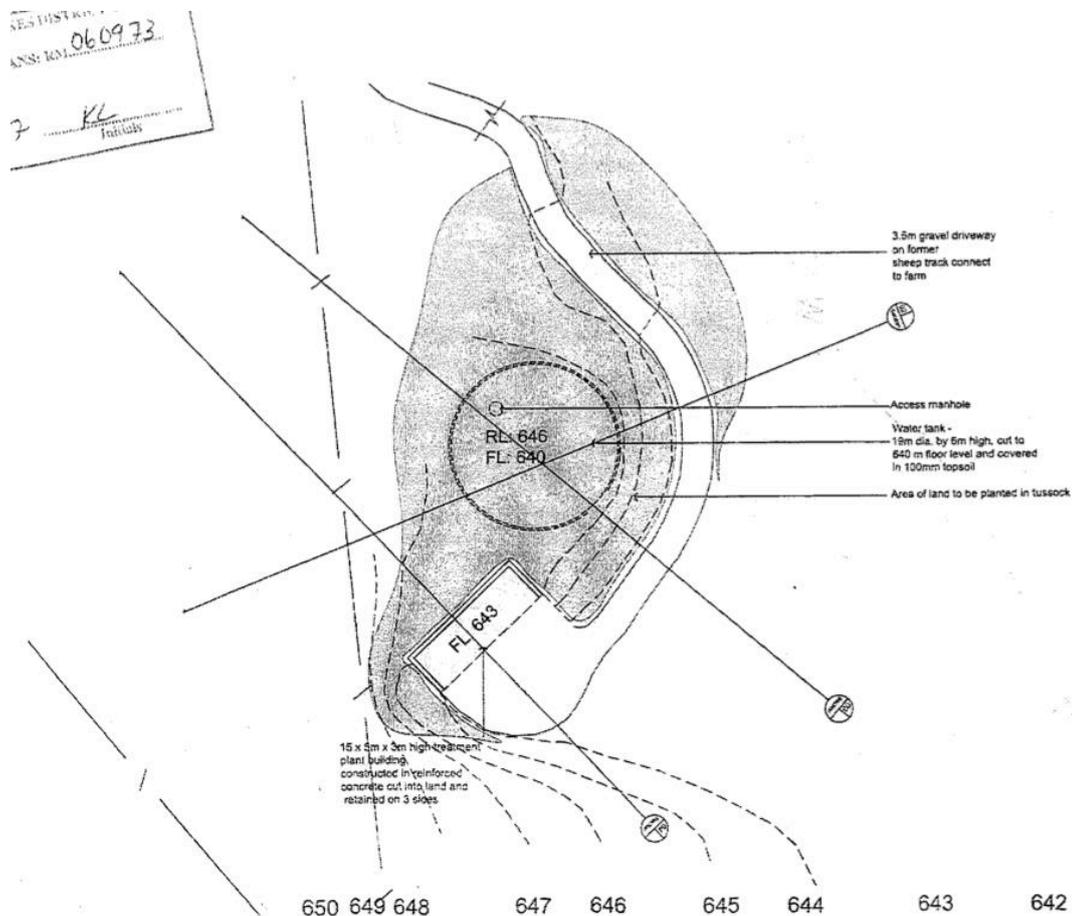
Photo 1. Proposed tanks site highlighted as viewed from the embankment upslope of the site, looking east towards the Pringles Creek gully vegetation to the right with the Robert's dwelling behind. 12 March 2020, 24mm lens (wide), Sony Full Frame A7ii.

6. The proposed access road would traverse the southern fringe of the open pastoral slope near the edges of the Pringles Creek gully before connecting into a consented roadway within the residential area (yet to be constructed) of the MCSSZ. The nearest residential dwelling to the site (tank yard) is located 370m to the SSE of the Robin's rural property, and four dwellings located with a small rural lifestyle subdivision on Gin and Raspberry land to the SE 470m distant. Land to the west is a high country farm with the Cardrona Ski field further upslope. Downslope beyond

the open slope the land drops down an embankment to the valley floor and the Cardrona Valley Road with a village fringe area of scattered rural lifestyle properties.

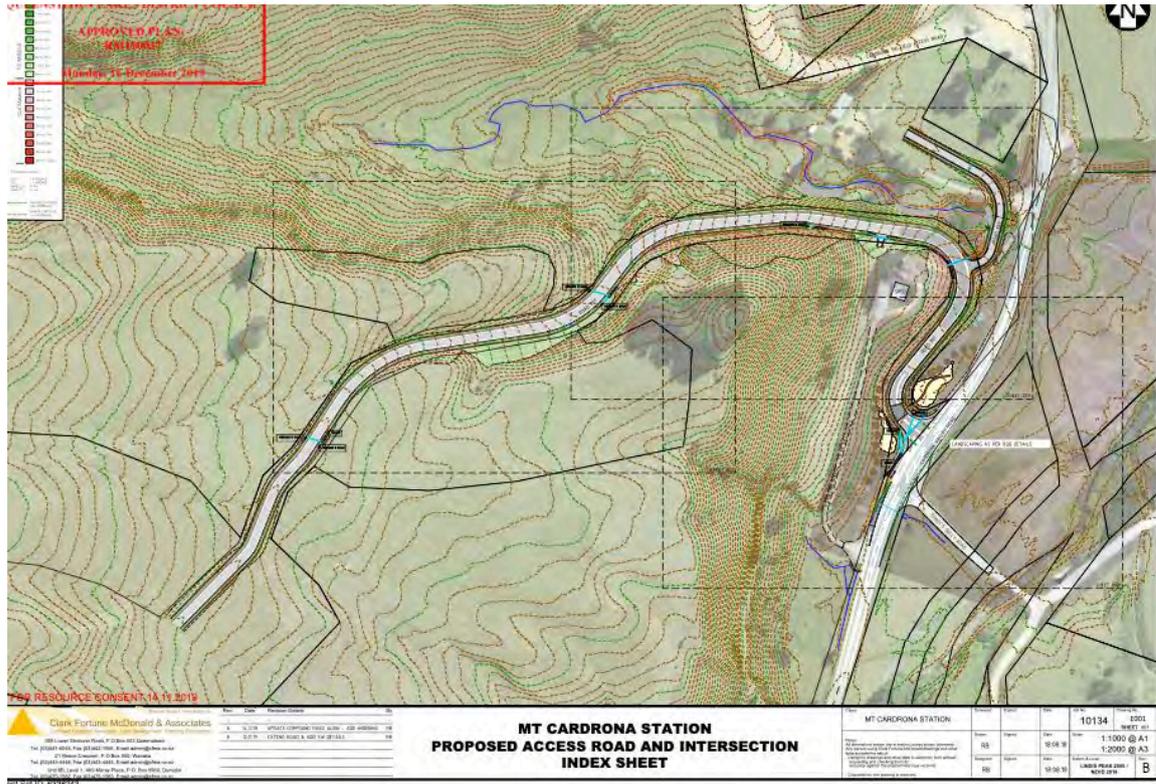
BACKGROUND

7. The land to the north and east of the site, and including the proposed pond, tanks and access road, is within the MCSSZ activity area *7b Heritage*, and includes a public easement in gross and indicative key pedestrian linkages as per *Section 12-139ii* of the ODP. Activity area 7:
- To provide for the protection of heritage features within the Zone, and the protection of the open space surrounding the Village.
 - To enable public pedestrian access through the area while ensuring the safe operation of farming and other rural activities, providing for ecological enhancement, and protecting the water races.
 - To restrict buildings other than those associated with the provision of access to the surrounding recreational activities.
 - To ensure that the natural values of the escarpment west of Cardrona Road are maintained and enhanced by suitable revegetation and by avoiding buildings in Activity Area 7a.
8. *RM060973 Mount Cardrona Station*
Consent granted to construct a reservoir and water treatment building and undertake associated earthworks at a location adjacent to Pringles Creek at 640masl. The water reservoir and part of the treatment building to be underground, with earth reinstated with pasture grass and tussock on roof (below). Consent was later extended to expire on the 20 December 2015.



9. *RM190037 Mount Cardrona station Ltd*

Consent granted to undertake earthworks for the construction of an access road and secondary access road within the MCSSZ residential area. (Proposed reservoir access road to connect to this road).



10. Consent Notice 9238838.3 requires all buildings to be in accordance with the Mount Cardrona Station Design Guidelines, Sept 2008, and existing water races to be managed and maintained.

ASSESSMENT

11. The appropriate assessment matters of the operative District Plan are within:

- *Section 17.3.2 Assessment Matters (Utilities)*
- *Section 22 Earthworks*
- *Section 12.22 Mount Cardrona Station Special Zone*
- *Section 5.4.2.2 Assessment Matters (2) Outstanding Natural Landscapes (District Wide)*

and within the Proposed District Plan it is assessed against:

- *Section 30 Energy and Utilities*
- *Section 21.21.1 Outstanding Natural Features and Outstanding Natural Landscapes (ONF and ONL)*
- *Section 21.21.3 Other Factors and positive effects, applicable in all the landscape categories (ONF, ONL and RCL)*
- *Section 25 Earthworks*

12. I carried out a site visit on the 12th March 2020 under fine clear conditions. Site visit photos are attached as Appendix 1 to this document. In rating effects, I will use the following guideline scale from the *NZILA Best Practice Guide – Landscape Assessment and Sustainable Management version: 02.11.10* (left column). I have defined my interpretation of the scale (right column) in terms of less than minor, minor and more than minor.

NIL	Nil Effects
NEGLIGIBLE	Less than Minor Adverse Effects
VERY LOW	
LOW	Minor Adverse Effects
MODERATE	More than Minor Adverse Effects
HIGH	
VERY HIGH	
EXTREME	

Operative District Plan

17.3.2 Assessment Matters (Utilities)

(i) The extent to which the following effects are likely to occur:

- *degrade the quality of the landscape by increasing the apparent level of modification and/or reducing its visual coherence;*
- *conflict with landform and vegetation patterns;*
- *encroach upon and degrade the visual and landscape amenity of shorelines and skylines.*

13. Proposed earth mounding, installation of tanks and pond, and formation of an access road would contribute to an increase to the modification of an open landscape devoid of buildings and structures. The proposed development would occupy a fringe area of an open slope and shallow gully of Pringles Creek. Proposed planting would assist to integrate the development into the landscape but only to a limited degree as the planting is of an insufficient scale, density and species diversity to be effective. The scale of works is relatively small in this broad landscape, but the openness and open character of the landscape does not lend itself well to absorbing such modification. I consider the proposed development would increase the apparent level of modification to the landscape and reduce its visual coherence to a moderate degree.
14. The scale of development, and particular the scale and nature of proposed earthworks, would conflict with landform patterns to a low degree as the variability of the natural terrain is high, and the site is located on a fringe area reducing its prominence. Proposed planting is informal in nature but has low species diversity and includes species that are not consistent with species found naturally in the adjacent Pringles Creek. I consider the proposed planting would have conflict with natural vegetation patterns to a moderate to low degree. I recommend that the planting is amended to increase plant species diversity, use species that are evident in the Pringles Creek catchment, and increase the planting density and extent to follow natural patterns and to support the visual mitigation of the development.
15. The site is backed by the escarpment with slopes behind and would not breach skylines as viewed from public viewpoints.

(ii) The extent of the visual impact of the utility from any adjoining Residential, Rural-Residential, Rural-Lifestyle, Township, Town Centre, Corner Shopping Centre, Remarkables Park, Resort or Rural Visitor zoned site or from any public road or public place, and its impact on the amenity values and character of the surrounding environment taking into account its external appearance.

16. The site has a broad viewing catchment including the MCSSZ, the Snow Farm access road, the Cardrona ski field access road, private properties on the elevated slopes either side of the valley, and the Pisa Conservation area. The tanks would be obscured from view from the Cardrona Valley Road, dwellings along Gin and Raspberry Road, the Cardrona ski field lower carpark to the north of the site, and the river corridor.
17. From elevated viewpoints such as the Snow Farm and Cardrona Ski field access roads the full extent of the development would be visible but of a small scale in a broad landscape. Proposed structures, and in particular the roof of the tanks would create glare regardless of its colour and would stand out in a setting that is devoid and is intended to be devoid of buildings through its

zoning. Glare can have an effect over large distances catching the eye and drawing attention to development, especially within landscape as open as this one. The similar consented development for the same location, RM060973 included grassed roofs for tanks and water treatment facilities and this is a very effective measure for reducing visibility of buildings and structures in the landscape. The proposed development however only offers a limited degree of mitigation with earth mounding and low-density planting.

18. The proposed development would be fully visible from immediately upslope along the Cardrona Ski field access road in a backdrop context of anticipated future building development within the MCSSZ to be less out of context. It would however be viewed within an open space activity area otherwise intended to be free of built form and would detract from the character and amenity of the surrounding landscape.
19. Overall, I consider adverse effects on the visual amenity and character of the surrounding landscape would be moderate to high. I recommend that colours for the tanks are dark grey with a light reflectivity value of between 7% and 15%, with a matt paint finish and or an alternative measure is provided such as a grass roof, or non-reflective material. Final materials and colours to be submitted to council for certification prior to construction beginning on site. Samples of materials may be requested for certification.

(iii) The extent of any adverse effect created through a reduced setback from boundaries on the surrounding environment including the potential to affect the privacy and outlook of residents.

(iv) The degree to which any adverse effect created by a reduced setback may be mitigated through different options for site layout.

20. Not applicable to this application.

(v) The extent to which the visual impact of the utility can be mitigated by landscaping and the extent to which other factors contribute to integrating utilities with the surrounding environment including:

- *a higher quality of planting over a smaller area.*
- *an unobtrusive building design.*
- *the compatibility of materials used for finishing and the colour of the building with the environment.*
- *use of low reflective colours within the range of earth browns, greens, greys and blue greys.*

21. As above I consider higher species diversity, planting density, and greater extent of planting is required especially towards the southern parts of the mounding and earthworks for the tank yard and overflows towards the creek. Planting should be fenced with rabbit proof fencing to prevent stock and rabbits grazing and irrigated for the initial establishment period of 3 years. All planting should have an organic mulch applied to suppress weeds and to retain moisture around planting.
22. All earth worked areas, including the side castings for the access road should be re-grassed in a brown top dominant pastoral grass to be consistent with the surrounding landscape.
23. All tanks and associated pipes, cabinets etc. should be of recessive grey or olive green colouring, and have a matt paint finish or alternative low glare treatment including potentially grassed roofs.

(vi) The degree to which the proposed choice of site or route for the utility will affect the environment and the reason for the choice.

(vii) The extent to which alternative sites or routes have been considered and reasons as to why these have been selected ahead of alternatives.

24. Effects on the landscape are discussed above. Alternative sites are not offered within the application. Reference to RM060973 is made for a similar development in the same location. That development however provides a more effective integrated design with low impact on the landscape by burying facilities and installation of grassed roofs. The proposed development would be more open, exposed, and visible within in this setting.

(xi) The degree to which glare may affect the enjoyment, character or amenity of the surrounding environment or the safety of adjoining roadways and the effect of measures to mitigate any such adverse effect.

25. Effects on glare are discussed above. In addition, I note the following.
26. The proposed tanks would be visible from the Robert's dwelling at 10 Curtis Road and would sit in their view towards Mt Cardona that is highly natural in character and devoid of buildings. Proposed mounding and planting would assist in diminishing views of the tanks, but potential glare from the roof would degrade the enjoyment, visual amenity and landscape character from this property. The proposed low density of planting would not be effective in avoiding adverse effects on this property and further planting is recommended to screen the tanks from view.

(xii) In Areas of Significant Indigenous Vegetation:

27. The site is not an area of identified significant indigenous vegetation. The Pringles Creek however has ecological values that are of note and works should avoid removal or damage to indigenous vegetation in this area. All proposed planting should be ecologically sourced from the 'Lakes' ecological region.

(xiii) The extent to which the utility will adversely affect the range of recreational opportunities available in the District or the quality of experience of the people partaking of those opportunities

(xiv) The extent to which the utility will reduce opportunities for passive recreation and enjoyment.

28. Activity area 7b within the MCSSZ is an open space area to be kept free of buildings and includes provision for public walkways. The proposed development includes a service access road that would enable vehicle activity, dust and noise into the open space that would detract from the experience of the landscape. Such effects would only be temporary when servicing of the facility is required and would not likely be significant more than existing farm traffic.
29. The proposed earthworks and structures would detract from the landscape of a relatively natural and pastoral setting. As above by providing a recommended more natural vegetated context to the site to visually contain the development and integrate it into the broader landscape such effects potentially could be mitigated.

Section 22 Earthworks

30. This assessment matters of Section 22 are applied to the *Rural General* zone and the MCSSZ as the assessment matters relevant to this application are similar within both zones.

i Nature and scale of the Earthworks

31. Proposed earthworks for the tanks and pond would result in a change in landform that would not sympathetic to the immediate natural topography but within the larger scale of the natural variations of this landform would not be overtly out of context once regrassed and vegetated. Works for the access road would be highly visible as a line cutting across the landscape but as it is tucked to the side of an open field it would not fragment or divide the openness of the landscape. Earthworks for the water intake pipe would be minimal as I understand as a cut and cover trench reinstated to natural levels to have a negligible adverse effect on the natural landform. As above the line of the pipeline should avoid and work around existing indigenous vegetation to maintain a natural cover and context to diffuse the visibility of the line of the pipeline route.
32. Proposed mitigation measures would visually soften the modified landform but only to a limited degree. I recommend that all grassing of exposed earth uses brown top to blend into the pastoral setting. As above additional planting of indigenous vegetation is recommended to visually integrate the modified terrain into the landscape.

iii Remedial works and revegetation

33. Proposed rehabilitation of the site would not be adequate to effectively mitigate adverse effects and additional planting is recommended with supporting planting methodology and maintenance to ensure planting establishes. A time frame for mitigation is not provided. Regrassing and planting should be completed within 3 months of completion of works, ideally within the spring.
34. The site is exposed land open to pests, stock and cold and dry conditions. The effectiveness of proposed planting will be highly dependent on controlling pests and stock, irrigation for establishment, mulch and density of planting. As above I recommend such measures are a condition of consent if granted.

iv Effects on rural landscape and visual amenity values, including on Outstanding Natural Features and Outstanding Natural Landscapes.

35. Earthworks within the *Rural General* zoned part of the site are relatively minor with formation of overflows and burying of the intake pipe. As above I consider additional planting is required around the overflow areas to screen and integrate such areas into the landscape.

12.22 Mount Cardrona Station Special Zone.

viii. Discretionary Activity- Access Roads in Activity Areas 6 and 7 and Car parking in Activity Area 6a

The extent to which:

- (a) *The car parking and access is necessary in order to enable public access to the open space areas;*
 - (b) *The effects from hard surfaces can be avoided through use of permeable material;*
 - (c) *The car park and access areas are rural in character;*
 - (d) *Landscaping is used to mitigate adverse effects;*
 - (e) *Earthworks are minimised through appropriate site location and design.*
36. The proposed access road would cut along the southern side of a large open space adjacent to Pringles creek. The road would be 3m in width and metalled. Earthworks details for the road are not provided so cannot be assessed in detail. Based on the gentle slope it is assumed a shallow scrape would be required to form the road. I consider the placement of the road to the edge rather than through the open space lessens its impact on the landscape. It also could potentially be used as public access to the open space as intended on the structure plan. I recommend that all earthworks are regrassed with brown top grass; concrete kerbs and channels are avoided; drainage be grassed swales only; and the road width is maintained to a width no greater than 3m to reduce the visual impact of the road and maintain the rural character.

Section 5.4.2.2 Assessment Matters (2) Outstanding Natural Landscapes (District Wide);

37. The ONL assessment matters only apply to *Rural General* zoned land and therefore the part of the site to be assessed is the overflows and water intake pipes within the Pringles Creek gully. The main part of the development is however within an open space activity area of the MCSSZ and on the boundary of the *Rural General* zone. Whilst the tanks are not defined as 'buildings', the 'structures will have an impact on the landscape context of the ONL.
38. The Pringles Creek part of the site has a high natural character. Proposed works in this area would be minor earthworks to bury the water intake pipe, and form outflows. Proposed works are low to the ground and potentially would adversely affect the native vegetation cover and landscape character and visual amenity to a low to moderate degree. This can be avoided and mitigated by ensuring the buried pipeline avoids existing native vegetation. Additional planting around the overflows is recommended to integrate the modified ground into the landscape and maintain a general vegetated context for the development consistent with the Pringles Creek natural character.

39. The proposed tanks are not within *Rural General* zone but will have an adverse effect on the openness of the ONL as they will sit isolated in an open expanse of landscape where the boundary between zones is largely undistinguishable. The tanks in context of the ONL will be visible over a broad and elevated catchment. By ensuring tanks do not produce any glare and that planting around the site is natural and dense to blend into the Pringles Creek vegetation, the development potentially could sit largely with a contained context with minimal presence. As above I consider controls on building materials and additional planting is required to integrate and adequately mitigate the development into the context of the ONL.

Proposed District Plan

21.21.1 Outstanding Natural Features and Outstanding Natural Landscapes (ONF and ONL) 21.21.3 Other factors and positive effects, applicable in all the landscape categories (ONF, ONL and RCL)

40. Effects on landscape character and visual amenity are covered above.

Section 30 - Energy and Utilities

41. I understand from council's planner that the proposed tanks are not classed as buildings. Policy 30.2.7.1 lists those measures required to manage the adverse effects of utilities on the environment including landscaping, colours, integration with surrounding environment and avoidance of sensitive sites including the ONL. These matters have been discussed above.

Section 25 - Earthworks

42. The landscape matters relevant to this application are similar or duplicates of the Section 20 earthworks of the ODP and are discussed above.

CONCLUSION

43. An application has been received for resource consent for construction of a reservoir settling pond, water holding tanks, treatment buildings, access road construction and associated structures at a site off the Cardrona Valley Road, Cardrona. The site straddles the boundary of the *Mt Cardrona Station Special Zone* (MCSSZ) and the *Rural General* zone and is within an *Outstanding Natural Landscape* (ONL) .
44. The proposed tanks, settling pond and access road would be constructed within an open field that is part of an open space/heritage activity area of the MCSSZ that is intended to remain free of buildings, provide public access to open space, and protect heritage values of this part of the landscape. The balance of the development would extend into the Pringles Creek gully with some earthworks and installation of overflows and a water intake pipe.
45. The development sits within an open landscape and has a high degree of openness and has limited ability to absorb development into the landscape. The development would be visible from a number of public and private viewpoints. Most viewpoints are distant but elements of glare from the tanks would draw attention to the site and detract from the visual amenity and natural characteristics of this landscape. Proposed earth mounding intended to assist in screening the tanks, and to a lesser degree the pond, would have some effect but would be insufficient to screen the development from all viewpoints. Proposed supporting mitigation planting is too thinly planted, and not of a sufficient extent to provide a modified context able to absorb and integrate the development into the landscape.
46. An earlier similar consented water facility at this location, not built, included buried tanks and treatment plans with grassed roofs and is a very effective considered design to avoid and mitigate adverse effects in this open setting. This is not proposed by this development. The site however is on the fringe on the open slope and this lessens its impact compared to a more central position on the slope and enables it potentially to be integrated and absorbed into the Pringles Creek landscape context. More extensive native planting is recommended around the development site to provide vegetation cover to partially hide and absorb the development into a natural setting. This requires higher density of planting, more extensive coverage, greater planting diversity and an appropriate planting methodology and maintenance to enable reliable establishment of plants. Controls on building materials to avoid glare from the tanks, and in particular from the roof is

recommend as glare would highlight the presence of built forms over a broad viewing catchment and detract from the openness and natural character of the landscape. Samples of materials, colours or further details of alternative measures such as grassed roof or some form of natural cover should be submitted to council for certification prior to construction beginning on site.

47. Subject to providing further information to demonstrate the establishment of a vegetated context to absorb development, structure design that eliminates the adverse effects of glare, and standard rural conditions regarding earthworks, I consider the proposed development could be adequately mitigated to sit comfortably within this landscape.

RECOMMENDED CONDITIONS

Should consent be granted I consider that the following conditions should be included:

- i. The MCS Landscape Plan submitted with the application shall be amended by an ecologist /landscape architect/landscape designer with ecological planting experience and shall be resubmitted to council for certification prior to works beginning on site. The plan shall be amended to achieve the following:

- The extent of area of earth fill outside of the security fenced area as shown on the submitted earthworks drawing *MCS Water Scheme Stilling Pond & Tank Site Earthworks Dwg No. E002 Sheet 2* shall be planted with indigenous plants of the following species planted at no greater than 1.0m apart, and of an even species mix:

Plagianthus regius
Aristotelia fruiticosa
Corokia cotoneaster
Coprosma propinqua
C.rugosa
C. virescens
C. rigida
Discaria toumatou
Hoheria lyalli
Myrsine divaricate
Oleria odorata
Grislinea littoralis

with *Fuscospora cliffortoides* (Mountain Beech) planted in five clusters of 5 or 7 plants at 1.5m centres in selected south facing slopes.

- To include the extent of area of planting as shown on the submitted MCS landscape plan that are outside the areas of fill as required as noted above, and to be planted with the species and at the density as noted above.
- To ensure a cluster of no less than 7 Mountain beech and mixed indigenous plants from the list above is planted to the west of the western tank to block views of the tanks from the Robert's dwelling.
- To illustrate on the plan the location of post and wire farm fencing with rabbit proof netting to be installed to exclude stock, rabbits and hares from planting areas. All planting areas must fully enclosed and exclude any gates.
- To identify on the plan that all planted areas shall have a drip irrigation system installed or similar, to ensure all planted areas are irrigated for the first three years of establishment from the date of planting.
- All planting shall be naturalistic ecological planting and avoid any straight rows.
- Include a detailed planting schedule showing botanical names, grades, density and quantities for each species to be planted. All plants shall be planted at a revegetation grade with a height no less than 30cm (above ground height), and all beech shall be planted at a PB5 or larger with a height of no less than 50cm.

- ii. All planting, stock and pest protection fencing, and irrigation identified on the certified landscape plan shall be implemented and certified by council as completed within 6 months from the completion of earthworks and installation of the water tanks. All planting shall have a slow release fertiliser applied, and the full extent of planted areas shall have an organic mulch applied to a depth adequate to suppress weeds and retain moisture. All plants shall be confirmed in writing that they have been supplied by a plant nursery that has eco-sourced plants from the 'Lakes' ecological region.
- iii. All certified landscape works thereafter shall be maintained in accordance with the plan as a closed canopy and the stock and pest protection fencing maintained. Irrigation shall be operated and maintained for a period of three years following completion of planting to ensure healthy growth of plants. If any tree or plant shall die or become diseased it shall be replaced within 12 months.
- iv. All areas of earthworks (that are not to be planted), including side castings from the access road, and areas of cut and fill shall be re-sown in grass with a greater than a 50% brown-top content consistent with the surrounding landscape within three months of completion of the earthworks and shall be maintained to achieve a healthy and continuous sward of grass.
- v. The access road to the site shall be gravel with a carriageway of a maximum width of 3m. There shall be no concrete kerbs and channels. All drainage shall be grassed swales only.
- vi. The earthworks for the water intake pipe trench to Pringles Creek shall be backfilled and reinstated to natural ground levels. The inlet pipeline works shall exclude the removal of any native vegetation.
- vii. All built and installed elements including security fences, cabinets, machinery, pumps, and the water tanks shall be of colours and materials of a dark grey or olive-green colour with a light reflectivity value (LRV) of between 7% and 15%. Colouring may include mixed shades within the above range. All selected colours and materials shall be submitted to council for certification prior to installation. Samples may be requested for certification.
- viii. The water tanks shall be of a non-reflective surface that does not create glare or metallic sheen and shall be of a matt finish, and/or include measures that eliminate glare or sheen such as a grassed roof, or non-reflective covers. Samples of selected materials and colours, and /or alternative treatments that eliminate glare effects shall be submitted to council for certification prior to installation.
- ix. Lighting shall not be installed within any part of this development.
- x. Any installation of solar panels shall be ground based only and shall not be visible from beyond the security fenced site boundary.
- xi. All security fencing around site shall be standard post and wire, and/or mesh to a height of no more than 2.5m. All posts and wires to be coloured or otherwise treated to achieve the above colour controls (condition vii).

Memo prepared by


Richard Denney

LANDSCAPE ARCHITECT

DENNEY LANDSCAPE ARCHITECTURE

Richard Denney (B.L.A. hons, B. Sc).

Appendix 1 PHOTOS

All photos are taken with a handheld full frame mirrorless 24.3MP digital camera, *Sony A7ii* and a *Sony FE 4/24-105 G OSS* zoom lens unless otherwise noted. The 'no.mal' view is considered to be a 50mm focal length as opposed to photo that has been zoomed in or out or cropped. Photos are intended to support the landscape assessment report as a record of site observations and as a tool to assist understanding of how the proposed change will affect selected viewpoints.



Photo 1. Subject site (tanks location) and Mount Cardrona as viewed from Snow Farm / Pisa Conservation area access road looking towards the northwest 12th March 2020, 10.59am. 49mm focal length (standard).



Photo 2. Subject site (tanks location) and Pisa range as viewed from the Cardrona Ski Field access road upslope of the site 12th March 2020, 10.25am. 49mm focal length (standard).



Photo 3. Subject site (tanks location) and Mount Cardrona as viewed from the Roberts property (domestic curtilage area) 12th March 2020, 10.03am. 50mm focal length (standard).



Photo 4. Pringles Creek gully approximately 700m upstream of the subject site (tank location highlighted) , with gully terrace to the left (route of proposed buried pipeline) and incised creek and denser scrub vegetation to the right . 12th March 2020, 9.18am. 24mm focal

APPENDIX 4 – ENGINEERING REPORT



ENGINEERING REPORT

TO: Rosalind Devlin

FROM: Lyn Overton

DATE: 6/05/2020

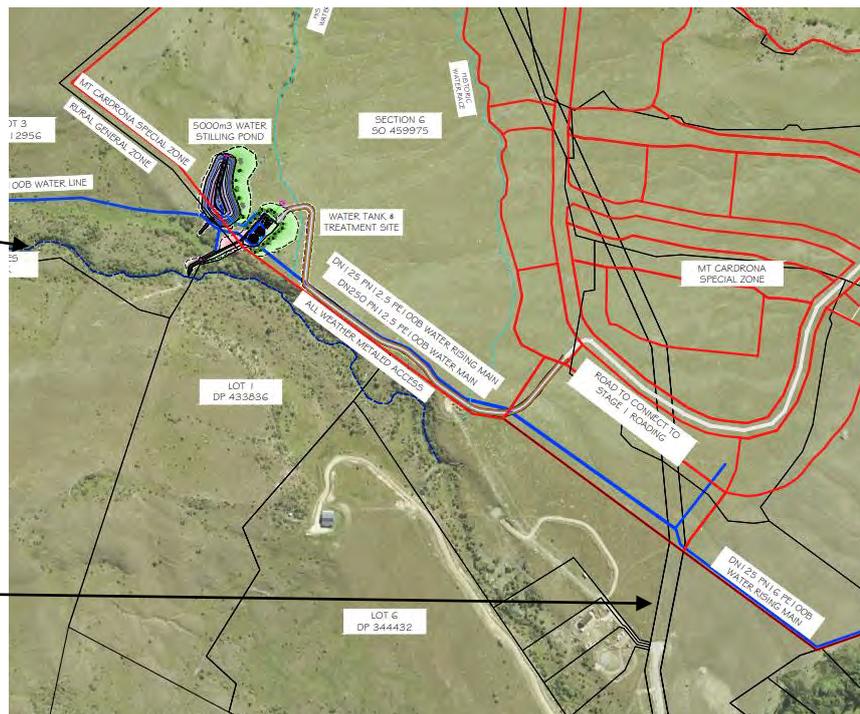
APPLICATION DETAILS	
REFERENCE	RM181097
APPLICANT	Cardrona Valley Infrastructure Limited
APPLICATION TYPE & DESCRIPTION	Land use consent is sought for the construction of a reservoir settling pond, water holding tanks, treatment buildings, access construction and all associated incidental structures.
ADDRESS	Cardrona Valley Road, Cardrona
ZONING	Rural General, Mt Cardrona Station Special Zone (ODP) Part Rural & not yet rezoned (PDP)
LEGAL DESCRIPTION	Section 1 Blk XXV Town of Wanaka
SITE AREA	46.12ha
ACTIVITY STATUS	Discretionary

Application	Reference Documents	Consent Application.
	Previous Relevant Consents	RM060973 – Land Use Consent to construct buildings for a water treatment plant. RM190037 – Land Use Consent to create a road from Cardrona Valley Road
	Date of site visit	6/01/2020

Location Diagram

Pringles Creek

Pringles Creek Road



Comments		
SITE DETAILS	Existing Use	Rural farm block – Mt Cardrona Station
	Neighbours	There is residential development to the southwest.
	Topography/Aspect	The site is on an alluvial fan that slopes down to the south east. ephemeral streams
	Water Bodies	Pringles creek is located to the southwest, there are also several ephemeral streams located across the fan, and an historic water race.

ENGINEERING		COMMENTS	Condition	
TRANSPORT	Access	Parking	I am satisfied that there is sufficient area for maintenance staff for parking at the proposed site. I recommend that all parking and vehicle manoeuvring areas are constructed to Council standards.	X
	Access	Means of Access	<u>Access</u> Access to the site is from Cardrona Valley Road. The access and intersection from Cardrona Valley Road to the top of the terrace was recently assessed under RM190037. The applicants intend to extend the access from this road to the reservoir via a 3m wide gravel formation. I am satisfied that the gradient of the access road will be less than 1(V):6(H) due to the topography. I recommend an appropriated condition to ensure that the access is constructed to Council standards and includes the provision for stormwater disposal.	X

ENGINEERING		COMMENTS	Condition	
EARTHWORKS	Extent	Description	Earthworks are required to create a settlement pond, install two large water tanks and associated plant and buildings and to realign a water race.	
		Cut /Fill Volume (m ³)	Cut – 9,900m ³ Fill – 7,950m ³	
		Total Volume (m ³)	17,850m ³	
		Area Exposed (m ²)	1.58ha	
		Max Height Cut/Fill (m)	Cut – 5.7m Fill – 5.1m	
		Prox. to Boundary	The plans (cross-section 'L-L') indicates that the batter slopes formed on the southern side of the access to the silt forebay area will be formed at a gradient of approximately 1(V):2(H) with the top of the batter slope more or less located at the boundary of the neighbouring site to the south. While this will breach Operative District Plan rule 22.3.3(ii)(b)(iii) and Proposed District Plan (PDP) rule 25.5.18 in regards to the distance of the top to toe of the cut in relation to the boundary, I am satisfied that there will be no adverse effects on the neighbouring property as a result due to the proposed gradient of the finished slope.	
		Prox. to Water	The proposed earthworks required for the water intake structure and the overflow structures will require earthworks within 5m of a water body. These works will breach PDP rule 25.5.19. At the time these works are undertaken the applicants will need to ensure that appropriate site management measures are in place to avoid contaminating the water within Pringles Creek as the properties within Pringles Creek Road are also using Pringles Creek as their water supply.	

Stability	Geotech assessment by	GeoSolve Ltd	
	Report reference	'Geotechnical Report, Mt Cardrona Station – Reservoir, Cardrona' (dated September 2019, GeoSolve Ref: 190229)	
	Report comment	The report makes several recommendations in respect to locating the reservoir a minimum of 20m from the toe of the mapped landslide area and removal of unsuitable material from foundation excavations. The report also provides recommendation in respect to site preparation, excavations, ground retention, ground water issues, foundations and comments on the natural hazards identified on the site. I accept the report as read and recommend that the earthworks are undertaken in accordance with the recommendations made in this report.	X
	Rock breaking	Not anticipated.	
	Rock blasting	Not anticipated.	
	Preconstruction survey	Not required.	
	Retaining	As per the recommendations made in the GeoSolve Ltd report.	X
	Recommendations on cut/batter slopes	As per the recommendations made in the GeoSolve Ltd report.	X
	Fill certification/specific foundation design required	As above.	
	Engineers supervision	The excavation and fill processes will need to be supervised by a suitably qualified engineer if certification is required. An appropriate condition is recommended.	X
	Uncertified fill covenant	Not required.	
	Schedule 2a Certificate	Not required.	
	Clean fill only	Not required.	
Site Management	Report reference	The applicants have provided a construction management plan that details sedimentation, dust, noise and traffic controls. I understand the Council planner will assess any site management requirements against the provisions and requirements of the Council adopted Guidelines for Environmental Management Plans dated June 2019 (EMP), and provide any necessary comment and/or conditions. An appropriate condition is recommended to ensure that the site management is undertaken in accordance with Council Standards.	X
	Specific sedimentation management	The GeoSolve Ltd report has recommended that sediment control is put in place as there is a high risk of the fine silts entering Pringles Creek.	
	Specific stormwater management		
	Neighbours	I am satisfied that the earthworks are feasible and no adverse effects will result on neighbouring sites.	
	Traffic management	I am satisfied that traffic management will not be necessary for this stage of the development.	
	Construction crossing	Not required due to the location of the site and the fact that no excavated material will be removed from the site.	

	Revegetation	An appropriate condition is recommended to ensure all exposed areas are stabilised or re-vegetated at the completion of earthworks.	X
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SERVICES	Existing Services		The site is not serviced.	
	Water	Potable	The proposal is for the construction of a water reservoir and treatment plant with the water supplies being extracted from Pringles Creek and Cardrona River. I recommend an appropriate condition for the design to be submitted for review.	X
		Fire-fighting	Not required.	
	Effluent Disposal		Not required.	
	Stormwater		Based on the test pit log provided I am satisfied that there are no issues on-site that would preclude stormwater disposal to ground. Stormwater disposal from the access will be assessed as part of the road design process.	
	Power & Telecoms		An appropriate condition is recommended to ensure that any electricity or wired telecommunications connections to the treatment plant are placed under ground.	X

NATURAL HAZARDS	Hazards on or near the site		The site is at risk from the Nevis-Cardrona Fault System, a young active composite alluvial fan and is possibly susceptible to liquefaction. There is also a landslide risk identified above the site.	
	Report on Hazards		<p>The GeoSolve Ltd report referenced in the earthworks section of this report makes the following comment in respect to the fault line:</p> <p><i>“The NW Cardrona Fault hazard has been assessed in Section 5.13. The proposed storage tank and treatment building are determined to be offset 90 m from the active fault trace of the NW Cardrona Fault and therefore exceeds the minimum 20 m required setback from the active fault trace.”</i></p> <p>The report also states that there was no instability identified at the proposed reservoir site but recommends that the works to be set back a minimum of 20m from the toe of the landslide feature and that the downslope reservoir bund should be designed by a chartered professional engineer. The report also makes comment in respect to foundation design and removal from unsuitable alluvial material found on site. No conditions are recommended in respect to natural hazards.</p>	
	ORC		Otago Regional Council has granted a water permit to extract water from Pringles Creek and Cardrona River, Consent No: 2009.191.V2. This includes several conditions in respect to extraction rates and monitoring flows within Pringles Creek.	
	Proposed Mitigation		Not required.	
	Supervision of works?		As per GeoSolve Ltd recommendations.	X
	Certification of mitigation?		Not required.	

T INFORM	Developers Engineering Representative	I recommend that the name of the Engineering representative is provided to Council prior to works commencing.	
	Notice of commencement	Not required.	

	Traffic Management Plan	Not required.	
	Design Certificates	Required as the water supply may be vested in the future.	X
	Completion Certificates	As above.	X
	As built	Required.	X

TITLE	<p>Covenants/consent notices</p>	<p>Conditions registered on consent notice 8574798.6</p> <p>Conditions a) to d) registered on consent notice 9238838.3 are in respect to servicing the site with appropriate infrastructure prior to any development being undertaken on the site. I am satisfied these conditions will be met at the time the site is further developed.</p> <p>Operative condition b) registered on consent notice 9238838.3 requires that all water races and their margins are protected. The proposed works will be over an existing water take race that feeds the historic Cardrona Company water race. The applicants have confirmed that this water take race was partially constructed by the owners of the horse trekking business and is not part of the historic race. Discussion with the horse trekking business has confirmed that the water take race was installed by a previous owner (Eric Anderson) at the time he owned the property and used the site for barley cropping pre 1970. I note that the consent notice does not specifically reference historic water but states existing races, it is assumed that the races being referred to are in fact the Cardrona Company and Walter Little's historic races referenced in the Plan Change documents. I am satisfied that the historic races will remain relatively undisturbed with the exception of the access over them. I leave the planner to comment further on this matter.</p>	
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RECOMMENDED CONDITIONS

It is recommended that the following conditions are included in the consent decision:

General

- All engineering works, in 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 May 2018 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: <https://www.qldc.govt.nz/services/resource-consents/land-developments-and-subdivisions>

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

- The owner of the land being developed shall provide a letter to the Manager of Resource Management Engineering 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.
- Prior to commencing any work on the site 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 to ensure that neighbouring sites remain unaffected from earthworks. These measures shall be implemented **prior** to the

commencement of any earthworks on site and shall remain in place for the duration of the project, until all exposed areas of earth are permanently stabilised.

4. At least 7 days prior to commencing excavations, the consent holder shall provide the Manager of Resource Management Engineering at Council with the name of a suitably qualified geo-professional as defined in Section 1.7 of QLDC's Land Development and Subdivision Code of Practice who is familiar with the GeoSolve Ltd report (dated September 2019, GeoSolve Ref: 190229) and who shall supervise the excavation/earthworks/fill procedures and ensure compliance with the recommendations of this report. This engineer shall continually assess the condition of the excavation and shall be responsible for ensuring that temporary retaining is installed wherever necessary to avoid any potential erosion or instability.
5. Prior to commencing works on the site, the consent holder shall obtain 'Engineering Review and Acceptance' from the Queenstown Lakes District Council for development works to be undertaken and information requirements specified below. The application shall include all development items listed below unless a 'partial' review approach has been approved in writing by the Manager of Resource Management Engineering at Council. The 'Engineering Review and Acceptance' application(s) shall be submitted to the Manager of Resource Management Engineering at Council for review, prior to acceptance being issued. At Council's discretion, specific designs may be subject to a Peer Review, organised by the Council at the applicant's cost. The 'Engineering Review and Acceptance' application(s) shall include copies of all specifications, calculations, design plans and Schedule 1A design certificates as is considered by Council to be both necessary and adequate, in accordance with Condition **(1)**, to detail the following requirements:
 - a) The provision of a water storage and water treatment facility to provide potable water for future Mount Cardrona Village development within Lot 9 DP 446161 and Lot 2 DP 445633 in accordance with Council standards. The designs shall include related intake structures, reticulation, and monitoring systems and demonstrate an ability for possible future vesting with the QLDC.
 - b) The provision of an access way to the development that complies with the guidelines provided for in QLDC's Land Development and Subdivision Code of Practice. The access shall have a minimum formation standard of 150mm compacted AP40 with a 3.0m minimum carriageway width. Provision shall be made for stormwater disposal from the carriageway.
 - c) The construction of all vehicle manoeuvring and car parking areas to Council's standards. Provision shall be made for stormwater disposal from all impermeable surfaces.
 - d) The provision of Design Certificates for all engineering works associated with this development submitted by a suitably qualified design professional (for clarification this shall include all Roads and Water reticulation). The certificates shall be in the format of the QLDC's Land Development and Subdivision Code of Practice Schedule 1A Certificate.

To be monitored throughout earthworks

6. The earthworks, batter slopes and site management shall be undertaken in accordance with the recommendations of the report by GeoSolve Ltd (dated September 2019, GeoSolve Ref: 190229).
7. 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.
8. No earthworks that are not authorised by this consent, temporary or permanent, are to breach the boundaries of the site.

On completion of earthworks

9. On completion of the earthworks, the consent holder shall complete the following:

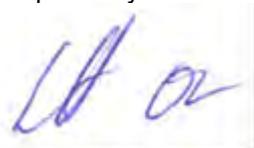
- a) The submission of 'as-built' plans and information required to detail all engineering works completed in relation to or in association with this subdivision/development at the consent holder's cost. This information shall be formatted in accordance with Council's 'as-built' standards and shall include 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 (5) above.
 - c) The submission of Completion Certificates from both the Contractor and Engineer advised in Condition (2) for all engineering works completed in relation to or in association with this subdivision/development (for clarification this shall include all Roads and Water infrastructure). 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.
 - d) Any power supply or wired telecommunications connections to the treatment plant shall be underground from existing reticulation and in accordance with any requirements and standards of the network provider.
 - e) All earthworked areas shall be top-soiled and revegetated or otherwise permanently stabilised.
 - f) The consent holder shall remedy any damage to all existing road surfaces and berms that result from work carried out for this consent.
10. In the event that the Engineering Acceptance issued under Condition (5) contains ongoing conditions or requirements associated with the installation, ownership, monitoring and/or maintenance of any infrastructure subject to Engineering Acceptance, then at Council's discretion, a Covenant in Gross (or other alternative legal instrument acceptable to Council) shall be registered on the relevant Records of Title detailing these requirements for the lot owner(s). The final form and wording of the document shall be checked and approved by 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. The applicant shall liaise with the Subdivision Planner and/or Manager of Resource Management Engineering at Council in respect of the above. All costs, including costs that relate to the checking of the legal instrument by Council's solicitors and registration of the document, shall be borne by the applicant.

[Note: This condition is intended to provide for the imposition of a legal instrument for the performance of any ongoing requirements associated with the ownership, monitoring and maintenance of any infrastructure within this development that have arisen through the detailed engineering design and acceptance process, to avoid the need for a consent variation pursuant to s.127 of the Resource Management Act].

Advice Note

1. The consent holder is advised that Building Consent may be required for the construction of the water reservoirs.
2. The consent holder is advised to obtain any necessary consents from the Otago Regional Council for the water supply.

Prepared by:



Lyn Overton

Reviewed by:



Michael Wardill

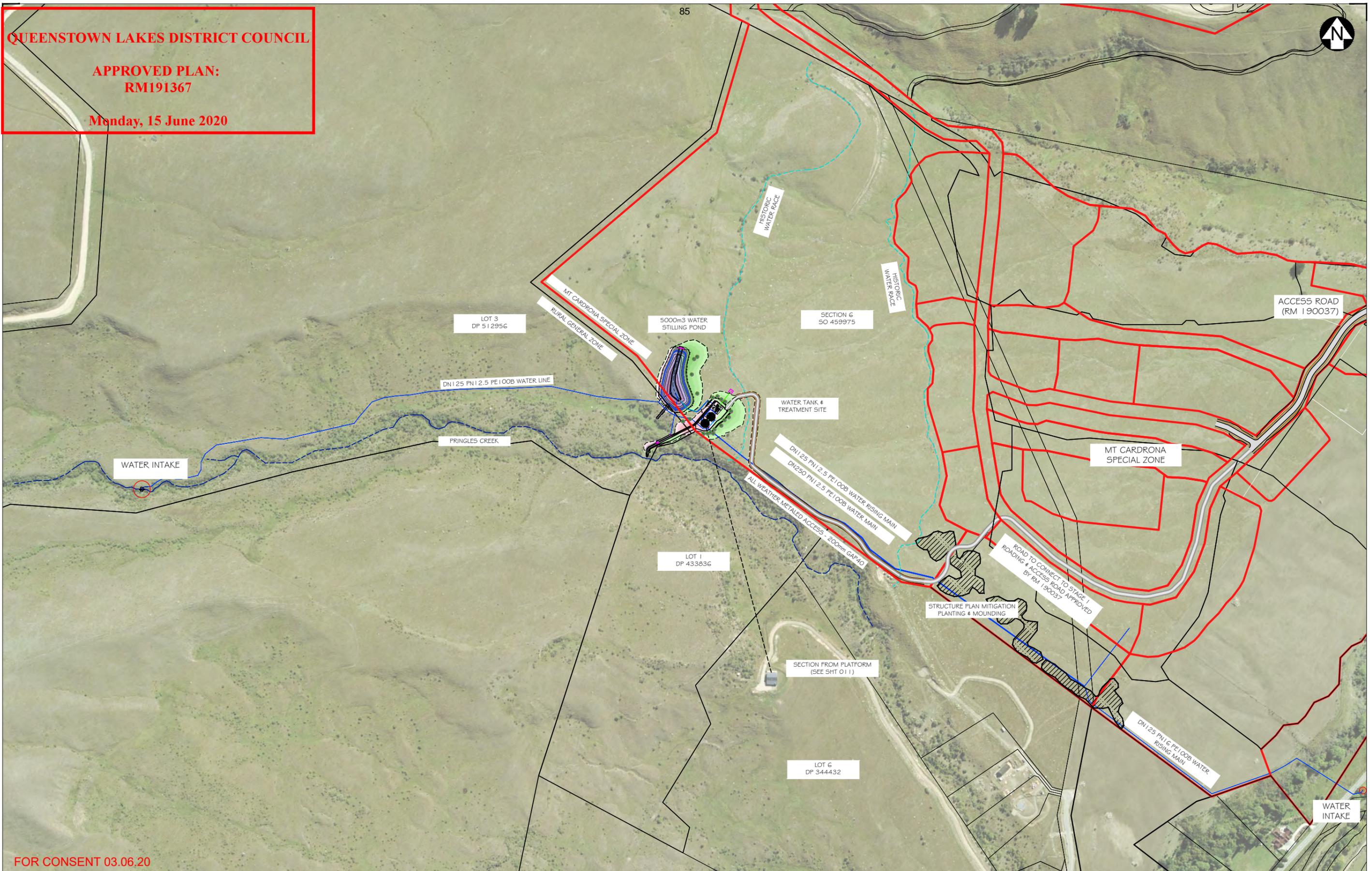
**SENIOR LAND DEVELOPMENT
ENGINEER**

**TEAM LEADER - RESOURCE
MANAGEMENT ENGINEERING**

QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:
RM191367

Monday, 15 June 2020



FOR CONSENT 03.06.20

Clark Fortune McDonald & Associates
 Licensed Cadastral Surveyors - Land Development - Planning Consultants
 309 Lower Shotover Road, P.O. Box 553 Queenstown
 Tel. (03)441-6044, Fax (03)442-1066, Email admin@cfma.co.nz
 21 Reece Crescent, P.O. Box 550, Wanaka
 Tel. (03)443-4448, Fax (03)443-4445, Email admin@cfma.co.nz
 Unit 6B, Level 1, 480 Moray Place, P.O. Box 5960, Dunedin
 Tel. (03)470-1582, Fax (03)470-1583, Email admin@cfma.co.nz

Rev.	Date	Revision Details	By
B	03.06.20	ADD BEND AROUND MITIGATION MOUNDING	RB

MT CARDRONA STATION WATER SCHEME - OVERALL LAYOUT

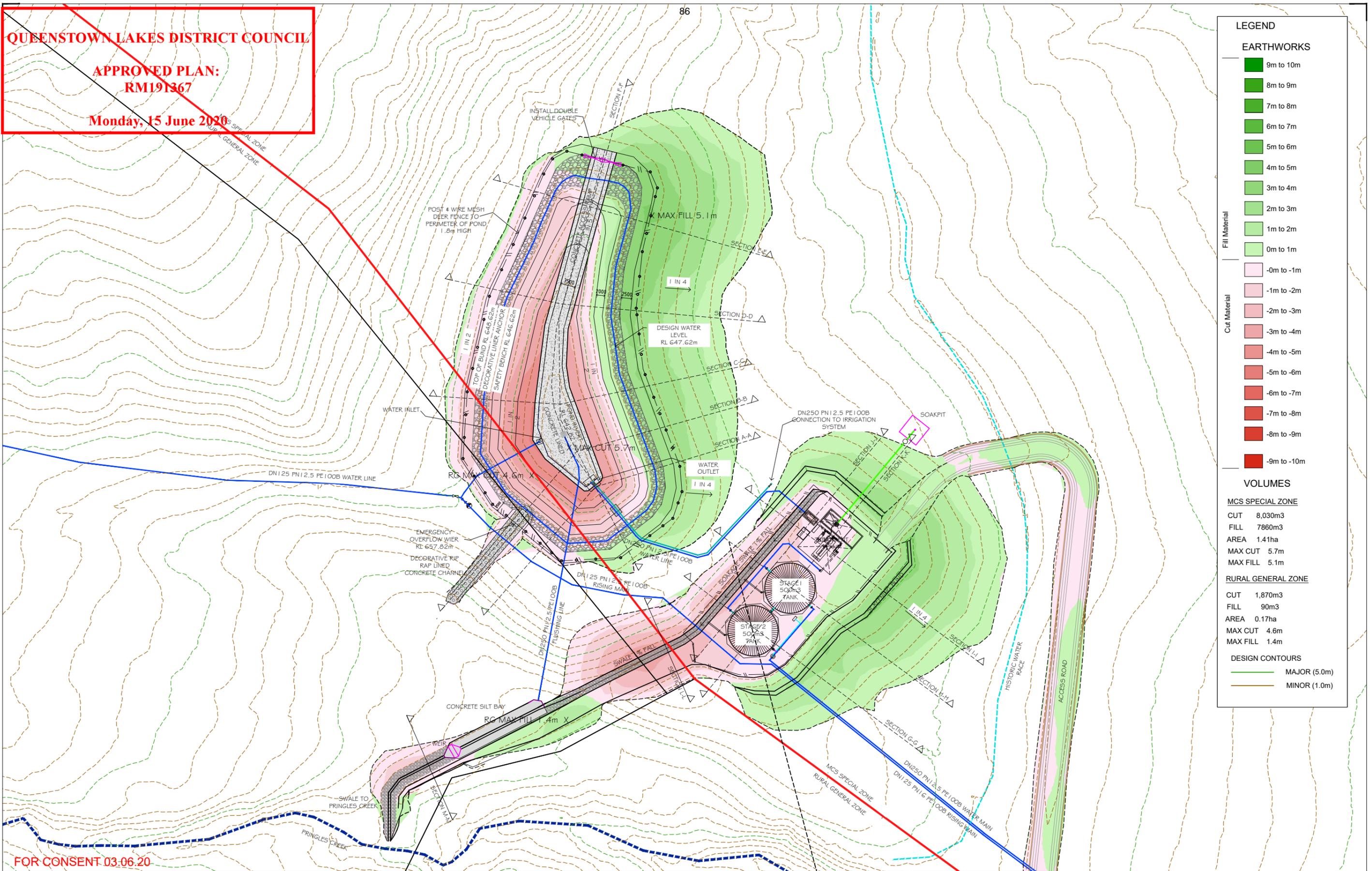
Client	Cardrona Valley Infrastructure Ltd	Surveyed	Signed	Date	Job No.	10073	Drawing No.	E002
Notes:	All dimensions shown are in meters unless shown otherwise. Any person using Clark Fortune McDonald drawings and other data accepts the risk of: - Using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions. - Copywrite on this drawing is reserved.							
Drawn	RB	Signed	-	Date	Scale	1:2500 @ A1	1:5000 @ A3	
Designed	-	Signed	-	Date	Datum & Level	LINDIS PK 2000 / NZVD 2016	Rev.	B

QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:
RM191367

Monday, 15 June 2020

86



LEGEND

EARTHWORKS

Fill Material

- 9m to 10m
- 8m to 9m
- 7m to 8m
- 6m to 7m
- 5m to 6m
- 4m to 5m
- 3m to 4m
- 2m to 3m
- 1m to 2m
- 0m to 1m

Cut Material

- 0m to -1m
- 1m to -2m
- 2m to -3m
- 3m to -4m
- 4m to -5m
- 5m to -6m
- 6m to -7m
- 7m to -8m
- 8m to -9m
- 9m to -10m

VOLUMES

MCS SPECIAL ZONE

CUT 8,030m³
 FILL 7860m³
 AREA 1.41ha
 MAX CUT 5.7m
 MAX FILL 5.1m

RURAL GENERAL ZONE

CUT 1,870m³
 FILL 90m³
 AREA 0.17ha
 MAX CUT 4.6m
 MAX FILL 1.4m

DESIGN CONTOURS

- MAJOR (5.0m)
- MINOR (1.0m)

FOR CONSENT 03.06.20

Shotover Design Limited trading as

Clark Fortune McDonald & Associates
 Licensed Cadastral Surveyors - Land Development - Planning Consultants

309 Lower Shotover Road, P.O. Box 553 Queenstown
 Tel. (03)441-6044, Fax (03)442-1066, Email admin@cfma.co.nz
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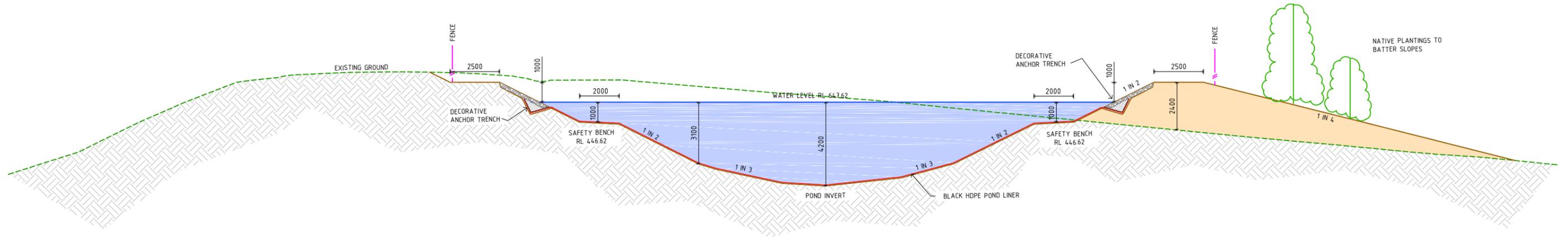
Rev.	Date	Revision Details	By

MCS WATER SCHEME
STILLING POND & TANK SITE EARTHWORKS

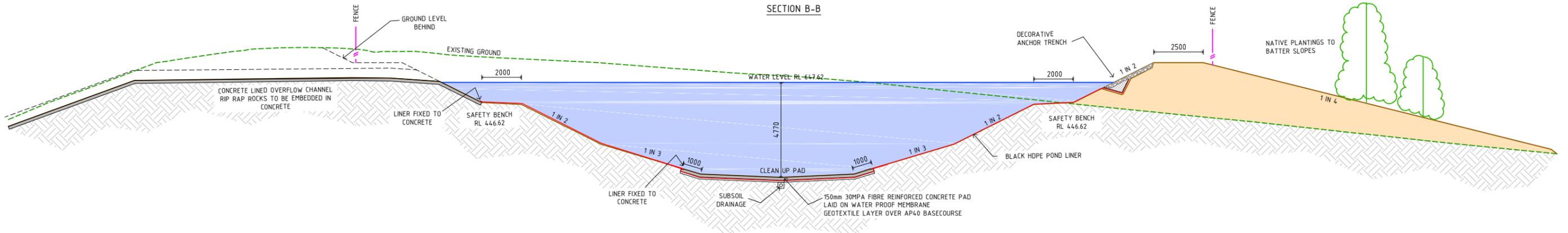
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Drawn	RB	Signed		Date	Scale	1:400 @ A1		SHEET 002
Designed		Signed		Date	Datum & Level	LINDIS PK 2000 / NZVD 2016	Rev.	

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SECTION A-A



SECTION B-B



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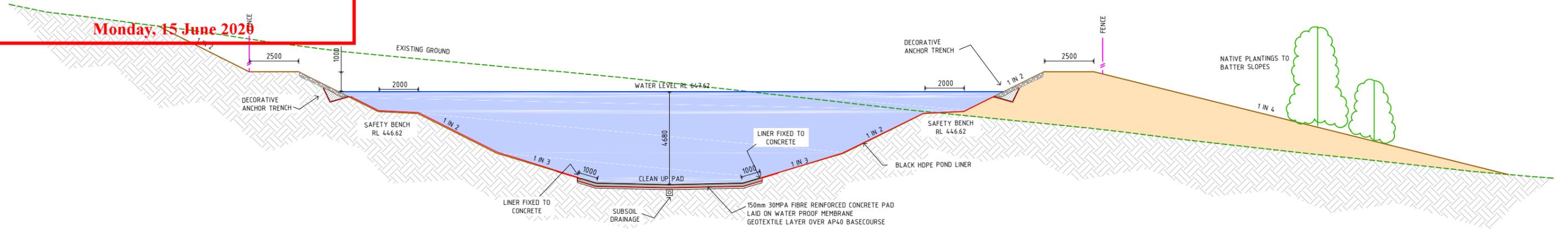
Rev.	Date	Revision Details	By
-	-	-	-

MCS WATER SCHEME
STILLING POND SECTION VIEWS

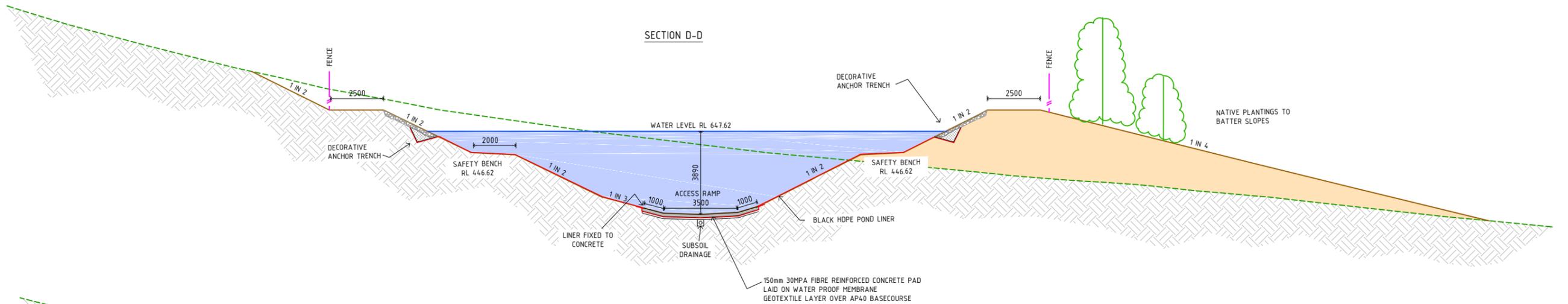
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					SHEET 003
	Drawn	Signed	Date	Scale	1:100 @ A1
	RB		-		1:200 @ A3
	Designed	Signed	Date	Datum & Level	LINDIS PK 2000 / NZVD 2016
	-		-		Rev. -

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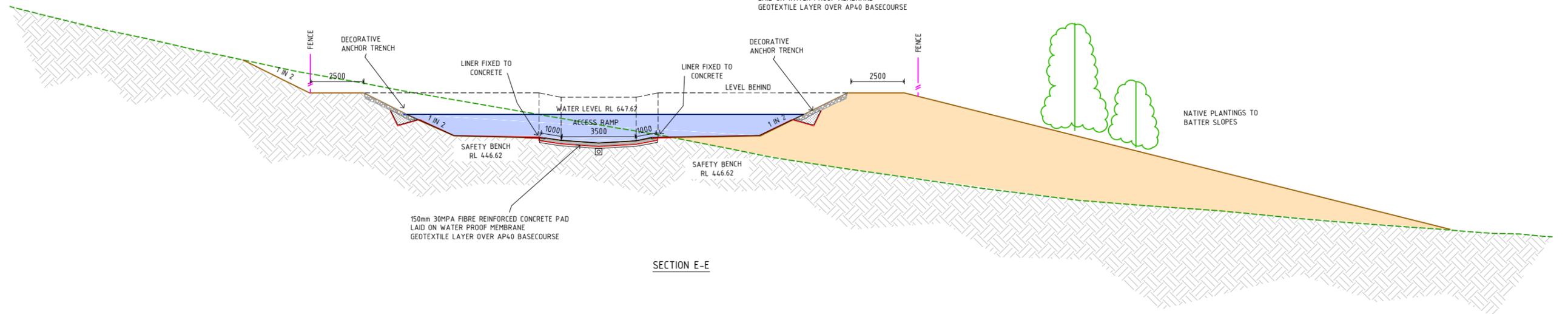
SECTION C-C



SECTION D-D



SECTION E-E



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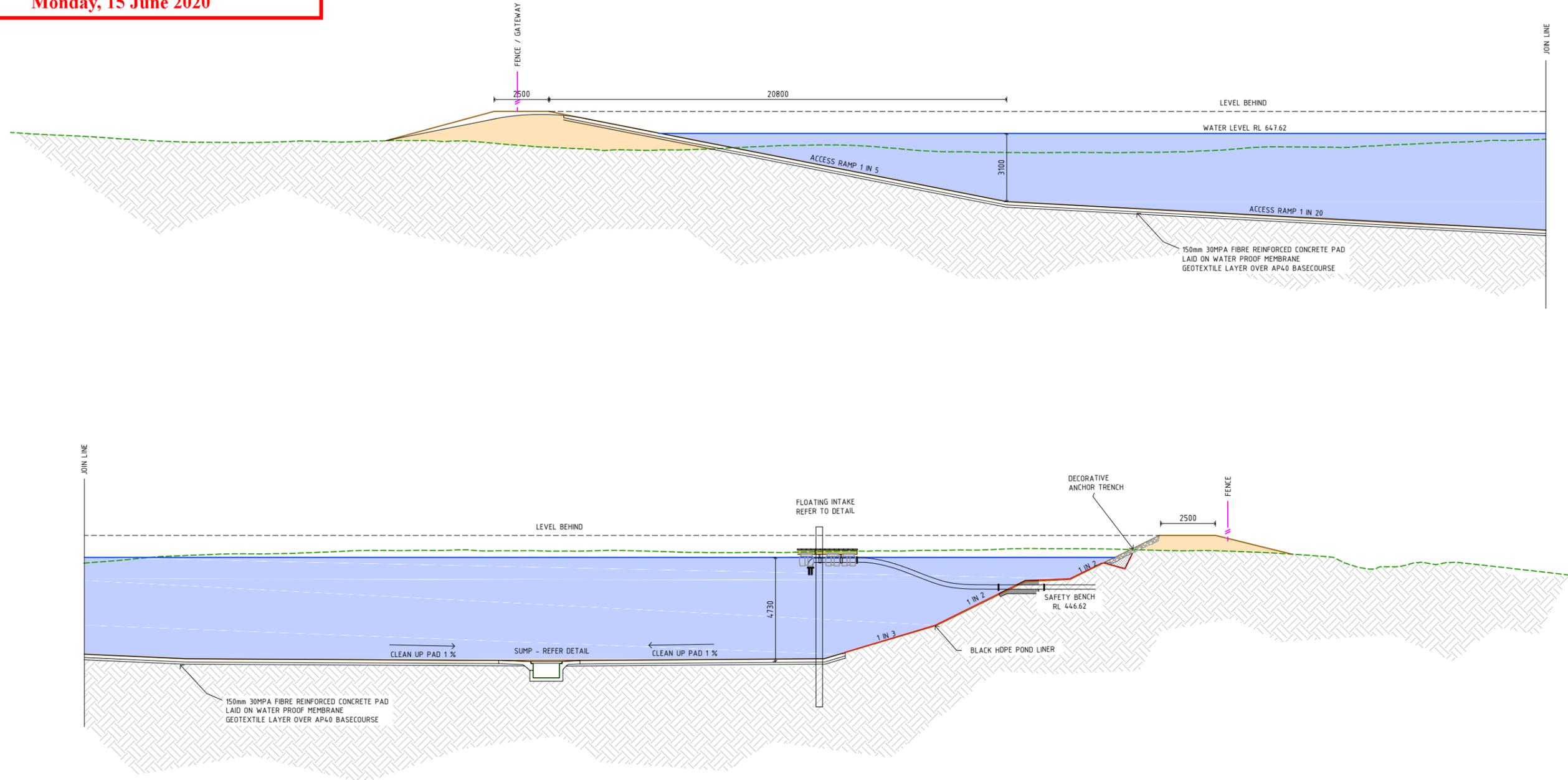
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Rev.	Date	Revision Details	By
-	-	-	-

**MCS WATER SCHEME
STILLING POND SECTION VIEWS**

Client	Cardrona Valley Infrastructure Ltd	Surveyed	Signed	Date	Job No.	Drawing No.
					10073	E002
						SHEET 004
Drawn	RB	Signed		Date	Scale	1:100 @ A1
						1:200 @ A3
Designed		Signed		Date	Datum & Level	LINDIS PK 2000 / NZVD 2016
						Rev. -

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Rev.	Date	Revision Details	By
-	-	-	-

MCS WATER SCHEME
STILLING POND SECTION VIEWS

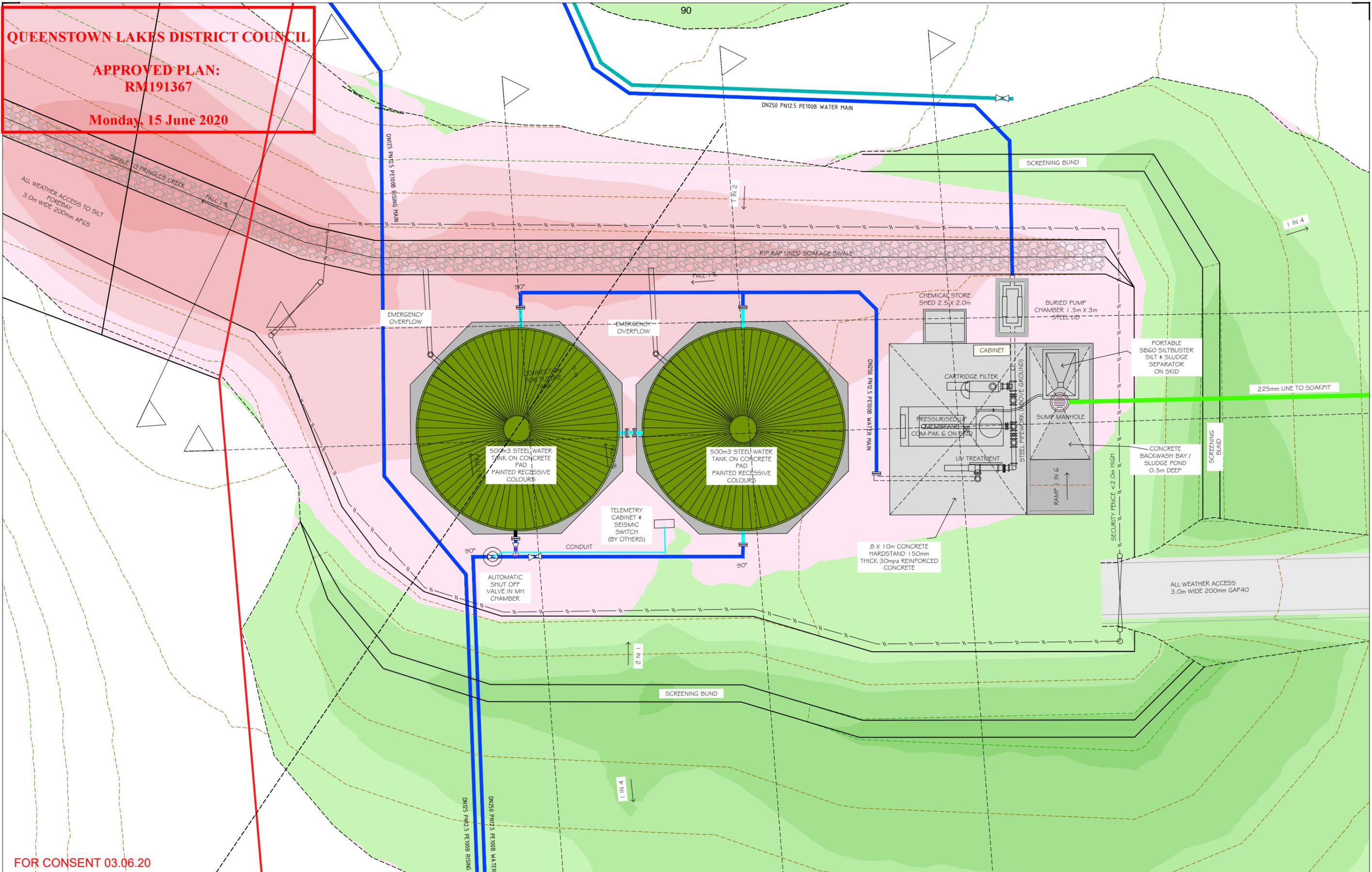
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Designed	-	Signed	-	Date	Datum & Level	LINDIS PK 2000 / NZVD 2016	Rev.	-

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QUEENSTOWN LAKES DISTRICT COUNCIL

**APPROVED PLAN:
RM191367**

Monday, 15 June 2020



FOR CONSENT 03.06.20

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**MCS WATER SCHEME
TREATMENT PLANT AND TANK LAYOUT**

Client	Surveyed	Signed	Date	Job No.	Drawing No.
CARDRONA VALLEY INFRASTRUCTURE LTD				10073	E002
					SHEET 006
					1:100 @ A1
					1:200 @ A3
					Datum & Level
					LINDIS PK 2000 / NZVD 2016
					Rev.

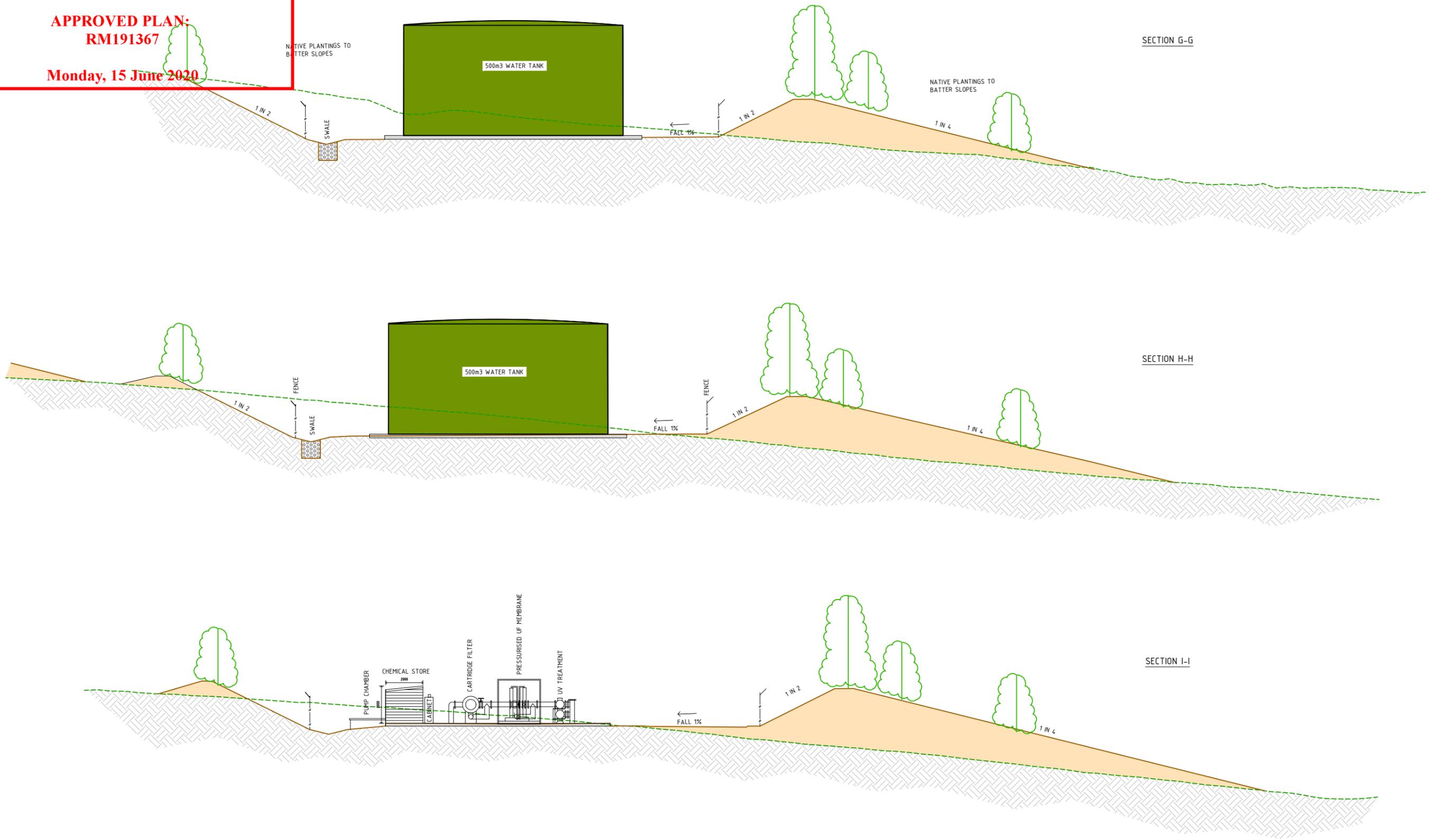
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QUEENSTOWN LAKES DISTRICT COUNCIL

APPROVED PLAN:
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Rev.	Date	Revision Details	By
-	-	-	-

MCS WATER SCHEME
TANK SITE SECTION VIEWS

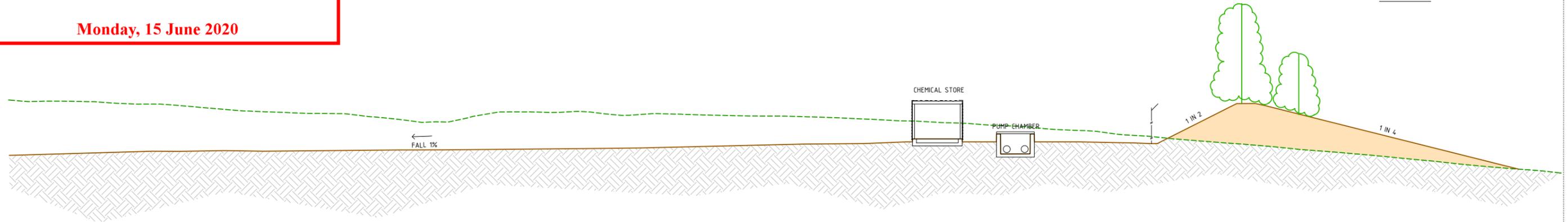
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						SHEET 007
Notes:	All dimensions shown are in meters unless shown otherwise. Any person using Clark Fortune McDonald drawings and other data accepts the risk of:					
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Drawn	RB	Signed		Date	Scale	1:100 @ A1 1:200 @ A3
Designed		Signed		Date	Datum & Level	LINDIS PK 2000 / NZVD 2016
						Rev. -

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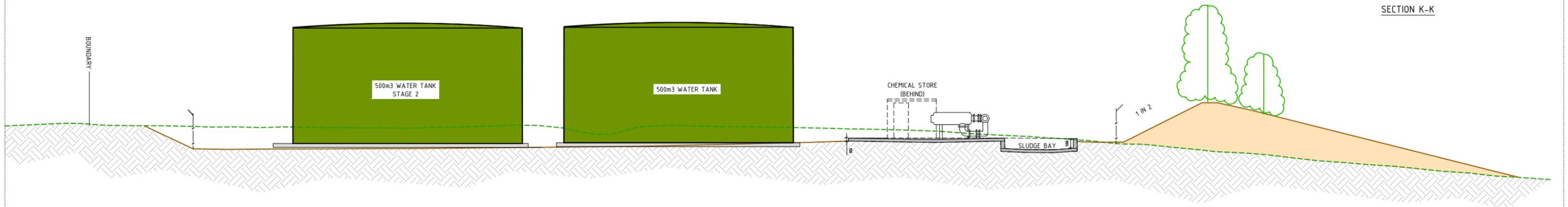
**APPROVED PLAN:
RM191367**

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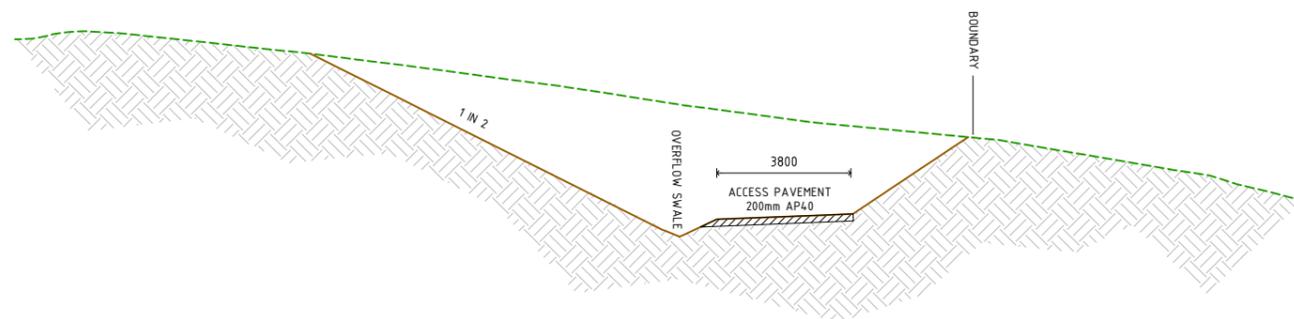
SECTION J-J



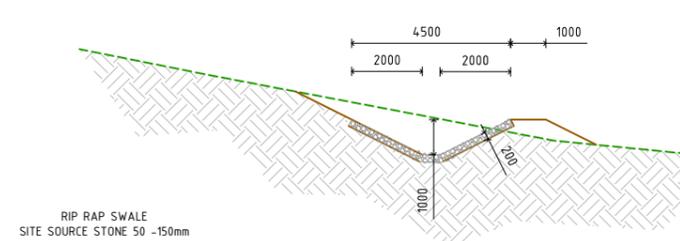
SECTION K-K



SECTION L-L



SECTION M-M



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**MCS WATER SCHEME
TANK SITE SECTION VIEWS**

Client	Cardrona Valley Infrastructure Ltd	Surveyed	Signed	Date	Job No.	10073	Drawing No.	E002
Drawn	RB	Signed	-	Date	Scale	1:100 @ A1		SHEET 008
Designed	-	Signed	-	Date	Datum & Level	1:200 @ A3		
						LINDIS PK 2000 / NZVD 2016		Rev. A

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**APPROVED PLAN:
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Monday, 15 June 2020

HORIZ CURVE DATA

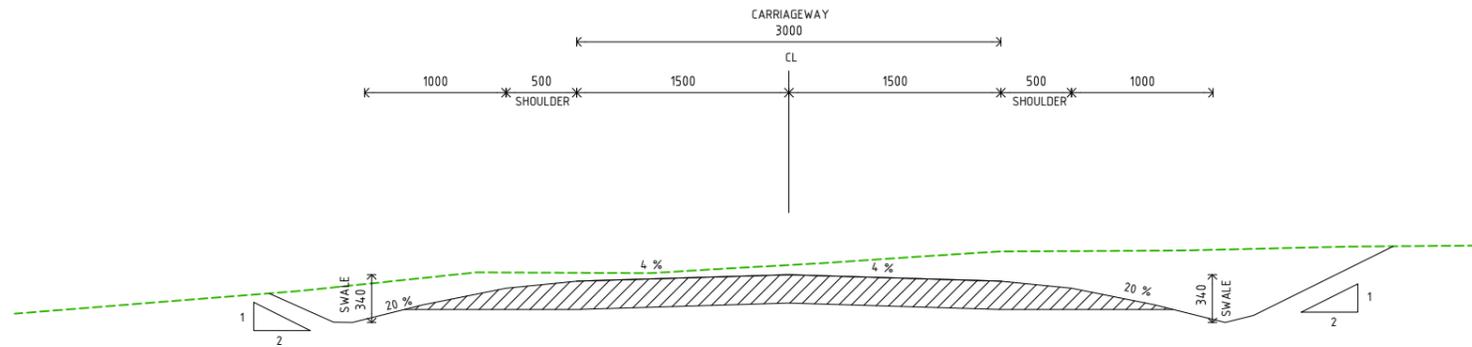
VERT GEOMETRY GRADE (%)
VERT GRADE LENGTH (m)
VERT CURVE LENGTH (m)

DATUM R.L.511.000

DEPTH	642.776	643.15	0.38	642.725	643.16	0.43	642.600	643.29	0.69	642.570	643.35	0.78	642.129	643.23	1.10	640.528	640.35	-0.17	639.799	639.64	-0.16	638.552	638.60	0.05	637.708	637.48	-0.23	637.219	637.26	0.04	637.081	637.00	-0.08	635.856	635.90	0.05	633.376	633.99	0.61	632.316	632.25	-0.07	631.300	631.06	-0.24	623.328	623.16	-0.17	623.047	622.84	-0.21	621.836	621.82	-0.02	615.886	615.89	-0.00	614.532	614.83	0.30	606.443	606.04	-0.40	604.489	604.49	0.00	603.768	603.35	-0.42	603.290	603.21	-0.08	595.055	595.36	0.30	586.369	586.65	0.28	581.427	581.43	-0.00	579.257	579.82	0.56	576.849	576.85	-0.00	577.099	576.82	-0.28	576.715	576.71	-0.00	575.740	575.86	0.12	572.628	572.78	0.15	571.872	571.87	0.00
C.L. FINISHED LEVEL	642.776	643.15	0.38	642.725	643.16	0.43	642.600	643.29	0.69	642.570	643.35	0.78	642.129	643.23	1.10	640.528	640.35	-0.17	639.799	639.64	-0.16	638.552	638.60	0.05	637.708	637.48	-0.23	637.219	637.26	0.04	637.081	637.00	-0.08	635.856	635.90	0.05	633.376	633.99	0.61	632.316	632.25	-0.07	631.300	631.06	-0.24	623.328	623.16	-0.17	623.047	622.84	-0.21	621.836	621.82	-0.02	615.886	615.89	-0.00	614.532	614.83	0.30	606.443	606.04	-0.40	604.489	604.49	0.00	603.768	603.35	-0.42	603.290	603.21	-0.08	595.055	595.36	0.30	586.369	586.65	0.28	581.427	581.43	-0.00	579.257	579.82	0.56	576.849	576.85	-0.00	577.099	576.82	-0.28	576.715	576.71	-0.00	575.740	575.86	0.12	572.628	572.78	0.15	571.872	571.87	0.00
EXISTING G.L.	642.776	643.15	0.38	642.725	643.16	0.43	642.600	643.29	0.69	642.570	643.35	0.78	642.129	643.23	1.10	640.528	640.35	-0.17	639.799	639.64	-0.16	638.552	638.60	0.05	637.708	637.48	-0.23	637.219	637.26	0.04	637.081	637.00	-0.08	635.856	635.90	0.05	633.376	633.99	0.61	632.316	632.25	-0.07	631.300	631.06	-0.24	623.328	623.16	-0.17	623.047	622.84	-0.21	621.836	621.82	-0.02	615.886	615.89	-0.00	614.532	614.83	0.30	606.443	606.04	-0.40	604.489	604.49	0.00	603.768	603.35	-0.42	603.290	603.21	-0.08	595.055	595.36	0.30	586.369	586.65	0.28	581.427	581.43	-0.00	579.257	579.82	0.56	576.849	576.85	-0.00	577.099	576.82	-0.28	576.715	576.71	-0.00	575.740	575.86	0.12	572.628	572.78	0.15	571.872	571.87	0.00
CHAINAGE	0.00	0.92	2.92	3.41	9.23	26.46	33.96	41.43	45.86	65.86	100.00	141.38	171.38	200.00	225.98	238.16	300.00	302.51	312.38	388.02	400.00	500.00	517.68	600.00	609.89	700.00	800.00	859.91	900.00	973.81	1000.00	1091.51	1100.00	1130.76	114.702																																																																			

LONGSECTION - CL WATER TANK ACCESS

A1 HORIZ SCALE 1 : 2000
A1 VERT SCALE 1 : 1000



ACCESS ROAD - TYPICAL SECTION
SCALE 1:25 @ A1

FOR CONSENT 03.06.20

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Rev.	Date	Revision Details	By
-	-	-	-

**MCS WATER SCHEME
ACCESS ROAD DETIALS**

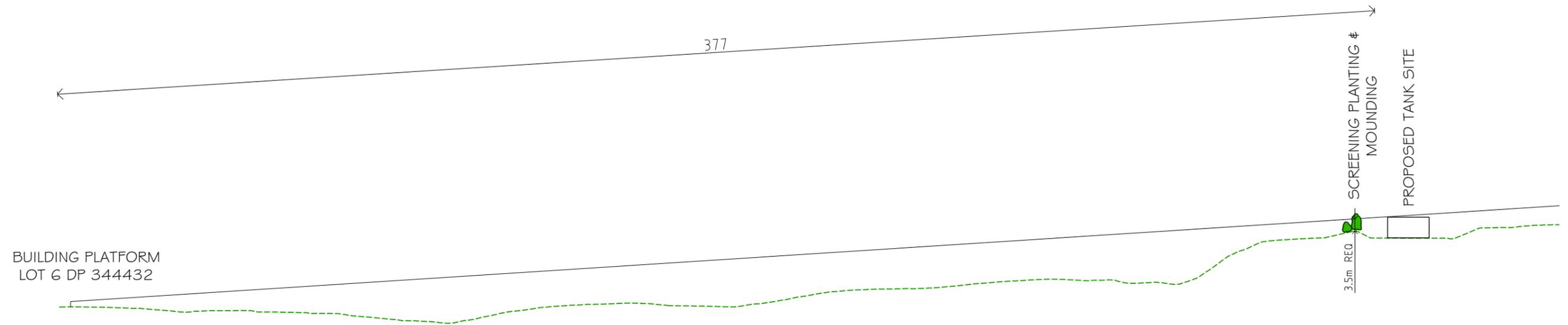
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CARDRONA VALLEY INFRASTRUCTURE LTD				10073	E002
	Drawn	Signed	Date	Scale	1:2000 @ A1
	RB		-	1:4000 @ A3	
	Designed	Signed	Date	Datum & Level	LINDIS PK 2000 / NZVD 2016
	-		-	Rev.	-

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**APPROVED PLAN:
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Monday, 15 June 2020



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Rev.	Date	Revision Details	By
-	-	-	-

**MCS WATER SCHEME
SECTION VIEW FROM LOT 6 DP 344432 PLATFORM**

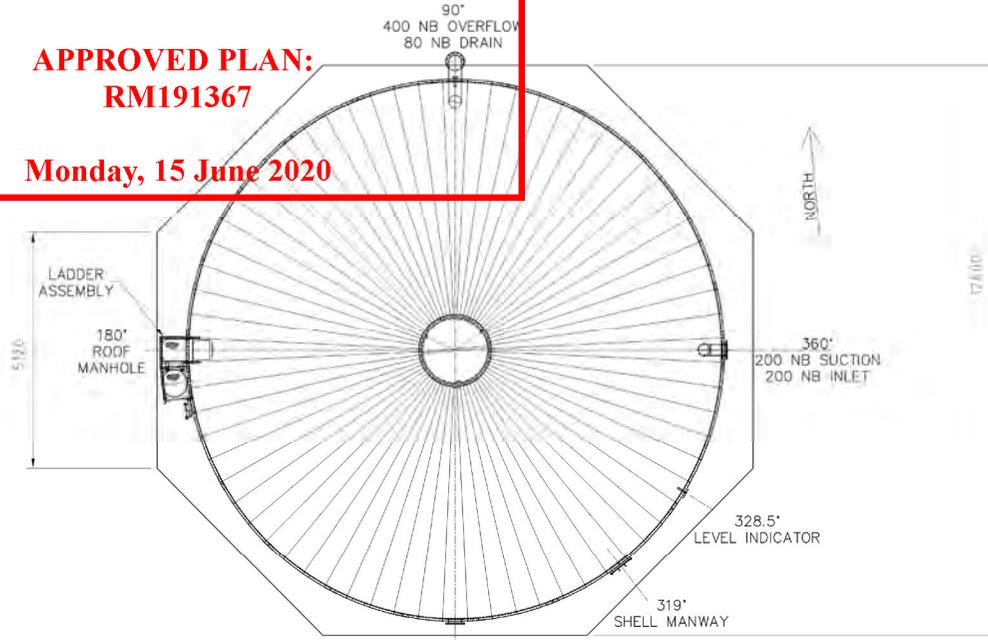
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Drawn	RB	Signed		Date	Scale	1:600 @ A1		SHEET 011
Designed	-	Signed		Date	Datum & Level	LINDIS PK 2000 / NZVD 2016	Rev.	A

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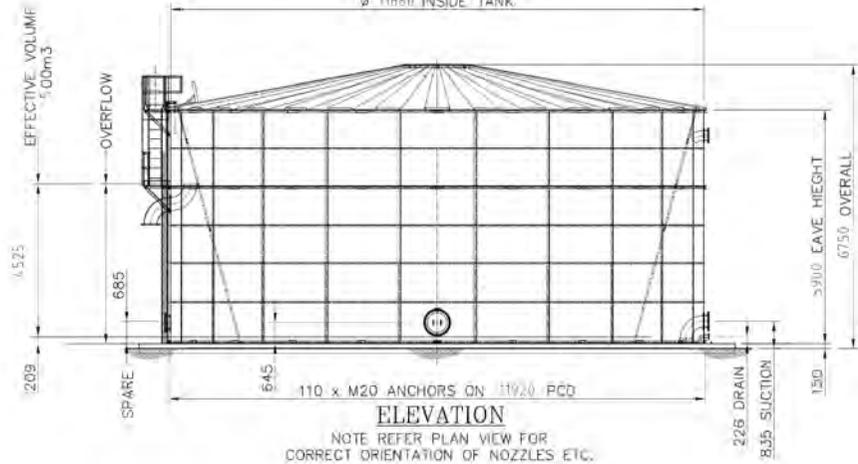
**APPROVED PLAN:
RM191367**

Monday, 15 June 2020



PLAN VIEW

φ 11860 INSIDE TANK



ELEVATION

NOTE REFER PLAN VIEW FOR CORRECT ORIENTATION OF NOZZLES ETC.

TANK MATERIALS	
TANK	MILD STEEL, HOT DIP GALV.
TANK COLOUR (POWDER COATED)	IRON SAND
ROOF	G450 Z450 GALV. M.S.
INTERNAL LADDER	STAINLESS STEEL 304
EXTERNAL LADDER	MILD STEEL, HOT DIP GALV.
PLATFORM	MILD STEEL, HOT DIP GALV.
NOZZLES	STAINLESS STEEL 304
WIND BRACING / STIFFENERS	MILD STEEL, HOT DIP GALV.

TANK DIMENSIONS	
TANK HEIGHT	6.75 M
MAX. DIAMETER	11.86 M
MAX. WATER LEVEL	7.52 M
FREEBOARD AT TOP	3.33 M
LOW OPERATING LEVEL (DEAD WATER)	0.21 M
EFFECTIVE CAPACITY	100 M ³

GENERAL DESIGN CRITERIA	
IMPORTANCE LEVEL	4
ENGINEERED DESIGN LIFE	50 YEARS

WIND LOAD DESIGN CRITERIA (AS/NZS 1170.2)	
WIND REGION	A7
TERRAINE CATEGORY	3
MINIMUM RETURN PERIOD	LESS THAN 6 MONTHS
RETURN PERIOD	1000 YEARS
WIND SPEED v_f	46 M/S

EARTHQUAKE LOAD DESIGN CRITERIA (NZS 1170.5 : 2004)	
HAZARD FACTOR Z	0.32
SUBSOIL CLASS	D
RETURN PERIOD	2500 YEARS
ANNUAL PROBABILITY OF EXCEEDENCE p	0.0004

ISSUED FOR APPROVAL

CLIENT: -

SIGNED: -

DATE: -

DRAFT - SUBJECT TO DETAILED DESIGN

REV	DATE	AMENDMENT	CHD	APFD	REV	DATE	AMENDMENT	CHD	APFD	REV	DATE	AMENDMENT	CHD	APFD

MT LARDRONA WATER SCHEME
100m³ WATER TANK DETAIL

DRG. No. REV.