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24 November 2025

Planning Manager – Planning and Environment
Central Otago District Council
PO Box 122
ALEXANDRA

ASSESSMENT OF ENVIRONMENTAL EFFECTS

LOTS 1 – 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP590633.

Location: Hawley Road, Earnscleugh.

Applicants: Ao Marama Limited
c/o Garry Nixon, Michael Olsen and Philip Murray, directors.

Enclosed for council consideration is an application for subdivision resource consent for the above-described property. In addition, the application includes a proposed minor boundary change with a neighbouring property of 79 Hawley Road owned by KS and AC Buchanan.

THE PROPERTY



The property comprises Lot 1, DP 590633 held in Certificate of Title 1160015 and contains 209.657 hectares.

The property is located on the western side of the Earnsclough flats bounding Strode Road to the north-east and Hawley Road to the south. It comprises moderate and steep hill slopes with numerous rocky outcrops. Altitude ranges from 160m asl at Strode Road to 350m at the highest point.

The land comprises LUC classes VII and VIII. It was originally part of Earnsclough Station and was used as a pre-shearing holding block providing a short period of extensive late winter grazing. It was purchased by L&M Mining as part of a mining operation carried out on the Earnsclough flats and later, on sold to an adjacent orchardist.

The land has very limited commercial pastoral or horticultural value being a dryland block without irrigation. A boundary adjustment as a condition of the sale and purchase agreement meant that the only land capable of productive use as orchard has been amalgamated into the adjacent orchard title.

Prior to purchase by the current owners a significant portion of the block was covered in wilding pines which were the seed source of spread onto adjacent properties. The current owners have recently entered into a programme of wilding pine control with the National Wilding Conifer Control Programme so that all pines have been felled or treated with herbicide.

The owners are committed to eradicating wilding pines from the property and are carrying out an extensive weed control programme. They plan to restore the indigenous vegetation by encouraging natural regeneration and by planting seed source forest/shrublands species that would originally have existed here.



1. THE PROPOSAL

1.1 Proposed subdivision

1.1.1 Proposed allotments

The applicant seeks the right to subdivide Lot 1, DP 590633 containing 209.6570 hectares into eight allotments creating 7 additional Records of Title.

Lots 5 to 8 will have areas of 6.7 ha, 5 ha, 2.5 ha and 2.3 ha respectively with boundaries subject to survey. These lots will be prepared for sale as rural lifestyle blocks with building sites for each lot as shown in Plans 2.1 to 2.6 to be approved as part of the application.

Lots 2 to 4 will have areas of 5000m² and are to provide building sites and curtilage areas within each of these lots as shown on the attached plans 3.1 to 3.5. These lots will be held in separate titles to be retained by the current owners of the property. The titles will include a covenant that the titles shall be held in conjunction with one third undivided share of the balance land being Lot 1 being 191.657 ha. The covenant will provide access to the sites through Lot 1.

1.1.2 Building platforms

Building platforms for each allotment are discreetly located on the landscape to blend with the surroundings. Building platforms proposed for Lots 2 to 4 are 150m² and for Lots 5 to 8, 250m².

1.1.3 Access

Access to Lots 5 to 8 is to be provided by an upgraded access road which is partly located on legal road reserve and partly over neighboring land on which a legal right of way is to be created. Access shall be formed to connect with Hawley Road within legal road reserve in accordance with the council's standards at the applicant's cost.

Formed road access through Lot 1 exists to within close distance of the proposed building platforms within lots 2 - 4.

1.1.4 Services

Domestic water for Lots 5 – 8 is to be provided by piped supply from an existing bore within Lot 6 (as shown in Plans 2.1 & 2.2) that will be pumped to a header tank within Lot 1 and reticulated to each lot by underground pipe. Each residence is expected to have at least a 30,000 litre tank for buffering and firefighting purposes. Reticulation of water will require an easement over adjoining land and a license to occupy over legal road.

Water to Lots 2 – 4 is to be provided by piped supply from an existing well within Lot 1 (shown on plan 3.1) that is in close proximity to the proposed building platforms. Water is to be pumped to a header tank and reticulated to each lot by underground pipe by solar pump.

Electricity to Lots 5 – 8 is to be provided from the main grid by an underground cable from Hawley Road to the boundary of each lot along the line of the existing access road.

Electricity at Lots 1 – 4 will be provided by solar systems at each dwelling.

Sewerage for each residence will be by way of septic tanks treatment and disposal field. The area of each allotment is sufficient to provide ample area for soakage disposal after treatment. An experienced plumber has inspected the house sites and identified suitable soakage fields for each site (attachment 26).

1.1.5 Earthworks

Earthworks will be required to upgrade the existing access road to Lots 5 – 8 to provide a suitable surface and grade. Vehicle access will be required to each building platform and the leveling of building sites at the time of seeking building consent.

1.1.6 Design Controls

The applicant proposes that the council set building design controls on height and cladding at the time of issuing building consents.

1.1.7 Environmental offsets

The applicant proposes that 182 ha of Lot 1 be subject to a QEII covenant to be registered on the title as an offset against any potential adverse effect on the visual amenity of the area resulting from the proposal. The covenant would include provisions to protect the outstanding natural landscape that exists here from further building development or subdivision and to facilitate the ongoing restoration of the indigenous vegetation that existed here originally.

The applicant has also entered into a programme of wilding pine control on the property which has effectively removed a major seed source from spreading onto surrounding land. A programme of follow-up seedling control is being carried out along with a programme of controlling other weeds on the property, particularly broom and cotoneaster.

1.2 **Proposed boundary change**

An adverse occupation of the subject property by the neighbor, KS and AC Buchanan at 79 Hawley Road exists where a sleepout and two garages have been constructed over the boundary (refer appended attachment 15, Plan 4). To resolve this situation an agreement has been reached with the Buchanan's to alter the boundary on the lines shown on the attached plan (Plan 4). The boundary change will reduce the area of the subject property by 2087m² and increase Buchanan's property by the same amount. This will result in little material effect on the subject property and will allow the Buchanan's to comply with the council standards for yards (4.7.6.A Bulk and Location Requirements) where buildings must be a minimum of 10m from the boundary.

2. DISTRICT PLAN PROVISIONS

2.1 Zoning

The property is zoned Rural Resource Area in the operative Central Otago District Plan with a Landscape Classification of Significant Amenity Landscape (SAL).

The subdivision is a non-complying activity as the allotments have an average area less than 8 hectares and a minimum allotment size of 2 hectares in a Rural Resource Area that is not identified in the planning maps as Rural Residential (RR)(4:7.5(iii) Subdivision).

Reason

Intensive subdivision results in future development that has a significant potential effect on landscape and amenity values, the transport network, and ground water quality.

2.2 Standards

The subdivision proposal does not meet the requirements of Standard 4.7.6A(a) Yards with respect to Lots 7 and 8 where the proposed house sites are within 10 meters of the legal road alignment. It does not meet the strict application of the standard with respect to Lot 3 in that two measurements from the boundary are less than 25 metres but all being greater than 10 metres.

2.3 Assessment of the proposal against relevant provisions of the district plan

4.3 Objectives

4.3.3 Objective – Landscape and amenity values

To maintain and where practicable enhance rural amenity values created by the open space, landscape, natural character and built environment values of the District's rural environment, and to maintain the open natural character of the hills and ranges.

Comment

The net effect of the proposal is to enhance the amenity and natural character of the land through eradicating wilding pines from the property, restoring the indigenous vegetation and entering into a covenant that ensures that the landscape will be protected from residential development over 87% of the property for future generations. Considering the relatively discreet siting of the proposed residential development and their relatively minor impact on the landscape, the positive aspect of the proposal, in the applicant's opinion, outweighs the adverse effects on the landscape amenity.

4.3.8 Objective – Significant indigenous vegetation and habitats of indigenous fauna

To recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Comment

The proposal protects and enhances areas of indigenous vegetation that includes seven rare species (At Risk – Declining) and habitats of indigenous fauna including important lizard habitat. There will be no significant adverse effects on indigenous vegetation and indigenous fauna resulting from the proposed subdivision.

4.3.9 Objective – Integrated, comprehensive mixed-use development

To recognise and provide for an appropriately located development which integrates farming, horticulture, recreational, visitor, residential and lifestyle development and supporting infrastructure in a sustainable manner, but avoids, remedies or mitigates potential adverse effects on: • landscape and amenity values of the rural environment; • natural and physical resources including soils, water and groundwater resources, and existing viticultural areas; • existing lifestyle amenities; • core infrastructural resources; • the functioning of urban areas.

Comment

The proposal supports integrated mixed-use development by providing for appropriate residential development relatively close to Alexandra on land that has very limited potential for productive purposes at the same time as meeting other community objectives of landscape and conservation protection.

4.4 Policies

4.4.2 Policy – Landscape and amenity Values

To manage the effects of land use activities and subdivision to ensure that adverse effects on the open space, landscape, natural character and amenity values of the rural environment are avoided, remedied or mitigated through:

(a) The design and location of structures and works, particularly in respect of the open natural character of hills and ranges, skylines, prominent places and natural features,

Comment

The location of proposed house sites is generally not prominent when viewed from public places and is consistent with other houses located in the same zoning in this proximity. Proposed earth works associated with access will not be prominent on the landscape and will be of a scale that will not have significant adverse effects on landscape and amenity values. We suggest that earth works and design of structures associated with buildings be dealt with through conditions applied at the time of building consents.

(b) Development which is compatible with the surrounding environment including the amenity values of adjoining properties, (c) The ability to adequately dispose of effluent on site,

Comment

The proposed lots 5 – 8 adjoin rural residential land being used for a similar purpose to that being proposed. Lots 2 – 4 supports the management and use of the surrounding environment for landscape and amenity purposes which is consistent with community objectives for this type of land in this location.

(d) Controlling the generation of noise in back country areas,

Comment

The proposed land use will not generate significant noise.

(e) The location of tree planting, particularly in respect of landscape values, natural features and ecological values,

Comment

Planting amenity trees around residences on lots 5 – 8 will not be inconsistent with the surrounding landscape considering that it is adjacent to a highly developed cultural landscape. Planting potentially spreading trees such as conifers is adequately controlled through the rules in the Regional Pest Management Plan. Lots 2 – 4 are not easily visible from any public place so that tree plantings are unlikely to significantly adversely affect the landscape amenity.

(f) Controlling the spread of wilding trees.

Comment

The property owners have carried out an extensive wilding pine control programme which they are committed to maintaining in the future.

(g) Encouraging the location and design of buildings to maintain the open natural character of hills and ranges without compromising the landscape and amenity values of prominent hillsides and terraces.

Comment

The applicants have chosen house sites that strike a balance between avoiding significant adverse impact on the natural landscape character when viewed from a public place and sites that afford future owners a view of the surrounding landscape. The development is in keeping with other land in the vicinity in this zoning. We suggest that design aspects of buildings be dealt with at the time of application for building consent.

4.4.3 Policy – Sustainable Management of infrastructure

To ensure that the development of infrastructure in the rural environment promotes sustainable management by: (a) Requiring developers to contribute a fair and reasonable proportion of the costs involved, and (b) Maintaining and

enhancing the safe and efficient operation of the infrastructure network (including roading), while avoiding, remedying or mitigating adverse effects.

Comment

The proposed access points extend onto existing rural roading in an area relatively close to Alexandra which utilises existing infrastructure.

4.4.6 Policy – Adverse effects on soil resources

To ensure that the location, construction and/or operation of land use activities and subdivision make adequate provision for the protection of the soil resource by avoiding, remedying or mitigating the adverse effects of practices which may cause: (a) Erosion, instability or loss of topsoil, Cross Reference Objectives: 4.3.1, 4.3.7 Methods: 4.5.2, 4.5.6 Rule: 4.7.6J Central Otago District Plan 1 April 2008 Page 4:13 Rural Resource Area (b) Loss of nutrient or incidence of soil contamination, (c) Loss of soils with special qualities, (d) A reduction in vegetation cover and moisture holding capacity, and (e) Soil compaction.

Comment

The proposal will improve protection of the soil resource by applying a management regime that will result in increased vegetation cover, reducing soil erosion risk and rabbit proneness. No significant area of high-quality soil is included within the property. Land Use Capability class is predominantly Class VII and VIII.

4.4.7 Policy – Significant indigenous vegetation, wetlands and wildlife

To protect areas of: (a) Significant indigenous vegetation, (b) Significant habitats of indigenous fauna, (c) Significant wetlands, (d) Indigenous vegetation or habitats that support a significant indigenous fresh water fishery,

Comment

The proposal will protect areas that have been identified as containing significant indigenous vegetation by removing wilding pines, other invasive weeds such as broom and cotoneaster and eliminating domestic stock. Future management for conservation goals will be secured by a QEII covenant over 185ha of the balance land.

4.4.9 Policy – Effects of rural activities

To recognise that some rural activities, particularly those of a short duration or seasonal nature, often generate noise and other effects that can disturb neighbours by ensuring that new developments locating near such activities recognise and accept the prevailing environmental characteristics associated with production and other activities found in the Rural Resource Area.

Comment

Reverse sensitivity can sometimes be an issue with residential use in close proximity to rural areas such as orchards. In this case the closest house site is 150 metres from an orchard and is therefore unlikely to be affected by normal orchard activities.

4.4.10 Policy – Rural subdivision and development

To ensure that the subdivision and use of land in the Rural Resource Area avoids, remedies or mitigates adverse effects on:

(a) The open space, landscape and natural character amenity values of the rural environment in particular the hills and ranges,

Comment

The subdivision into Lots 5 – 8 is located at the less publicly visible end of the property and is on the lower slopes of the property where the open space, landscape amenity and natural character of the rural environment is not significantly affected. These lots are also adjacent to similarly developed land for rural residential purposes.

Lots 2 – 4 are located higher on the property but are nestled into gently undulating terrain where they are not readily visible when viewed from public places. Provided that building design and material conditions are applied, this subdivision will not, in the applicant's opinion, lead to significant adverse effects on the open space, landscape and natural character of the rural environment.

(b) The natural character and values of the district's wetlands, lakes, rivers and their margins,

N/A

(c) The production and amenity values of neighbouring properties,

Comment

The proposal has no effect on the productivity of adjacent properties. The proposal has no significant adverse effect on the amenity values of neighbouring properties as the use for rural residential purposes is consistent with the general locality. Design and material conditions will ensure that future residences are in keeping with the general landscape character.

(d) The safety and efficiency of the roading network,

Comment

Driveway access onto Hawley Road for Lots 5 – 8 is on legal road reserve which will be developed to meet council standards for access onto public roads. Although much of the access road is on road reserve, access onto it is over private land that is proposed to be subject to a ROW easement over the neighboring title in favour of the 7 title holders. Consequently, there will be no 'as

of right' public access onto the road reserve and the access will effectively be a private road to be maintained by the title holders.

(e) The loss of soils with special qualities,

Comment

There is no significant area of 'soils of special quality' within the subject property, the land being predominantly LUC Class VII and VIII.

(f) The ecological values of significant indigenous vegetation and significant habitats of indigenous fauna,

Comment

The property does not contain an area of Significant Indigenous Vegetation (SNA) that is identified in the District Plan, however a preliminary survey by the QEII agent has identified that there is present a number of threatened species within the property that are worthy of protection. The proposal will enhance the protection of these species by controlling wilding pines and invasive weed species and by carrying out planting of indigenous species that previously grew in this location as proposed.

(g) The heritage and cultural values of the district,

Comment

The property is not known to contain significant heritage and cultural values.

(h) The water quality of the District's surface and groundwater resources, and

Comment

The proposal will have no significant effect on the district's surface and groundwater resources.

(i) Public access to or along the rivers and lakes of the District, particularly through the use of minimum (and average) allotment sizes.

Comment

The property does not bound any river or lake.

4.4.12 Policy – Weed and pest plant and animal infestation

To encourage land use practices that avoid, remedy or mitigate weed infestation, in particular wilding tree spread, and the spread of pest plants and animals throughout the district.

Comment

The applicants have carried out a programme of wilding pine control to eradicate what has been a major source of spread onto neighbouring properties. The

conditions of the QEII covenant will require the current and future owners to maintain the land free of wilding conifers. A programme of broom control has also been carried out as well as spraying cotoneaster and other invasive shrub species.

4.7 Rules

4.7.5 Non-complying activities

4.7.5(iii) Subdivision

Except as otherwise provided for in Rule 4.7.2(ii)(b) subdivision that creates an allotment or allotments with an average area less than 2 hectares in areas identified as “Rural Residential” ([RR]) on the planning maps, or that creates an allotment or allotments with an average area less than 8 hectares and/or with an area less than 2 hectares in an area in the Rural Resource Area not identified on the planning maps as Rural Residential ([RR]), or an allotment that breaches Rule 4.7.2(ii)(a)(i) as it relates to Rural Resource Area (1) or Rural Resource Area (2) is a noncomplying activity. Cross Reference Policies: 4.4.2, 4.4.10

Reason

Intensive subdivision results in future development that has a significant potential effect on landscape and amenity values, the transport network, and ground water quality.

Comment

The proposal results in a subdivision of 8 separate allotments of between .5ha and 191 ha. The average lot size, when calculated in accordance with the district plan formula for calculating average lot size, is 4.2 ha which is less than the 8 ha prescribed by the rule in 4.7.5(iii).

The proposal includes three lots (Lots 2 – 4) which are intended to provide separate titles over three house sites to be held by each of the three partners in the land. These lots are proposed to be 5000m² which is less than the minimum 2ha that is prescribed by Rule 4.7.5(iii). It is however intended that these titles will include a condition where each title can only be held in conjunction with an undivided 1/3 share in the land included in lot 1.

Notwithstanding the rule in 4.7.5(iii), the applicant believes that the subdivision proposal as presented does not have significant adverse effects on the landscape and amenity values or the transport network or groundwater. The applicant believes that the net effect of the proposal, when considered in light of the environmental offsets proposed, will have a net long term positive outcome for the landscape amenity, significant indigenous vegetation and integrated comprehensive mixed-use development. Furthermore, the proposal will help facilitate the control of pest plants including wilding pines and broom within the property.

4.7.6 Standards

4.7.6A Bulk and location requirements

- (a) Yards. A minimum of 25 metres side and rear yard and 10 metres front yard from a neighboring boundary is required for all buildings.

Comment

The proposed house sites for lots 7 & 8 do not meet this standard, lot 7 house site being 6m from the legal road boundary and Lot 8 being 5.5m from the road boundary. As the road formation is approximately 10m from the boundary in both instances and the road use will be limited to the 4 lot owners, there is not expected to be significant adverse impacts from this aspect of the proposal (attached as Plans 2.3 – 2.6).

The house site for Lot 3 does not meet the strict application of this rule having two measurements from the boundary less than 25 metres (16 & 18m, attached as Plan 3.4).

- (f) Height

Comment

It is suggested that the council apply height standards (6m) to buildings at the time of building consent application.

- (g) Transmission lines

No buildings shall be built within 12 metres of the centre line or from the outer edge of support structures of high voltage transmission lines.

Comment

The closest house site is 28m from the centre line of the high voltage transmission line that dissects the property. The proposal therefore meets the standards with respect to this aspect.

4.7.6D Visual effect of buildings and structures

It is proposed that the council apply standards required to address visual effects of buildings and structures at the time of application for building consents as per those recommended by the Landscape architect's report.

Assessment of Environmental Effects

ASSESSMENT MATTERS

We assess the proposal pursuant to Section 4.7.4 (iii) Subdivision in Rural Resource Area, Central Otago District Plan as follows;

1. *The effects of the subdivision and future development on:*

- *Open space, landscape and natural character and amenity values.*

Comment

The overall outcome of the subdivision proposal will be to enhance the natural character and amenity values of the of the subject land by allowing a minor intensification of use for residential purposes that will facilitate the control of wilding pines and other exotic invasive weeds on the property and the restoration of the indigenous vegetation.

Proposed house sites are located where their visual impact will have no more than minor impact on the visual amenity of the landscape as viewed from public places.

- *Reserves, all public conservation land managed by the Department of Conservation and recreation facilities, including the provision and maintenance of such facilities,*

Comment

The proposal land is not in proximity to reserve or public conservation land.

- *Heritage sites, including archaeological sites and waahi tapu, and heritage landscapes.*

Comment

There is no known heritage or waahi tapu sites on the subject land.

- *Sites, lakes and rivers and their margins and other features of cultural value to Kai Tahu ki Otago,*

N/A

- *Notable trees, and areas of significant indigenous vegetation and significant habitats of indigenous fauna, and,*

Comment

There are no notable trees or areas of indigenous vegetation or significant habitats identified within the subject land.

- *The natural character of water bodies and their margins.*

Comment

There are no water bodies within the subject land.

2. *Potential for visual absorption of future built development with particular attention being given to those areas identified as outstanding natural landscapes and significant amenity landscapes on the planning maps.*

Comment

The entire property is identified as Significant Amenity Landscape within the Central Otago District Plan. The set back location of proposed allotments from surrounding properties and from public roads combined with the sensitive siting of proposed building platforms and use of appropriate building materials and colour pallets will result in future built development associated with residential development being easily absorbed into this landscape.

3. *Capability for sustainable use of the productive land and soil resource.*

Comment

The entire area of the subject land has very limited potential for sustainable productive use it being dryland, mainly LUC class VII that is highly rabbit prone under pastoral use.

4. *The potential for reverse sensitivity effects and methods to address such effects on existing rural production activities and on existing infrastructure, including the use of separation distances and yards.*

Comment

Although the property adjoins a commercial orchard on Hawley Road, the proposed new allotments and house sites are between 150 and 500 metres from orchard land. Reverse sensitivity is therefore not considered to be a likely issue.

5. *The adequacy of the allotment in respect of its ability to safely dispose of effluent and stormwater on-site, without compromising health, and the quality of ground and surface water resources.*

Comment

All the proposed house sites have sufficient area of sloping land surrounding them within their allotments to provide for adequate and safe disposing of effluent (see attachment 26).

6. *The provision of an adequate water supply, given the intended use of the allotments, unless an allotment is incapable of being occupied by a dwelling.*

Comment

The applicants have established and tested two bores which will provide adequate quantity and quality of drinking water for the proposed residential uses (see attachments 28 & 29).

7. *The location, design and construction of access, and its adequacy for the intended use of the allotments.*

Comment

The location of access roads is shown on the attached subdivision plans (see attachments 17 & 18). It is proposed that consent to subdivision be conditional on vehicle access being constructed to the required council standard.

8. *The provision of adequate utility services, (including roading), and in particular the location, design and construction of these services.*

Comment

Road access to the proposed rural residential allotments has been constructed to a preliminary standard off Hawley Road. This access is partly within legal road reserve however it will require a private ROW easement in part to access. This effectively makes the road a private road for use by the lot owners only and access to the balance land. Ongoing maintenance would therefore be the responsibility of the lot owners.

Electricity is proposed to be provided by underground cable to Lots 5 to 8 from Hawley Road. It is proposed that residences within Lots 3 to 5 be off grid using independent solar generated electricity.

Domestic water is proposed to be provided by underground pipe from existing bores shown on Plans 2.1 and 3.1.

9. *Earthworks necessary to prepare the site for occupation and/or use.*

Comment

Preparation of house sites will occur after sale. It is proposed that conditions pertaining to earthworks necessary for preparing house sites and driveways be applied at the time of building consent.

10. *The provision of access to backland.*

Comment

Access to backland is proposed to be provided by way of a ROW through Lot 5 in favour of the balance land on the line of the existing access road. Access through Lot 1 to Lots 2 to 4 will be provided by way of covenant on the respective titles which ties each title to 1/3 undivided share in Lot 1.

11. *The provision of esplanade reserves and strips and access to them.*

N/A

12. Any financial contributions necessary for the purposes set out in Section 15 of this Plan.

13. Any amalgamations or easements that are appropriate.

Comment

It is proposed that consent be granted for the boundary adjustment with KS and AC Buchanan at 79 Hawley Road at the same time as granting consent to the subdivision proposal. This has efficiencies in survey and documentation.

14. *The identification of potential building platforms that are encouraged in locations that will maintain the open natural character of hills and ranges, without compromising the landscape and amenity values of prominent hillsides and terraces.*

Comment

The building sites identified and shown on the attached subdivision plans strike an appropriate balance between having a low impact on the landscape and amenity values and providing the future occupants with a view of the surrounding landscape.

15. *Whether or not the clustering of lots would be beneficial in terms of avoiding or mitigating adverse environmental effects.*

Comment

This option is considered inappropriate for this location as it is considered not in keeping with the surrounding semi-rural character of the area.

16. *Whether or not the applicant will commit or has committed to work or services as environmental compensation (such as the control of wilding pines) and if so committed, whether it is or will be:*

- *to remedy at least in part any adverse effects of onsite works; or*
- *on the site or within the same general area, landscape or environment as the proposed activity; and/or*
- *effective by way of conditions, bond or covenant; and/or*
- *the product of public consultation or participation.*

Comment

The applicant has recently carried out an extensive programme of wilding pine control and has committed to eradicating all conifers species capable of spreading from the property. The property has been a significant source of spread of wilding pines onto neighboring properties, so this control work has allowed for the wider wilding pine control programme in the area to be successful.

The applicant intends to carry out a programme of landscape restoration on the balance land by controlling invasive weed species such as broom and cotoneaster and by planting native species that would have previously been present in this landscape.

Furthermore, the applicants propose as a condition of consent an offset to any adverse effect of the proposed subdivision on natural landscape character and amenity values of the land in the form of a QEII covenant to be registered against that proportion of the balance land shown on the subdivision plan (see Plan 1.2, attachment 3). The covenant's principal objectives will be to

protect the landscape amenity values by prohibiting further subdivision and supporting the restoration of the indigenous vegetation on the land.

17. *The appropriate size of any allotment bearing in mind any of the above factors.*

Comment

The allotments are of a size consistent with the rural character of the area.

18. *Any objectives and policies relevant to the above matters.*

Comment

The proposal is assessed against the objectives and policies of the Central Otago district plan in Section 2.3 of this report.

19. *Any other matters provided for in section 220 of the Act.*

CONSULTATION

At the time of lodging this application six adjoining neighbours have been consulted on the subdivision proposal, being K and A Buchannan, Clyde Orchard Limited, L and E Cowie, Roberts Family Fruit Ltd, Earnsclough Station Ltd and Panmure Orchard Ltd.

CONCLUSION

The proposed subdivision allows for an appropriate and sustainable use of the land resources and is not in conflict with the Resource Management Act 1991 or the objectives and policies of the Central Otago District Plan.

Although non-complying in terms of the rules concerning average lot size and minimum lot size, the proposal complies with regard minimum lot size with the main rural residential subdivision of lots 5 - 8. This land is of low agricultural value and, with the proposed location of house sites combined with conditions on build material and colour pallet that the council may wish to apply on application for building consent, will have no more than minor adverse impact on the landscape values.

The three non-complying sized lots are proposed to be linked by registered agreement on the title to an undivided third share in the balance land of approximately 192 ha. Approximately 185 ha of the balance land is proposed to be subject to a QEII covenant that will prevent further subdivision and will support the environmental restoration of the land. The result is expected to be a net gain for landscape protection and biodiversity in the district.

The proposal will provide for rural residential development in a location where similar land use is occurring on land with low potential for productive uses.

A handwritten signature in blue ink, appearing to read 'Phil Murray', with a stylized flourish underneath.

Phil Murray
Director
Ao Marama Ltd

Email: philh.murray@outlook.com
Contact: 027 2218133

ATTACHED

- 1. Plan 1.0: Property boundary map**
- 2. Plan 1.1: Proposed subdivision plan**
- 3. Plan 1.2: Proposed subdivision plan-QEII**
- 4. Plan 2.1: Proposed subdivision plan, Lifestyle lots**
- 5. Plan 2.2: Proposed subdivision plan, Lifestyle lots**
- 6. Plan 2.3: Proposed house site Lot 5**
- 7. Plan 2.4: Proposed house site Lot 6**
- 8. Plan 2.5: Proposed house site Lot 7**
- 9. Plan 2.6: Proposed house site Lot 8**
- 10. Plan 3.1 Proposed subdivision plan, owners lots**
- 11. Plan 3.2 Proposed subdivision plan, owners lots**
- 12. Plan 3.3 Proposed house site Lot 2**
- 13. Plan 3.4 Proposed house site Lot 3**
- 14. Plan 3.5 Proposed house site Lot 4**
- 15. Plan 4: Proposed boundary change**
- 16. Roading access location map**
- 17. Roading access Plan 1**
- 18. Roading access Plan 2**
- 19. Stormwater drainage Plan 1**
- 20. Stormwater drainage Plan 2**
- 21. Stormwater drainage Plan 3**
- 22. Landscape Effects Assessment Report**
- 23. Landscape Restoration Plan**
- 24. Planting plan Map**
- 25. Species List**
- 26. Onsite Waster Water Disposal Assessment**
- 27. Correspondence from QEII**
- 28. Bore log 1-Lifestyle Lots**
- 29. Bore log 2-Owners Lots**
- 30. Certificate of title**



Lot 3 soakage field



Lot 4 soakage field



Lot 5 soakage field



Lot 6 soakage field



Lot 7 soakage field



Lot 8 soakage field

Phil Murray

From: Rob Wardle - Central Otago <RWardle@qeii.org.nz>
Sent: Thursday, 19 September 2024 9:13 am
To: Phil Murray
Subject: Ao Marama Ao

Dear Phil. Thank you for the opportunity to visit you proposed covenant site at Ao Marama, Earnscliffe. You have asked if this area would qualify for protection under an Open Space Covenant with the Trust. Based on my preliminary inspection of the area on 18 September 2024, my professional opinion is that a formal proposal would receive approval from the QEII Board if submitted. I am not able to guarantee this.

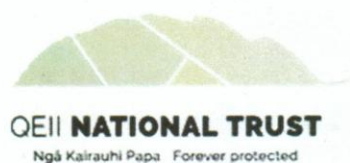
My endorsement of the proposal is based on:

- My non-professional assessment that the estimated 180 ha area proposed for protection is an outstanding example of a semi-arid Central Otago rocky landscape. Furthermore, the land is highly visible from much of the Alexandra Basin and surrounds.
- The substantial and commendable effort that has gone into wilding pine control.
- An apparent commitment to control of other woody weeds including cotoneaster and cherry.
- A walk-through assessment confirming that land supports seven "At Risk – Declining" vascular plant and lichen species. Namely *Raoulia australis* (scabweed), *Raoulia beauverdii* (Beauverd's mat daisy), the grass *Rytidosperma buehneri*, *Xanthoparmelia semiviridis* (vagrant lichen), matagouri, *Olearia lineata* (tree daisy) and the shrub *Pimelea aridula* subsp. *aridula*.
- Kanuka was observed at a single site where it was observed to be strongly regenerating. Kanuka is ranked as Nationally Vulnerable due to it belonging to the myrtle family and is therefore potentially susceptible to myrtle rust disease.
- Many areas including tors, rocklands, denuded pavement areas and protected gullies retain much of their natural character with a range of common native shrub, herb, cushion plant, fern and grass species being present.
- The relative dearth of similar areas in our protected land network.

Indicative support for covenanting is on the proviso that a robust covenant document can be agreed upon which amongst other activities precludes sub-division, erection of structures, construction of vehicle tracks, buildings, planting of exotic vegetation or alteration of hydrology. A covenant will need to balance the requirement of achieving enduring protection of the land whilst recognising the need for some flexibility to cater for uncertainties around managing modified semi-arid environments for conservation purposes.

Subject to resourcing capability, I am happy to prepare a full covenant proposal when there is certainty around associated consents or an otherwise firm commitment to proceed.

Ngā mihi



Rob Wardle | Regional Representative | Central Otago

QEII National Trust | Ngā Kairauhi Papa

Mobile: 020 4012 6483 |



Bore Construction Report

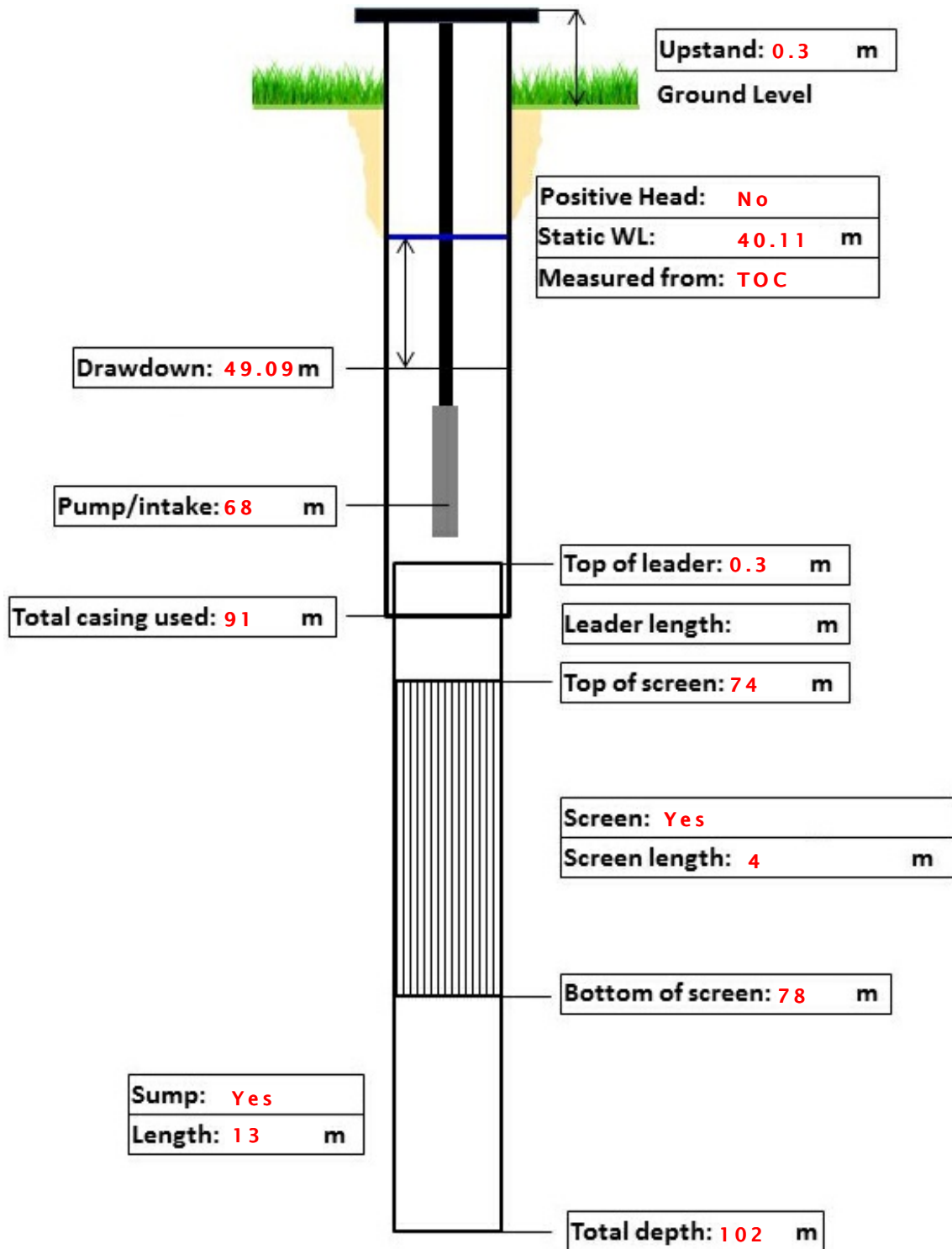


OFFICE USE ONLY		
Date received:	Accession number:	Signed:
Bore number: 2714 hole no3	Entered IRIS date:	Invoice date:

GENERAL DETAILS		
Client/Consent holder's name: AQ Marama Phill Murry		Consent number: RM24.696
Location/Address: Earnsclough		
Grid reference - Easting: 1309204m E	Northing: 4983436m N	Mobile phone: 0272218133
Sketch plan attached: Yes	Photos attached: Yes	Home phone:
DRILLING DETAILS		
Drilling company: SouthDrill Ltd		Driller: Rowland Harrex
Machine/Rig: Western Star Drilling Rig [QCL493]		Fleet no. 2030
Drill method(s): Air Rotary		
BORE CONSTRUCTION DETAILS		
Start date: 10/02/2025	Finish date: 13/02/2025	
Bore diameter: 200mm	Casing material: Steel	
Screen material: steel		
Screen diameter (inside): 150mm	Screen diameter (outside): 160mm	
Screen slots: 2.5mm	Overdrilled: Yes	
PUMPINGWATER DETAILS		
Dry bore: No	If dry, was casing retrieved?	Bore filled in:
Development period: 5 hours	Development method: Airlifted	
Yield/test pumping: Pumped	Test pump period: 6 hours	
Test pump rate: 1.7 litres/second	Method of measuring reate: Volumetric test	
Comments: veay good water flow for rock hole		
Pumped water level: 49.09 metres		
WATER QUALITY ETC		
Bacterial water test: Yes	Chemical water test: Yes	
Casing top sealed: Yes	Impervious seal at ground: Yes	
Comments: 8" steel casing from 0.0- 11m open hole to 102m 6" casing to 91m slooted 74m to 78m placed pump at 68m take hill lab test 4.95ntu		
BORE LOG (METRES BELOW REFERENCE POINT)		
0m	clays gravels schist	
1.3m	quixdisd schist brown	
7.1m	schist hard 8" casing to 11m	
11m	schist hard dry	
31m	damp soft zone	
33m	schist hard and small soft zones water flow at 3lts/min	
42m	schist hard small soft zones dry	
51m	soft schist possible fault	
74m	soft zone lots of water flow about 5lts/sec	
78m	fractured schist more water flow	
102m		
Do you intend to drill more bores under this Land Use Consent number? No		
If yes, number of bores drilled:		Number of bore logs provided:

Bore Construction Diagram

Bore number:
2714 hole no3



Certificate of Analysis

Page 1 of 5

Client:	SouthDrill Limited	Lab No:	3778956	DWAPv1
Contact:	SouthDrill Limited C/- SouthRoads Limited PO Box 968 Invercargill 9840	Date Received:	14-Feb-2025	
		Date Reported:	26-Feb-2025	
		Quote No:	102422	
		Order No:	2714	
		Client Reference:	Bore water	
		Submitted By:	SouthDrill Limited	

Sample Type: Aqueous

Sample Name:		Phill Murray No3 13-Feb-2025 3:00 pm	Aesthetic Values	Maximum Acceptable Values (MAV)
Lab Number:		3778956.1		
Individual Tests				
Total Cadmium	g/m ³	< 0.000053	-	0.004
Total Chromium	g/m ³	< 0.00053	-	0.05
Fluoride	g/m ³	0.40	-	1.5
Routine Water + E.coli profile Kit				
Escherichia coli	MPN / 100mL	< 1	-	< 1
Routine Water Profile				
Turbidity	NTU	10.8	≤ 5	-
pH	pH Units	8.0	7.0 - 8.5	-
Total Alkalinity	g/m ³ as CaCO ₃	240	-	-
Free Carbon Dioxide	g/m ³ at 25°C	4.3	-	-
Total Hardness	g/m ³ as CaCO ₃	210	≤ 200	-
Electrical Conductivity (EC)	mS/m	56.9	-	-
Electrical Conductivity (EC)	µS/cm	569	-	-
Approx Total Dissolved Salts	g/m ³	380	≤ 1000	-
Total Arsenic	g/m ³	0.0092	-	0.01
Total Boron	g/m ³	0.021	-	2.4
Total Calcium	g/m ³	39	-	-
Total Copper	g/m ³	0.00078	≤ 1	2
Total Iron	g/m ³	1.08	≤ 0.3	-
Total Lead	g/m ³	0.00074	-	0.01
Total Magnesium	g/m ³	28	-	-
Total Manganese	g/m ³	0.159	≤ 0.04 (Staining) ≤ 0.10 (Taste)	0.4
Total Potassium	g/m ³	1.46	-	-
Total Sodium	g/m ³	44	≤ 200	-
Total Zinc	g/m ³	0.035	≤ 1.5	-
Chloride	g/m ³	31	≤ 250	-
Nitrate-N	g/m ³	< 0.05	-	11.3
Sulphate	g/m ³	24	≤ 250	-



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

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

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

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

pH/Alkalinity and Corrosiveness Assessment

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

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

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

The pH of this water is within the NZ Drinking Water Guidelines, the ideal range being 7.0 to 8.0.

With the pH and alkalinity levels found, it is unlikely this water will be corrosive towards metal piping and fixtures.

The high alkalinity of this water may cause an increase in the pH in the root zones of plants which are irrigated using this water.

Hardness/Total Dissolved Salts Assessment

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

There will be difficulty in forming a lather with soap, and a 'scum' will form in baths, showers, etc.

The high value for hardness (200 is considered excessive) indicates that this water may promote scale build-up in pipes and cylinders, and that irrigation systems using this water may be prone to scale build-up and blockage of narrow irrigation capillaries and jets.

Nitrate Assessment

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

Nitrate-nitrogen was not found in this water.

Boron Assessment

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

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

Metals Assessment

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

Iron was found in this water at a high level.

Manganese was found in this water at a significant level.

Treatment to remove iron and/or manganese will be required.

Bacteriological Tests

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

Escherichia coli was not detected in this sample.

Final Assessment

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

Summary of Methods

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

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Routine Water Profile		-	1
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO ₂ D : Online Edition.	1.0 g/m ³ at 25°C	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B : Online Edition.	1 µS/cm	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m ³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0011 g/m ³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m ³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.000053 g/m ³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m ³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m ³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00011 g/m ³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00053 g/m ³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0011 g/m ³	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F ⁻ C : Online Edition.	0.05 g/m ³	1
Nitrate-N	Filtered (if required) sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m ³	1

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Escherichia coli	MPN count using Colilert (Incubated at 35°C for 24 hours) and 97 wells. Analysed at Hill Laboratories - Microbiology; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 9223 B : Online Edition.	1 MPN / 100mL	1

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

Testing was completed between 14-Feb-2025 and 26-Feb-2025. For completion dates of individual analyses please contact the laboratory.

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

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

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Bore Construction Report

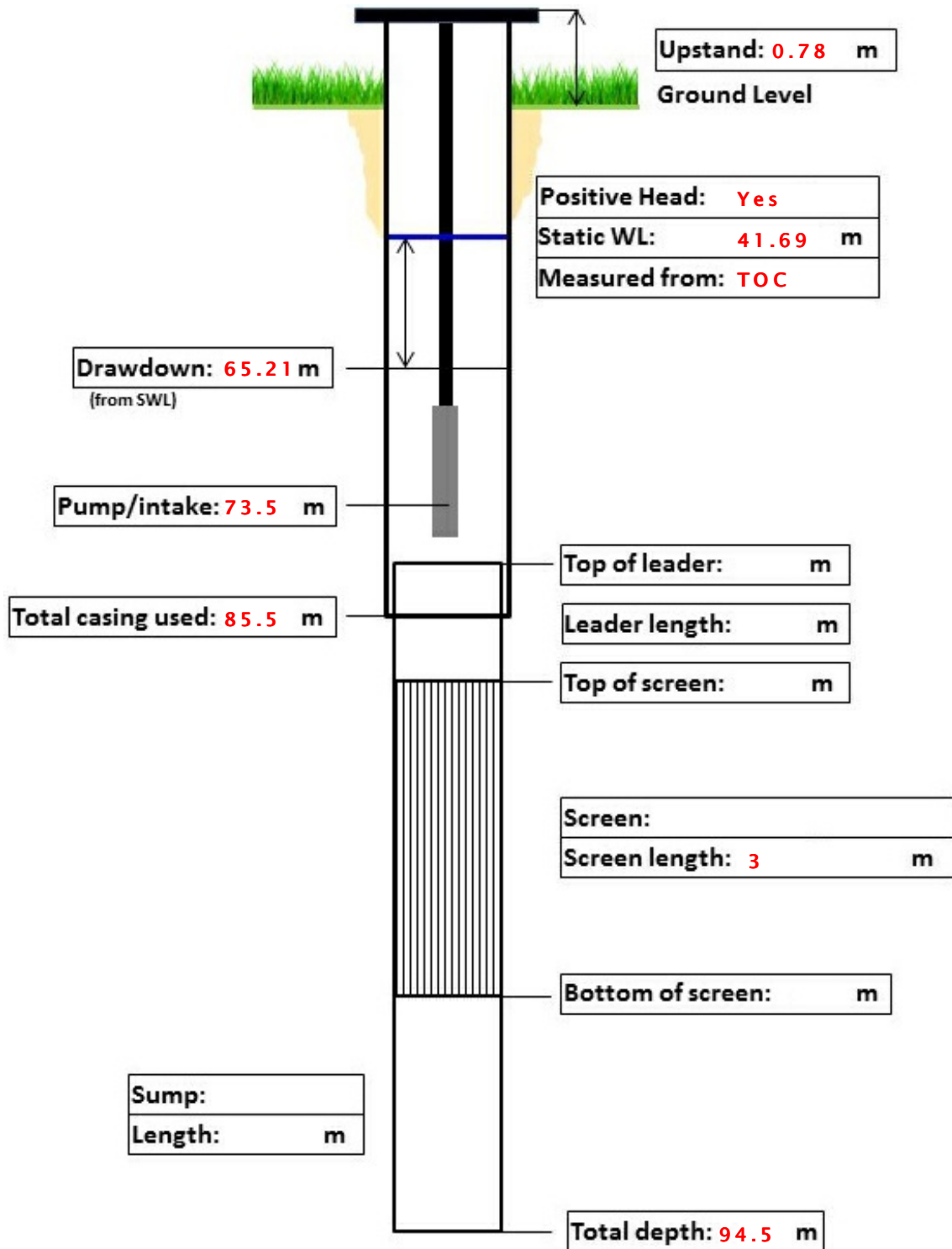


OFFICE USE ONLY		
Date received:	Accession number:	Signed:
Bore number: 2555 hole no 2 rock hole 8" to 6"	Entered IRIS date:	Invoice date:

GENERAL DETAILS		
Client/Consent holder's name: PHIL MURRY A.Q.MERAMA		Consent number: RM.23.660
Location/Address: 1130 EARNSCUGH ROAD		
Grid reference - Easting: 1309420m E	Northing: 4984416m N	Mobile phone:
Sketch plan attached: Yes	Photos attached: Yes	Home phone:
DRILLING DETAILS		
Drilling company: SouthDrill Ltd		Driller: Rowland Harrex
Machine/Rig: Western Star Drilling Rig [QCL493]		Fleet no. 2030
Drill method(s): Air Rotary		
BORE CONSTRUCTION DETAILS		
Start date: 23/11/2023	Finish date: 28/11/2023	
Bore diameter: 200mm	Casing material: Steel	
Screen material: STEEL		
Screen diameter (inside): 150mm	Screen diameter (outside): 154mm	
Screen slots: 3mm	Overdrilled: Yes	
PUMPING/WATER DETAILS		
Dry bore: No	If dry, was casing retrieved?	Bore filled in:
Development period: 8.5 hours	Development method: Airlifted	
Yield/test pumping: Pumped	Test pump period: 4 hours	
Test pump rate: 1.6 litres/second	Method of measuring rate: Volumetric test	
Comments: AT 1.6 SLOWLY DROPPING CUT BACK TO 1.2 RISING SLOWLY BACK TO 60.14		
Pumped water level: 65.21 metres		
WATER QUALITY ETC		
Bacterial water test: Yes	Chemical water test: Yes	
Casing top sealed: Yes	Impervious seal at ground: Yes	
Comments: 8" CASING 0.0-6M OPEN HOLE TO 94M ONLY CHARGE TO 90M RUN 6" CASING TO 85.5M SLOT CASING FROM 78.5M TO 81.5M		
BORE LOG (METRES BELOW REFERENCE POINT)		
0.0m	LOSS GRAVELY SCHIST	
1.8m	BROWN OXIDIZE SCHIST	
42m	BLUE SCHIST ODD SOFT ZONES BLOWING ABOUT 3LTS/MIN	
55m	BLUE SCHIST WITH SOFT ZONES BLOWING 10LTS/MIN	
66m	SCHIST HARD LARGE SOFT ZONES BLOWING ABOUT 40LTS/MIN	
86m	FAULT ZONE VERY FRACTURED SCHIST BLOWING ABOUT 2LTS/SEC	
94.5m		
Do you intend to drill more bores under this Land Use Consent number? No		
If yes, number of bores drilled:		Number of bore logs provided:

Bore Construction Diagram

Bore number:
2555 hole no 2 rock hole 8" to 6"



Certificate of Analysis

Page 1 of 5

Client:	SouthDrill Limited	Lab No:	3417195	DWAPv1
Contact:	SouthDrill Limited C/- SouthRoads Limited PO Box 968 Invercargill 9840	Date Received:	29-Nov-2023	
		Date Reported:	06-Dec-2023	
		Quote No:	102422	
		Order No:	2555-015	
		Client Reference:	Bore water	
		Submitted By:	SouthDrill Limited	

Sample Type: Potable Water

Sample Name:		Phil Murray Hole No 2 28-Nov-2023 4:00 pm	Aesthetic Values	Maximum Acceptable Values (MAV)
Lab Number:		3417195.1		
Individual Tests				
Total Cadmium	g/m ³	0.000059	-	0.004
Total Chromium	g/m ³	< 0.00053	-	0.05
Fluoride	g/m ³	0.29	-	1.5
Routine Water + E.coli profile Kit				
Escherichia coli	MPN / 100mL	< 1	-	< 1
Routine Water Profile				
Turbidity	NTU	7.1	≤ 5	-
pH	pH Units	7.8	7.0 - 8.5	-
Total Alkalinity	g/m ³ as CaCO ₃	250	-	-
Free Carbon Dioxide	g/m ³ at 25°C	8.2	-	-
Total Hardness	g/m ³ as CaCO ₃	320	≤ 200	-
Electrical Conductivity (EC)	mS/m	103.6	-	-
Electrical Conductivity (EC)	µS/cm	1,036	-	-
Approx Total Dissolved Salts	g/m ³	690	≤ 1000	-
Total Arsenic	g/m ³	0.0189	-	0.01
Total Boron	g/m ³	0.030	-	2.4
Total Calcium	g/m ³	69	-	-
Total Copper	g/m ³	< 0.00053	≤ 1	2
Total Iron	g/m ³	1.19	≤ 0.3	-
Total Lead	g/m ³	0.00023	-	0.01
Total Magnesium	g/m ³	37	-	-
Total Manganese	g/m ³	0.80	≤ 0.04 (Staining) ≤ 0.10 (Taste)	0.4
Total Potassium	g/m ³	2.5	-	-
Total Sodium	g/m ³	90	≤ 200	-
Total Zinc	g/m ³	0.051	≤ 1.5	-
Chloride	g/m ³	120	≤ 250	-
Nitrate-N	g/m ³	0.09	-	11.3
Sulphate	g/m ³	92	≤ 250	-



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

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

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

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

pH/Alkalinity and Corrosiveness Assessment

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

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

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

The pH of this water is within the NZ Drinking Water Guidelines, the ideal range being 7.0 to 8.0.

With the pH and alkalinity levels found, it is unlikely this water will be corrosive towards metal piping and fixtures.

The high alkalinity of this water may cause an increase in the pH in the root zones of plants which are irrigated using this water.

Hardness/Total Dissolved Salts Assessment

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

There will be difficulty in forming a lather with soap, and a 'scum' will form in baths, showers, etc.

The high value for hardness (200 is considered excessive) indicates that this water may promote scale build-up in pipes and cylinders, and that irrigation systems using this water may be prone to scale build-up and blockage of narrow irrigation capillaries and jets.

Nitrate Assessment

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

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

Sodium and Chloride Assessment

Chloride levels above 100 may cause irrigation problems with sensitive plants, especially with overhead sprinkler systems.

Boron Assessment

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

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

Metals Assessment

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

Iron was found in this water at a high level.

Manganese was found in this water at a high level.

Treatment to remove iron and/or manganese will be required.

Bacteriological Tests

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

Escherichia coli was not detected in this sample.

Final Assessment

The parameters Turbidity, Total Hardness, Total Arsenic, Total Iron and Total Manganese did NOT meet the guidelines laid down in the 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022' and the 'Aesthetic Values for Drinking Water Notice 2022' issued by the Water Services Regulator ("Taumata Arowai") for water which is suitable for drinking purposes.

Summary of Methods

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

Sample Type: Potable Water			
Test	Method Description	Default Detection Limit	Sample No
Routine Water Profile		-	1
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO ₂ D : Online Edition.	1.0 g/m ³ at 25°C	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B : Online Edition.	1.0 g/m ³ as CaCO ₃	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2510 B : Online Edition.	0.1 mS/m	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B : Online Edition.	1 µS/cm	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m ³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0053 g/m ³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.000053 g/m ³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00011 g/m ³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.00053 g/m ³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.053 g/m ³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.021 g/m ³	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition / US EPA 200.8.	0.0011 g/m ³	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F ⁻ C : Online Edition.	0.05 g/m ³	1
Nitrate-N	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m ³	1

Sample Type: Potable Water			
Test	Method Description	Default Detection Limit	Sample No
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.5 g/m ³	1
Escherichia coli	MPN count using Colilert 18 (Incubated at 35°C for 18 hours) and 97 wells. Analysed at Hill Laboratories - Microbiology; Unit 1, 17 Print Place, Middleton, Christchurch. APHA 9223 B : Online Edition.	1 MPN / 100mL	1

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

Testing was completed between 29-Nov-2023 and 05-Dec-2023. For completion dates of individual analyses please contact the laboratory.

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

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



Kim Harrison MSc
Client Services Manager - Environmental



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy




R.W. Muir
Registrar-General
of Land

Identifier **1160015**
Land Registration District **Otago**
Date Issued 08 November 2024

Prior References

OT19A/1163 OT19A/1164

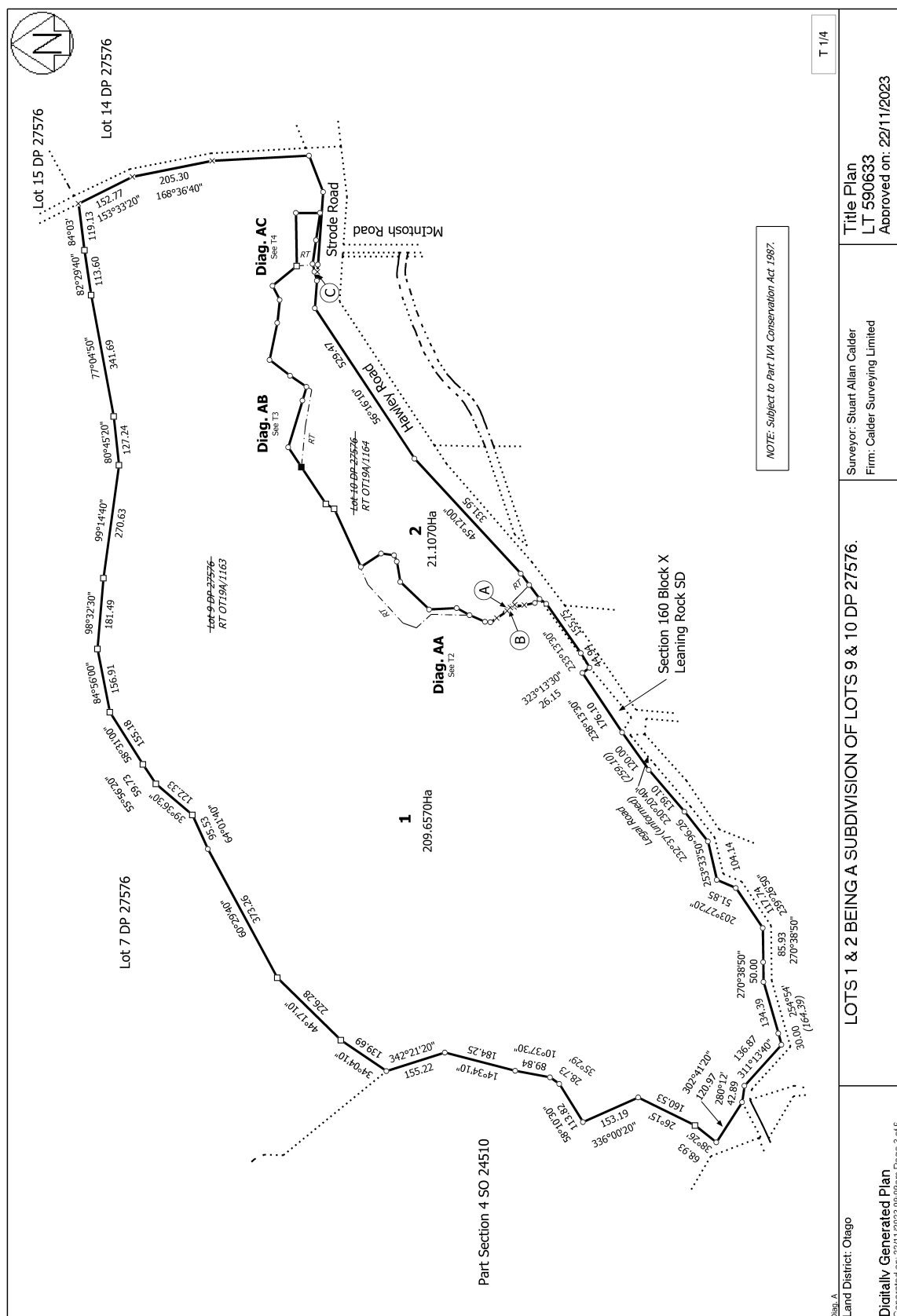
Estate Fee Simple
Area 209.6570 hectares more or less
Legal Description Lot 1 Deposited Plan 590633

Registered Owners

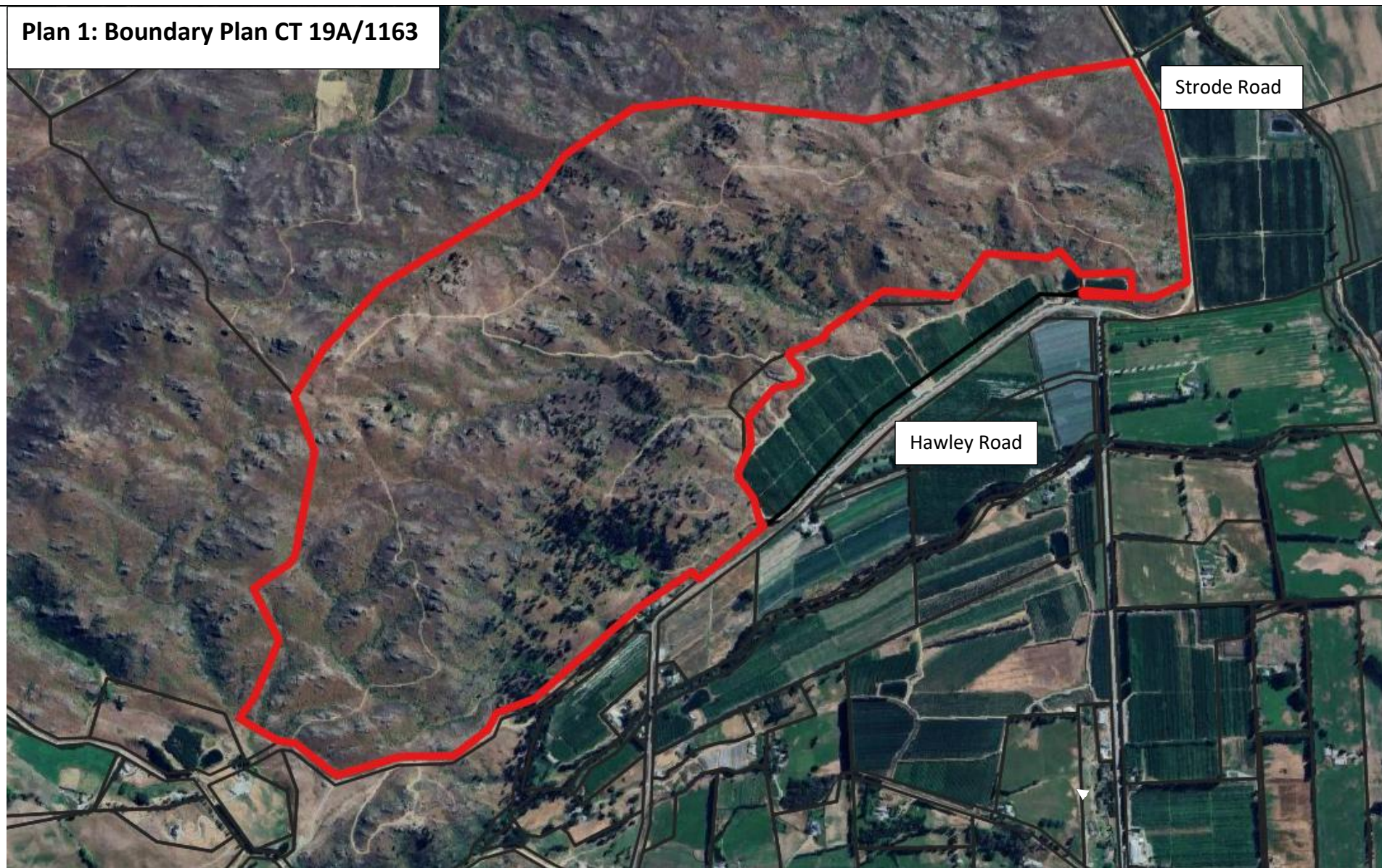
Ao Marama Limited as to a 1/10 share
Garry Harold Nixon and Arlene Elizabeth Nixon as to a 3/10 share
Philip Hunter Murray and Lynne Christine Stewart as to a 3/10 share
Michael Ian Olsen and Helen Moyra Brown as to a 3/10 share

Interests

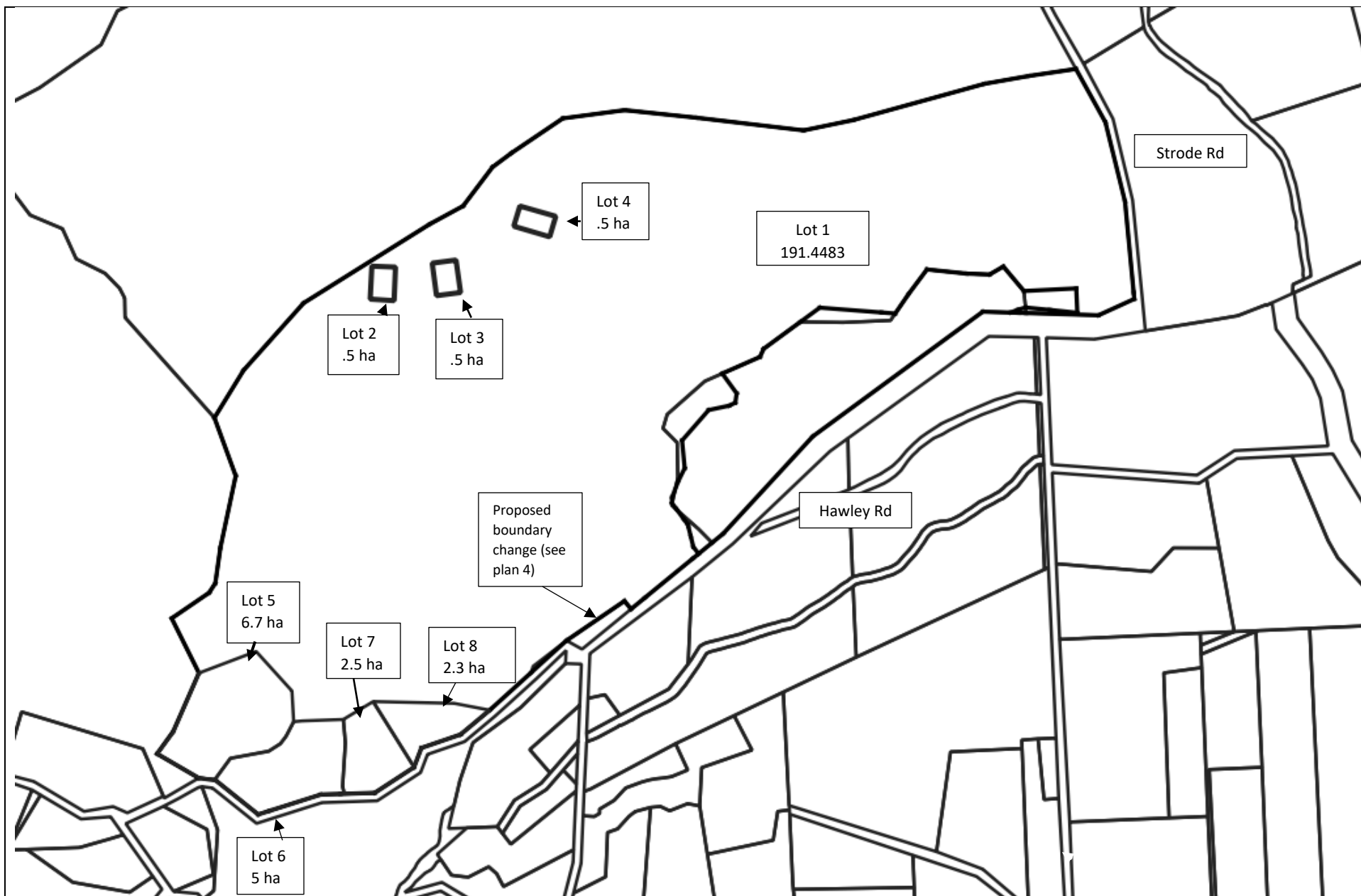
Subject to Section 11 Crown Minerals Act 1991
Subject to Part IV A Conservation Act 1987
Subject to a right (in gross) to convey and store water over part herein in favour of Earnsclough Irrigation Company Limited created by Transfer 885859 - 30.6.1995 at 2:29 pm
942086.14 Land Improvement Agreement pursuant to Section 30A Soil Conservation and Rivers Control Act 1941 - 13.1.1998 at 12.40 pm and varied 948537.3 - 29.5.1998 at 9.29 am
973958.6 Variation of Land Improvement Agreement 942086.14 - 26.8.1999 at 3.45 pm
Land Covenant in Covenant Instrument 12637615.2 - 20.12.2022 at 4:00 pm
Fencing Covenant in Transfer 12637615.3 - 20.12.2022 at 4:00 pm (affects part formerly Lot 9 DP 27576)
Appurtenant hereto is a right of way created by Easement Instrument 13102358.6 - 8.11.2024 at 11:39 am
The easements created by Easement Instrument 13102358.6 are subject to Section 243 (a) Resource Management Act 1991
Subject to a right of way over part marked B and a right to convey water over part marked C all on DP 590633 created by Easement Instrument 13102358.7 - 8.11.2024 at 11:39 am
The easements created by Easement Instrument 13102358.7 are subject to Section 243 (a) Resource Management Act 1991



Plan 1: Boundary Plan CT 19A/1163

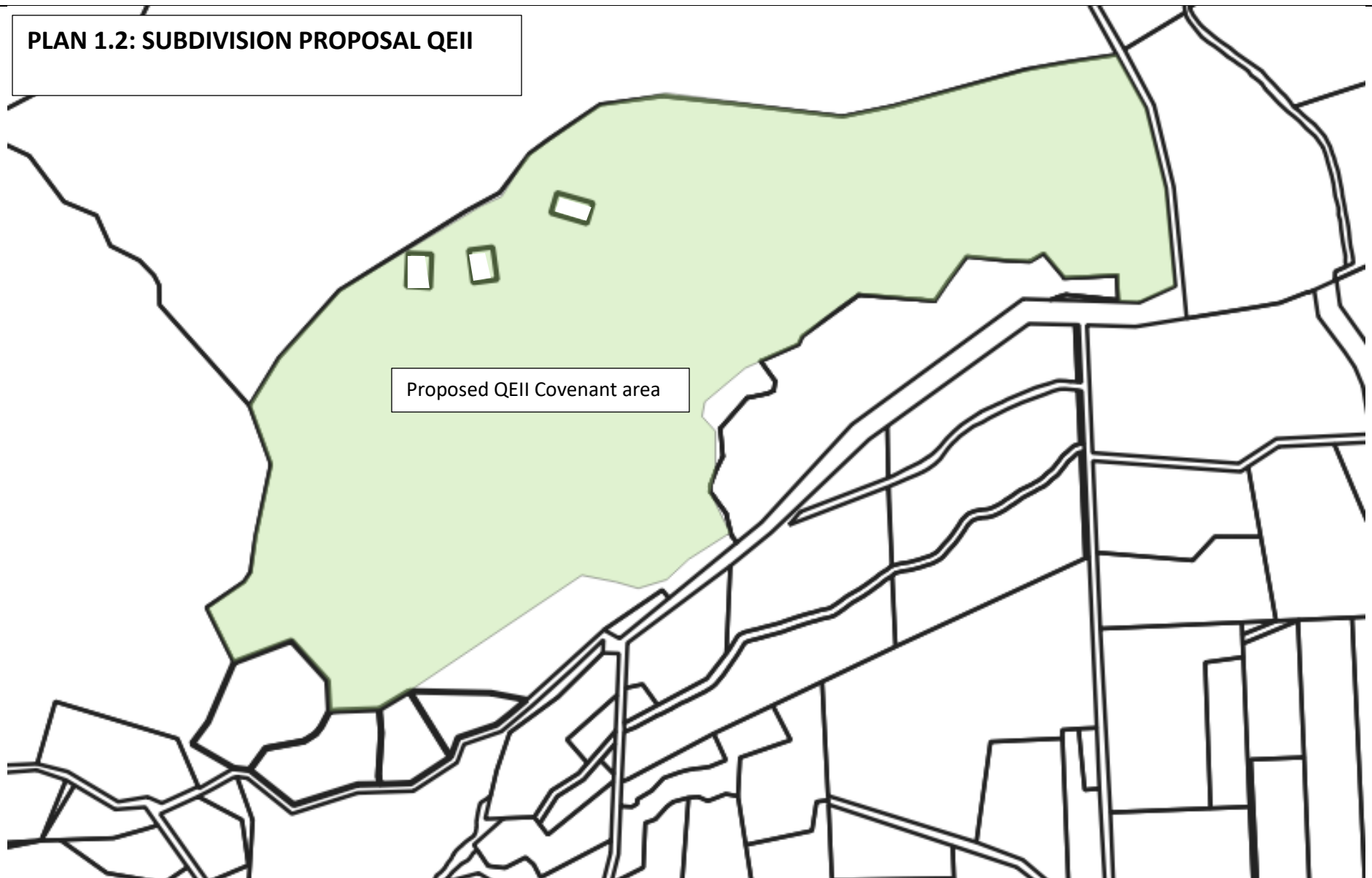


**LOT 1 DP 590633, AREA 209.657HA.
HAWLEY ROAD, EARNSCLEUGH**



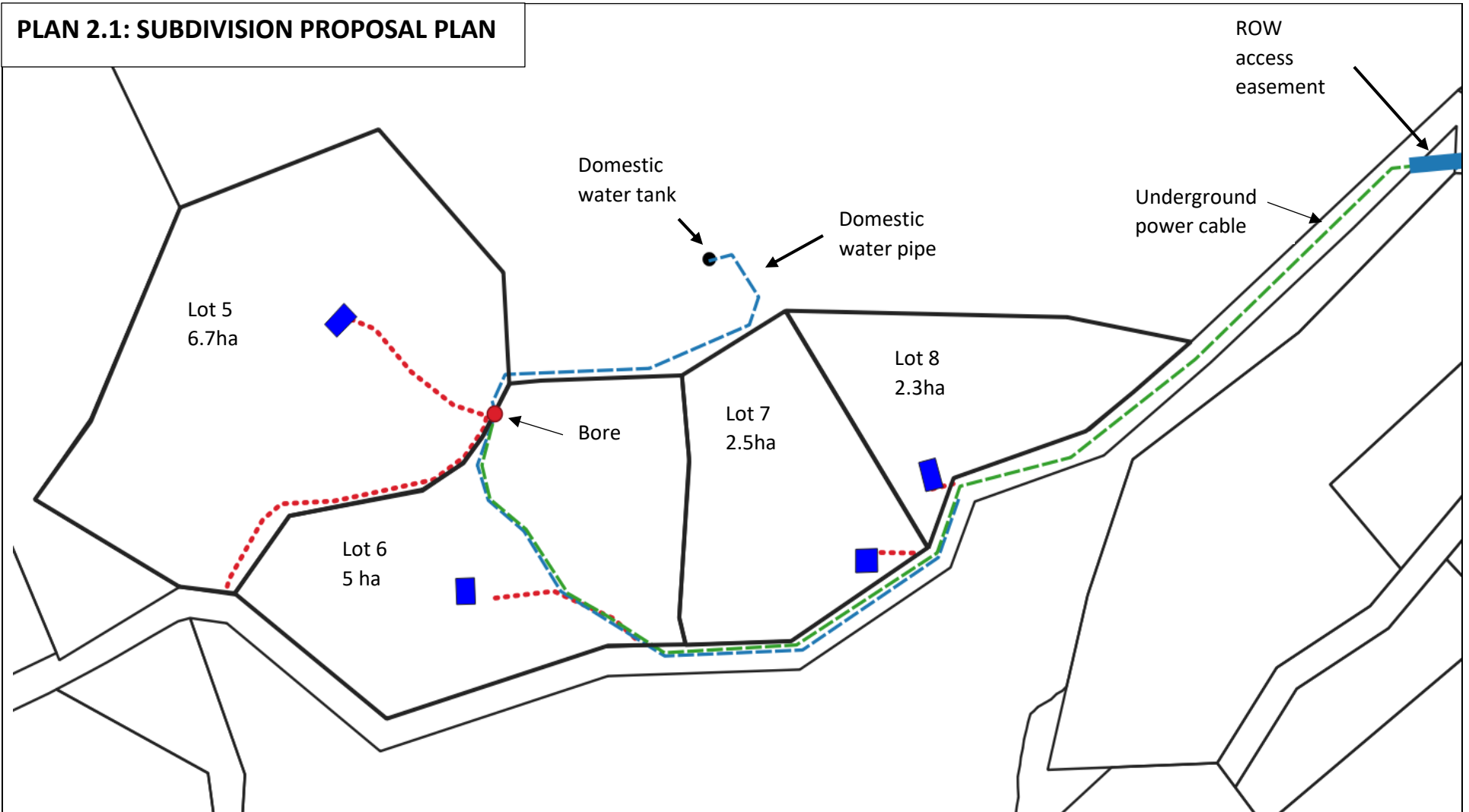
PLAN 1.1: SUBDIVISION PROPOSAL PLAN
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH

PLAN 1.2: SUBDIVISION PROPOSAL QEII



**PROPOSED QEII COVENANT AREA, 182 ha approx.
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

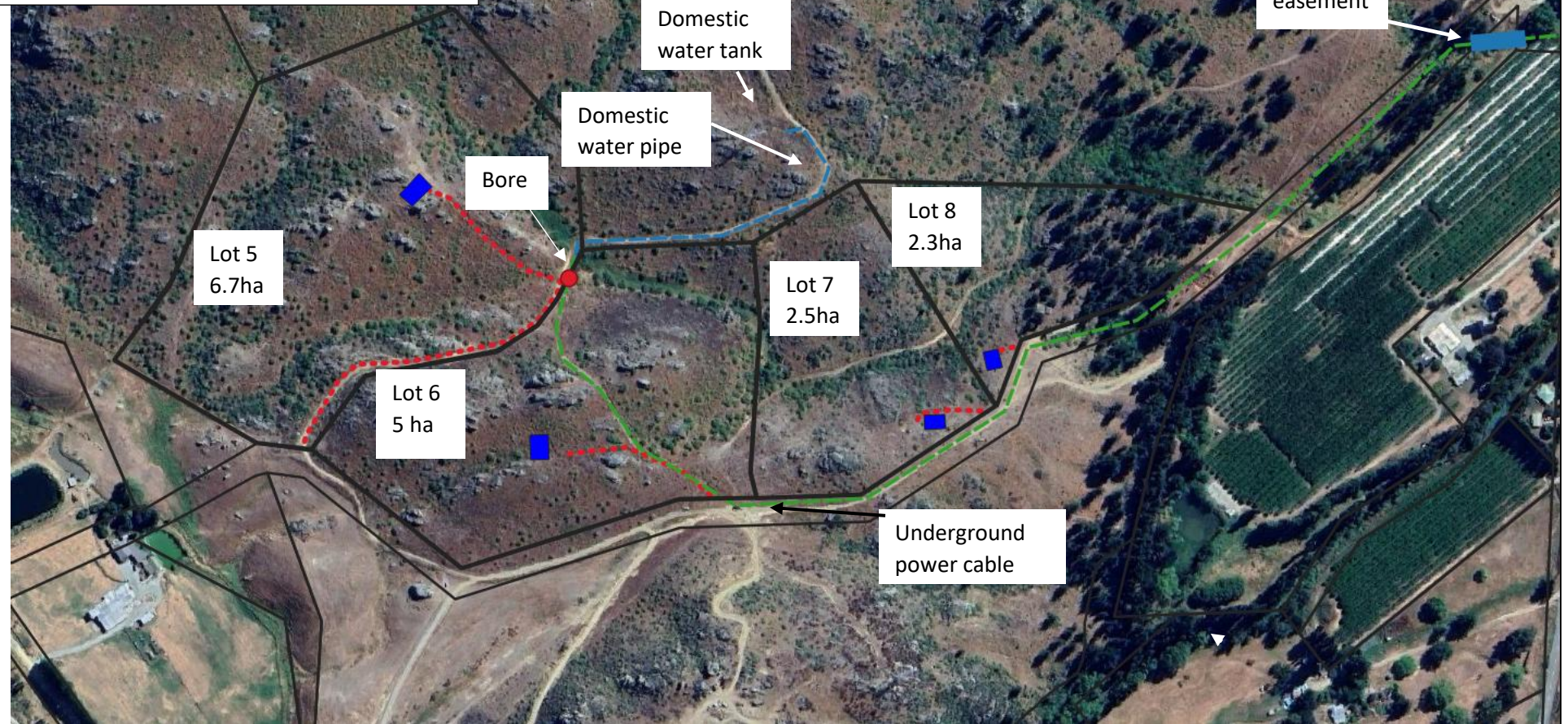
PLAN 2.1: SUBDIVISION PROPOSAL PLAN



**LOTS 5 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

Scale 1:2500

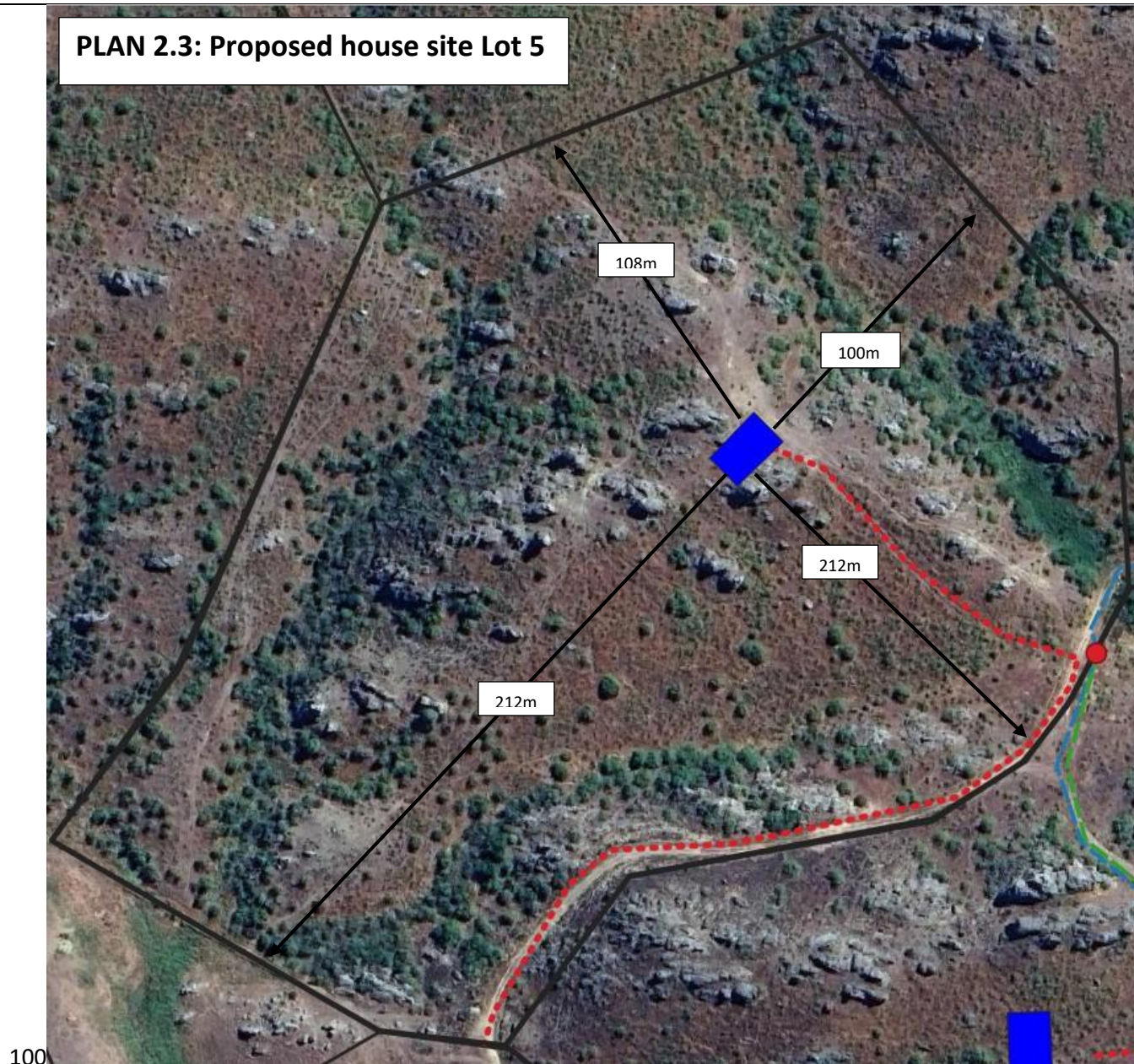
PLAN 2.2: SUBDIVISION PROPOSAL
House sites and driveway access



LOTS 5 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH

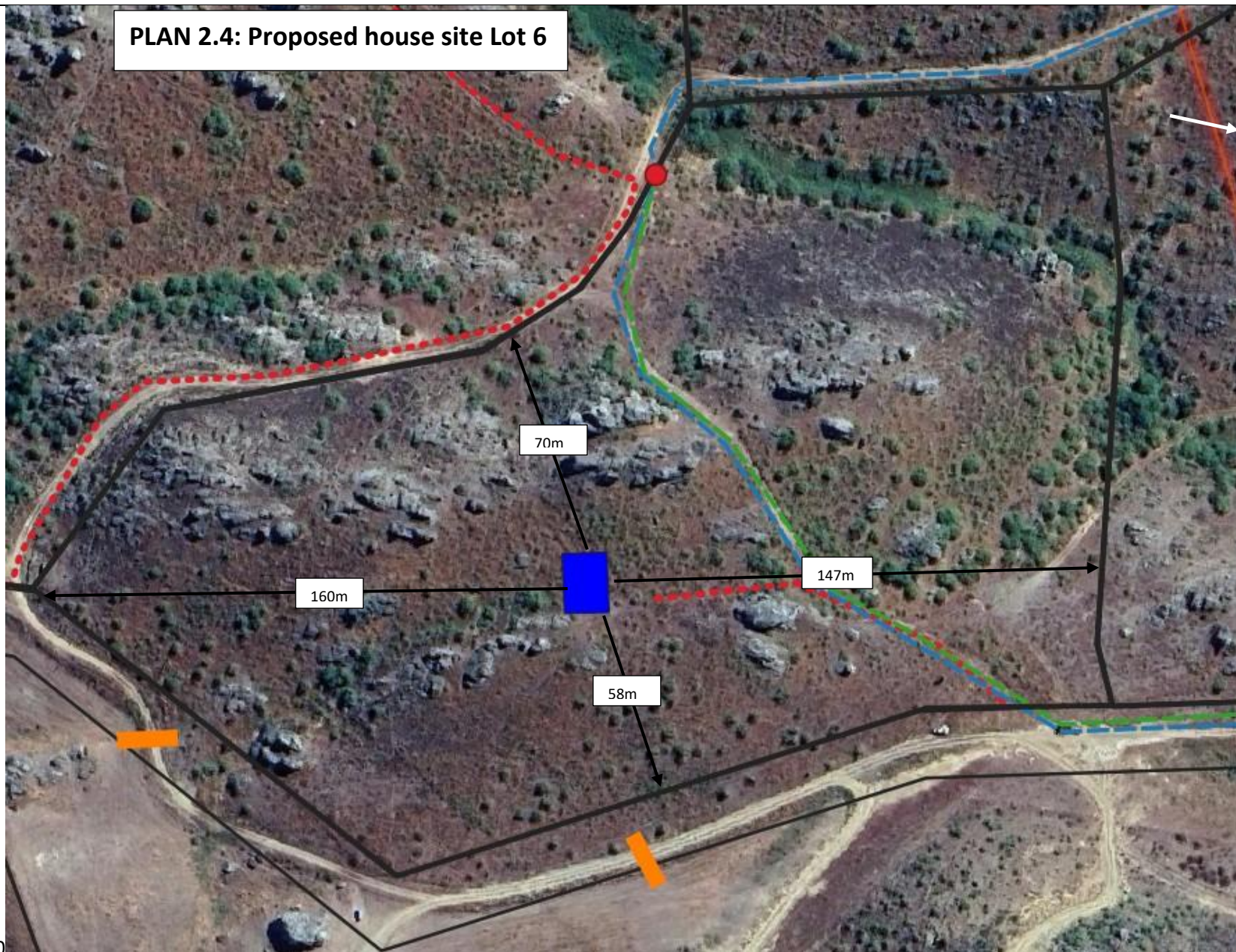
Scale 1:2500

PLAN 2.3: Proposed house site Lot 5



**LOT 5 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

PLAN 2.4: Proposed house site Lot 6



**LOT 5 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

PLAN 2.5: Proposed house site Lot 7



**LOT 7 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

PLAN 2.6: Proposed house site Lot 8



**LOT 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

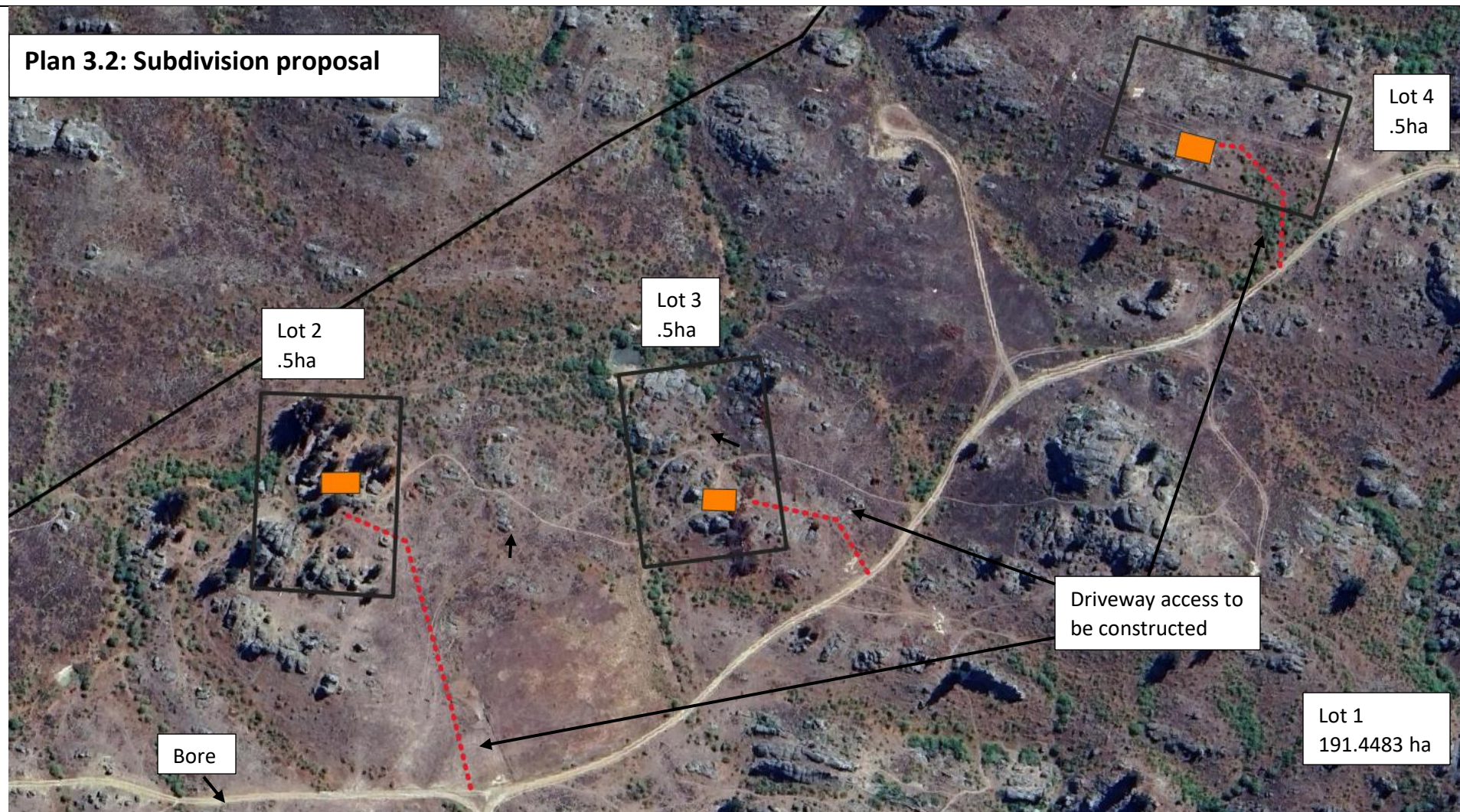
Plan 3.1: Proposed Subdivision



Owners house sites and curtilage areas
LOTS 1 TO 4 BEING A PROPOSED SUBDIVISION OF LOTS 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH

Scale 1:10000

Plan 3.2: Subdivision proposal



House sites and driveway access
LOTS 1 TO 4 BEING A PROPOSED SUBDIVISION OF LOTS 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH

Scale 1:2500

Plan 3.1: Proposed house site, Lot 2



**Owners house sites and curtilage areas
LOT 2 BEING A PROPOSED SUBDIVISION OF LOTS 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

Plan 3.2: Proposed house site, Lot 3



**Owners house sites and curtilage areas
LOT 3 BEING A PROPOSED SUBDIVISION OF LOTS 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

Plan 3.3: Proposed house site, Lot 4



**Owners house sites and curtilage areas
LOT 4 BEING A PROPOSED SUBDIVISION OF LOTS 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH**

Lot 1
DP 590633
RT 1160015

Sec. 160
Blk X Leaning
Rock SD
RT OT229/246

Hawley Road

Legal Road

2087 m²

possible new boundary

old fence

RT

RT

possible new boundary

existing boundary

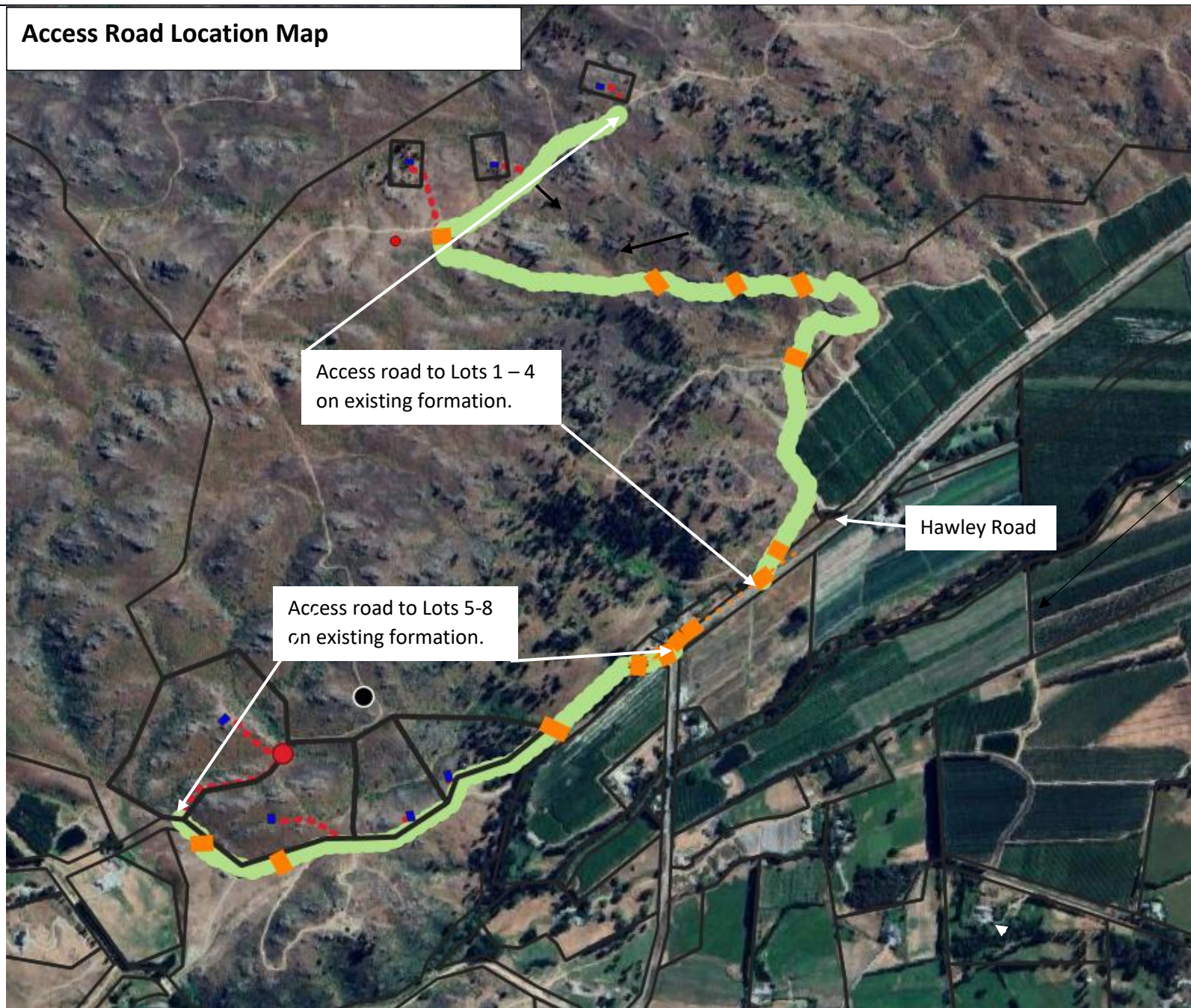
old peg (unreliable)

NOTES:
1. Aerial flown December 2024.
2. Aerial accuracy +/- 0.05m.



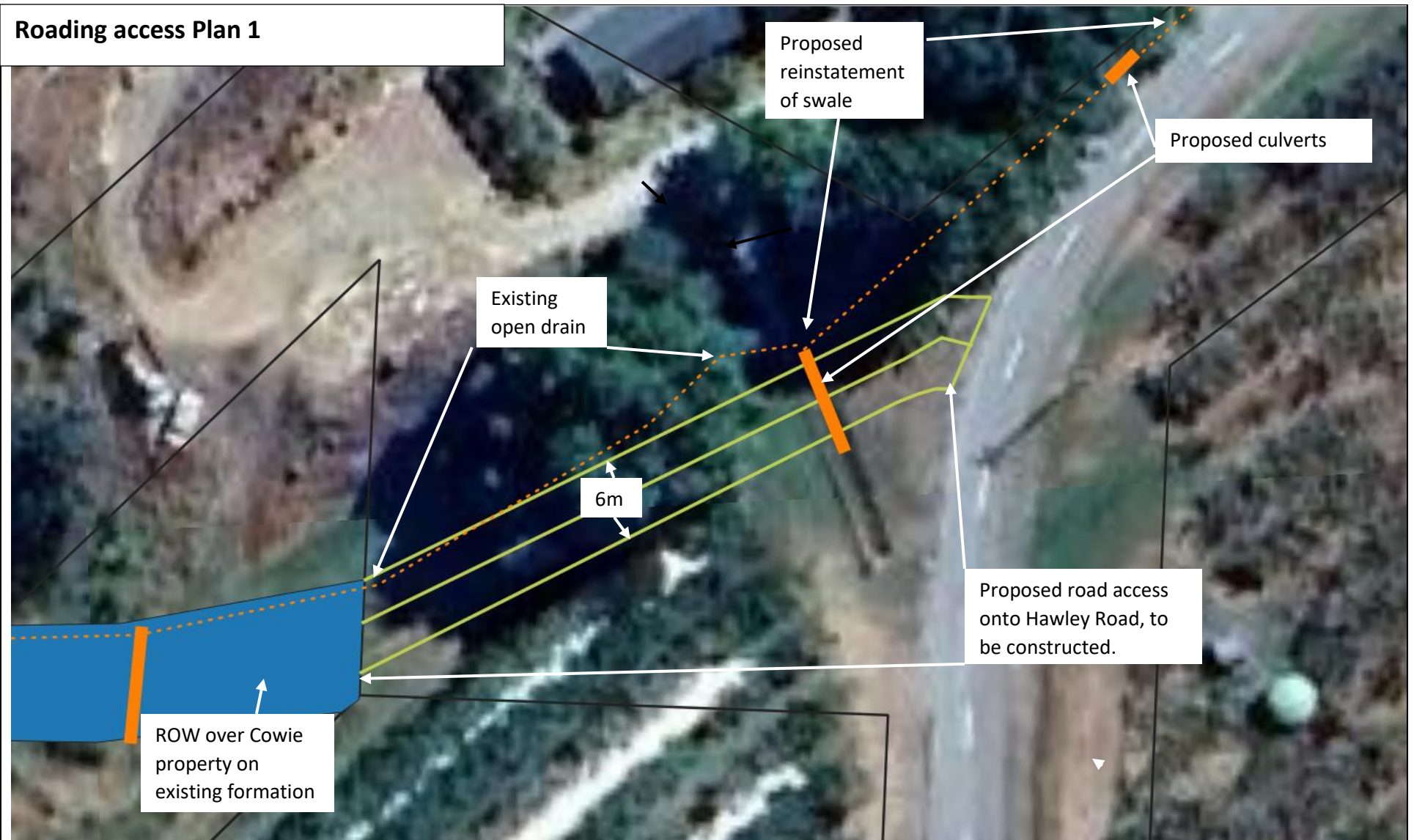
Talk and share your screen
with **Copilot Vision**

Access Road Location Map



Access Road location map for proposed subdivision of LOT 1 DP 590633, HAWLEY ROAD, EARNSCLEUGH

Roading access Plan 1

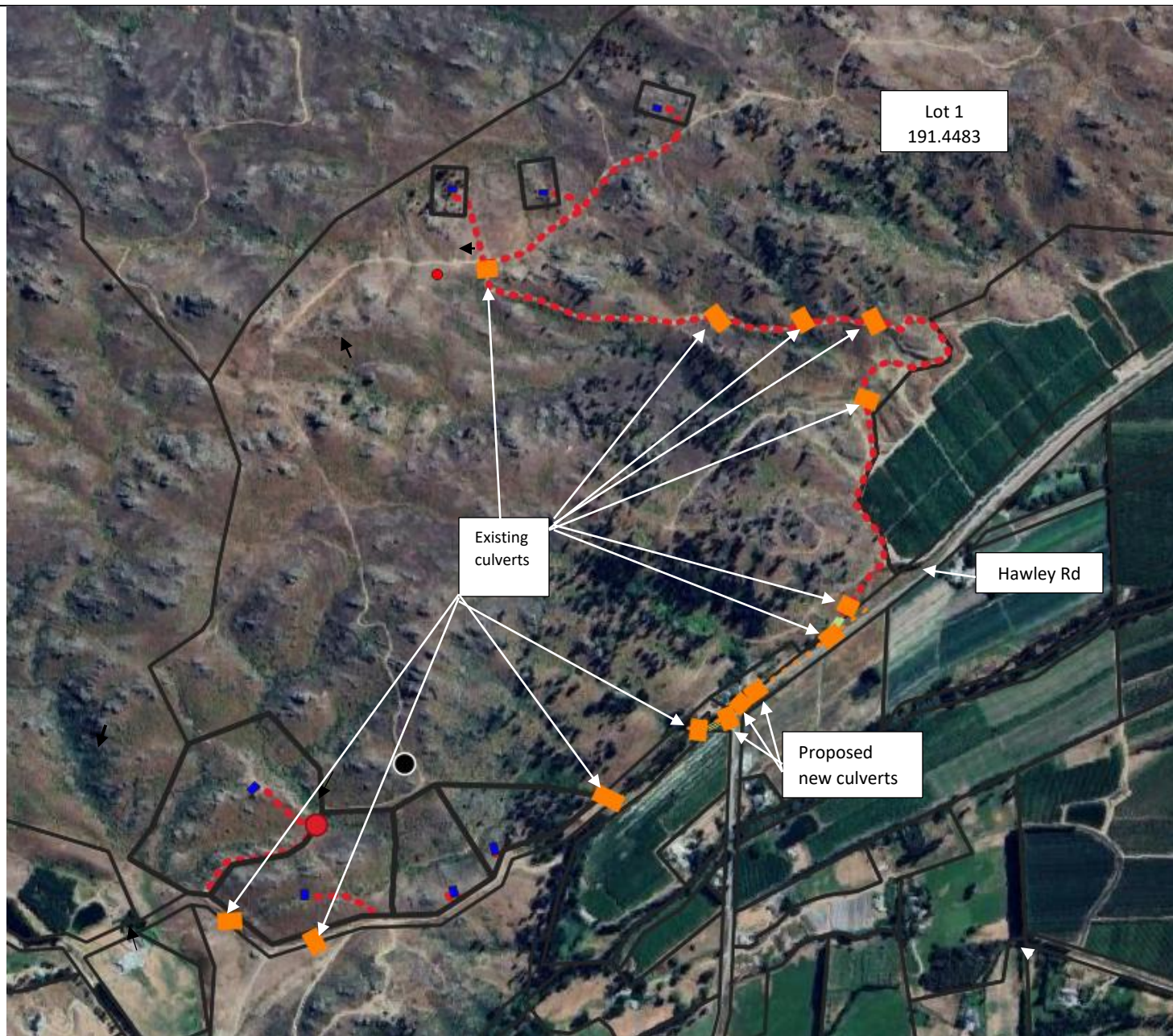


**Roading access plan for proposed subdivision of LOT 1 DP 590633, access to Lots 5-8.
HAWLEY ROAD, EARNSCLEUGH**

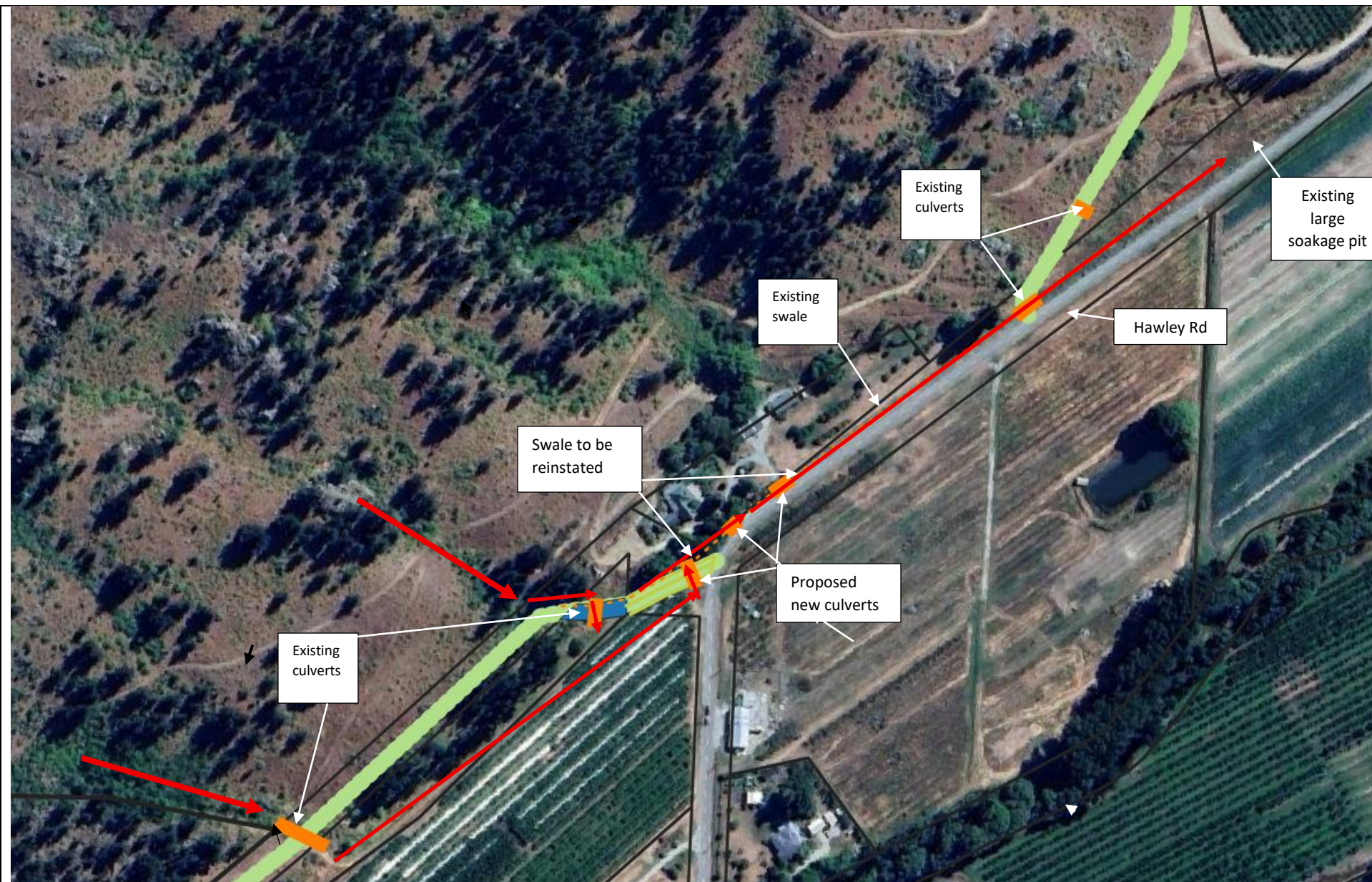
Roading access Plan 2



Roading access plan for proposed subdivision of LOT 1 DP 590633, access to Lots 1-4 and 5-8.



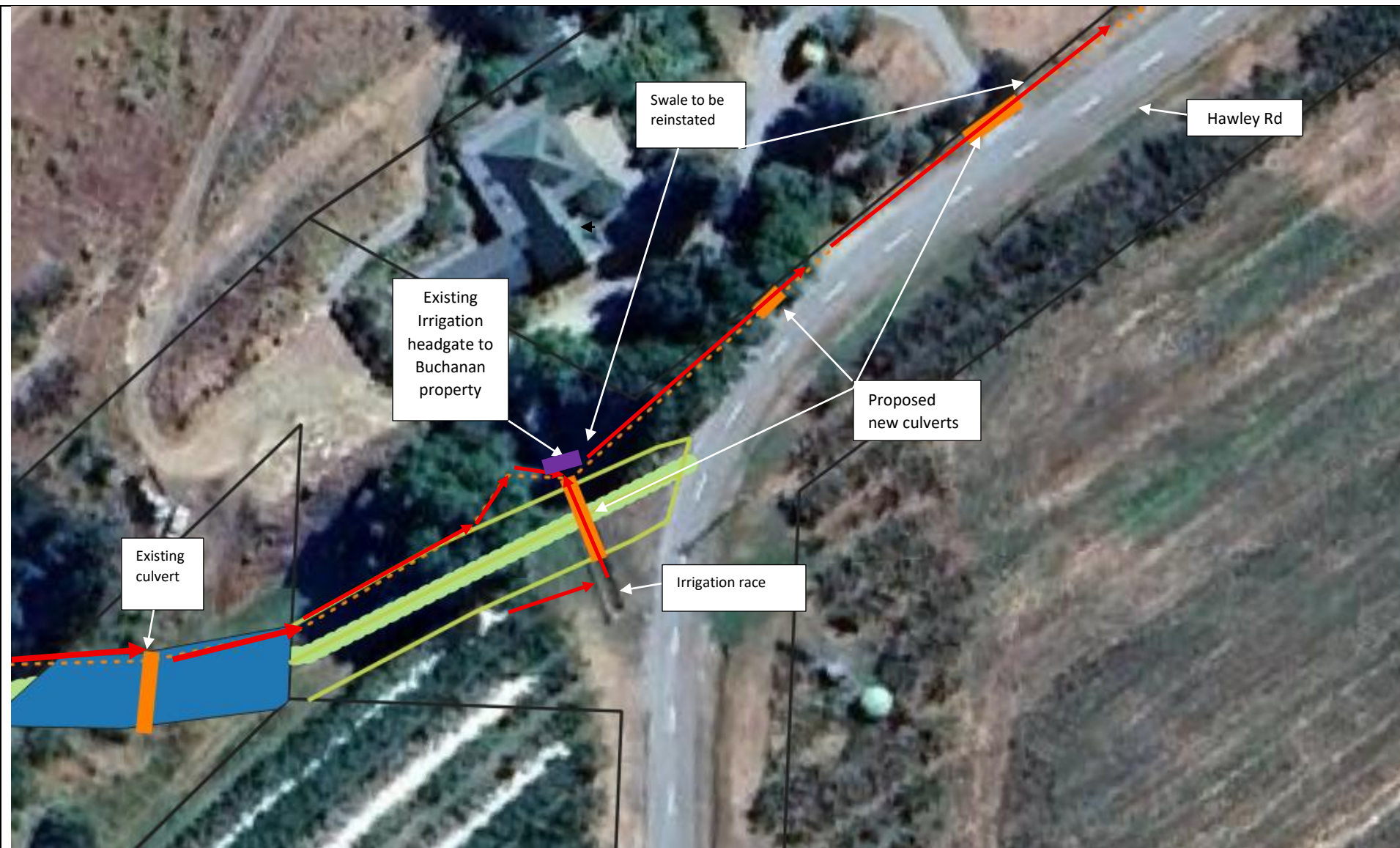
STORMWATER DRAINAGE PLAN 1
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH



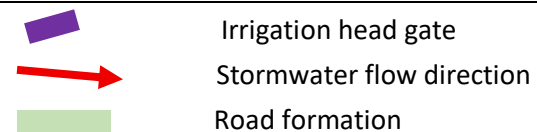
STORMWATER DRAINAGE PLAN 2
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH



Stormwater flow direction
 Access Road formation



STORMWATER DRAINAGE PLAN 3
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH



Proposed Subdivision, Hawley Road, Earnscliffe

Landscape Effects Assessment Report

10 March 2025



Prepared by

MIKE MOORE

BSc, Dip LA, MRRP, ANZILA

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Introduction

Ao Marama Ltd have commissioned a landscape effects assessment of the proposed subdivision of its 209.657 ha property at Hawley Road, Earnsclough. The property location is shown in **Figure 1**. Consent is sought to subdivide the property into 8 lots.

Lots 2 – 4 are small 0.5ha lots with building platforms and will each have one third undivided share in Lot 1, the 191.657 ha balance lot. Lots 5 – 8 have areas of 6.7, 5.0, 2.5, and 2.3 ha respectively and are proposed as rural lifestyle blocks. An approximately 182 ha QEII covenant to protect the natural values of the land is proposed for Lot 1.

The property is within the Rural Resource Area in the Central Otago District Plan (CODP) and is covered by a Significant Amenity Landscape (SAL) overlay. In terms of Rule 4.7.5 (iii) the application for subdivision is a non-complying activity.

This report addresses the landscape effects of the proposed subdivision and land use and is structured as follows:

- Methodology.
- Site and area description.
- Landscape values.
- The proposed development
- Recommended landscape mitigation,
- Landscape effects assessment,
- Assessment against the relevant Central Otago District Plan provisions,
- Conclusion.

Methodology

This assessment follows the concepts and principles outlined in Te Tangi a te Manu, the New Zealand Institute of Landscape Architects (NZILA) Landscape Assessment Guidelines¹, and has been informed by a review of the relevant statutory provisions and site visits on 13 February and 6 March 2025.

Site and area description

The site

As shown in Figure 1, the site is located on low hill country to the western side of the Earnsclough flats and is bounded by Strode Road to the east and Hawley Road to the south. It comprises moderate – steep hill slopes of schist geology with numerous rocky outcrops, and ranges in altitude from approximately 160 – 350m. The property is located on the top and southeastern side of a low hill block which is bounded by faults to the west and southeast, and which has a broad SW – NE aligned ridge. Various gullies drain the majority of the property toward the southeast and Omeo Creek although part of the property in the north has a northerly aspect.

The land was originally part of Earnsclough Station and was used as a pre-shearing holding block for late winter grazing. Prior to purchase by the current owners much of the block was covered in wilding pine trees. The current owners have recently undertaken a programme of wilding pine control so that all pines have now been felled or treated with herbicide. Other exotic weed species such as broom and cotoneaster are also being controlled. A major feature of the land is the rocky terrain and outcrops. The vegetation cover is now mainly low stature and comprised of exotic grasses, briar rose and thyme, with some indigenous matagouri and coprosma also present in places.

There is a power line (with pylons) running across the western end of the property and two small NIWA climate stations, but otherwise the only structures / earthworks relate to farm tracks.

¹ Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

The landscape context

The site forms part of the dryland hill country that defines the Clutha Valley / Earnsclough flats to the west. The valley / flats are a relatively intensely settled rural area utilized for farming and orcharding and the urban areas of Alexandra and Clyde are approximately 4km and 3.5km distant from the property to the southeast and northeast respectively.

The dryland hill country (including the site) has low levels of land use intensification and domestication, and has an open, relatively natural rural character. There are several rural lifestyle properties near the property to its west and south and Fraser Dam Road, a minor rural road, is located to the west and south of the site.

Figures 2 - 8 illustrate the character of the site and area.

Landscape values

Landscape and landscape values are defined in the NZILA Landscape Assessment Guidelines² as follows:

'Landscape embodies the relationship between people and place. It is the character of an area, how the area is experienced and perceived, and the meanings associated with it'.

Landscape values are – *'The reasons a landscape is valued. Values are embodied in certain attributes'.*

² ² Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

Values recognized in the CODP

The values of the Central Otago landscape, as discussed in the CODP and supporting Central Otago District Rural Review Landscape Assessment (COLA)³ are based on its distinctive flat topped, fault block mountain ranges, its semi-arid character expressed through extensive tussock grasslands, the powerful Clutha / Mata-au River and associated hydro lakes, and highlights of orchards, vineyards and historic gold-mining artefacts. The area is notable for its expansive scale and legible natural landforms. Various objectives and policies⁴ refer to 'rural amenity values' citing open space, landscape, natural character and built environment attributes, and in particular, the 'open natural character of the hills and ranges'.

In the area of the site, the CODP identifies a Significant Amenity Landscape (SAL) noted in Section 2.3.1 as 'Cairnmuir Range' with the higher land above and behind (to the southwest) identified as Outstanding Natural Landscape (ONL). The plan is silent on the particular landscape values underpinning the identification of SAL's, however the COLA addresses the 'Cairnmuir, Obelisk and Old Man Range' landscape unit (Unit 13) and describes 'the main ranges' as forming 'the large structural elements in the landscape' and 'the backdrop to most views'. It states that 'most of these landscapes appear essentially "natural" rather than "cultural" meaning that they largely retain their natural character rather than having been significantly changed by rural activities'. In my assessment, the delineation of the range slopes in this area into ONL (higher slopes and summits) and SAL (lower) slopes) categories can be interpreted as reflecting the higher degree of naturalness and visual sensitivity of the higher slopes.

Values assessment

There are no natural values or cultural / heritage associations of particularly recognized significance relating to this property and in my assessment the key landscape values of relevance in this area are related to the natural character of the foothills and the role of this in providing a natural landscape context for the more domesticated and intensively developed lowlands. The important factors underpinning this natural character include

³ LA4, 2008, Central Otago District Rural Review Landscape Assessment Report and Recommendations

⁴ CODP Objective 4.3.3 & Policies 4.4.2 and 4.4.10

the legibility of the natural landform, the significant influence of the rocky outcrops, the naturalness of the vegetation patterns (reflecting topography), the presence of indigenous vegetation in places, and the minimal impact of earthworks, structures and other human derived elements.

The proposed development

As illustrated in **Figures 9, 9A and 9B** it is proposed to subdivide the property into 8 lots including 7 lots with proposed building platforms as follows:

- Lot 1: 191.657 ha with no building platform is proposed. Lots 2 – 4 will have one third undivided share in this lot. An area of approximately 182 ha is to be protected via a QEII covenant to enhance and protect its natural values.
- Lots 2 – 4: 0.5 ha each, with 150m² building platforms. Access to these lots is to be via an existing farm track from Hawley Road with extensions off this track to the building platform sites.
- Lot 5: 6.7 ha, with a 250m² building platform. Access is to be via an upgraded existing farm track which is partially on legal road alignment from Hawley Road with extension off this track to the building platform.
- Lot 6: 5 ha, with a 250m² building platform. Access is to be via an existing farm track on legal road alignment from Hawley Road with extension off this track to the building platform.
- Lot 7: 2.5 ha, with a 250m² building platform. Access is to be via an existing farm track on legal road alignment from Hawley Road with extension off this track to the building platform.
- Lot 8: 2.3 ha, with a 250m² building platform. Access is to be via an existing farm track on legal road alignment from Hawley Road with extension off this track to the building platform.

Domestic water to lots 2 – 4 is to be provided by piped supply from an existing well within Lot 1. Water is to be pumped to a header tank and reticulated to each lot by an underground pipe. Domestic water for lots 5 – 8 is to be provided by piped supply from

an existing bore. This will be pumped to a header tank within Lot 1 and reticulated underground to each lot.

Lots 2 – 4 will not have mains electricity and future dwellings will use off-grid solar systems. Electricity to Lots 5 – 8 is to be provided from the main grid via underground cable from Hawley Road along the line of the existing access road.

Sewerage for each building platform (lots 2 – 8) will be catered for by septic tank treatment and disposal field.

Recommended landscape mitigation

To minimise adverse effects on open rural character and other landscape values, the building platforms have been sited to be as visually recessive as practicable from public viewpoints and the following mitigation conditions are proposed:

1. *All dwellings and accessory buildings are to be contained within the building platforms identified.*
2. *Maximum building heights above existing or modified ground level shall be as follows:*
 - *Lots 2 – 4*
 - *All buildings – 4m*
 - *Lots 5 – 8*
 - *Dwellings – 5m*
 - *Buildings accessory to dwellings – 4m.*
 - *Other buildings including buildings accessory to farm activity – 4m*
3. *Unless buildings are clad in naturally finished, natural materials (e.g. stone or timber), building colours for new buildings are to be selected to ensure that contrast with the dominant hues of the surrounding rural landscape is minimized. Light reflectivity values (LRV) for painted finishes shall be no more than 20%.*

4. *Access driveways are to retain a rural character. Monumental gates, signage and driveway lighting is not permitted. Driveway surfaces shall be metaled with soft edges (i.e., no kerbs).*
5. *Water tanks (including those on Lot 1) are to be coloured, sited, and fully or partially buried and / or screened (by existing rocks or planting) to have minimal visual impact from beyond the property.*
6. *All fencing is to be confined to standard rural post and wire construction or stone walls using locally appropriate rock.*
7. *All services are to be located below ground.*
8. *Earthworks associated with buildings or driveways or other development, shall be minimized and shall be designed and finished to blend as seamlessly and naturally as possible with the natural contours. Subtle, well blended mounding is acceptable but no bunding or retaining walls shall be constructed. Cut and fill batter slopes are to be re-grassed (sown or hydro-seeded) no later than the next growing season following the earthworks.*
9. *Any planting (excluding fruit trees and vegetable gardens) further than 20m from a dwelling shall be comprised of locally appropriate indigenous species only.*
10. *Wilding exotic tree species on Lots 2 – 8 are to be managed to remove / kill those present and to prevent future establishment and spread.*
11. *Any outdoor lighting shall have all exterior lighting fixed and be capped, filtered or pointed downwards and screened to reduce light spill. There shall be no outdoor feature lighting.*

Landscape effects assessment

Landscape effects are defined in the NZILA Landscape Assessment Guidelines⁵ as follows:

⁵ Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

‘An adverse or positive outcome for a landscape value as a consequence of changes to a landscape’s physical attributes’.

As noted in the Guidelines, visual effects are a subset of landscape effects, and a visual effect is described as *‘a consequence for landscape values as experienced in views’*.⁶

I assess the landscape effects of the development against the landscape values discussed above, and those inherent in the relevant statutory provisions. Landscape effects may be positive or adverse in nature and I rate the degree of effect in terms of the 7-point rating scale (from very low – very high) recommended in the NZILA Landscape Assessment Guidelines. The relationship of this scale to RMA terminology is illustrated below in the table copied from Te Tangi a te Manu.

Degree of effect assessment scale

LESS THAN MINOR		MINOR	MORE THAN MINOR				SIGNIFICANT
VERY LOW	LOW	LOW-MOD	MODERATE	MOD-HIGH	HIGH	VERY HIGH	

Physical effects

The site landforms are already modified to a small extent by farm tracking. Further landform modification associated with upgraded roading will be minimal as the proposed accessways will follow existing alignments and extension driveways generally follow amenable terrain. Natural landform will be modified in the vicinity of the building platforms to facilitate development but given the limited scale of the building platforms and the proposed condition requiring sensitive integration of earthworks adverse effects on natural landform will not be significant.

Given the modification of the land by farming and previous wilding pine infestation, there are no areas of significant indigenous vegetation that will be impacted. The proposed management of the majority of the property (Lot 1) under a QEII covenant to enhance its

⁶ Te Tangi a te Manu para 6.08.

natural values will have positive biodiversity effects in the long term that are likely to be significant, given the scale of the area involved.

The development provides for 7 new dwellings in two distinct parts of the property, and with two distinctive types of character. Lots 2 – 4 are located on the broad plateau-like ridgetop and development on these small building platforms provides for small crib type dwellings only. Development on Lots 5 – 8 will be on the steeper side slopes and the larger building platforms provide for typical modestly scaled domestic dwellings. All the building platforms have been sited to have modest – low levels of visibility and the proposed mitigation conditions applying to all will ensure low visual prominence in the wider landscape. Lots 5 – 8 are sited in the southern part of the site in an area where there are other rural and rural lifestyle dwellings in the wider setting.

In my assessment this property has moderate – high sensitivity to domestication, being part of the ‘hills and ranges’ as per CODP Objective 4.3.3. I consider however, that its physical landscape effects will be overwhelmingly positive. This is because:

- Approximately 87% of the property will remain unbuilt and will be managed to enhance its natural values. This will protect the values of openness and naturalness, particularly in the most visually prominent north-eastern part of the site and will have long term ecological / biodiversity benefits.
- Built form and associated earthworks on Lots 2 – 4 will be small scale and located and controlled to have low impact on the landscape. Adverse effects will be low.
- Development on Lots 5 – 8 will be sited and controlled to have low visual prominence and to integrate well with the existing landscape character. This part of the site has low visual prominence from Clyde, Alexandra and the main highways in the area and there is already domestication associated with rural lifestyle blocks in the surrounding area. Adverse effects will be low.

Visual effects

The following tables outline my assessment of the visual effects of the proposed subdivision from representative viewpoints in the area surrounding.

Mutton Town Road (see Figure 3)

Relevance of viewpoint	Generally representative of views toward the property from distant viewpoints to the north-east including State Highway 8
Distance to nearest BP (approx.)	4.2km (Lot 4)
Existing view	This is a view south-westward across the more intensively developed valley flats towards the Old Man Range (Kopuwai) / Obelisk Range. Part of the property is visible on the foothill landform in the middle distance. In common with the higher Range slopes behind, the foothills landform appears highly natural, being characterised by grassland clothed natural landforms and pervasive rocky outcrops. Other than pylons associated with a power line, built form and tracking etc is essentially absent.
Effects of the proposed development	From this viewpoint there will be no visibility of any buildings or driveways due to landform screening. More generally, built form on Lots 2 - 4 will have some potential visibility from State Highway 8 above and to the north of Clyde, but due to the effects of distance, the small scale and recessive colouring of the structures, and partial landform screening, any visual impact will be negligible. The most significant effect is likely to be the possibility of visibility of lights at night. A condition to minimise lighting impacts is proposed. In the long term, the management of the site to protect and enhance its natural values will have positive visual effects on landscape values including the demise of the few remaining dying pine trees and subtly increasing naturalness associated with regenerating indigenous species.
Nature / degree of effect on values	Overall, I assess the visual effects on landscape values as positive / very low initially with the degree of positive effects increasing subtly over time.

Earnsclough Road (see Figure 4)

Relevance of viewpoint	Generally representative of views toward the property from Earnsclough Road
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Distance to nearest BP (approx.)	2.2km (Lot 4)
Existing view	This is a view westward across the more intensively developed valley flats towards the hills and ranges to the west. The property is visually prominent on the foothill landform close-by, which despite the presence of weedy species, appears essentially natural, being characterised by grassland clothed natural landforms and pervasive rocky outcrops. Built form and tracking etc is essentially absent.
Effects of the proposed development	From this viewpoint there will be no visibility of any buildings or driveways due to landform screening. In the long term, the management of the site to protect and enhance its natural values will have positive visual effects on landscape values including the demise of remaining dying pine trees and subtly increasing naturalness associated with regenerating indigenous species.
Nature / degree of effect on values	Overall, I assess the visual effects on landscape values as positive / very low initially with the degree of positive effects increasing subtly over time.

Bridge Hill, Alexandra (see Figure 5)

Relevance of viewpoint	Generally representative of views toward the property from higher elevation viewpoints in Alexandra
Distance to nearest BP (approx.)	6.4km (Lot 8)
Existing view	This is a view north-westward across the intensively settled lower Earnsclough flats toward the Obelisk Range and Cairnmuir Mountains. The property is visible in the middle distance as a low hill block with the higher ranges beyond. The character of the site hill block is largely natural with no buildings visible, but there are tracks present and also decaying poisoned pine trees.
Effects of the proposed development	From this viewpoint built form on Lots 2 – 4 will be screened by landform and / or will have negligible visual impact due to distance, building scale and recessive building colours. Buildings on Lots 5 – 7 will be potentially visible and will be seen on the lower hill slopes. Development on Lot 8 will be largely screened by landform. The visual impact of buildings on Lots 5 – 7 will be effectively mitigated by the viewing distance and the proposed height, colour and other development controls proposed. If noticed, they

	will be seen at low level on the slopes. In the long term, the management of the site to protect and enhance its natural values will have positive visual effects on landscape values including the demise of the pine trees and subtly increasing naturalness associated with regenerating indigenous species.
Nature / degree of effect on values	Overall, I assess the visual effects on landscape values as adverse / very low initially, becoming positive / low over time as the natural character of the land recovers.

Hawley Road (see Figure 6)

Relevance of viewpoint	Representative of views from Hawley Road and the surrounding area. This road provides the closest clear views toward Lots 6 – 8 from a public place to the eastern side of the site. Hawley Road is a local road with modest usage.
Distance to nearest BP (approx.)	830m (Lot 8)
Existing view	This is a view south-westward along Hawley Road with the Obelisk Range defining the landscape to the south. The undeveloped, 'natural' slopes rising to the west are part of the site property and orchards, dwellings and mature exotic trees create the character of the intensively settled flat land to the east of the road.
Effects of the proposed development	The only development that will be visible from this viewpoint will be Lots 7 and 8 with other sites being screened by landform. Built form on these lots will be seen on the lower slopes, with Lot 7 above Lot 8. Both sites will have a landform backdrop. The houses will be noticeable but their visual impact will be mitigated by the proposed height and colour controls and by the controls over planting and other site development. In my assessment these measures will ensure that they integrate comfortably into the rural landscape.
Nature / degree of effect on values	I assess the visual effects on landscape values as adverse / low.

Lower end of Fraser Dam Road (see Figure 7)

Relevance of viewpoint	Representative of views from the lower end of Fraser Dam Road and the surrounding area which includes several dwellings ⁷ . Fraser Dam Road is a minor / low usage road.
Distance to nearest BP (approx.)	430m (Lot 5)
Existing view	This is a north-eastward view across narrow valley flats toward the hill block of the site. The property forms the more natural backdrop to the more developed and domesticated foreground flats. Pylons are visible on the skyline and there is tracking visible along with weedy species, but the site has an overwhelmingly natural character based on its rocky natural landform and minimal impact of built elements.
Effects of the proposed development	The only development that will be visible from this viewpoint will be Lot 5 with other sites being screened by landform. Built form on Lot 5 will be visible mid-slope, in the context of large rocks and with a landform backdrop. As a built element in a natural landscape context it will be seen as a minor focal point to an extent, however, I consider that the proposed controls will ensure it has modest visual impact and integrates with the landscape. The proposed condition requiring management of weedy tree species will ensure that there are some positive naturalness effects to mitigate adverse effects associated with built form.
Nature / degree of effect on values	I assess the visual effects on landscape values as adverse / low.

Higher viewpoint on Fraser Dam Road (see Figure 8)

Relevance of viewpoint	Representative of views from higher viewpoints on Fraser Dam Road. Fraser Dam Road is a minor / low usage road.
Distance to nearest BP (approx.)	1.78km (Lot 5)
Existing view	This is an eastward view from within the valley system associated with Omeo Creek. The site is located on the hill block that defines the valley to the north. The more intensively used and domesticated Earnsclough Flats, and the urban area of Alexandra can be seen beyond the ridgeline to the east. The hill slopes that include the site are dry, rocky and predominantly

⁷ Including 117, 124, 147 & 153 Fraser Dam Road

	covered in exotic grassland and shrubland. Built form is minimal on the hill country except for pylons, and some dwellings or farm sheds at lower level. Disturbance associated with tracking represents the most visually dominant modification.
Effects of the proposed development	Built form on Lots 5 and 6 will be visible from this viewpoint although Lot 5 is likely to have significant landform / rocky outcrop screening. Buildings will be seen within the lower slope context with other built form already present in the wider vicinity. The visual impact of development will be low due to the proposed height and colour controls over buildings and the controls over site development and planting. I consider it will blend well with its natural landscape context.
Nature / degree of effect on values	I assess the visual effects on landscape values as adverse / low.

Landscape effects discussion and conclusion

Landscape effects are effects on landscape values. The open natural character of the hills and ranges is particularly noted in the CODP and I assess the site as being on the lower 'hills and ranges'. I consider that the relevant landscape in this case has high rural amenity values of openness and naturalness, supported by high landform legibility, natural vegetation patterns and low impact of built form and other human modification.

Generally, I consider that the proposed QEII covenant over most of the property and the management of the land to enhance its natural values will result in positive landscape effects. These will accrue progressively as indigenous vegetation recovers. The proposed 7 dwellings with associated earthworks and additional tracking will have some adverse effects but considering the mitigation measures proposed to ensure appropriate integration with the landscape character and low visual impact, I assess these as low in degree.

It is my overall assessment that the development will result in landscape effects that are adverse / low (minor) initially but that these effects will transition to positive as the effects of management under the QEII covenant become increasingly evident over time. I

estimate that the timeframe involved in this transition will be in the order of 10 years or more.

Assessment against the relevant Central Otago District Plan provisions

The property is within the Rural Resource Area in the Central Otago District Plan (COPD), and is covered by a Significant Amenity Landscape (SAL) overlay. In terms of Rule 4.7.5 (iii) the application for subdivision is a non-complying activity.

The table below copies the COPD provisions considered relevant to landscape effects of the proposed subdivision and provides brief comment.

COPD objectives and policies considered relevant to these matters	Comment
4.3.3 <u>Objective – Landscape and Amenity Values</u> <i>To maintain and where practicable enhance rural amenity values created by the open space, landscape, natural character and built environment values of the District's rural environment, and to maintain the open natural character of the hills and ranges.</i>	In my assessment the proposed development meets this objective comprehensively. Adverse effects associated with new built form and earthworks will be effectively mitigated and ultimately outweighed by positive effects of land management to enhance natural values, under the proposed QEII covenant.
4.4.2 <u>Policy – Landscape and Amenity Values</u> <i>To manage the effects of land use activities and subdivision to ensure that adverse effects on the open space, landscape, natural character and amenity values of the rural environment are avoided, remedied or mitigated through:</i>	I consider that the proposed development is consistent with this policy as noted below:

(a) <i>The design and location of structures and works, particularly in respect of the open natural character of hills and ranges, skylines, prominent places and natural features,</i> (b) <i>Development which is compatible with the surrounding environment including the amenity values of adjoining properties, ...</i> (e) <i>The location of tree planting, particularly in respect of landscape values, natural features and ecological values, ...</i> (g) <i>Encouraging the location and design of buildings to maintain the open natural character of hills and ranges without compromising the landscape and amenity values of prominent hillsides and terraces.</i>	The proposed structures and earthworks will be located where their visual impact is low and the comprehensive suite of mitigation measures will ensure low visual prominence. In my assessment the proposed development on the lower part of the hills and ranges is compatible with the surrounding environment. Adverse effects on landscape values as experienced from surrounding areas (including adjoining properties) will be low. Tree planting is proposed to be controlled and restricted to locally appropriate indigenous species. The proposed building platforms have been selected to integrate built form with low landscape impact. Development controls are proposed to ensure low visual impact and appropriate integration with the natural landscape character.
<u>4.4.10 Policy – Rural Subdivision and Development</u> <i>To ensure that the subdivision and use of land in the Rural Resource Area avoids, remedies or mitigates adverse effects on:</i> (a) <i>The open space, landscape and natural character amenity values of the rural environment in particular the hills and ranges,</i> (b) <i>The natural character and values of the District's wetlands, lakes, rivers and their margins,</i> (c) <i>The production and amenity values of neighbouring properties,</i>	Ultimately, the development will result in positive effects on landscape values overall due to the intention to manage 87% of the land to enhance its natural values under a QEII covenant. Adverse effects on openness associated with the proposed new dwellings will be effectively mitigated by the proposed development controls. No waterways or areas of recognised cultural / heritage significance are impacted. I assess any adverse visual effects from neighbouring properties as low given the mitigation measures proposed.

<i>(f) The ecological values of significant indigenous vegetation and significant habitats of indigenous fauna,</i> <i>(g) The heritage and cultural values of the District,</i> <i>Particularly through the use of minimum (and average) allotment sizes.</i>	Whilst the proposed subdivision is non-compliant with the CODP minimum and average allotment sizes standard, the design is an appropriate response to the character of the property and its proposed management for natural character enhancement.
16.3.4 <u>Objective – Amenity Values</u> <i>To ensure, where appropriate, that amenity values of the District created by the open space, landscape and natural character values, and areas of significant indigenous vegetation, significant habitat of statutorily managed sports fish and game are not adversely affected by subdivision.</i>	As above, it is my assessment that the proposed development is consistent with this objective.

Conclusion

The property is located on low hills on the western side of the Earnsclough Flats and is part of the 'hills and ranges' (as per the CODP) defining the Clutha Valley in this area. It is covered by a SAL overlay and has rural character amenity values associated particularly, with openness and naturalness.

The proposed development involves establishing a QEII covenant over 87% of the property that will ensure management to enhance the natural values of the land. It also involves provision for 7 dwelling sites which have been sited to have low visual impact. A comprehensive suite of mitigation controls are proposed to ensure appropriate integration of built form, earthworks and planting etc with the landscape.

In my assessment effects on landscape values will be adverse / low (minor) in the short term but as indigenous vegetation recovers in the long term, the overall effects of the development will be positive. I consider that the proposed development is consistent with the CODP objectives and policies relating to landscape.

Mike Moore

Registered NZILA Landscape Architect

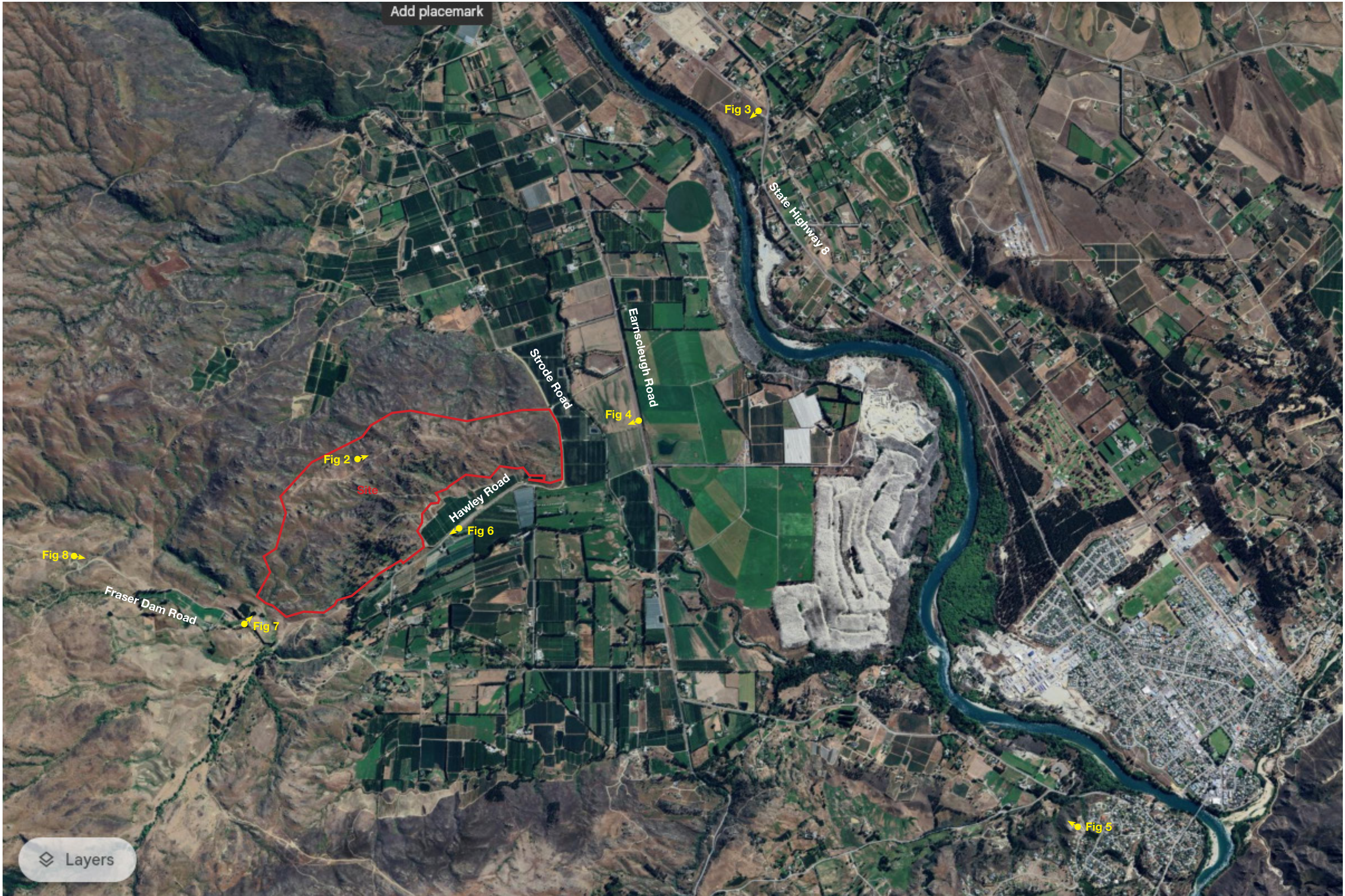


Figure 1: Site and Photo-points Location Plan



Figure 2: View north-eastward from proposed lot 3, showing the character of the upper part of the property

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 18mm



Figure 3: View toward the property from Mutton Town Road, near its intersection with State Highway 8

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm



Figure 4: View toward the property from Earnscleugh Road, near its intersection with McPherson Road

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm



Figure 5: View toward the property from Bridge Hill, Alexandra

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm

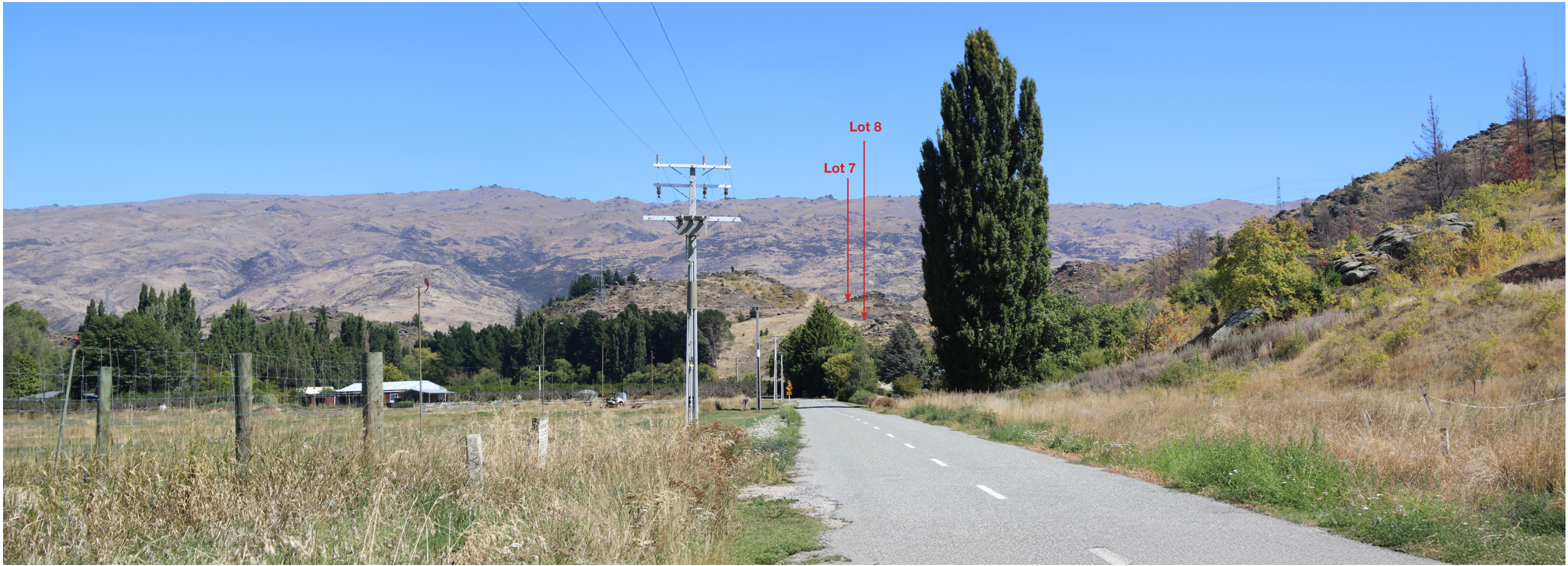


Figure 6: View toward the property from Hawley Road

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm



Figure 7: View toward the property from the road, adjacent to 124 Fraser Dam Road

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm



Figure 8: View toward the property from Fraser Dam Road approximately 2.7km west of its intersection with Hawley Road.

Camera: Canon EOS 80D
Image: Stitched photographs – focal length 50mm

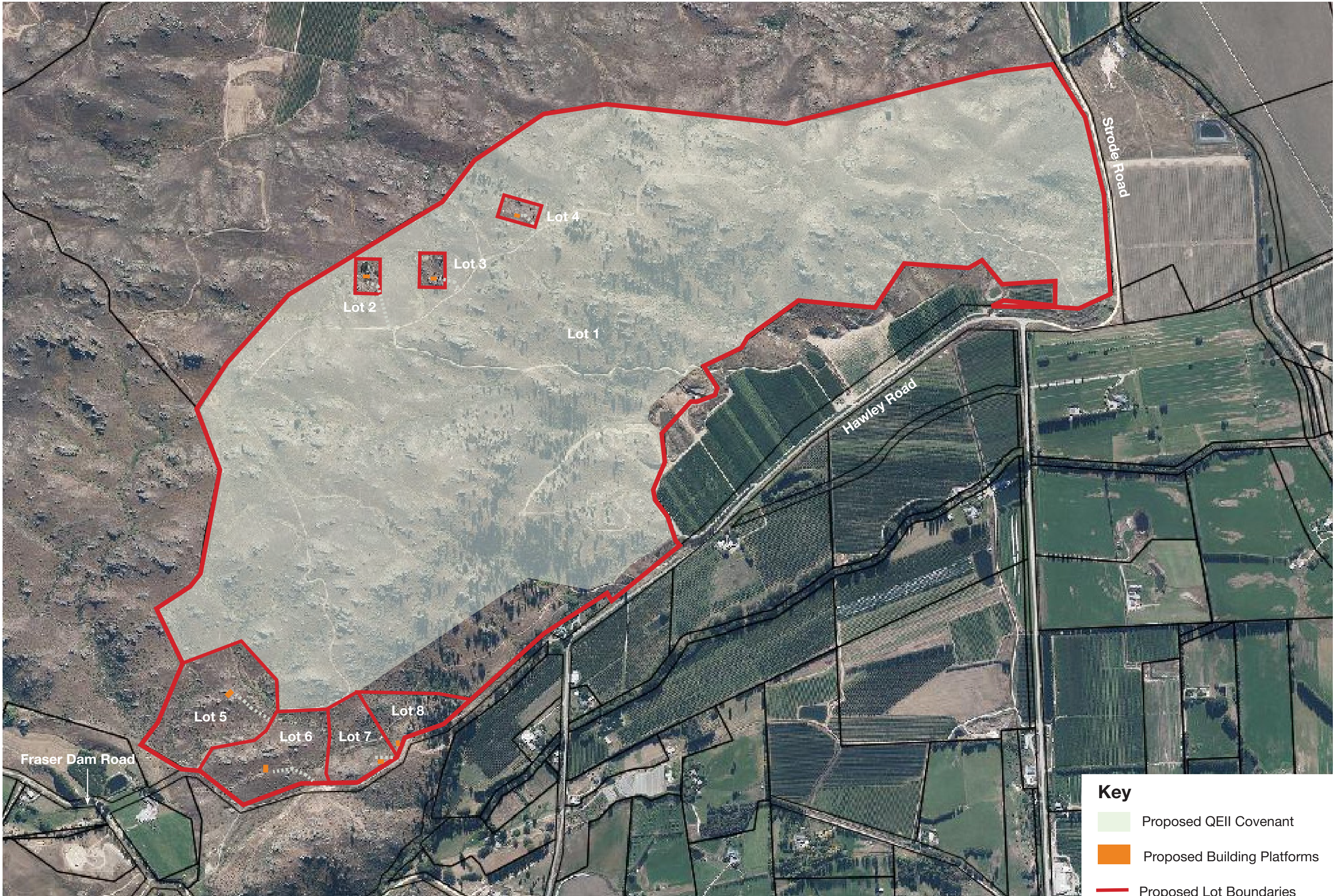


Figure 9: Proposed Subdivision Plan – Hawley Road

Subdivision Plan 3.1



Figure 9A: House sites and driveway access
Lots 1 to 4 being a proposed subdivision of Lots 1 DP 590633.
Hawley Road, Earnsclough

SUBDIVISION PROPOSAL PLAN 2.2
House sites and driveway access

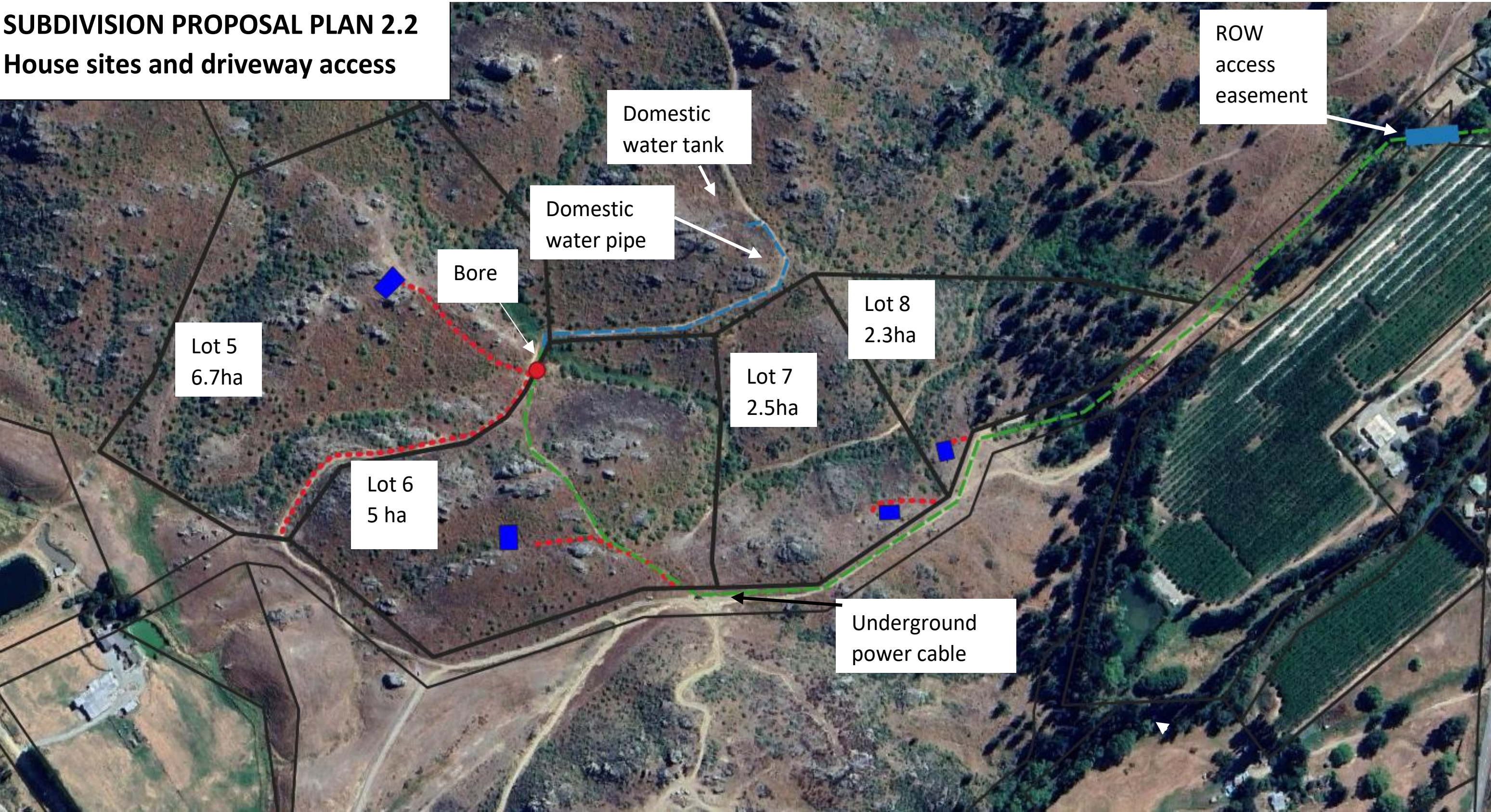


Figure 9B: Lot 5 to 8 being a proposed subdivision of Lot 1 DP 590633.
Hawley Road, Earnsclough

Ao Marama Landscape Restoration Plan

Site History

Vegetation History

Pre arrival of Māori, the site would have supported a dense diverse forest/shrubland interspersed with short tussock (*Festuca and Poa*). The arrival of Māori saw an increased fire frequency from that estimated to be around one in 200 years caused by natural fires to one in 50 years resulting from accidental and deliberate fires lit by Māori.

Immediately prior to Europeans arriving, the vegetation on the site would have likely been a mosaic of short tussock grassland and kanuka on sunny faces with dense stands of grey shrublands (*Olearia, Coprosma, Corokia, Cabbage tree, matagouri, kowhai*) in gullies and shady faces.

The arrival of European pastoralists from the 1860's saw a further increase in fire frequency caused by fires deliberately lit to clear land for grazing and to render native tussock grasses more palatable to stock. The increased fire frequency combined with year-round grazing, first by sheep and later by sheep and rabbits, saw the land reduced to bare ground and scab weed (*Raoulia australis*) on sunny faces and hard tussock (*Festuca novaezealandia*), low producing sward grasses (Browntop, Sweet vernal and Brome grass) in gullies and shady faces. Remnant native shrub species survive today in gullies and in fire refuges around rock outcrops.

The site is known to be severely rabbit prone and consequently suffered a history of severe rabbit plagues from the early part of the 20th century. This fact ensured that no recovery of vegetation occurred from the initial almost total destruction of the original vegetation caused by the combination of burning and grazing.

In 1989 the government introduced the Rabbit and Land Management Programme to assist farmers in making their properties more rabbit-proof. Rabbit numbers were significantly reduced on this site from this period allowing some recovery of vegetation. The arrival of RCD (Rabbit Calicivirus) in 1997 reduced rabbit control costs and ensured continued recovery of vegetation cover.

The subdivision of the site from Earnsclough Station freehold in 2001 resulted in a significant reduction in sheep grazing. This resulted in a more rapid recovery of vegetation, particularly on sunny faces where stock had tended to hang. It also accelerated natural succession into woody vegetation in shady faces and gullies which included both native and exotic weed species including wilding pines, sweet briar, cotoneaster and broom.

Land Use History

Early Māori use of the site would likely have been as a place to hunt Moa and later, weka and possibly a site where Te kouka (cabbage tree) was harvested for cooking in large umus.

On European arrival, this area was taken up as part of a pastoral licence which included the vast tract of land extending from the Earnsclough flats to Fraser Basin at the top of the Old Man Range. This particular block was used as a holding paddock for sheep pre-shearing for Earnsclough Station which was held as a pastoral lease under the 1948 Land Act.

In the early 1990's the government introduced tenure review with the aim of entering into negotiation with lease holders to exchange their perpetual leases for freehold of part of the property. The balance land was to be retained for conservation purposes. This process was initially carried out under the reclassification process of Land Act 1948 and later under the Crown Pastoral Land Act 1998. Earnsclough Station was one of the first properties to enter this process with the tenure review being completed in 1996. The subject land was included as part of the freehold title.

On completion of tenure review, the landowner sought to reduce the farms exposure to rabbit risk. It subsequently subdivided off a large proportion of the lower rabbit prone land which this property forms part of, that was sold to L&M Mining which proposed mining the Earnsclough Flats.

Subsequently, L&M Mining subdivided the land into the current allotments and sold them to adjoining orchardists and as lifestyle blocks. Some small pockets of good soils on moderate terrain on these blocks was developed for orcharding with most of the balance land remaining ungrazed.

In December 2022 three couples (the current owners) joined together to purchase the subject land from Harry Roberts who owned the orchard on adjoining land. The purpose of purchasing the property agreed between the parties was to maintain most of the property as one block and to protect and enhance its landscape qualities while restoring the native vegetation. To make this vision practically and financially achievable, it was decided to pursue a similar subdivision proposal of a small portion of the block to that proposed by the previous owner. This is to recoup the purchase price and defray restoration costs while retaining the balance of the land in a QEII covenant to protect the landscape values for future generations.

In addition to the Rural Residential subdivision, the proposal is to create three separate allotments of 5000 m² for each of the partners as potential building sites. This will provide the opportunity for each partner to establish a residence from which restoration work can be carried out and the property enjoyed.

In 2023 Ao Marama Ltd made the decision to remove sheep grazing from the property on the grounds that grazing is not consistent with the objective of restoring native vegetation and reducing rabbit proneness. These factors outweigh the downsides of removing grazing of increased rate of sweet briar invasion and increased fire risk.

Outcome Vision

The vision for the Ao Marama Landscape Restoration Plan is to restore the area to a self-sustaining ecosystem that reflects its historical natural state and enhances the landscape values. This vision encompasses the re-establishment of native flora and fauna and the creation of habitat that supports a wide range of species. The goal is to create a landscape that not only provides ecological benefits but also enhances the cultural and recreational value of the area for future generations.

Central to this vision is having the ability to establish three modest dwellings on separate titles within the property from which restoration work can be based and to take full enjoyment of the landscape and restoration work being carried out.

The proposal to subdivide a total of 16.5 hectares of the eastern end of the property into 4 rural residential titles makes good use of the less visually prominent part of the property and helps fund the restoration project.

Recent Boundary Changes

At the time of purchase by Ao Marama Ltd in 2022, agreement was reached with the vendor to subdivide off the only part of the property capable of economic development, this being a small cherry orchard, and incorporating it into the adjoining orchard. Consequently, this land is no longer part of the title. As part of that agreement, a new access was formed around the outside of the adjoining orchard to provide a link with existing tracks on the property.

Weed and Pest Control

Weeds

Effective weed and pest control are critical components of the Ao Marama Landscape Restoration Plan. Weeds that are present include wilding pines, broom, cotoneaster and sweet briar. Wild cherry and Hawthorne also pose a threat.

Wilding pines are the greatest threat to restoring native vegetation on this property and have been a major seed source of spread onto adjacent properties. Over half the property had a significant cover of wilding pines when purchased. A major control programme in association with the National Wilding Conifer Control Programme has

since been carried out using the 'drill and fill' method. This has resulted in all pines on the property being killed with follow-up control of seedlings ongoing.

Two seasons of herbicide spraying of broom, cotoneaster and sweet briar has been carried out since purchase by the partners using a 'side by side' and spray unit acquired for this purpose.

Pests

Rabbits are the greatest current threat to restoration objectives for Ao Marama. Rabbits are currently in low number, probably partly due to low numbers when originally part of Earnsclough Station who were diligent in their rabbit control and partly due to the ongoing effects of the RHD virus introduced in 1996. The boundaries of the property are rabbit fenced.

The short-term control strategy for rabbits is to destock the property with the aim of maintaining a long grass environment which is undesirable for rabbits. Rabbit numbers will be monitored and ground control carried out if numbers exceed that allowed by the ORC.

The long-term control strategy is to encourage the restoration of the land toward a native forest/shrubland vegetation cover that does not support a high rabbit population.

As part of the restoration programme, a predator control programme involving trapping of possums, mustelids, hedge hogs and wild cats will be carried out. This will allow the recovery of bird and lizard populations that would normally exist in this environment.

Restoration Strategy

The restoration strategy for Ao Marama aims to restore the original forest/shrubland vegetation that would have existed prior to human occupation. Work of palaeontologist Dr Mike Pole, landscape ecologist Dr Geoff Rogers, landscape restoration specialist Ben Teal, as well as advice from Rob Wardle of QEII and Rachel Baxter of Haehaeata community native plant nursery, will inform our restoration strategy.

The strategy involves a staged approach to restoration that involves, in order:

- Exotic invasive weed control with the following order of priority.
 - Wilding pines, broom, cotoneaster, wild cherry, Rowen
- Planting strategic pockets of native tree and shrub species from the species list (Appendix 2) as seed sources in locations shown on the attached planting plan (Appendix 1).
- Early summer hand watering of planted seedlings to aid establishment in the first year.
- Ongoing weed and pest control.

Natural regeneration from existing seed sources will provide the greatest contribution to restoring the native cover with planting used to reintroduce species previously lost out of the system and to accelerate recovery. Monitoring and adaptive management are integral to the strategy, allowing for ongoing assessment and adjustment of restoration activities based on ecological outcomes.

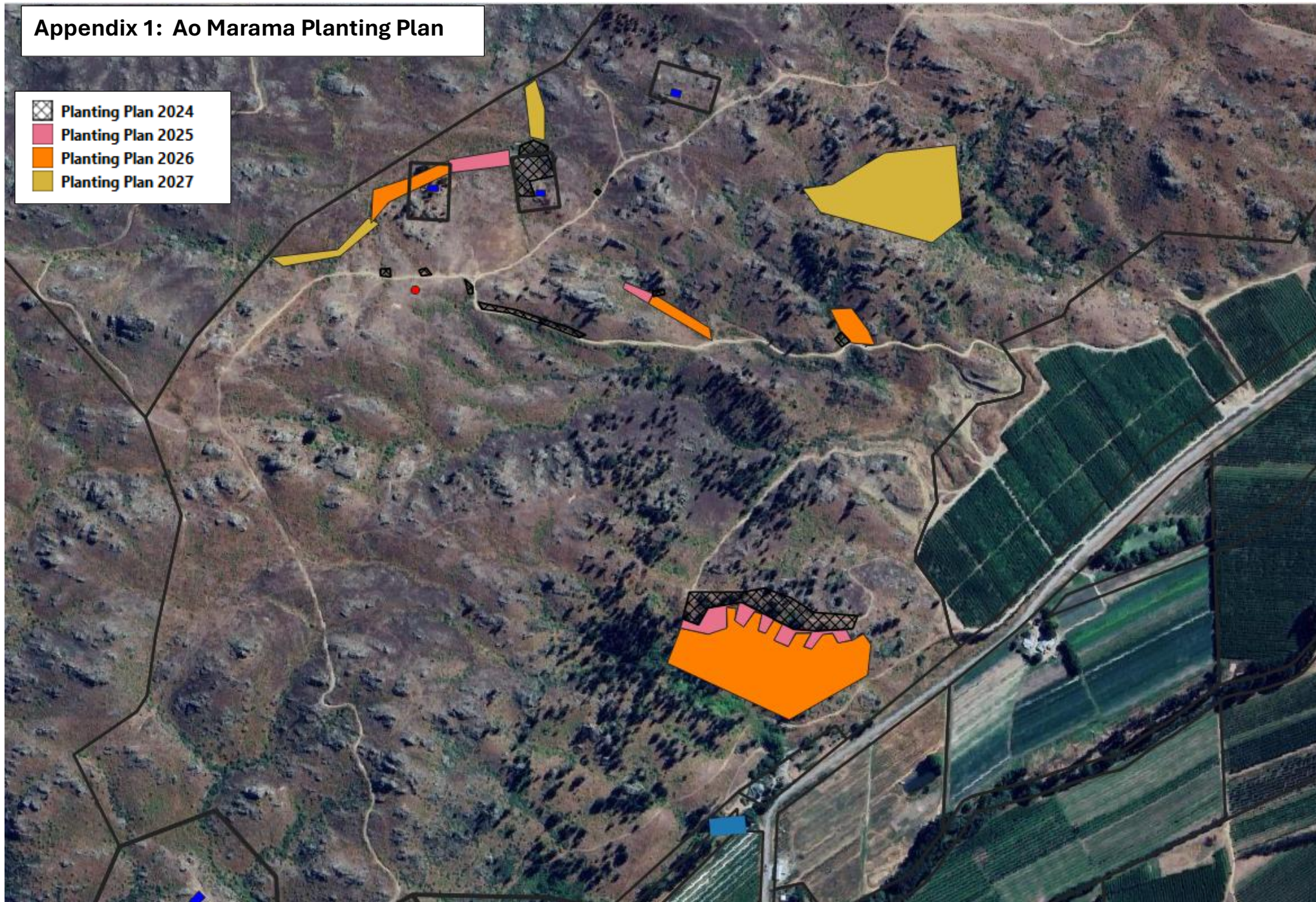
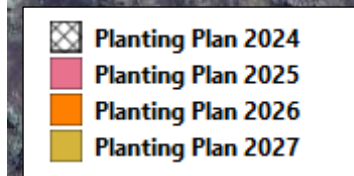
Ongoing Maintenance

Maintenance of the restored landscape is essential to ensure the long-term success of the Ao Marama restoration efforts. This involves regular monitoring of plant and animal populations, as well as ongoing weed and pest control to prevent reinvasion.

Maintenance activities are scheduled throughout the year, with particular attention given to the early stages of plant establishment and periods of high pest activity.

In conclusion, the Ao Marama Landscape Restoration Plan represents a comprehensive effort to restore a once-thriving indigenous ecosystem. By integrating ecological principles and the community's aspirations for maintaining Central Otago's unique and outstanding landscape, the plan aims to create a resilient and vibrant landscape that will be cherished by future generations. The journey to restoration is ongoing, but with continued dedication and support, the vision of a restored Ao Marama can be realised.

Appendix 1: Ao Marama Planting Plan



Appendix 2: Species List for Ao Marama rest

Species	Threat Classification
Carex buchananii	At Risk – Declining
Carex petriei	
Carex virgata	
Carmichaelia compacta	At Risk – Naturally Uncommon
Carmichaelia kirkii	Threatened - Nationally Vulnerable
Coprosma brunnea	
Coprosma dumosa	
Olearia bullata	
Pseudopanax ferox	At Risk – Declining
Veronica rakaiensis	
Veronica salicifolia x 'FTH'	
Austroderia richardii	
Carmichaelia petreii	At Risk – Declining
Olearia lineata	At Risk – Declining
Coprosma wallii	At-Risk Declining
Carex secta	
Teucrium parvifolium	At Risk – Declining
Pittosporum divaricatum	
Veronica cupressoides	Threatened - Nationally Endangered
Olearia fimbriata	Threatened - Nationally Vulnerable
Coprosma rugosa	
Sophora microphylla	
Species	Threat Classification
Coprosma propinqua	
Corokia cotoneaster	
Olearia hectorii	Threatened - Nationally Endangered
Cordyline australis	
Plagianthus regius	
Podocarpus laetus	
Veronica pimeleoides sbsp faucicola	At Risk – Declining

Carmichaelia crassicaulis sbsp crassicaulis	At Risk – Declining
Prumnopitys taxifolia	
Dacrycarpus dacrydioides	
Hoheria glabrata	
Olearia odorata	
Kunzea ericoides	Threatened - Nationally Vulnerable
Phormium tenax	
Carex maorica	
Phormium cookianum	
Aristotelia fruticosa	
Leptospermum scoparium	At Risk – Declining
Griselinia littoralis	
Pittosporum tenuifolium	
Olearia avicennifolia	
Veronica salicifolia	
Chionochloa rubra	
Coprosma crassifolia	At Risk – Declining
Fuscospora cliffortioides	
Phylocladus alpinus	

oration planting

av survival	Total no.s	In
100%	19	1 planting
100%	19	1 planting
100%	41	2 plantings
100%	7	1 planting
100%	3	2 plantings
100%	10	1 planting
100%	4	1 planting
100%	4	1 planting
100%	3	1 planting
100%	5	1 planting
100%	10	1 planting
98%	60	3 plantings
96%	64	4 plantings
96%	136	3 plantings
95%	20	1 planting
92%	97	4 plantings
92%	12	2 plantings
90%	10	1 planting
90%	41	3 plantings
88%	172	4 plantings
87%	40	3 plantings
87%	184	4 plantings
av survival	Total no.s	In
86%	108	4 plantings
81%	56	4 plantings
80%	182	4 plantings
78%	80	3 plantings
77%	137	4 plantings
75%	4	2 plantings
75%	12	2 plantings

71%	8	1 planting
67%	4	1 planting
67%	3	1 planting
67%	30	1 planting
67%	64	2 plantings
64%	109	4 plantings
63%	50	4 plantings
50%	2	1 planting
50%	8	1 planting
47%	21	2 plantings
40%	60	3 plantings
20%	10	1 planting
20%	10	1 planting
4%	27	2 plantings
2%	42	2 plantings
0%	2	1 planting
0%	10	1 planting
0%	17	1 planting
0%	1	1 planting

ON-SITE WASTEWATER DISPOSAL ASSESSMENT

- Proposed Subdivision of Lot 1 DP 590633

ISSUED TO: Central Otago District Council
ISSUED BY: Rory McLellan
PROJECT NAME: Ao Marama Ltd

To whom it may concern;

RE: Lot 1 DP 590633 Wastewater Disposal Assessment – Proposed Residence

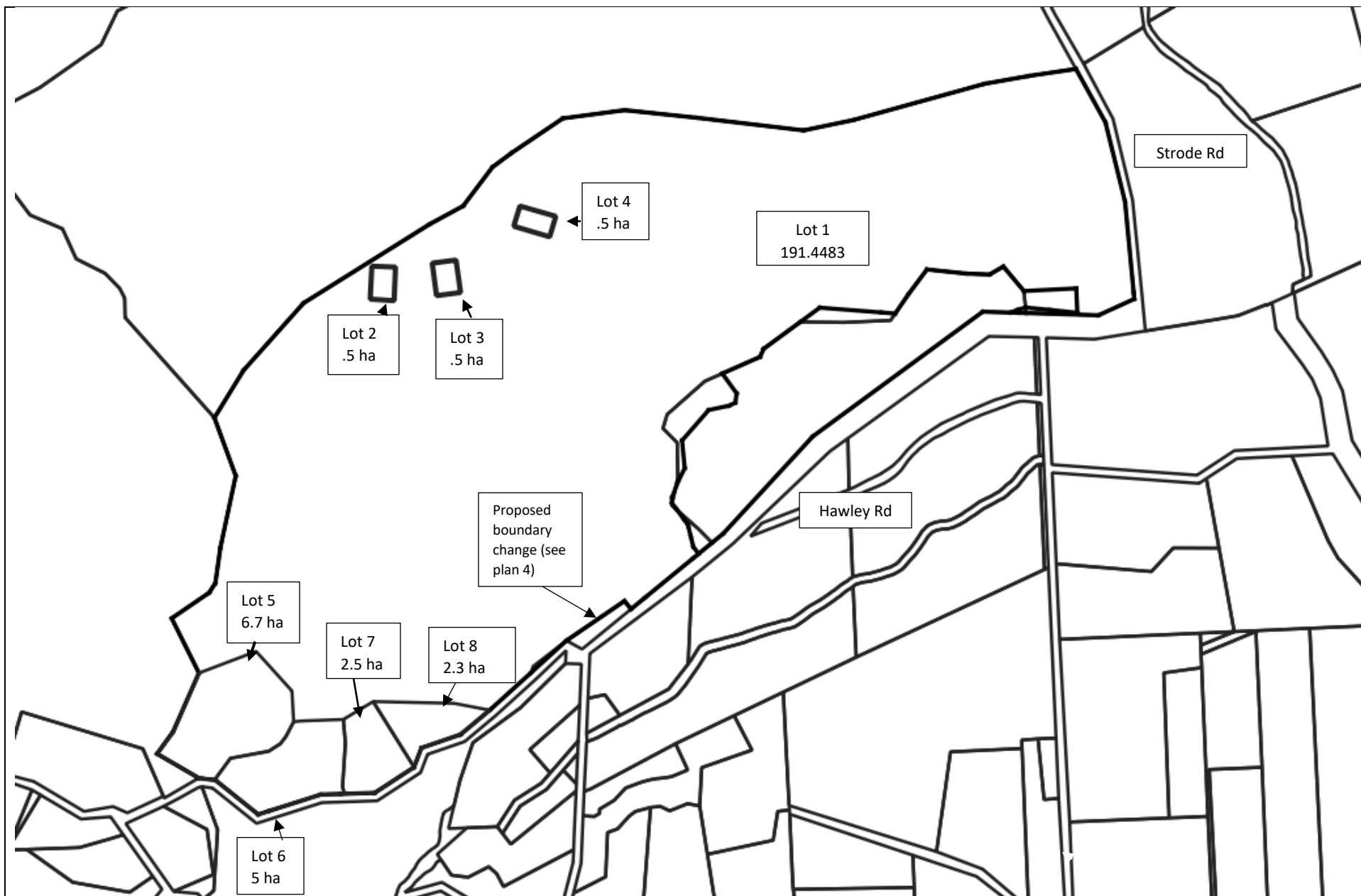
The Soil Category is 3 – weakly structured loams with a design load rate of 24mm/d.
My findings verify that the wastewater disposal for this site can be achieved in compliance with AS/NZS 1547:2012.

There is more than sufficient land area that would be acceptable for a AES wastewater treatment system and stormwater disposal to be installed and easily maintain all exclusion zone and set back distances as per AS/NZS 1547:2012 for the proposed development.

Signature: 
(Rory McLellan)

Qualifications: Certifying Drain layer – Reg # 12773

Date: 06/12/2024



PLAN 1.1: SUBDIVISION PROPOSAL PLAN
LOTS 1 TO 8 BEING A PROPOSED SUBDIVISION OF LOT 1 DP 590633.
HAWLEY ROAD, EARNSCLEUGH



Lot 2 Soakage field