

**APPLICATION FOR
SUBDIVISION AND LAND USE CONSENT**

Sarb Investments Ltd

**THOUSAND ACRE ROAD
AWAMOA**

Prepared By

Cubitt Consulting Ltd

April 2020

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FORM 9
APPLICATION FOR A RESOURCE CONSENT
UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT, 1991

To: Manager-Resource Consents
Waitaki District Council
Private Bag 50058
Oamaru

Sarb Investments Ltd hereby apply for the resource consent described below:

1. The current owner of the site is:

Sarb Investments Ltd, the applicant

2. The location to which this application relates is:

This application relates to a property located at the end of Thousand Acre Road, Awamoa, and is contained within the triangular piece of land that lies between Thousand Acre Road, Gardiners Road and Beach Road. The property is legally described as Lot 10 DP 356427 (CFR OT8D/556) although is currently subject to subdivision consent 202.2019.1365.

3. The type of resource consent sought is:

Subdivision and land use consent

4. A description of the activity to which the application relates:

The property is zoned General Rural. Resource Consent 202.2019.1365 has enabled the subdivision of this 24.8ha property into six rural allotments ranging from 4.0 to 4.3has. Access to all allotments is from Thousand Acre Road.

Consent is now sought to create 25 rural lifestyle blocks of between 4096 and 6441 m², along with 2 balance areas of 19917 and 86973 m² to be used for hay and silage production. The proposal is more fully described in the attached AEE.

The minimum allotments size for subdivision in the Rural General zone is 4has. Hence, the subdivision is a non-complying activity pursuant to Rule 14.3.5.

With respect to the subsequent dwellings, Rule 4.4.1 permits residential activities at a density of one per 4has in the Rural General zone. Hence, the dwellings on Lots 1 to 25 again do not comply. Any dwellings on these lots are discretionary activities in accordance with Rule 4.3.3(12).

Access and servicing issues are fully described in Section 1.2 of the application.

5. The following additional resource consents are required in relation to this proposal and have been applied for:

None.

6. We attach an assessment of effects that the proposed activity may have on the environment in accordance with Section 88 and the Fourth Schedule of the Act.

7. **We attach other information required to be included in the application by the District Plan or Regional Plan or Regulations**

Dated at Dunedin on 20 April 2020



Signed _____

Allan Cubitt as Agent for Sarb Investments Ltd

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1. Description of Proposal

1.1 Description of the Site

This application relates to a 24.8ha property located at the end of Thousand Acre Road, Awamoa, which is contained within the triangular piece of land that lies between Thousand Acre Road, Gardiners Road and Beach Road. The property is situated approximately halfway between Oamaru and Kakanui and is legally described as Lot 10 DP 356427 (CFR OT8D/556) although is currently subject to subdivision consent 202.2019.1365. That consent enables the subdivision of the subject property into six rural allotments ranging from 4.0 to 4.3has.

Legal access to the property is available from both Beach and Thousand Acre Roads. However, Beach Road is no longer maintained due to coastal erosion and has been closed to the public for some time now. Hence, physical access is from Thousand Acre Road only. This road is sealed with metalled shoulders and water tables on both sides.

The site is relatively flat pasture land that slopes gently to the south-east. A distinct coastal escarpment form runs through the middle of the site parallel with the coast. Two small water courses also traverse the property, each having a small pond associated with it. A shelterbelt of pines runs along a short length of the Thousand Acre Road boundary while there some scrubby exotic vegetation (elderberry and willow) within the northern watercourse.

The property has history of arable farming although the land is currently used for grazing and silage production purposes. There are presently no buildings on the site with the only structures being farm fences.

The surrounding landscape is rural in character with rural land uses, scattered dwellings and farm sheds, occasional (mainly exotic) shelter and amenity plantings and open pastoral paddocks. However, the triangular block of land running south from Gardiners Road and bounded by Thousand Acre Road and Beach Road (within which the subject site lies), has noticeably become more densely settled in recent years.

1.2 Proposed Activity

Land use and subdivision resource consent is sought to enable the development of a number of rural living opportunities within the property. The proposed development is illustrated on the Scheme Plans attached at Appendix 1. The vision for the development is to provide for country living in a coastal situation on sites that are not unduly difficult (large) to manage. Of the 28 lots to be created, 25 will be created for this purpose. These sites will range in area from 4096m² to 6441m². Consent is sought for dwellings on these lots.

The location of the lots ensures that no building will occur within 100m of the coastline. Open space areas are retained in Lots 26 (19917m²) and 27 (86973m²) for rural land use along the coastal edge and adjacent to Thousand Acre Road. Lot 28 (13262m²) is to be vested as road. It will have a legal width of 15 - 20m and a sealed carriageway a 6m.

(i) Landscape and Ecological Enhancement Works

To mitigate the built impact of the proposal on rural amenity, a comprehensive landscape/ecological enhancement package has been designed to enhance natural character, which in time, will provide balance to the potential adverse rural amenity and natural character effects associated with a greater density of buildings on the site. These measures are outlined in detail in the landscape assessment of Mr Mike Moore at Appendix 3.

To briefly summarise, a significant area of framework planting is proposed alongside the watercourses, along part of the Thousand Acre Road frontage and at the southern end of the site near the intersection

of Thousand Acre and Beach Roads (see Mike Moore's Figure 13.) The planting concept is based on restoration of the natural character of the site and plants appropriate to the local environment are proposed (see Mike Moore's Appendix A). This planting will be implemented prior to Section 224C certification of the subdivision and maintained by the developer until well established, after which time maintenance will become the responsibility of the various lot owners.

Within one year of any building works commencing on site, lots owners will also be required to carry out planting within the allotments. These plantings are designed to soften and mitigate the visual impact of buildings (again, see Mike Moore's Figure 13). With the exception of plantings below 1.5m at mature height and fruit trees, these plantings will be confined to indigenous species appropriate to the character of the site.

The internal road will not have kerb and channel, footpaths or street lighting while the carriageway will have soft edges (gravel shoulders and grassed swales). An entrance feature at the roads intersection with Thousand Acre Road is proposed, although there is no design concept for this as yet. It is intended that it will be 'low-key' using materials appropriate to the local rural landscape (e.g. Oamaru Stone and heavy timber) and it will not be illuminated.

(ii) *Design Controls*

The mitigation package also contains a range of controls on building and earthworks to minimise adverse effects on rural amenity and natural character as follows:

(a) All buildings shall be a maximum of 5m height above existing or modified ground level and gross floor area for all buildings on each site shall be no greater than 350m².

(b) Building setbacks will be as follows, with rationale noted

Boundary	Setback	Rationale
Existing road	15m	Consistent with WDP Rural Zone standard
Existing adjacent properties	20m	Consistent with WDP Rural Zone standard (except for Lot 25 which due to lot shape has been reduced to 10m)
Proposed internal road	10m	To provide for a spacious character for the internal roadway (in conjunction with building height controls)
Other internal boundaries	6m	Consistent with the WDP Rural Zone standard for non-residential buildings over 10m ² gross floor area (except for buildings for the housing of animals).

(c) All buildings will be clad in naturally weathered timber or locally appropriate stone, or other materials that are finished in colours that have low levels of contrast with the colours of the rural landscape setting. Painted surfaces will have light reflectivity ratings of no more than 30%.

(d) All earthworks will be designed to blend seamlessly with the natural contours surrounding. Retaining walls are to be avoided except where screened by buildings or landform from viewpoints beyond the site. Fill is not to be imported to raise the elevation of building sites.

(e) Access driveways are to retain an informal rural character with soft edges (i.e. no kerbs). Monumental gates and driveway lighting are not permitted.

(f) Water tanks are to be sited, and/or buried and/or screened (by planting) to have minimal visual impact from beyond the property.

(g) Fencing (if any) is to be confined to standard rural post and wire construction or stone walls using locally appropriate rock. Boundary planting rather than fencing is encouraged.

(h) All outdoor lighting shall comply with the following standards to minimize adverse 'dark sky' effects and effects on rural character:

(i) Shielding: All outdoor lighting shall be shielded from above in such a manner that the edge of the shield shall be below the whole of the light source.

(ii) Filtration: All outdoor lighting shall have a filter to filter out the blue or ultraviolet light, provided the light source would have more than 15% of the total emergent energy flux in the spectral region below 440nm. The filters used must transit less than 10% of the light at any wavelength less than 440nm. This therefore includes, but is not limited to, florescent, mercury vapour and metal halide lamps.

(iii) The following outdoor lighting shall not be displayed between 11.00pm and sunrise:

- Searchlights (except emergency services on site should need arise)
- Outside illumination for aesthetic purposes of any building or garden feature by floodlighting.
- Outside illumination of any car parking area.
- Any outdoor illumination in which light is produced by high pressure sodium, metal halide, mercury vapour lighting or florescent lighting.

(iv) *Servicing*

(a) *Wastewater*

While the Kakanui to Oamaru 150mm Ø foul sewer pumping main runs past the site in Thousand Acre Road, at this stage all allotments are to be self-serviced by an appropriate wastewater system. These systems will be designed in accordance with the Otago Regional Council, Regional Plan Water and the Australian/New Zealand Onsite Domestic Management Standard – AS/NA 1547:2012.

(b) *Stormwater*

Stormwater is currently conveyed to the site by two 300mm dia. culverts under Thousand Acre Road and a table drain, and then enters a naturally occurring spring within the site. Stormwater runoff from the new roads and development within the allotments is to be conveyed to the existing water bodies within the site via swales. These existing waterbodies will then continue to pass water under Beach Road through a number of culverts to the coast. However, two of these culverts are currently blocked and will need to be cleaned out prior to the development commencing.

(c) *Water Supply*

The development is to be supplied with both a potable water supply and firefighting water storage by means of a restricted supply via the WDC 150mm Ø PE watermain located within Thousand Acre Road. A network of small diameter PE (PN12.5) pipework will reticulate the site. Each lot will be supplied with a shutoff valve, a filter and an in-line Maric restrictor at the boundary. The minimum domestic storage requirements for each site are 5,450L for domestic supply, and a further 50,450L

storage for firefighting purposes only. The firefighting supply will be required to meet SNZ PAS 4509:2008.

(d) Other Services

Power, and telecommunications utility services are both available within Thousand Acre Road. These will be installed along the internal road and RoW's.

(e) Access

A new 15-20m wide public road will be created within Lot 28 to facilitate access to the proposed allotments. The road will have a 6m sealed carriageway with metalled shoulders 0.75m wide and grass stormwater swales approximately 3m wide. Lots 1 to 5 will gain access via RoW A while Lots 7 to 11 will gain access via RoW B. RoW A will have a 10m legal width and will have a 5m sealed carriage, reducing down to 3.5m as it passes Lot 4. RoW B will have a legal width of 10m and a sealed carriageway of 5m. The remaining lots will gain direct access to the internal road.

The proposed RoW and services easements necessary to give effect to this development are tabulated on the scheme plan.

(v) Recreation Features

A number of easements will be provided along the water courses within the property, and across Lot 27, to enable residents to access Beach Road and the coast. An easement is proposed be created at the southern tip of the property and along the Beach Road boundary to facilitate the potential for the Dunedin to Oamaru cycle trail that has recently been mooted. The applicant is also promoting the opportunity for the installation of a public art/sculpture piece within this easement to celebrate the history of the area and provide a meeting/focal point for residents and visitors alike.

1.3 *Status of Activities*

The property has a Rural General zoning in the Waitaki District Plan. The minimum allotments size for subdivision in the Rural General zone is 4has. Hence, the subdivision is a non-complying activity pursuant to Rule 14.3.5.

With respect to the subsequent dwellings, Rule 4.4.1 permits residential activities at a density of one per 4has in the Rural General zone. Dwellings located on lots under this size are discretionary activities in accordance with Rule 4.3.3(12).

Overall, the proposal is considered to be a **non-complying activity**.

2. Assessment of Environmental Effects

2.1 *Introduction*

Because the activity is a non-complying activity, Council is not limited in the matters it can consider. However, after considering all potential effects of the activity, we believe the following are the main issues that need to be addressed and assessed:

- Amenity values
- Rural Productivity and High-Class Soils
- Servicing
- Hazards and HAIL
- Transportation
- Easements
- Heritage, Cultural and Recreation values
- Reverse sensitivity
- Cumulative effects.

Each of these issues are addressed below.

2.2 *Amenity values*

Issue 4 of the Rural zone relates to the protection of rural amenity. The issue notes that *“intensification and diversification of rural farming activities has occurred in the last two decades”*. The drivers for this include economic reasons *“and a demand for residential dwellings in the rural area for retiring farming people wishing to remain in the rural area, or other people wishing to farm blocks on a part time basis.”* The issue goes on to note that *“despite this diversification, the rural environment has particular amenity and environmental values”* which *“include privacy, rural outlook, spaciousness, ease of access, and quietness.”* In this context, the issue notes that

“Intense dwelling and other building development, associated with subdivision, can also cause a significant loss of “openness.” The decline in the openness of an area can cause increased loss of privacy, loss of rural outlook and loss of spaciousness; all important amenity values for many people living in the rural area. In addition, people living in urban areas often value rural open spaces that are nearby. “

The District Plan seeks to maintain a level of rural amenity that is consistent with the range of activities anticipated in the rural areas provided that this does not create unacceptably unpleasant living or working conditions or a significant deterioration in the quality of the rural environment.

In this context, we note that the triangular piece of land that lies between Gardiners Road, Thousand Acre Road and Beach Road has essentially been developed for rural lifestyle purposes, despite most the properties complying with the 4ha minimum. The exceptions to the complying 4ha rule are 53 and 55 Gardiners Road in the north of the block, which are both around 2has.

For the most part, the land surrounding this block still comprises large land holdings used for farming purposes. However, this 67ha block has always been difficult to manage (despite some areas being classified as high-class soil) due to soil moisture management issues (see section 2.3 below). This has eventually led to the land being sold off for rural lifestyle purposes.

This proposal is a continuation of that trend, with most people seeking rural lifestyle properties now looking for smaller, more manageable blocks. While the size of the allotments ranges from 4096m² to 6441 m², overall density is around 1ha per dwelling. What must be remembered in this context is what Justice Fogarty highlighted in his High Court *Foodstuffs* judgment. He stated that it is not the effects, or major effects, of an activity that are in question – it is recognised that all activities have effects. The question is whether they are adverse and if so, the degree to which they are adverse. In other words, while there may be quite a significant change in an environment due to a development, that change is not necessarily adverse.

To assess the impact of the proposal in this context, the applicant commissioned experienced Landscape Architect, Mr Mike Moore, to undertake landscape and visual effects assessment of the proposed development. His report is attached at Appendix 3. Mr Moore outlines the landscape values that the relevant statutory documents (the Waitaki District Plan (WDP) and the New Zealand Coastal Policy Statement (NZCPS)) ascribes to the site as being:

- *rural amenity including openness, privacy, spaciousness, quietness and rural outlook.*
- *the natural character and visual amenity of the coastal environment / identified significant coastal landscape.*

Mr Moore considers that this site “*certainly exhibits rural character due to its rural land use, openness, lack of built form and spacious qualities. More generally, the landscape in the area has rural character also based on rural land uses such as grazing, and built density which although increasing, is clearly rural in nature.*” He goes on to say that “[n]atural character attributes and associated visual amenity values of the site are underpinned by its largely unmodified natural landforms and lack of built form” but notes that “[t]he site is however significantly modified ecologically by its history of farming and the vegetation cover is now largely exotic.” Mr Moore also confirms that for the purposes of his report “*the extent of the coastal environment will be taken to coincide with the WDP Significant Coastal Landscape as this is a statutory document with current standing, and is substantially consistent with the NZCPS in this regard...*”.

In carrying out his assessment, Mr Moore has factored in both the permitted baseline for the site, which he believes would have a significantly reduced landform legibility and spaciousness effect on the landscape, and the range of planting and design conditions that he has proposed. He then goes on to assess both the landscape effects (the impact of the proposal on landscape elements, patterns, and processes, and its character) and the visual effects (the impact of the proposal on the views available to people and the impact of this on amenity values) of the proposal.

In relation to landscape effects, Mr Moore concludes that these will be “*adverse in that part of the site will no longer have the rural character and openness values that the WDP Rural Zone envisages*”. However, he goes on to state that he assesses “*the magnitude of these adverse effects as **moderate** – **low** taking into account the following:*

- *Adverse effects on naturalness will be mitigated by the proposed planted framework and biodiversity values will be enhanced.*
- *Built impact will be controlled by the proposed suite of mitigation measures. In particular the proposed height and colour controls, and framework plantings will be very effective when compared with what could occur as of right (6 dwellings and 10m high buildings uncontrolled as to colour / reflectivity) under the current consent (202-2019-1365).*
- *Openness will be impacted but mitigated from significant adjacent viewpoints by the retention of extensive open space adjacent to Thousand Acre Road and the coast provided by lots 26 and 27 (the rural lots).*
- *Rural land use will still be present on the site, albeit reduced in area.*
- *Essentially, the above factors will ensure that whilst the proposed development introduces uncharacteristic built density, it will integrate well with the surrounding rural landscape character.*

In planning terms, the ‘moderate-low’ effect equates to ‘minor’ on the effect’s spectrum. Hence, the adverse landscape effects of the proposal are considered to be no more than minor.

Turning now to visual effects, Mr Moore considers that *“the value placed on views of the rural coastal landscape in this area are moderate to high.”* He bases this view on the fact that *“the WDP recognizes the coastal strip as a Significant Coastal Landscape with natural character and visual amenity values (Policy 16.8.3 (4)) and because it also includes an objective to maintain rural amenity generally (Objective 16.5.1).”*

Mr Moore assesses the visual effects of the proposal from 11 different viewpoints, ranging from sites along the coast, from nearby residents with views toward the site, and from the roads in the area. The viewpoints (with the relevant figure of his report noted) and his effects rating are listed below:

Kakanui Headland (see Figure 1)

A long, 3.5km distance public viewpoint to the south of the site from which the coast to the north including the site, can be seen. The effect is considered *“adverse / moderate - low in the short term but will reduce to adverse / low in the longer term.”*

Beach Road – south of the site (see Figure 14)

An 830m viewpoint representative of coastal views northward from Beach Road. The effect is considered *“adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term.”*

Thousand Acre Road adjacent to the site – south end (see Figure 15)

A close proximity (220m) northward viewpoint on Thousand Acre Road directly adjacent to the property. Also, generally indicative of the visual effects from Seadown Road and properties to the southwest of the site. The effect is considered *“adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term.”*

Thousand Acre Road adjacent to the site – north end (see Figure 16)

A close proximity (110m) south-eastward viewpoint on Thousand Acre Road directly adjacent to the property. The effect is considered *“adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term.”*

Thousand Acre Road north of the site (see Figure 17)

A close proximity (250m) southward viewpoint on Thousand Acre Road, just north of the property. Also, generally indicative of the visual effects from properties to the northwest of the site. The effect is considered *“adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term.”*

Gardiners Road (see Figure 18)

Views toward the site are not particularly the focus of views from Gardiners Road but this viewpoint is generally indicative of the visual effects from properties to the north of the site. Approximate distance to building site is 470m. The effect is considered *“adverse / moderate in the short term but will reduce to adverse / low in the longer term.”*

Beach Road approx. 540m north of Gardiners Road (see Figure 7)

A viewpoint southward, 1.46km along the coast toward the site from Beach Road, north of Gardiners Road – one of few places from which the site is partly visible. The effect is considered *“adverse / very low in both the short and long term.”*

Beach Road approx. 350m north of the site (see Figure 19)

This is a viewpoint from close to the closed road sign and barrier fence to the north of the site on Beach Road and represents as close a viewpoint (410m) as most people (pedestrians) will get from Beach Road to the north. Viewer numbers are probably low due to the vehicle barrier further

north near Gardiners Road and the lack of easy through access. The effect is considered “adverse / moderate in the short term but will reduce to adverse / low in the longer term.”

Beach Road adjacent to north end of the site (see Figure 20)

A close proximity (140m) view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion. The effect is considered “adverse / moderate in the short term reducing to adverse / low in the longer term.”

Beach Road adjacent to south end of the site (see Figure 21)

A close proximity (200m) view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion. The effect is considered “adverse / moderate in the short term reducing to adverse / low in the longer term.”

Adjacent property - 67 Gardiners Road (see Figure 11)

A directly adjacent property (20m) with an existing dwelling. The effect is considered “adverse / moderate in the short term, reducing to adverse / low in the longer term.”

The range of adverse visual effects Mr Moore identifies in the short is adverse ‘very low’ to adverse ‘moderate-high’, which in planning terms is ‘de minimus’ to ‘more than minor’. However, in the long term, once mitigation has taken effect, this range of effect reduces from ‘very low’ to ‘moderate-low’, which in planning terms is ‘de minimus’ to ‘minor’.

Mr Moore considers 10-years to be a ‘long term’ effect. It is important to remember in this context that in *Stokes v Christchurch City Council* [1999] NZRMA 409, the Environment Court confirmed that the proper test in these circumstances (the 104D threshold test) is to ask whether the adverse effects, as proposed to be remedied and/or mitigated are more than minor, taken as a whole. Therefore, where mitigation is proposed by way of conditions that may take some time to become fully effective (the usual case for planting), it is the final result that falls to be assessed, not the temporary situation.

As a consequence of Mr Moore’s assessment, we have concluded that any adverse effects of the proposal on rural amenity values, in the wider sense, to be no more than minor.

2.3 *Rural Productivity and High-Class Soils*

The subject property sits within a 67ha block of land that lies between Gardiners Road, Thousand Acre Road and Beach Road. As we highlighted in Section 2.2 of this report, in contrast to the surrounding land, this block has now essentially been developed for rural lifestyle purposes. Prior to the applicant purchasing the block in 2004, it had been in the ownership of the Leaman family since 1939. Three generations of the Leaman family have farmed the land since that time.

Mr Doug Leaman (see letter attached at Appendix 7) advises that his father began by growing potatoes, barley and wheat on parts of the property, mainly the higher plateau fronting Gardiners Road, while running stock on the balance. Mr Leaman took over the farming of the block in 1982. He advises that the best soils are located in the top corner of this block fronting Gardiners Road, which is in conflict with Planning Map 26 of the District Plan that identifies the southern tip of the subject property as containing ‘high class soils’ (Lots 1 to 6 of the subdivision appear to sit within this area with the remainder of the area being contained in the rural lots 26 and 27.) He advises that this soil is known locally as ‘Totara Tar’ and that while it is recognised as fertile, it is particularly difficult to manage due to moisture

management issues. When dry the soil forms a hard crust but when wet, it becomes very 'sticky'. The soils in the balance area are lighter and stonier. Overall, Mr Leaman describes the block as best suited to 'dryland farming' due to 'a typical seasonal lack of moisture and the effect of sea mist on the lower part'.

During his period farming the property, Mr Leaman advises that they had to supplement their income by off-farm employment. He eventually gave up farming the land after 18 years because he could not make a living off the area due to the management difficulties outlined above. He states that he did lease the property out to market gardeners but they too gave up after a few years due to these issues.

Mr Leaman's observations are corroborated by Mr John Foley, a Director of Glenmoa Farms Ltd, who have leased the land since 2006 (see letter at Appendix 8). He reiterates the difficulties encountered with the soil and the lack of water available to the site. Mr Foley advises that irrigating the land is not economic, a matter that the applicant has also investigated. A letter from the North Otago Irrigation Company (see Appendix 9) advises that it would cost in the order of \$400,500 to connect the property to their scheme. On-farm cost would be additional to this, in the order of \$5000 a hectare, giving a figure close to \$125,000.

What this illustrates is that the high-class soil classification over the property does not seem to be accurate as the property is really only suited to grazing and/or silage production at best. Now that the bulk of the site has been subdivided, rural productivity is further diminished to the point that it is no longer suitable for productive rural purposes.

In that context, the proposed subdivision makes more effective use of the land but does not impact on the rural productivity and high-class soil resources of the District as a whole. As Issue 1 of the Rural Objectives and Policies section of the WDP states, the District is well endowed with high class soil, much of which is already developed for intensive agriculture purposes. Perusal of the rural planning maps confirms the extent of the high-class soil in the district while there are also vast areas of good quality farmland not identified as having high class soil throughout the district as acknowledged by Section 16.1.1 of the District Plan.

As a consequence, any loss of land to farming as the result of this proposal will have a minor adverse effect at worst. It is also important to note that the lots are not residential scale but will contain enough land for future owners to utilise them for their own food production needs.

2.4 Servicing

Given that the proposal is for a denser than usual rural development, the applicant engaged Fluent Solutions to consider how water, wastewater and stormwater should be addressed by the design of the proposal. That report is attached at Appendix 4. For the purpose of their assessment, Fluent have assumed that the sites (Lots 1-25) may be occupied by a 200m², four-bedroom dwelling. A brief summary of their recommendations is set out below.

(i) Wastewater

The report notes that there is "a DN90 PE foul sewer adjacent the site that is owned and operated by the WDC. This rising main conveys pumped treated sewage from the Kakanui Wastewater Treatment Plant to Oamaru for further treatment." The applicant's preference would be for all allotments to be connected to the foul sewer main. However, current advice from the Council is that this line is at full capacity and cannot therefore take foul waste from this development.

Hence, the development is required to deal with foul waste in isolation of a public system. Two main options were investigated by Fluent as follows:

1. *A centralised, community wastewater treatment plant for the subdivision, including reticulated gravity drainage from each dwelling to the common wastewater treatment plant and large dispersal field located in the eastern Rural Lot.*
2. *Individual Lot on-site wastewater systems.*

A cost assessment of the communal system approach indicated that it was not a cost-effective option and therefore individual on-site wastewater systems are proposed for each allotment. These systems will be designed in accordance with the Otago Regional Council, Regional Plan Water and the Australian/New Zealand Onsite Domestic Management Standard – AS/NA 1547:2012. Fluent Solutions will develop a design guide for future Lot owners to ensure the on-site wastewater system meets any regulatory requirements and that it is appropriate to site conditions. This may involve the need for a resource consent from the Otago Regional Council if their permitted discharge standards cannot be met.

(ii) Stormwater

The report outlines the existing stormwater infrastructure in the area. Stormwater is currently conveyed to the site by two 300mm dia. culverts under Thousand Acre Road and a table drain. These drains enter a naturally occurring spring within the site, forming a second water body, with the water then draining through a 250mm dia. culvert under Beach Road. Fluent also highlight two other culverts in the south of the property that are blocked and do not currently convey any water under Beach Road. They recommend that these two culverts be reinstated by WDC.

Stormwater runoff from the new roads and development within the allotments is to be conveyed to the existing water bodies within the site via swales. These existing waterbodies/drains will then continue to pass water under Beach Road through a number of culverts to the coast.

(iii) Water Supply

The report identifies two water supply networks near the property which could be used to reticulate the site. The WDC DN150 watermain that conveys water from South Hill Oamaru to Kakanui is located within the road corridor of Thousand Acre Road while there is also a small diameter pipeline associated with a rural scheme that feeds five 'restricted' connections on Gardiners Road and Thousand Acre Road.

It is proposed to connect the development to the WDC 150mm Ø PE watermain located within Thousand Acre Road with a water supply system that comprises:

- Reticulated network design for restricted supply
- On site storage to meet domestic water demands
- Fire storage located on each property to meet SNZ PAS 4509:2008

A network of small diameter PE (PN12.5) pipework will reticulate the site. Each lot will be supplied with a shutoff valve, a filter and an in-line Maric restrictor at the boundary. The minimum domestic storage

requirements for each site will be 5,450L for domestic supply, and a further 50,450L storage for firefighting purposes only.

(iv) *Other Services*

Power, and telecommunications utility services are both available within Thousand Acre Road. These will be installed along the internal road and RoW's.

2.5 *Hazards and HAIL*

Natural Hazard Issue 4.2 of the District Plan identifies coastal erosion as an issue in the District, and states that areas up to 80m inland could be at risk within the next 50 years. The explanation and reasons of the Natural Hazard section (at page 42) states that a 100m building set back has been imposed along the coast to protect assets from coastal erosion (along with the purpose of the preservation of natural character generally).

As Council is well aware, Beach Road has been subject to coastal erosion over a lengthy period of time, leading to its closure. While this erosion has not encroached into the subject property, this coastal process has potentially significant implications for the proposal. As a consequence of that, the applicant has commissioned Dr Derek Todd (Principal Coastal and Hazards Scientist with Jacobs), to review the threat to the proposed subdivision. Dr Todd's report is attached as Appendix 5.

In that report, Dr Todd advises that in January 2019, the Otago Regional Council released the results of a recent NIWA report on coastal erosion and inundation for the Waitaki District. One of the purposes of that report was to update the Waitaki District Plan in relation to the potential effects of sea level rise. That report identifies that the entire Waitaki District coastline is retreating between 0.3m and 0.9m/yr. In relation to the southern end of Beach Road, the report indicates that long term erosion is in the order of 0.38m/yr.

Dr Todd reviewed the assessment methods and findings of the report in the context of the Beach Road coastline and considered them to be acceptable. In the context of this proposal, Dr Todd concluded as follows:

1. *Recent NIWA coastal hazards assessment indicates that the existing 100m setback provision of the Waitaki District Plan is adequate to provide protection to buildings for a period considerably longer than 50 years.*
2. *The Overview Development Plan supplied by Terramark shows that the Lot boundaries are setback and additional 20-80m beyond the conservative 100-year erosion zone from NIWA, and therefore the proposed Lot boundaries are an adequate distance from the coast over a 100-year planning timeframe.*

As a consequence of this appraisal and the NIWA report itself, we are confident that the proposed development will not be affected by coastal erosion over the 100-year planning timeframe.

With respect to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011, we note that the site was assessed under these regulations for the November 2004 application (RC SRC04/71). That

assessment was carried out by Stantec (formerly MWH), which is attached at Appendix 6. Figure 2 of the report identifies the locations from which soil samples were tested. As can be seen from that figure, the subject site was heavily sampled. The organochlorine pesticides screen was used as the Waitaki District Council was most concerned about the use of DDT at the property (the property has a history of market garden use). The report confirmed that there was no historical or physical evidence of such contamination and no contamination was detected in the samples tested.

No activity has taken place on the site since that report which would change this outcome. Hence, the HAIL regulations are not invoked

2.6 *Transportation*

Access to the proposal is from an existing crossing point to Thousand Acre Road, appropriately 200m south of the access point consented in 202.2019.1365. That consent enabled five (5) individual accesses to Thousand Acre Road. This proposal reduces that to one access point, a legal road that will be constructed within Lot 28. The location of the access meets the standards set out in Rule 12.2.2, including the required minimum sight distance of 195m on roads with a 100km/h speed limit, and minimum distances to road intersections and between vehicle crossings. The access will be upgraded to meet the design requirements of Rule 14.4.2.4 while the road will be constructed to the appropriate legal road standard. Cross sections of the road and the rights of way within the subdivision are attached at Appendix 1.

While this proposal increases the number of dwellings anticipated for the site by 19, this will not have any impact on the capacity and safe and efficient operation of the surrounding roading network. Traffic numbers in the area are very low so capacity will not be impacted on. Limited information is available on crash data for the area, but we would expect the area to have a good safety record given the characteristics of the roading network.

Overall, transportation effects are expected to be less than minor.

2.7 *Easements*

The current title is not affected by any easements or other restrictions. A proposed easement schedule for this subdivision is shown on the scheme plan. Any other easements necessary will be provided as required.

2.8 *Heritage, Cultural and Recreation Values*

As was highlighted in the decision for Consent 202.2019.1365, Kai Tahu have identified an historic Maori track traversing the north east of the site. This trail is an historically important link for manawhenua and traverses many different environments (including rural production land, coastal, and urban sites) within the District.

Given the existence of this historic trail, we propose that the standard accidental discovery condition be imposed on the consent. The applicant will also be seeking the written approval of Aukaha (on behalf of the appropriate iwi).

In this context, we would again highlight the applicant's willingness to celebrate the history of the area by providing the opportunity for a meeting/focal point for residents and visitors alike. This could also include installation of a public art/sculpture piece, if this is what the community considered appropriate. This may well reflect the historic Maori association with the area, although this has yet to be discussed with Kai Tahu representatives. Associated with this is the offering of an easement at the southern tip of the property and along the Beach Road boundary that could potentially facilitate the Dunedin to Oamaru cycle trail that has recently been mooted. A number of internal easements will also be provided along the water courses within the property, and across Lot 27, to enable residents to access Beach Road and the coast.

Overall, it is considered that the proposal will have the potential for a significant positive impact on the heritage, culture and recreation resources of the District.

2.9 *Reverse sensitivity and conflict*

Consideration is required of the extent to which the proposal will conflict with existing rural activities or affect their ability to continue to operate. As has been noted above, the property sites within a 67ha block of land that is bounded by Gardiners Road, Thousand Acre Road and Beach Road. This block has now essentially been developed for rural lifestyle purposes. While properties at the top end of the block remain at 4ha, there is little agriculture activity occurring on them outside of traditional grazing. A 20m set back from the northern boundary has been proposed, along with a requirement for planting by the future owners. In these circumstances, we see little likelihood of conflict with adjoining land uses.

Any activity taking place on the operational farms in the wider area will be sufficiently distant from the sites so that there is unlikely to be any conflict. These properties are not only separated by the roading network, they are also separated by Lot 26, which provides an additional rural buffer to these properties. Land use on Lot 26 (and 27) will be limited to haymaking and silage production, so there will be no likelihood of farm animals causing concern to the residents of the development.

As a consequence, reverse sensitivity issues are not likely to arise in this situation.

2.10 *Cumulative effects*

This matter requires consideration as to how much subdivision and development of the density proposed can be accommodated before an unacceptable threshold is reached in terms of rural amenity values. In this context, we highlight Mr Moore's conclusion that while the development proposed will result in a localized modification to the rural character, "*it has been designed to **integrate with minimal impact** to both the rural character and the natural coastal character*". While he acknowledges that "*the development will result in a change in character*", he believes that "*it will acceptably sustain the rural and natural coastal character amenity values*".

On this basis, we conclude that any adverse cumulative effects will be no more than minor.

2.11 *Summary of effects on the environment*

The above assessment leads us to conclude that the overall adverse effects of the proposal will be no more than minor. While the proposal creates a density of development not normally anticipated in a rural zone, it is considered appropriate in this particular location and does not impact on rural amenity values.

3. District Plan Policy Framework

The policy section relevant to this proposal is found in Section 16 Rural, of the District Plan. This section deals with eight resource management issues that affect the rural part of the district. Having reviewed the associated policy suite with each issue, we consider the following policy suites to be relevant:

- 16.2 ISSUE 1 - High Class Soils
- 16.3 ISSUE 4 – Protecting Rural Amenity
- 16.8 ISSUE 7 - Landscapes

The Policy suite associated with Issue 1 is as follows:

16.2.2 Objective 1

Retention of the productive potential of the high-class soils located in the Plains area.

16.2.3 Policies 1

1. *To encourage the continuing productive use of high-class soils by ensuring that such land is not subdivided into small lots nor developed for intensive residential activity.*
2. *To minimise the likelihood that areas of high-class soils will be covered with structures or hard surfaces over significant proportions of these soils, by preventing their subdivision into small lots.*
3. *To encourage liaison with other local authorities and organisations concerning research into land use and land management practices that sustains the downlands and plains' soil resource.*

At first glance, the proposal would seem contrary with this policy suite, given it is subdividing land identified as being high class soil into small allotments for residential use. While we would not categorise the proposal as 'intensive residential activity', it is well below the 4ha minimum lot size. However, as we have highlighted in the effect's assessment above, this land cannot be considered high class soil or particularly valuable agricultural land due to the nature of the soils and the lack of water, which cannot be overcome by irrigation. These issues have led to previous owners effectively give up the land for farming purposes.

On that basis, the proposal is not considered contrary to this policy suite.

Issue 4 of the Rural zone relates to the protection of rural amenity, with the relevant policies set out below.

16.5.1 Objective 4 - Rural Amenity

A level of rural amenity that is consistent with the range of activities anticipated in the rural areas, but which does not create unacceptably unpleasant living or working conditions for the District's residents and visitors, nor a significant deterioration of the quality of the rural environment.

16.5.2 Policies 4

1 To encourage a wide range of rural land use and land management practices in the Rural General Zone, without increasing the potential for conflict or the loss of rural amenity, by ensuring that subdivision is limited to moderate sized rural allotments.

2 To limit the scale of rural subdivision and density of residential activity in the Rural Scenic Zones to large rural lots in order to retain the amenity of openness and to assist in protecting the quality of the water resources.

3 To set performance standards or to use enforcement provisions for activities that may cause unpleasant living or working conditions for other people in the rural community, or that could cause a significant adverse effect to the environment.

...

...

6 To require that residential dwellings be setback from property boundaries so as to reduce the probability of dwellings being exposed to significant adverse effects from an activity on a neighbouring property.

...

8 To maintain clear distinctions between the urban and rural areas, in order to assist in protecting the character and quality of the surrounding rural areas.

....

With respect to policy suite, we note that Mr Moore considers a “node of rural lifestyle land use” to be consistent with the range of activities encountered in rural areas. We agree with that viewpoint, as dwellings are anticipated within the zone. The issue then becomes one of whether the provision of this ‘node of rural lifestyle land use’ will have a significant effect on rural amenity values. As a consequence of Mr Moore’s landscape and visual effects assessment, we have concluded that the adverse effects of the proposal on rural amenity values to be no more than minor. The development will create a high-quality rural living environment and the quality of the environment will be enhanced to the extent that indigenous biodiversity will be increased by the proposed plantings. Appropriate setbacks have also been proposed to neighbouring boundaries. The block bounded by Gardiners, Thousand Acre and Beach Road is now considered to be more of a lifestyle area opposed to a true farming area and distinct from the surrounding farm properties (policy 8). As a consequence, the proposal will not create any reverse sensitivity issues. This situation is not replicated anywhere else in the area that we are aware of.

Hence, while there is some inconsistency with this policy suite (given the size of the allotments), the proposal is not contrary to it and maintains the key outcomes sought.

Issue 7 deals with landscape matters, with the relevant policies as follows:

16.8.2 Landscape Objective

Subdivision, use and development are managed so that:

- the values identified for the outstanding or significant natural features, the outstanding landscapes, and the significant coastal landscapes are protected from inappropriate use and development; and
- the overall landscape qualities of the Rural Scenic Zone are retained.

16.8.3 Policies

...

4 To manage the effects of use and development within the significant coastal landscapes so that:
a) the natural character of the coastal environment is preserved and protected from inappropriate use and development; and b) the visual amenity associated with these landscapes is maintained.

...

e) In the outstanding natural features and landscapes and significant coastal landscapes buildings are to be located in areas with higher potential to absorb change and, together with residential units in the Rural Scenic Zone, where possible, are to avoid skylines, ridgelines, prominent places and features within important views and are to be encouraged to be in sympathy with the dominant forms and colours in the landscape;

...

i) Use and development is to take into account the effects of indigenous vegetation clearance on landscape character, and in particular, clearance is to be avoided where the values identified for the outstanding or significant natural features or outstanding natural landscapes, or the significant coastal landscapes, would be irreversibly lost.

..

8 To recognise that the Rural General Zone is made up of landscapes that have a greater capacity to absorb change because the land has been more intensively developed, and contains a greater range of land uses with a greater dominance of buildings and structures; at the same time acknowledging that the rural amenity of this zone still needs to be managed (refer to Issue 4 and the Associated Objective and Policies).

...

11 Any proposal to re-zone land for urban development, or proposed development of an intensity or scale that exhibits urban-like characteristics are required to assess the impacts on landscape character and the policies in this section of the Plan need to be considered against the merits of such a re-zoning proposal.

Policy 11 directs that where any development is proposed that is of an intensity or scale that exhibits urban-like characteristics, a landscape assessment is required. That has been carried out by Mr Moore. In relation to this policy, he concludes:

In my assessment, the proposed development exhibits rural lifestyle characteristics. Whilst this will create a node of higher built density that will contrast with more sparsely settled areas surrounding, considering the mitigation measures proposed, it will acceptably integrate in this environment in my assessment. As regards the fit with the Rural Section policies, specifically rural character will not be maintained, but more widely it is my conclusion that adverse effects on amenity and natural character will be sufficiently low as to disqualify this proposal as inappropriate development.

We interpret Moore's comments to mean that while amenity of the subject site will clearly change (due to a higher density of development), the impact on wider rural amenity will be sufficiently low and as a consequence, the development can be considered appropriate in the rural environment. His view tends to confirm the direction of Policy 8, that there are landscapes within the Rural zone that have a greater capacity to absorb change and that this is one of those landscapes (due to it already exhibiting a rural lifestyle character). In this case, we have a triangular block of land that is bounded by Gardiners, Thousand Acre and Beach Road. This block is now considered to be more of a lifestyle area opposed to a true farming area and is distinct from the surrounding farm properties.

With respect to the significant coastal landscape overlay, we note that the proposal is set back from this zone. Mr Moore has also assessed the proposal against the policies relevant to this overlay. He considers the proposal "*sympathetic to the natural values of the coast*" and that it "*can be acceptably absorbed into this rural coastal landscape*".

Overall, we do not find the proposal to be inconsistent with the landscape policy suite of the WDP.

4. Otago Regional Policy Statement

The Regional Policy Statement provides an overview of resource management issues facing the Otago region and how the integrated management of its natural and physical resources is to be achieved. District Plans must reflect the provisions of the Policy Statement and cannot be inconsistent with it. It is therefore mainly relevant at the policy formulation level and is not normally relevant to resource consent proposals.

The key policy of the RPS is Policy 5.3.1, which deals with rural activities. It reads as follows:

Manage activities in rural areas, to support the region's economy and communities, by all of the following:

- a) Enabling primary production and other rural activities that support that production;*
- b) Providing for mineral exploration, extraction and processing;*
- c) Minimising the loss of significant soils;*
- d) Restricting the establishment of incompatible activities in rural areas that are likely to lead to reverse sensitivity effects;*
- e) Minimising the subdivision of productive rural land into smaller lots that may result in a loss of its productive capacity or productive efficiency;*
- f) Providing for other activities that have a functional need to locate in rural areas*

The key provision here is e), subdivision that may result in loss of productive capacity. As we have outlined in the effect's assessment above, the land is not productive and any loss of land to farming as the result of this proposal will have a minor adverse effect at worst. While the allotments are smaller than the WDP rural residential minimum lot size, there is still ample space for people to grow their own food. Many people seek a rural coastal lifestyle, and the purpose of the Act is to enable the social, economic, and cultural well-being of people and communities. Such an activity has a functional need to locate in a rural environment.

While this proposal cannot be considered as the traditional type of urban development which Policy 4.5.1 deals with, it is at a higher density than the current rural residential standard of the DP. Hence, the Policy could be seen as of some relevance. It reads as follows:

Provide for urban growth and development in a strategic and co-ordinated way, including by all of the following:

- a) Ensuring future urban growth areas are in accordance with any future development strategy for that district.*
- b) Monitoring supply and demand of residential, commercial and industrial zoned land*
- c) Ensuring that there is sufficient housing and business land development capacity available in Otago;*
- d) Setting minimum targets for sufficient, feasible capacity for housing in high growth urban areas in Schedule 6*
- e) Coordinating the development and the extension of urban areas with infrastructure development programmes, to provide infrastructure in an efficient and effective way.*
- f) Having particular regard to:*
 - i. Providing for rural production activities by minimising adverse effects on significant soils and activities which sustain food production;*
 - ii. Minimising competing demands for natural resources;*
 - iii. Maintaining high and outstanding natural character in the coastal environment; outstanding natural features, landscapes, and seascapes; and areas of significant indigenous vegetation and significant habitats of indigenous fauna*
 - iv. Maintaining important cultural or historic heritage values;*
 - v. Avoiding land with significant risk from natural hazards;*
- g) Ensuring efficient use of land;*
- h) Restricting urban growth and development to areas that avoid reverse sensitivity effects unless those effects can be adequately managed;*
- i) Requiring the use of low or no emission heating systems where ambient air quality is:*
 - i. Below standards for human health; or*
 - ii. Vulnerable to degradation given the local climatic and geographical context;*
- j) Consolidating existing coastal settlements and coastal urban areas where this will contribute to avoiding or mitigating sprawling or sporadic patterns of settlement and urban growth.*

Much of this policy will be given effect to in the Waitaki District when the District Plan is reviewed in the next year or so. We understand that Councils has had feedback on the review, and that housing concerns was a significant issue raised by the community. In that context, we refer to the article in the ODT on January 8 2020, which acknowledges the housing issue in the District and outlined the concerns raised and solutions suggested in that feedback. While the proposal post-dates that feedback, it was conceived prior to this consultation and is reflective of some of the ideas floated in that article.

In terms of the relevant specifics of the policy, we have dealt with f) (i) and h) in the effects assessment and WDP policy assessment above. The direction in j) is zoning matter for the District Plan review but it may be suggested that this proposal is a 'sporadic pattern of settlement. As we have noted above, the proposal is more of a lifestyle development that is located within a rural area that has evolved into

a rural coastal lifestyle destination. This rural area is contained by Gardiners, Thousand Acre and Beach Roads so development will be consolidated and will not sprawl into adjoining farmland.

5. New Zealand Coastal Policy Statement

We note that the WDP was prepared before the NZCPS 2010 so may not yet give effect to the direction found in that statement. As a consequence, the Council has not yet determined the extent of the coastal environment under this NPS. However, the current District Plan does identify the coastal environment in this location and Mr Moore discusses this in his report. He advises as follows:

“In my assessment, and considering the guidance on defining the extent of the coastal environment in Policy 1 of the NZCPS, the WDP delineation is appropriate. Whilst the cliff edge forms a distinct boundary to the area of active coastal processes, the 100m setback line includes areas at risk from coastal hazards (Policy 1 (d)) and includes some of the immediate landscape context (Policy 1 (f)).”

Applying this logic, the development itself is not located within the coastal environment (and as a consequence, assessment in terms of Policy 6 of the NPS is not needed). Mr Moore has, however, considered the landscape provisions of the NPS. In relation to the preservation of natural character (objective 2 and policy 13) he concludes that *“the adverse effects of the proposed development on natural character are not significant and that they are adequately mitigated”* and that *“the development will acceptably integrate within this already modified coastal landscape and will not be inappropriate”*.

6. Section 104D of the Act

Section 104D of the Act sets out a test that non-complying activities must pass before they can be considered for consent. The test has two limbs, being that the activity must have no more than a minor adverse effect on the environment or that it must not be contrary to the policy framework of the District Plan. The conclusion reached above is that the proposal passes both these tests. Consequently, Council can consider the proposal for consent.

Given that the activity passes both limbs of the section 104D test, the only other issue that needs to be considered is the question of plan integrity and precedent. The 2009 Environment Court decision *Protect Piha Heritage Soc Inc v Auckland RC A015/09* noted that the RMA makes no reference to the integrity of planning instruments, precedent or to the coherence of and public confidence in the District Plan. While these are useful concepts that may be applied in appropriate cases, the Court stated that the need to apply them is less necessary where the plan provisions are effects based and the proposal does not generate adverse effects which are more than minor.

The Environment Court in *Berry v Gisborne DC W20/07* made it quite clear from that there will be very few cases where “Plan integrity will be imperilled to the point of dictating that the instant application should be declined”.

In our view this proposal does not offend the effects-based policies of the District Plan and does not generate adverse effects that are any more than minor. While the location is one zoned ‘Rural’ in the District Plan, the block contained with Gardiners, Thousand Acre and Beach Roads has effectively ceased being productive farmland and is now essentially a rural coastal lifestyle location. This proposal is effectively completing the transformation of the area. Moving beyond the confines of these roads, the land still largely comprises large farm properties. As a consequence, this proposal cannot be used as a precedent for similar development elsewhere in this location.

Consequently, it is our view that granting consent to this proposal would not create difficulties for Council in administering the District Plan consistently.

7. Consultation, Affected Persons and Notification

The applicant purchased the land contained within the block bounded by Gardiners, Thousand Acre and Beach Roads in 2004. Consent was granted by WDC for a 15-lot subdivision of that block in 2004. Lots 10 to 15 of that subdivision (which comprises the subject land) was to be completed as Stage 2 but was left to lapse. While this part of the subdivision has since been reconseented (in 2020 by 202.2019.1365), Mr Bill Brown, a Director of the applicant company, has consulted with Council on the future of this land since 2010, with a view to developing the land for rural lifestyle purposes. Mr Brown was seeking inclusion of the land as 'rural residential' under the new District Plan. He was advised in 2017 that Council was not investigating this land for rezoning given the current surplus of such land and it was suggested to him that he pursue his goal via the resource consent route under the current District Plan.

This application is the result of that advice and of the fact that the nature of the rural residential property market, and the housing market in general, has changed considerably in the Waitaki District, as it has in much of the country (notwithstanding the current situation). Much of the surplus rural residential land referred to in 2017 has now been developed or is in locations that are not sought after. As a consequence of this, Mr Brown has been fielding enquires from people seeking a rural coastal lifestyle, although on lots smaller than the normal lifestyle property. The request for smaller lots in fact goes back to Stage 1 of the process and this has only increased over time. The higher density of this particular proposal is an attempt to satisfy that demand.

Mr Brown has also consulted widely with the community. As a consequence, he has received a number of written approvals from neighbouring property owners as follows:

- LH & CA Weir - 97 Gardiners Road.
- Yang, Ho, Yee, Wong & Zhu - Lot 5 DP 356427, Gardiners Road.
- MR & H Martin - 67 Gardiners Road.
- Ching Tao - Lot 3 DP 356427, Gardiners Road
- Michael Hall - Lot 8 DP 346247, Gardiners Road (Beach Road)
- DR Martin - Val Roll No 26140/53100, Thousand Acre Road

GR & DJ Lucas of 53 Gardiners Rd have advised they do not support the proposal while a number of other people in the neighbourhood have not responded to Mr Brown's written request for support for the proposal. Most of these parties were written to twice while Mr Brown also met with some in person.

However, regardless of the written approvals, we assume that Council will fully notify the application and we request that this occur as soon as possible.

8. Part 2 Consideration and Conclusion

When exercising the discretion to grant or refuse the application sought, Part 2 of the Act is normally central to the determination. However, the role of Part 2 is in a state of change following the *King Salmon* decision and the general approach to the overall balancing exercise explained by the High Court in *Thumb Point Station Limited v Auckland Council*. That has been further particularised for section 104 in *RJ Davidson Family Trust v Marlborough District Council*. Hence, the proposal does not need to be evaluated against Part 2 matters and in reality, it has been assessed against the relevant provisions above anyway. For completeness, we would merely say that Part 2 matters are not compromised by this proposal.

In our view both limbs of the Section 104D tests for non-complying activities are satisfied and Council can therefore consider the proposal for consent. Because of the character of this particular location, the proposed development does not compromise the integrity of the District Plan and nor does it create an undesirable precedent. We are of the view that the proposal promotes the purpose of the Act, being

the sustainable management of the natural and physical resources and ask that consent be granted accordingly.



THOUSAND ACRE ROAD
(Legal & Sealed)

BEACH ROAD
(Legal)

SOUTH PACIFIC
OCEAN

Lot 28
Road to Vest

Lot 26

Lot 25

Lot 24

Lot 23

Lot 22

Lot 21

Lot 20

Lot 19

Lot 18

Lot 17

Lot 16

Lot 15

Lot 14

Lot 12

Lot 11

Lot 10

Lot 8

Lot 7

Lot 5

Lot 6

Lot 1

Lot 2

Lot 3

Lot 4

Lot 27

No build Line 100m from Boundary

Approximate Extent of Significant Coastal Landscape Area

Ped. Access

Ped. Access

DRAWING STATUS:
FOR CONSENT

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Title Information:

RT Reference: RT 229968
Legal Description: Lot 10 DP 356427
Area: 24.7942 ha

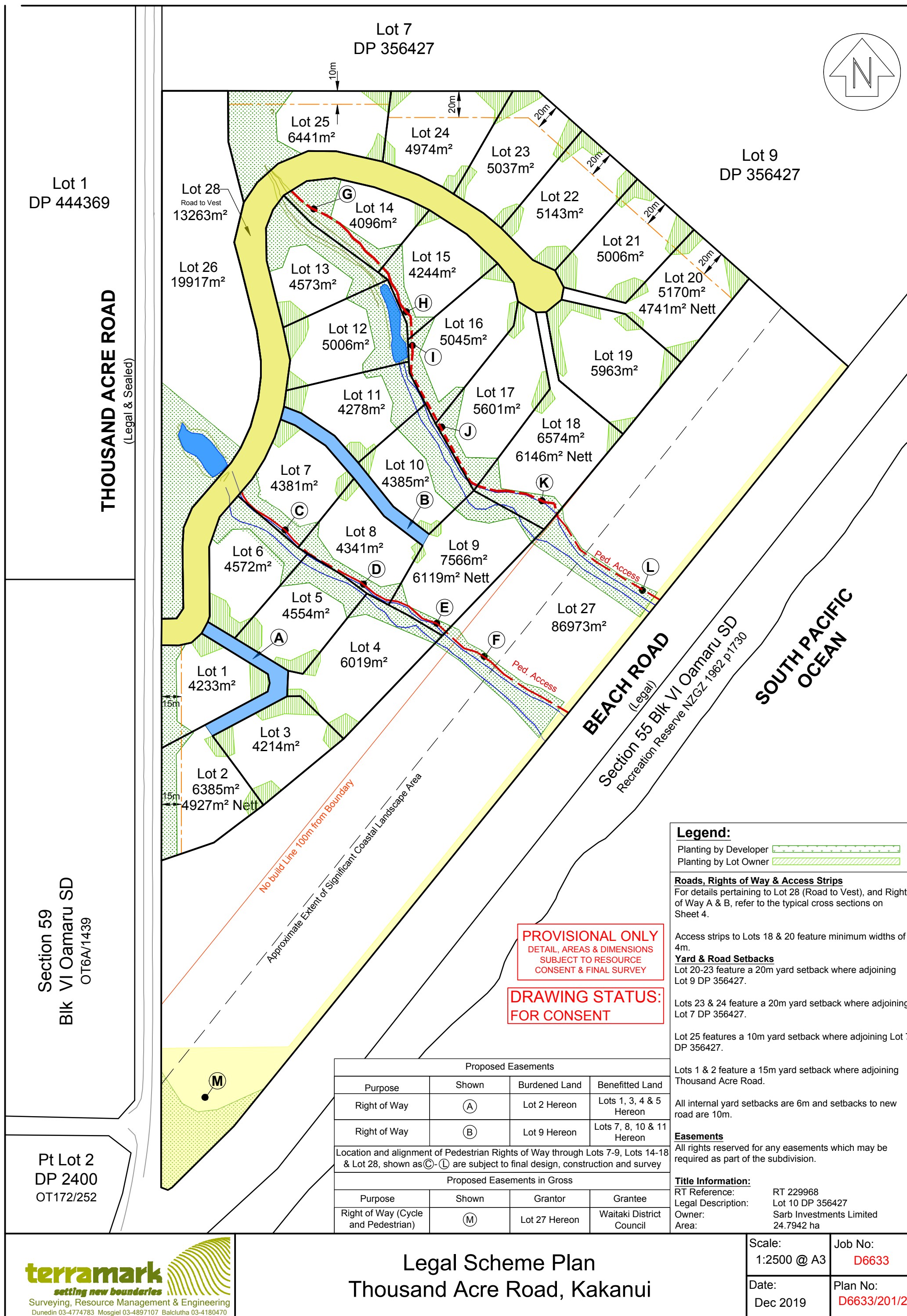
Scale:
1:2500 @ A3

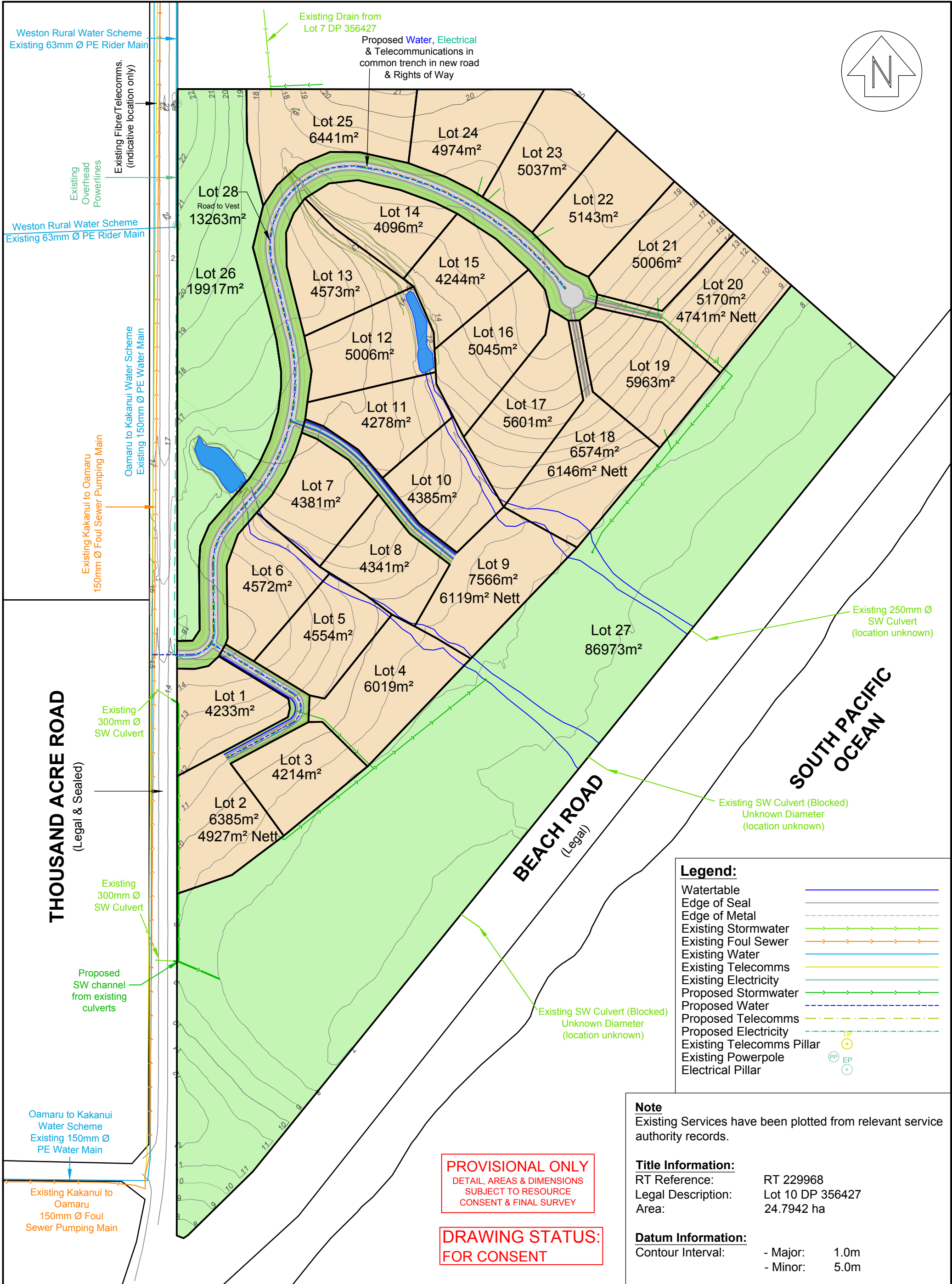
Job No:
D6633

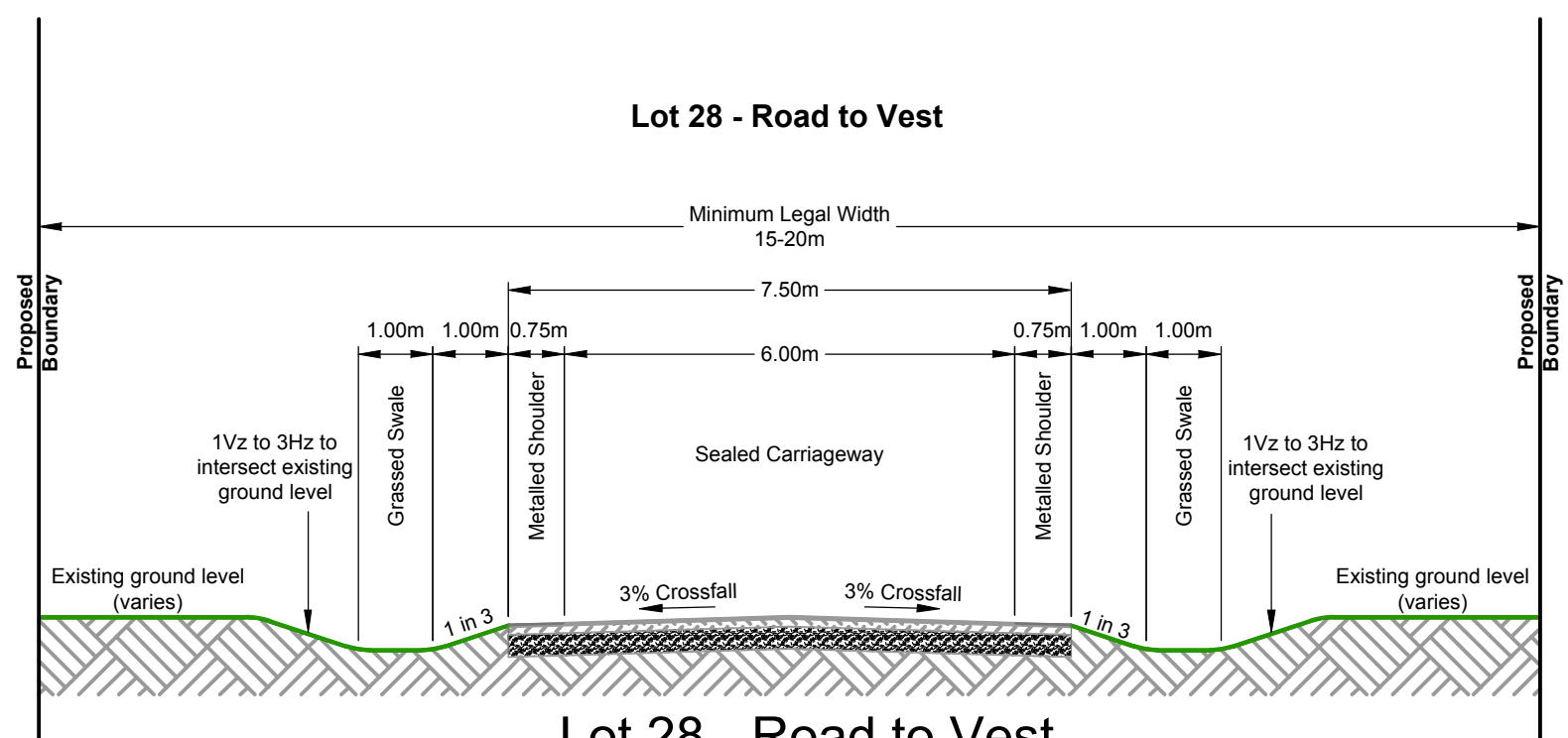
Date:
Dec 2019

Plan No:
D6633/201/1

Overview Development Plan
Thousand Acre Road, Kakanui

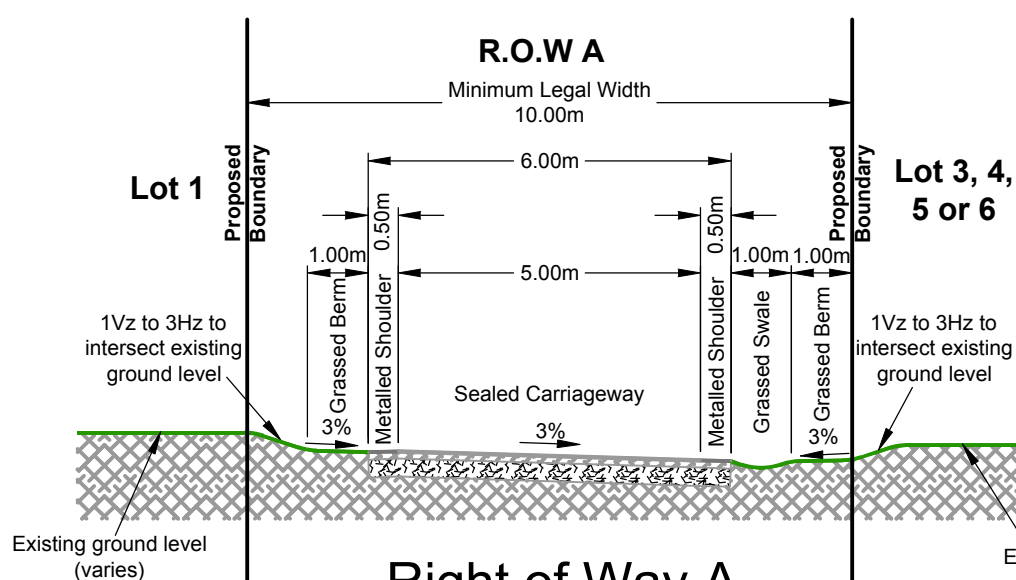




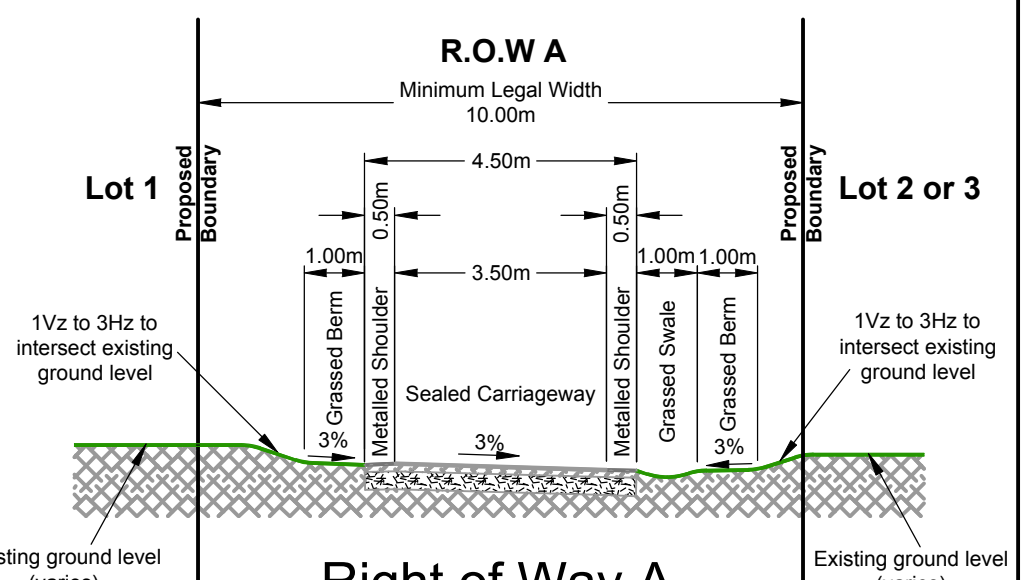


Lot 28 - Road to Vest
Typical Cross Section

Scale 1 to 100 @ A3

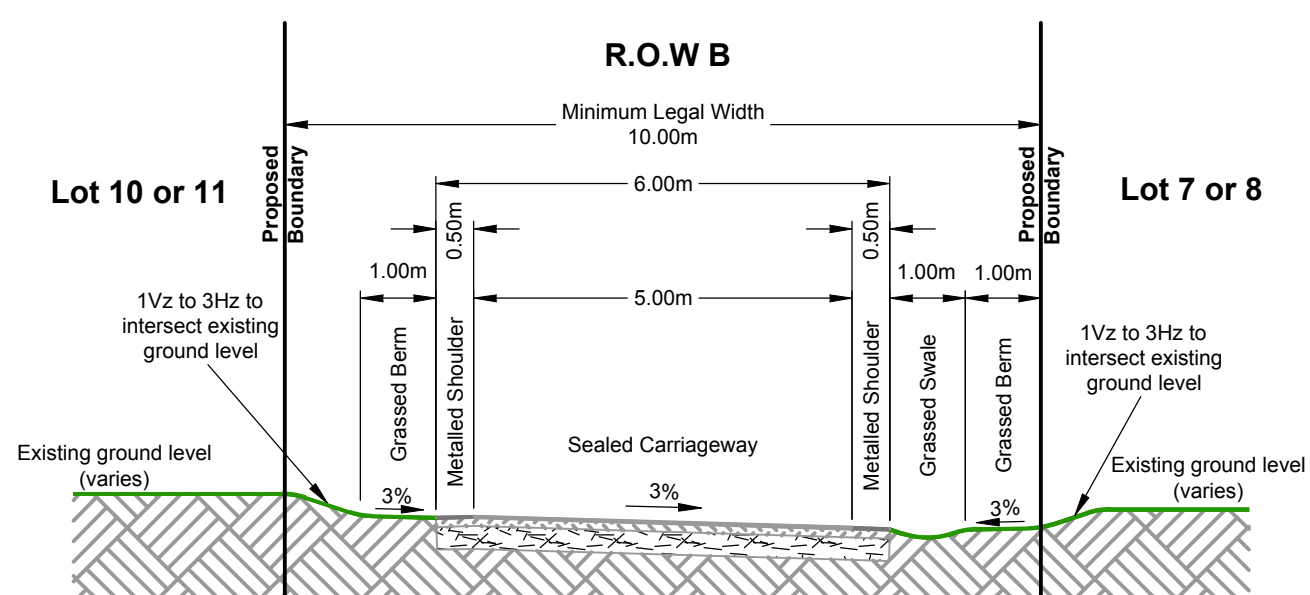


Right of Way A
Typical Cross Section
5.0m Wide Sealed Carriageway



Right of Way A
Typical Cross Section
3.5m Wide Sealed Carriageway

Scale 1 to 125 @ A3



Right of Way B
Typical Cross Section

Scale 1 to 100 @ A3

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

DRAWING STATUS:
FOR CONSENT



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **229968**
Land Registration District **Otago**
Date Issued 03 November 2005

Prior References

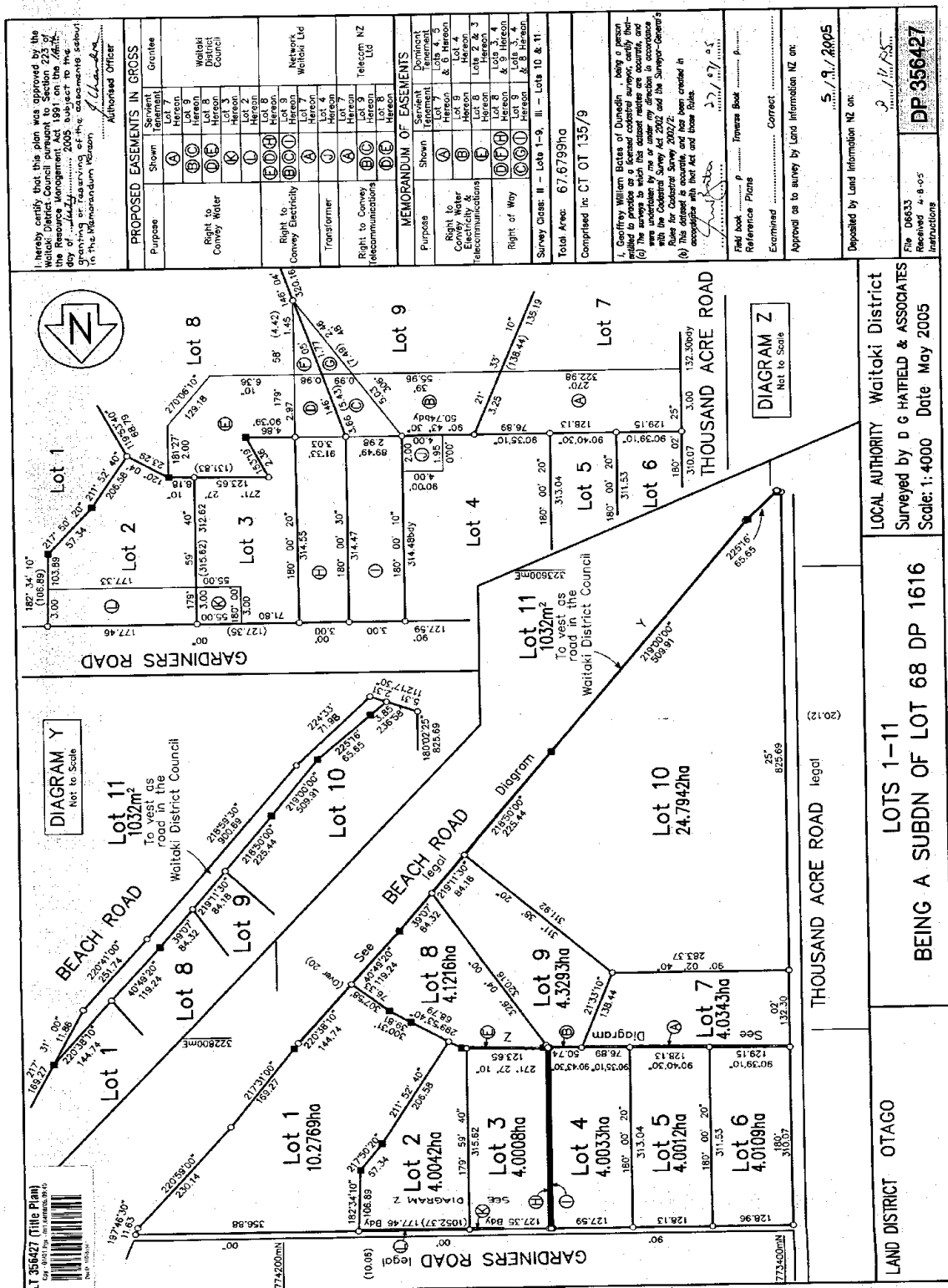
OT135/9

Estate	Fee Simple
Area	24.7942 hectares more or less
Legal Description	Lot 10 Deposited Plan 356427

Registered Owners

Sarb Investments Limited

Interests



Proposed Subdivision, Cottleston Downs, Awamoa.

Landscape and Visual Effects Assessment Report

14 April 2020



Prepared by

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Introduction

Sarb Investments Ltd is applying for resource consent to subdivide an approximately 24.8 ha property located between Thousand Acre Road and Beach Road, Awamoa. The subdivision will provide for 25 lifestyle blocks of between 4096 and 6441 m² with 2 balance areas of 19917 and 86973 m² to be used for hay and silage production. In terms of Waitaki District Plan (WDP) Rule 14.3.5 this will be a non-complying subdivision activity in the Rural zone which has a minimum net lot area standard of 4ha (40000 m²). This report provides a landscape and visual effects assessment of the proposed development and is structured as follows:

- Site and area description;
- Landscape values;
- The inland extent of the coastal environment
- The permitted baseline
- The proposed development;
- Landscape and visual effects illustrations;
- Landscape effects assessment;
- Visual effects assessment;
- Statutory provisions assessment;
- Conclusion.

Site and area description

The site is located between Thousand Acre and Beach Roads, adjacent to the coastline between Kakanui and Cape Wanbrow. The wider landscape context is the North Otago downlands, an area of low rolling country with occasional more resistant mesas and cuestas. The underlying geology in this part of the coast is limestone, siltstone and sandstone interspersed with more resistant volcanic rock (Deborah and Waiareka Volcanics) and the seaward edge is truncated by a degraded sea cliff. The area is drained via small water courses, two of which run through the property. Awamoa Creek is approximately 1km to the north and the Kakanui River some 4km to the south.

The site has a very gentle south-east gradient overall, and apart from the two water courses, the main topographical feature is a gentle, variably distinct coastal escarpment form that runs through the middle of the site parallel with the coast. There are currently ponds associated with each of the water courses that have been created by damming.

The property (and the area generally) has had a land use history of arable farming and the current land use on the property is grazing and silage production. Apart from a pine shelterbelt along a short length of the Thousand Acre Road boundary and some scrubby exotic vegetation (elderberry and willow) within the northern watercourse, the site vegetation is largely exotic pasture grass. There are no buildings on the site presently and the only structures are farm fences.

The surrounding landscape is rural in character with rural land uses, scattered dwellings and farm sheds, occasional (mainly exotic) shelter and amenity plantings and open pastoral paddocks. It is noticeable that the historically open rural landscape is becoming more densely settled in recent years, with built density in some areas (e.g. the southern side of Gardiners Road beginning to reflect the WDP 4ha minimum rural lot size or less.

Figures 1 – 11 (see attached graphic supplement) illustrate the character of the site and area.

Landscape Values

The values that are referenced by the Waitaki District Plan (WDP) and the New Zealand Coastal Policy Statement (NZCPS) that apply to this site and area can be summarised as:

- rural amenity including openness, privacy, spaciousness, quietness and rural outlook.
- the natural character and visual amenity of the coastal environment / identified significant coastal landscape.

The site certainly exhibits rural character due to its rural land use, openness, lack of built form and spacious qualities. More generally, the landscape in the area has rural character

also based on rural land uses such as grazing, and built density which although increasing, is clearly rural in nature.

Natural character attributes and associated visual amenity values of the site are underpinned by its largely unmodified natural landforms and lack of built form. The site is however significantly modified ecologically by its history of farming and the vegetation cover is now largely exotic. Natural coastal processes are slowly but progressively eroding the coast adjacent, and the low cliff edge forms a distinct break between the beach where natural coastal processes forms and elements are strongly dominant, and the coastal hinterland adjacent where rural land use significantly modifies the natural character. Whilst there are no buildings on the site itself, these along with associated shelter and amenity plantings, are characteristic elements in the wider coastal rural landscape.

The inland extent of the coastal environment

In the WDP, the significant coastal landscape is delineated as an approximately 100m strip along the coast from MHWS. The background Waitaki Landscape Study (Densem, 2004) discussed this coastline as being *‘a significant landscape at a district level, including the beach, cliffs, stream and river mouths and estuaries, and also land between the clifftop and coastal road, where that is in public ownership’*.

In my assessment, and considering the guidance on defining the extent of the coastal environment in Policy 1 of the NZCPS, the WDP delineation is appropriate. Whilst the cliff edge forms a distinct boundary to the area of active coastal processes, the 100m setback line includes areas at risk from coastal hazards (Policy 1 (d)) and includes some of the immediate landscape context (Policy 1 (f)). An alternative approach to the somewhat arbitrary 100m setback line which better reflects the landform, could be to delineate the top of the gentle coastal scarp as the boundary of the coastal environment in this area. This was the approach taken in the Coastal Environment of Otago Waitaki District Section Report (Moore et al, 2015), For the purposes of this report however, the extent of the coastal environment will be taken to coincide with the WDP Significant Coastal Landscape as this is a statutory document with current standing, and is substantially consistent with the NZCPS in this regard, in my assessment.

The Permitted baseline – Waitaki District Plan

Whilst the rural landscape in the vicinity of the site largely exhibits a fairly open character, the Waitaki District Plan (WDP) provisions do not protect the current level of built density but provide for a minimum lot size of 4ha per residential unit. There is no maximum area standard for buildings in the Rural Zone and the maximum height for buildings is 10m. **Figure 12** illustrates theoretically what the residential built density could be under the permitted baseline. This denser settlement pattern is likely to also involve more shelter and amenity plantings – often expressing the property boundaries. Overall, the landscape effect could be one with significantly reduced landform legibility and spaciousness. This permitted baseline is relevant to the assessment of landscape and visual effects.

The proposed development

The proposed development is illustrated in **Figure 13**. It involves subdivision of the property into 28 lots. Of these, 25 (lots 1 – 25), are to be developed for residential purposes, 2 (lots 26 and 27), are balance areas to be used for hay and silage production purposes, and one (lot 28) is to be vested as road.

The vision for the development is that it provides for country living in a coastal situation on sites that are not unduly large to manage. Open space areas are retained for rural land use along the coastal edge and adjacent to Thousand Acre Road. Whilst the development will result in a node of greater than permitted rural built density, it will include controls to effectively mitigate built impact on rural amenity and will have a comprehensive landscape / ecological enhancement focus designed to enhance natural character, which will in time, provide balance to adverse rural amenity and natural character effects associated with more buildings.

The proposed internal road will have a 15 - 20m legal width and a 6m sealed carriageway. To ensure it has a rural character there will be no kerb and channel, footpaths or street lighting and the carriageway will have soft edges (gravel shoulders and grassed swales).

The berm areas will be maintained by mowing (by adjacent landowners) and the road will have a spacious character. An entrance feature at the roadway intersection with Thousand Acre Road is proposed. There is no design concept for this as yet however, it is intended that it will be 'low-key' using materials appropriate to the local rural landscape (e.g. Oamaru Stone and heavy timber) and will be unlit.

Framework planting to be undertaken by the developer is proposed, as shown in Figure 13. This planting will be established alongside the watercourses, along part of the Thousand Acre Road frontage and at the southern end of the site near the intersection of Thousand Acre and Beach Roads. The planting concept is based on restoration of the natural character of the site and plants appropriate to the local environment are proposed as outlined in **Appendix A**. This planting will be implemented prior to Section 224C certification of the subdivision and maintained by the developer until well established, after which time maintenance will become the responsibility of the various lot owners.

Further plantings designed to soften and mitigate the visual impact of buildings are also proposed, to be established by the future lots owners (see Figure 13). These are also to be comprised of the framework species listed in Appendix A.

Proposed controls over Lots 1 - 25

Controls are proposed over the development on the residential lots to minimize adverse effects on rural amenity and natural character as follows:

(a) All buildings shall be a maximum of 5m height above existing or modified ground level and gross floor area for all buildings on each site shall be no greater than 350m².

(b) Building setbacks will be as follows, with rationale noted

Boundary	Setback	Rationale
Existing road	15m	Consistent with WDP Rural Zone standard

Existing adjacent properties	20m	Consistent with WDP Rural Zone standard (except for Lot 25 which due to lot shape has been reduced to 10m)
Proposed internal road	10m	To provide for a spacious character for the internal roadway (in conjunction with building height controls)
Other internal boundaries	6m	Consistent with the WDP Rural Zone standard for non-residential buildings over 10m ² gross floor area (except for buildings for the housing of animals).

- (c) All buildings will be clad in naturally weathered timber or locally appropriate stone, or other materials that are finished in colours that have low levels of contrast with the colours of the rural landscape setting. Painted surfaces will have light reflectivity ratings of no more than 30%.
- (d) All earthworks will be designed to blend seamlessly with the natural contours surrounding. Retaining walls are to be avoided except where screened by buildings or landform from viewpoints beyond the site. Fill is not to be imported to raise the elevation of building sites.
- (e) Access driveways are to retain an informal rural character with soft edges (i.e. no kerbs). Monumental gates and driveway lighting is not permitted.
- (f) Water tanks are to be sited, and / or buried and / or screened (by planting) to have minimal visual impact from beyond the property.
- (g) Fencing (if any) is to be confined to standard rural post and wire construction or stone walls using locally appropriate rock. Boundary planting rather than fencing is encouraged.
- (h) All outdoor lighting shall comply with the following standards to minimize adverse 'dark sky' effects and effects on rural character:
 - (i) Shielding: All outdoor lighting shall be shielded from above in such a manner that the edge of the shield shall be below the whole of the light source.

- (ii) Filtration: All outdoor lighting shall have a filter to filter out the blue or ultraviolet light, provided the light source would have more than 15% of the total emergent energy flux in the spectral region below 440nm. The filters used must transit less than 10% of the light at any wavelength less than 440nm. This therefore includes, but is not limited to, florescent, mercury vapour and metal halide lamps.
- (iii) The following outdoor lighting shall not be displayed between 11.00pm and sunrise:
 - Searchlights (except emergency services on site should need arise)
 - Outside illumination for aesthetic purposes of any building or garden feature by floodlighting.
 - Outside illumination of any car parking area.
 - Any outdoor illumination in which light is produced by high pressure sodium, metal halide, mercury vapour lighting or florescent lighting.
- (i) With the exception of plantings below 1.5m in mature height and fruit trees, all plantings on the lots will be confined to indigenous species appropriate to the character of the site. Recommended species are listed in Appendix A
- (j) The mitigation plantings within each lot as shown in Figure 13 are to be established within 1 year of any building works commencing on site. These are to be implemented in accordance with the guidelines in Appendix A.

Landscape and visual effects illustrations

To illustrate the effects of the proposed development on the landscape character, photo-simulations have been prepared from various representative viewpoints surrounding the site. These are shown in **Figures 14 - 21** and in each case illustrate the existing landscape, a photo-simulation of the proposed development showing approx. 10 years growth of the proposed plantings, and comparative photo-simulations indicating the theoretical built density that could occur on the property under the WDP permitted baseline

(see Figure 12), and as proposed by this development (see Figure 12(a)). **Appendix B** contains a method statement for the photo-simulations.

Landscape effects assessment

Landscape effects describe the impact of the proposal on the landscape elements, patterns, and processes, and its character. Their significance is determined with reference to the value and sensitivity of the landscape, and the scale and character of the proposal. The nature and magnitude of the landscape effects are described below based on the following scales:

Nature of effect

- *Positive*
- *Neutral*
- *Adverse*

Magnitude of effect

- *Very high*
- *High*
- *Moderate high*
- *Moderate*
- *Moderate - low*
- *Low*
- *Very low*

The site is part of a rural landscape with no particularly recognised landscape values, except that the coastal edge is classified as a Significant Coastal Landscape (SCL) with natural character and associated visual amenity values. As the area has been significantly modified by rural activities, it is my assessment that the main attributes that contribute to natural character are associated with its rural character generally, including low built density and openness which allows for generally high legibility of the natural landforms. Rural character is also supported by the productive rural land uses. Whilst the landscape presently exhibits relatively low built density, as discussed, the WDP does not protect the existing density and character but rather, provides for one dwelling per 4ha. Figure 12

illustrates the theoretical effect of this. Overall, it is my assessment that landscape sensitivity is high within the area identified as SCL (given that the preservation of the natural character of the coast is a matter of national importance under the RMA) and moderate more widely.

The proposed development will introduce more buildings and roading to the site. The natural landforms will be generally retained at the wider scale but there will be earthworks of modest scale associated with the internal road, each house site and access to these. The proposed development will involve establishment of an area of approximately 3.6ha in indigenous vegetation including wetland areas, and corridors and blocks of native shrubs and trees. The effect of all this will be to reduce the existing large rural scale and open, spacious character over much of the site, to enhance indigenous biodiversity, and to change the character and land use of much of the site from rural to high density rural lifestyle. Approximately 56% of the property will have a rural lifestyle use and character, whilst the remainder will remain rural. The overall density proposed (one dwelling per approx. 0.99ha) is akin to the WDP minimum site size standard for Rural-residential zones of one house per 1ha.

Whilst the scale and openness of much of the property will reduce, adverse effects on rural character associated with more buildings will be mitigated by the proposed framework plantings and controls over built development. The significance of this change in character is minimised when account is taken of the permitted baseline density of one dwelling per 4ha. Rural land use and open character will be maintained adjacent to the coast (including within the SCL) and alongside much of the Thousand Acre Road boundary.

Overall, it is my assessment that the nature of the landscape effects of the proposed development will be adverse in that part of the site will no longer have the rural character and openness values that the WDP Rural Zone envisages. I assess the magnitude of these adverse effects as moderate – low taking into account the following:

- Adverse effects on naturalness will be mitigated by the proposed planted framework and biodiversity values will be enhanced.
- Built impact will be controlled by the proposed suite of mitigation measures. In particular the proposed height and colour controls, and framework plantings will be

very effective when compared with what could occur as of right (6 dwellings and 10m high buildings uncontrolled as to colour / reflectivity) under the current consent (202-2019-1365).

- Openness will be impacted but mitigated from significant adjacent viewpoints by the retention of extensive open space adjacent to Thousand Acre Road and the coast provided by lots 26 and 27 (the rural lots).
- Rural land use will still be present on the site, albeit reduced in area.
- Essentially, the above factors will ensure that whilst the proposed development introduces uncharacteristic built density, it will integrate well with the surrounding rural landscape character.

Visual effects assessment

Visual effects describe the impact of the proposal on the views available to people and the impact of this on amenity values. Amenity values are defined in the RMA as *‘those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes’*. Visual effects are determined with reference to the sensitivity of viewers to change / the value placed on existing views, and the scale and character of the proposal. The nature and magnitude of the visual effects are described below based on the same scale as the landscape effects assessment above.

It is my assessment that the value placed on views of the rural coastal landscape in this area are moderate to high. This is on the basis that the WDP recognizes the coastal strip as a Significant Coastal Landscape with natural character and visual amenity values (Policy 16.8.3 (4)) and because it also includes an objective to maintain rural amenity generally (Objective 16.5.1). In discussing this particular area the Waitaki Landscape Study (Densem, 2004) refers to ‘lightly rolling and horticultural or farmed land right to the coast and ‘an interesting feeling of openness and conjunction of land and sea’.

Viewers potentially impacted by development on this site will include nearby residents with views toward the site from their properties, and users of the roads in the area. With the

exception of the dwelling directly adjacent to the site on the northern boundary (67 Gardiners Road) this assessment has not involved visits to private properties and is made on the basis of observations from the public roads in the vicinity or from on the property itself.

The site is visible from sections of Beach Road to the south, Thousand Acre Road, and Seadown Road. It is largely screened by landform and / or vegetation from Gardiners Road and from the open section of Beach Road to the north but can be viewed from the partially eroded portion of Beach Road adjacent. Very distant views are possible from Kakanui e.g. near the fishing club.

The following is an assessment of the effects of the proposed development from various representative viewpoints.

Kakanui Headland (see Figure 1)

Relevance of viewpoint	A long distance public viewpoint to the south of the site from which the coast to the north including the site, can be seen.
Approx distance to nearest visible building site	3.5km
Existing view description	This is a view northward up the coastline toward Cape Wanbrow. The site is visible across the water as part of the rural coastal landscape. Its character is pastoral with scattered rural buildings and shelter trees. Scenic values are at least moderately high.
Description of visual effects	Most of the proposed development will be visible from this viewpoint, with only a small area near Thousand Acre Road screened by an intervening headland. The proposed development will be seen as a node of higher built density set amongst plantings. The visual prominence of the buildings will be mitigated by the proposed height and colour controls and by the plantings once these are well established.

Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - low in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 5 – 6 visually prominent buildings visible on the site under the permitted baseline; and • Whilst the built density will introduce an area of rural lifestyle character, this will be seen at a distance and visual prominence of buildings will be muted.
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Beach Road – south of the site (see Figure 14)

Relevance of viewpoint	A viewpoint representative of coastal views northward from Beach Road
Approx distance to nearest visible building site	830m
Existing view description	This is a view northward up the coastline toward Cape Wanbrow, which is the main focal point. For motorists it will generally be experienced fairly fleetingly. The ocean, beach, low cliff and rural landscape behind contribute to a view with high scenic qualities. The landscape is pastoral and open in character with scattered houses and trees.
Description of visual effects	The development will be seen in the middle distance in its entirety and in the context of the surrounding rural landscape. It will result in a change of character, with a node of rural lifestyle scale dwellings and plantings introduced. The landscape scale and openness will be reduced in the vicinity of the site but the proposed plantings and the height and colour controls on the buildings will mitigate building

	prominence. The proposed native plantings at the southern end of the site will be relatively prominent and will enhance natural character. Overall, once plantings are well established (10 year timeframe) the development will integrate well into the rural landscape setting.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings

Thousand Acre Road adjacent to the site – south end (see Figure 15)

Relevance of viewpoint	A close proximity northward viewpoint on Thousand Acre Road directly adjacent to the property. Also generally indicative of the visual effects from Seadown Road and properties to the southwest of the site.
Approx distance to nearest visible building site	220m
Existing view description	The site is in the foreground of the view and is seen as open farmland with the sea and Cape Wanbrow beyond. Scattered dwellings are visible in the middle distance on nearby properties to

	the north and there are a few lineal shelterbelts. For motorists the view will generally be experienced fairly fleetingly.
Description of visual effects	<p>From this viewpoint views of the ocean and toward Cape Wanbrow will be retained but the existing rural character of part of the site will be altered by the proposed rural residential style development. Given the viewing angle the buildings will be mainly seen stacked behind each other rather than spread out across the width of the view. In this part of the site, the current pastoral openness will be replaced by buildings and native plantings. Whilst houses will be evident their visual impact will be mitigated by the height and colour controls and (progressively) by the structure plantings.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The possibility that under the permitted baseline, boundary plantings could be established that entirely screen views across the site to the ocean. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • Significant openness is retained adjacent to the road and the coast from this viewpoint.

Thousand Acre Road adjacent to the site – north end (see Figure 16)

Relevance of viewpoint	A close proximity south-eastward viewpoint on Thousand Acre Road directly adjacent to the property.
Approx. distance to nearest visible building site	110m
Existing view description	The site is seen as open pastoral farmland in the foreground and mid-ground of the view, sloping gently to the ocean behind. The natural landform character is legible and exotic vegetation can be seen in the northern waterway gully. For motorists the view will generally be experienced fairly fleetingly.
Description of visual effects	The proposed development will introduce a swathe of rural lifestyle land use in the middle ground with open paddock seen in front of this and the ocean still visible beyond. Rural character will be considerably modified but the proposed development will integrate with the landscape well with high amenity provided by the indigenous plantings, open foreground and buildings nestled into the planted context.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The possibility that under the permitted baseline, boundary plantings could be established that entirely screen views across the site to the ocean. • The built density will introduce an area of rural lifestyle character but the proposed development controls over

	<p>height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it.</p> <ul style="list-style-type: none"> • The positive effect of large areas of indigenous plantings • A degree of openness is retained adjacent to the road from this viewpoint.
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Thousand Acre Road north of the site (see Figure 17)

Relevance of viewpoint	A close proximity southward viewpoint on Thousand Acre Road, just north of the property. Also generally indicative of the visual effects from properties to the northwest of the site.
Approx distance to nearest visible building site	250m
Existing view description	<p>The view is southward across other small (approx. 4ha) rural properties toward the site. Both these properties and the site are seen as open pastoral farmland falling away gently toward the ocean, which is seen behind (the pond in the photograph was an ephemeral feature caused by a leakage issue and is now gone).</p> <p>Exotic trees adjacent to the northern watercourse on the property can be seen. Young boundary plantings are visible in the foreground which will eventually screen views toward the site and the ocean and are indicative of what is likely to happen more generally under closer (permitted) rural subdivision. For motorists the view will generally be experienced fairly fleetingly.</p>
Description of visual effects	<p>The proposed development will change the open rural character in the mid-ground of this view by introducing built development of a rural lifestyle nature. The existing exotic trees on the site (both in the gully area and along the road boundary) will be replaced by indigenous vegetation and a degree of openness will be retained close to Thousand Acre Road. The proposed building controls and</p>

	structure plantings will limit built impact and assist with integration of the development with the rural landscape context.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The change to the landscape character in the foreground associated with closer (permitted) rural development i.e. less openness. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings.

Gardiners Road (see Figure 18)

Relevance of viewpoint	Views toward the site are not particularly the focus of views from Gardiners Road but this viewpoint is generally indicative of the visual effects from properties to the north of the site.
Approx distance to nearest visible building site	470m
Existing view description	Gardiners Road is at a higher elevation than the site and this viewpoint has views across the open rural land of the site in the middle distance to the ocean and Moeraki peninsula in the far distance. There is some screening by intervening shelterbelts.

Description of visual effects	<p>The proposed development will change the open rural character in the mid-ground of this view by introducing built development of a rural lifestyle nature. The existing exotic trees on the site (both in the gully area and along the road boundary) will be replaced by indigenous vegetation and a degree of openness will be retained close to Thousand Acre Road. The development will be seen about 6 sections wide with (due to the landform sloping away) much of the development screened by the closer buildings and plantings. The proposed building controls and structure plantings, along with the viewing distance will limit built impact and assist with integration of the development with the rural landscape context.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • The screening of much of the more distant development by the closer houses and plantings.

Beach Road approx. 540m north of Gardiners Road (see Figure 7)

Relevance of viewpoint	<p>A viewpoint southward along the coast toward the site from Beach Road, north of Gardiners Road – one of few places from which the site is partly visible.</p>
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Approx distance to nearest visible building site	1.46 km
Existing view description	This is a view southward along the coastline toward Kakanui and Moeraki beyond. The seaward edge of the site can be seen in the middle distance as part of the rural coastal landscape but most of the property is screened by intervening landform and vegetation.
Description of visual effects	The proposed development on the site will be substantially screened from this viewpoint. Any dwellings visible that are associated with the dwellings will have minimal visual prominence due to the viewing distance, their muted colour schemes and the much greater impact of the existing houses located closer. The visible coastal edge part of the site will retain an open rural character.
Visual effects assessment	In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / very low in both the short and long term.

Beach Road approx. 350m north of the site (see Figure 19)

Relevance of viewpoint	This is a viewpoint from close to the closed road sign and barrier fence to the north of the site on Beach Road and represents as close a viewpoint as most people (pedestrians) will get from Beach Road to the north. Viewer numbers are probably low due to the vehicle barrier further north near Gardiners Road and the lack of easy through access.
Approx distance to nearest visible building site	410m
Existing view description	This is a view southward along the coastline toward Kakanui and Moeraki beyond. The site is in the middle distance and seen as part of the open pastoral rural coastal landscape. Existing houses are

	already quite prominent features both at near proximity to the west and in the distance beyond the site.
Description of visual effects	Some of the proposed houses will be visible behind the existing dwelling at 67 Gardiners Road but many will be screened by landform. The flat land adjacent to the coastal cliff and Beach Road will retain its current open rural character but the gently rising coastal terrace slopes back from this will undergo a change to rural-residential character. Buildings will be seen within a well planted context with an indigenous character and their visual prominence will be minimised by the proposed development controls.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of at least 4 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • The screening of much of the development from this viewing angle

Beach Road adjacent to north end of the site (see Figure 20)

Relevance of viewpoint	A close proximity view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It
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	should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion.
Approx distance to nearest visible building site	140m
Existing view description	The site is seen in the foreground of inland views from this viewpoint and as open, rural pasture. The low coastal terrace is the main landform feature. There are a few houses and exotic shelterbelts visible in the distance.
Description of visual effects	Open paddock will remain on the immediately adjacent flat area and indigenous plantings will highlight the watercourse areas. Beyond this in the middle distance, the character will change with rural lifestyle development on and above the gentle terrace landform. The building design controls (height / colour etc) will effectively reduce the potential built impact, as will the structure plantings as they mature.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / high in relation to the existing landscape. I consider however, that the potential effects associated with the permitted baseline could also be significantly adverse, and could entail the establishment of visually prominent houses as shown (see Figure 20 (c)) as well as lineal boundary plantings. Overall then and taking account of the permitted baseline, I rate the short term effects as adverse / moderate reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of at least 4 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over

	<p>height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it.</p> <ul style="list-style-type: none"> • The positive effect of large areas of indigenous plantings
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Beach Road adjacent to south end of the site (see Figure 21)

Relevance of viewpoint	A close proximity view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion.
Approx distance to nearest visible building site	200m
Existing view description	The site is seen in the foreground of inland views from this viewpoint and as open, rural pasture. The low coastal terrace is the main landform feature. There are a few houses and exotic shelterbelts visible in the distance.
Description of visual effects	Open paddock will remain on the immediately adjacent flat area and indigenous plantings will highlight the watercourse areas. Beyond this in the middle distance, the character will change with rural lifestyle type development on and above the gentle terrace landform. The building design controls (height / colour etc) will effectively reduce the potential built impact, as will the structure plantings as they mature.
Visual effects assessment	In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate-high in relation to the existing landscape. I consider however, that the potential effects associated with the permitted baseline could also be significantly adverse, and

	<p>could entail the establishment of visually prominent houses as shown (see Figure 21 (c)) as well as lineal boundary plantings. Overall then and taking account of the permitted baseline, I rate the short term effects as adverse / moderate reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 3 - 4 visually prominent buildings visible on the site under the permitted baseline from this viewpoint. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings
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Adjacent property - 67 Gardiners Road (see Figure 11)

Relevance of viewpoint	A directly adjacent property with an existing dwelling
Approx distance to nearest visible building site	20m
Existing view description	This view is from the southwestern deck of the dwelling. Its main focus is across the low boundary plantings and the rural land of the site to the ocean and southward coastline including Kakanui and Moeraki. More widely, the open rural paddocks back toward Thousand Acre Road form part of the coastal landscape context.
Description of visual effects	The visual amenity effect of the proposed development from this property is that the existing rural character of the land adjacent to the southwest, will transform to rural lifestyle and in particular, that new dwellings are proposed on the lots adjacent to its southwestern boundary. The current WDP rural zone setbacks apply but a higher density of buildings than would occur under the permitted baseline

	<p>will result. Balancing this, the proposed building scale and height controls will place more limits on the impact of built form than what could occur as of right (per site) and the proposed plantings will also provide screening and softening mitigation. In terms of effects on the coastal views from this property, these are effectively protected already by the WDP building line restriction, which is retained and moved approx. 5m inland under the proposed development.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term, reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of buildings and / or plantings that would generally screen views over the site under the permitted baseline from this viewpoint. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • Protection of the sea / coast views is unaffected or marginally improved by the proposed development.

Statutory provisions assessment

Waitaki District Plan

The proposed development is a non-complying subdivision activity in terms of Rule 14.3.5 in the WDP. As such, an assessment against the Subdivision and Rural Zone objectives and policies is required. Those objectives and policies considered relevant to the

landscape and visual effects of the proposed development are outlined below, along with brief comment.

<p>8.4.2 Objective 3</p> <p>The maintenance or enhancement of amenity, historic heritage, nature conservation values and landscape character through the subdivision process.</p>	<p>The proposed subdivision and development will result in a change in the existing rural character and adverse effects on the amenity values associated with this. More generally however, amenity values will be maintained through the development of a high quality rural lifestyle environment with significant plantings to enrich natural values and to mitigate the effects of more built form.</p>
<p>8.4.3 Policies</p> <p>3. To avoid or mitigate any adverse effects on visual amenity values associated with subdivision and associated development works.</p> <p>4. To encourage innovative subdivision design consistent with the maintenance of amenity value.</p>	<p>Visual amenity values associated with the site based on its existing open pastoral rural character will be adversely impacted but the existing level of openness is not assured under the WDP permitted baseline. The proposed development mitigates these adverse effects through controls to minimise the visual prominence of built form and through significant indigenous plantings designed to screen and integrate buildings. Whilst amenity values associated with the existing character of the area will be modified, the development will result in a rural lifestyle character that will have high amenity values through well integrated built form and plantings that enhance the indigenous vegetation cover in the area and emphasise the existing waterway features. The subdivision design minimises impacts on the existing landform and the openness adjacent to the coast and Thousand Acre Road.</p>

<p>5. To avoid subdivision where it is likely that the subsequent landuses would not give effect to the policies for the ... significant coastal landscapes set out for the Rural Zone under Chapter 16.8, Issue 7 – Landscapes.</p>	<p>Assessment against the Rural zone provisions is provided below.</p>
<p>16.5.1 Objective 4 – Rural Amenity</p> <p>A level of rural amenity that is consistent with the range of activities anticipated in the rural areas, but which does not create unpleasant living or working conditions for the District's residents and visitors, nor a significant deterioration of the quality of the rural environment.</p>	<p>A node of rural lifestyle land use is consistent with the range of activities encountered in rural areas (interpreted broadly). The development proposed will adversely affect the amenity values associated with the existing open pastoral landscape character but will create a high quality rural lifestyle area. This will result in more opportunities for pleasant rural living without the burden of maintaining a 4ha block and the quality of the environment will be enhanced to the extent that indigenous biodiversity will be increased by the proposed plantings.</p>
<p>16.5.2 Policies 4</p> <p>1. To encourage a wide range of rural land use and land management practices in the Rural General Zone, without increasing the potential for conflict or the loss of rural amenity, by ensuring that subdivision is limited to moderate sized rural allotments.</p> <p>6. To require that residential dwellings be setback from property boundaries so as to reduce the probability of dwellings being exposed to significant adverse effects from an activity on a neighbouring property.</p>	<p>The proposed development is inconsistent with the method component of this policy (in that the lot sizes are less than the 4ha minimum site size) but in my assessment it is generally consistent with its overall aim – i.e. encouraging a wide range of rural land use without the loss of rural amenity. The amenity values based on the current open pastoral character will be modified but a different character with its own high amenity will be introduced.</p> <p>With the exception of Lot 25, the residential setbacks proposed for this development are consistent with the WDP Rural zone standards.</p>

<p>8. To maintain clear distinctions between the urban and rural areas, in order to assist in protecting the character and quality of the surrounding rural areas.</p>	<p>The proposed development will result in a new node of relatively high density rural lifestyle land use. It will modify the existing rural character and have adverse effects on its values of openness and spaciousness but will enhance it in terms of indigenous biodiversity.</p>
<p>16.8.2 Landscape Objective</p> <p>Subdivision, use and development are managed so that:</p> <ul style="list-style-type: none"> • The values identified for the outstanding or significant natural features, the outstanding landscapes and the significant coastal landscapes are protected from inappropriate use and development ... 	<p>The values identified for the significant coastal landscapes are its natural character and [associated] visual amenity values. The area identified as SCL in this area will remain unaffected by the proposed development except for some establishment of indigenous planting, which will enhance its natural character.</p> <p>More widely, natural character and associated amenity values in this coastal area are underpinned by its largely unmodified natural landforms and relatively sparse density of built form. It is however, significantly modified ecologically by its history of farming and the vegetation cover is now largely exotic. The proposed development will adversely affect naturalness to the extent that there will be more built form of a rural lifestyle character but this will be mitigated in the long term by the proposed framework plantings which will enhance the biodiversity natural values and screen, soften and integrate the buildings.</p>
<p>16.8.3 Policies</p> <p>4. To manage the effects of use and development within the significant coastal landscapes so that:</p>	<p>If the landward extent of the coastal environment in this area is defined as coinciding with the extent of the SCL, the effects of the proposed development are positive and involve the establishment of indigenous plantings that will enhance the</p>

<p>a) the natural character of the coastal environment is preserved and protected from inappropriate use and development; and</p> <p>b) the visual amenity associated with these landscapes is maintained.</p> <p>6. To assist in achieving the outcomes in Policies 2 to 5 above, the following policies are to be considered against any subdivision, use or development applications:</p> <p>e) In the ... significant coastal landscapes buildings are to be located in areas with higher potential to absorb change and ... are to avoid skylines, ridgelines, prominent places and features within important views and are to be encouraged to be in sympathy with the dominant forms and colours in the landscape.</p> <p>f) Earthworks are encouraged to be located away from visually sensitive areas, and where practicable towards the edges of the landform and vegetation patterns;</p>	<p>natural character. If the coastal environment is defined more widely, then the development will have adverse effects on naturalness associated with more buildings but these effects will be effectively mitigated by the framework of native plantings. The coastal landscape is already highly modified by agricultural use and whilst the change in this area to rural lifestyle character will alter the character and amenity, it will not be inappropriate per se. A high quality rural lifestyle character sympathetic to the natural values of the coast will result.</p> <p>No buildings are proposed to be within the part of the site that is within the SCL. More widely however, and to assess the development against the spirit of the policy, the subdued gently rolling landform of the site means that the development will be visible within the rural coastal landscape to varying extents from viewpoints surrounding. Seen in views northward and southward along the coast it will generally have a backdrop of higher land. Its form and layout minimises change to the landform and celebrates the watercourses as features. Integration of built form with the landscape is proposed via controls over building design and colour and by the establishment of a strong planted framework. It is my assessment that a node of sensitively designed rural lifestyle development in this area with significant indigenous plantings as proposed, can be acceptably absorbed into this rural coastal landscape.</p>
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<p>h) Earthworks, where possible, should be restored and finished to a contour sympathetic to the surrounding physiography and should also, where possible, be revegetated with a cover appropriate to the site and setting;</p> <p>i) Use and development is to take into account the effects of indigenous vegetation clearance on landscape character, and in particular, clearance is to be avoided where the values identified for Significant coastal landscapes, would be irreversibly lost.</p> <p>8. To recognise that the Rural General Zone is made up of landscapes that have a greater capacity to absorb change because the land has been more intensively developed, and contains a greater range of uses with a greater dominance of buildings and structures, at the same time acknowledging that the rural amenity of this zone still needs to be managed.</p> <p>11. Any proposed development of an intensity or scale that exhibits urban-like characteristics are required to assess the impacts on landscape character and the policies in this section of the Plan need to be considered against the merits of such a re-zoning proposal.</p>	<p>In my assessment, the development proposed aligns well with Policy 8.</p> <p>In my assessment, the proposed development exhibits rural lifestyle characteristics. Whilst this will create a node of higher built density that will contrast with more sparsely settled areas surrounding, considering the mitigation measures proposed, it will acceptably integrate in this environment in my assessment. As regards the fit with the Rural Section policies, specifically rural character will not be maintained, but more widely it is my conclusion that adverse effects on amenity and natural character will be sufficiently low as to disqualify this proposal as inappropriate development.</p>
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New Zealand Coastal Policy Statement 2010

Given the coastal location of the site, the objectives and policies of the NZCPS are also relevant. Those considered relevant to landscape matters are listed below with comment provided.

<p>Objective 2</p> <p>To preserve the natural character of the coastal environment and protect natural features and landscape values through:</p> <ul style="list-style-type: none"> • Recognizing the characteristics and qualities that contribute to natural character, natural features and landscape values and their location and distribution • Identifying those areas where various forms of subdivision, use and development would be inappropriate and protecting them from such activities; and • Encouraging restoration of the coastal environment. 	<p>The characteristics and qualities that contribute to natural character and associated landscape values are as follows:</p> <ul style="list-style-type: none"> • The sea, beach and coastal cliff strongly express dynamic coastal processes • Inland of the coastal cliff, the landscape is highly modified by farming land use but there are naturalness values associated with the pastoral rural activities including legible and coherent natural landform and openness <p>Overall, it is my assessment that both natural character and the associated amenity values are moderate.</p> <p>The proposed development avoids the area identified as SCL in the WDP but will have effects on the character of the wider coastal landscape involving the establishment of a node of higher built density and associated amenity plantings. The landscape scale and openness will reduce. The landform coherence and legibility associated with the current openness will also reduce but this effect will be mitigated by the framework plantings that will emphasise the waterways. The development will enhance indigenous biodiversity and natural vegetative character. It is my</p>
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	assessment that considering the mitigation measures proposed, the development will acceptably integrate within this already modified coastal landscape and will not be inappropriate.
<p>Policy 6 Activities in the coastal environment</p> <p>(1) In relation to the coastal environment:</p> <p>(f) consider where development that maintains the character of the existing built environment should be encouraged, and where development resulting in a change in character would be acceptable.</p> <p>(h) consider how adverse visual impacts of development can be avoided in areas sensitive to such effects, such as headlands and prominent ridgelines, and as far as practicable and reasonable, apply controls or conditions to avoid those effects.</p>	<p>The proposed development will involve the establishment of a small node of rural lifestyle type settlement on the coast between Oamaru and Kakanui that is not provided for in the WDP. There are currently no rural-residential zones provided for on the Waitaki District coastline, with the townships such as Kakanui providing for higher density coastal living opportunities only. Clearly, this application raises potential precedent and cumulative effects issues as to whether and where, development of this type is appropriate. In my assessment it is important for preservation of the natural character of the coastal environment reasons that developments of this sort are not provided for too liberally along the coast and should generally be located in association with existing nodes of settlement. In this case however, considering the character of the coast southward from Oamaru, one development close to the city and carefully controlled to minimize natural character effects as proposed, can be acceptably integrated.</p> <p>As discussed above the visual effects of built form will be effectively mitigated by the proposed building scale, height and colour controls as well as the development of framework plantings.</p>

<p>(i) set back development from the coastal marine area and other water bodies, where practicable and reasonable, to protect the natural character, open space, public access and amenity values of the coastal environment.</p>	<p>The proposed development is set back from the coastal marine area and is not within the area identified as SCL in the WDP.</p>
<p>Policy 13 Preservation of natural character</p> <p>(1) To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:</p> <p>(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and</p> <p>(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment ...</p>	<p>It is my assessment that the natural character of the coastal environment is significantly modified in this area, and only moderate in significance. This is consistent with the findings of the Coastal Environment of Otago Natural Character and Outstanding Natural features and Landscapes Assessment, Waitaki District Section report dated 26 June 2015 (Moore et al, 2015). This means that the test in this case is whether significant adverse effects on natural character are avoided and other adverse effects are avoided, remedied or mitigated. It is my assessment that the adverse effects of the proposed development on natural character are not significant and that they are adequately mitigated.</p> <p>The coastal environment has been identified as an approximately 100m strip back from the coastal scarp as an area that provides the immediate context to the coast and which is potentially subject to coastal hazards. Within this area coastal erosion processes are vividly expressed at the coastal scarp and seaward of this natural character and processes are dominant. Landward however, whilst the natural landform is generally coherent, the vegetation is highly modified. The main attributes that contribute to natural character landward of the sea cliff are associated with its</p>

	<p>rural character generally, including low built density and openness which allows for generally high legibility of the natural landforms. The area is rural in character and not wild, but it does have scenic values based on the fertile, domesticated rural character in immediate juxtaposition with the sea.</p> <p>The proposed development will enhance the natural character of the area identified as Significant Coastal Landscape (SCL) in the WDP as areas are proposed to be re-established in indigenous vegetation. More widely than the identified SCL area, existing naturalness and rural amenity will be adversely affected by new dwellings. These effects will not be unduly significant however because natural character is already significantly modified and the proposed building controls and indigenous plantings will soften and mitigate the impact of buildings. Controls are also proposed on lighting to limit the extent of adverse effects on the natural darkness of the night sky.</p> <p>Overall, it is my assessment that the effects of the proposed development on the natural character of the coastal environment will be adverse in nature but low in magnitude. This rating factors in the following:</p> <ul style="list-style-type: none"> • The area identified as significant coastal landscape in the WDP will not be impacted by buildings, will retain its rural character and will be enhanced by indigenous plantings. • Natural coastal and stream processes will be largely unaffected by the development except that the natural
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	<p>character of the watercourses will be enhanced by indigenous plantings.</p> <ul style="list-style-type: none"> • The coastal hinterland is already significantly modified and is rural and settled in character. The WDP permitted baseline which allows a minimum rural lot size of 4ha provides for a significant increase in built form than currently exists. • The proposed development will increase the impact of buildings and modify the rural character in the vicinity but the proposed development controls and plantings will effectively mitigate the impact of this in the long term (once plantings have a significant visual impact in softening and providing context to the buildings).
<p>Policy 14 Restoration of natural character</p> <p>Promote restoration or rehabilitation of the natural character of the coastal environment, including by:</p> <p>(a) identifying areas and opportunities for restoration or rehabilitation;</p> <p>(c) where practicable, imposing or reviewing restoration or rehabilitation conditions on resource consents and designations, including for the continuation of activities; and recognizing that where degraded areas of the coastal environment require restoration or rehabilitation, possible approaches include:</p> <p>(i) restoring indigenous habitats and ecosystems, using local genetic stock where practicable; or</p> <p>(ii) encouraging natural regeneration of indigenous species, recognizing the</p>	<p>A major component of the proposed development is the restoration of indigenous vegetation appropriate to the site. This will mitigate the effects of more built form on natural character and also enrich the area ecologically.</p>

<p>need for effective weed and animal pest management; or</p> <p>(iii) creating or enhancing habitat for indigenous species; or</p> <p>(iv) rehabilitating dunes and other natural coastal features or processes</p> <p>(v) restoring and protecting riparian and intertidal margins; or</p>	
<p>Policy 15 Natural features and natural landscapes</p> <p>To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:</p> <p>(a) avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and</p> <p>(b) avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment.</p>	<p>The coastal landscape in this area is not outstanding and there are no outstanding natural features in my assessment. This is consistent with the findings of the Coastal Environment of Otago Natural Character and Outstanding Natural afeatures and Landscapes Assessment, Waitaki District Section report dated 26 June 2015 by myself and others (Moore et al, 2015). This means that the test in this case is whether significant adverse effects on natural features and landscapes are avoided and other adverse effects are avoided, remedied or mitigated. As discussed above, it is my assessment that the adverse effects of the proposed development on the coastal landscape are not significant and that they are adequately mitigated.</p>

Conclusion

The property in question is within the rural landscape on the coast between Oamaru and Kakanui. This area is not recognized for outstanding natural landscape values but a narrow band directly adjacent to the coast has is identified as a 'significant coastal landscape' in the WDP. The landscape values associated with the site and its wider

landscape context are rural character, natural coastal character and the amenity values associated with these.

The development proposed will result in a localized modification to the rural character and the establishment of a small node of rural lifestyle land use. Whilst it will clearly contrast with the rural character in terms of built density and land use and modify natural character through increased built form, it has been designed to integrate with minimal impact to both the rural character and the natural coastal character. This is through a suite of development controls to mitigate the visual impact of buildings and through establishment of a comprehensive planted framework that will mitigate the built elements and enhance the indigenous biodiversity and visual character.

In my assessment whilst the development will result in a change in character it will acceptably sustain the rural and natural coastal character amenity values.

Mike Moore

Registered NZILA Landscape Architect

References

Densem G (2004), Waitaki Landscape Study, Waitaki District Council.

Moore M et al (2015), Coastal Environment of Otago Natural Character and Outstanding Natural Features and Landscapes Assessment, Waitaki District Section Report, Otago Regional Council.

Appendix A : Planting guidelines – Cottleston Downs, Awamoa

The following species are recommended for the framework plantings shown in Figure 13. Planting establishment and management is to be carried out in accordance with the guidelines outlined below.

1. Where required, fencing should be carried out to protect the areas to be planted from grazing by stock.
2. The areas to be planted are to be sprayed to kill existing grasses using a non-residual systemic herbicide.
3. Planting densities are to be approximately 1.5m
4. Plant grades are to be Pb3 or equivalent, minimum.
5. One slow release fertilizer tablet will be used per plant.
6. A circle of mulch (100mm deep woodchip or sacking or similar) is to be applied around each plant to assist in plant establishment and weed suppression.
7. The area around each plant is to be maintained weed free until well established by hand weeding or spraying where this is possible without adversely affecting the plants.
8. Plants should be watered as / if required during dry spells until well established.
9. Survival should be monitored and any dead plants replaced immediately. Animal pests should be controlled and if required, plants should be provided with an eco-shelter for protection against rabbit and possum browse.
10. The plantings are to be managed to ensure their ongoing health and vitality.

Species	Common name	Wetland / wetland margins	Waterway margins / framework plantings
<i>Aristotelia serrata</i>	Wineberry		X
<i>Austroderia richardii</i>	Toetoe	X	
<i>Carex secta</i>	Purei	X	
<i>Carex virgata</i>		X	
<i>Carpodetus serratus</i>	Putaputaweta		X
<i>Coprosma crassifolia</i>			X

<i>Coprosma propinqua</i>	Mingimingi	X	X
<i>Cordyline australis</i>	Cabbage tree		X
<i>Dacrycarpus dacrydioides</i>	Kahikatea	X	X
<i>Griselinia littoralis</i>	Broadleaf		X
<i>Hebe elliptica</i>	Shore hebe		X
<i>Hoheria angustifolia</i>	Narrow-leaved lacebark		X
<i>Isolepis nodosa</i>	Club rush	X	
<i>Kunzea robusta</i>	Kanuka		X
<i>Leptocarpus similis</i>	Jointed rush	X	
<i>Leptospermum scoparium</i>	Manuka	X	
<i>Melicope simplex</i>			X
<i>Melicytus ramiflorus</i>	Mahoe		X
<i>Myoporum laetum</i>	Ngaio		X
<i>Olearia fragrantissima</i>			X
<i>Phormium tenax</i>	Flax	X	
<i>Pittosporum eugenoides</i>	Lemonwood		X
<i>Pittosporum tenuifolium</i>	Kohuhu		X
<i>Plagianthus regius</i>	Lowland ribbonwood		X
<i>Podocarpus hallii</i>	Halls totara		X
<i>Pseudopanax crassifolius</i>	Lancewood		X
<i>Pseudopanax ferox</i>	Fierce lancewood		X
<i>Sophora microphylla</i>	Kowhai		X

Appendix B : Photo-simulation method

Purpose and limitations

The photo-simulations (Figures 14 – 21) are presented as indicative guides to the likely visual effects of the proposed development. Four images are presented per viewpoint as follows:

- (a) The existing view (stitched photograph).
- (b) Photo-simulation illustrating the likely overall visual effect of the proposed development once fully implemented and with planting with approx. 10 years growth. This shows:
 - houses 300m² (24 x 12.5m) in footprint and 5m high. These are located on the lots in locations considered to be the most likely, and aligned with the contours to facilitate consistency with proposed mitigation measure (d). The built form illustrated, whilst less than the 350m² maximum gross floor area provided for, is considered to be a reasonable indication of likely development scale per section (as a single entity in this case). The grey colour used is indicative of the darker tones required by proposed mitigation measure (c).
 - the proposed framework plantings (both those to be established by the developer and by the lot purchasers) between 0.5m and 6m in height in the locations shown in Figure 13.

Note that no attempt has been made to make the buildings appear realistic given the variables / uncertainty about actual house locations and designs. Likewise, whilst the plant forms illustrated are generally consistent with the species proposed, for consistency with the buildings and to emphasise the theoretical / indicative nature of the illustrations, no attempt has been made to make these look realistic. The planting scale is considered to be generally indicative of what can be expected after about 10 year's growth. In reality, whilst the framework plantings to be established by the developer are likely to be implemented more or less at once (possibly over 1 – 3 seasons), the plantings on the residential lots may be implemented considerably later.

- (c) Photo-simulation illustrating a possible scenario for subdivision and associated development of houses under the WDP Rural Zone permitted baseline. This shows:

- houses 300m² in floor area over two levels (15 x 10m) in footprint and 10m high (the maximum height permitted in the WDP Rural zone provisions. The subdivision layout is based on an existing scheme and the house locations are considered to be non-fanciful possibilities. Whilst there is no maximum floor area in the WDP, 300m² is used for fair comparison with the proposed development. The same grey tone is used as per simulation (b) and (d) for consistency but it should be noted that there are no colour or light reflectivity value (LRV) controls applying to permitted buildings in the WDP Rural zone.
- No plantings are shown as these (if established) are not required by the Plan and could take a wide variety of forms.

(d) Photo-simulation for comparison with (c) above showing the proposed buildings (as per (b) above minus the proposed mitigation framework plantings.

Photography (Adventure Media Group Ltd)

The photography for the base images in the photo-simulations are shot using a full-frame Canon EOS 5D MkIV camera using a Canon EF24-70mm f/2.8 L-series lens locked off at 50mm. To achieve the range of the proposed development the images are a composite of 3-7 panning shots, each photographed on a tripod at an elevation of 1.6m directly above the GPS marker for each photo site. Overlap of around 25% assures accuracy between frame stitches using Adobe Photoshop's photomerge tool to create the final images. The merge process used was the same for each of the final images. The final images form the existing views (a) and the base layer for the subsequent photo-simulations (b), (c) and (d).

Computer model (Terramark Ltd)

Computer modelling of plantings and dwellings at the site has been undertaken using a 3D visualization module within the surveying & engineering design software, 12d Model v14.

The location, and extent of vegetated areas were supplied by the landscape architect. These areas were further broken into sub-areas defined by the plant types and planting

densities. Within the overall planting areas a total of three types of sub-areas were defined, generically described by the general height of the plants, and known as 'high plantings', 'medium plantings', and 'low plantings & sedge'.

Each sub-area was assigned a user-defined foresting file used to populate the area with vegetation, containing the following details:

- Types of plants to be located within each area;
- Percentage of each plant within the area (e.g. 5% of total)
- Height range of each type of plant (max & min);
- Spread variation (percentage)

In addition to defining a foresting file for each sub area, during the application of this information, the planting density was also specified as follows:

- High Plantings – 4,000 plants/hectare
- Medium Plantings – 10,000 plants/hectare
- Low Plantings – 20,000 plants/hectare
- Sedge Plantings – 20,000 plants/hectare

The placements of all plants within the specified area is undertaken in a random manner by the software but based upon the details contained within the foresting file and the overall specified plant density for the area.

The various trees within the imagery have been generated by first creating a 2-dimensional 'billboard' of a digital image of a tree and rotating this image about a central axis to create a series of interleaved 2-dimensional images, giving the impression of a 3-dimensional tree. Trees are automatically given correct heights by 12d Model on the basis of the desired tree height and the horizontal and vertical size of the digital image from which the 'billboard' tree is generated.

Image rendering (Terramark Ltd and Adventure Media Group Ltd)

Imagery of the plantings have been generated from 12d Model. 12d Model enables users to specify a viewing location, viewing height, target location and target height to generate 3-dimensional imagery of a viewshed.

A total of ten image viewpoints external to the subject site were survey fixed via GPS. In addition, the centroid of the site has been determined (geometric center of the site) and used as the target location. This line between viewing point and the site centroid forms the central baseline for generating imagery within 12d for each viewpoint. The height at both the view location and the target location have been set at 1.6m, producing a horizontal view-plane known as a plane of collimation. The view-plane has been rotated left and right of the central baseline in a series of 31.5° movements to create as many overlapping viewsheds as required to capture the entirety of the site from the specified viewpoint.

Imagery from 12d has been output as a series of gridded high-resolution rasters which have subsequently been exported and combined to produce a series of PDF images to be stitched together by the photographer based upon their overlap.

Buildings within the imagery have been created within 12d Model by creating simple triangulated irregular networks (TINs) to produce a simple house-shaped object of dimensions specified by the landscape architect. The colour applied to the house TINs is known as *Resene Ironsand*, (RGB Value 142, 89, 60). Variation within this colour upon the imagery is a result of the necessity of 12d Model to create shading to render a 3-dimensional effect. All shading has been applied at a 45° angle.

From the output PDF files created from the digital model in 12D, we have extracted the 3-9 image tiles and stitched these together, again using the same process as for the actual photographs. The points of reference to the site have been included with these stitches and the negative data (where no digital information existed) has been deleted from the final panorama for each photo site. This process was repeated for the proposed development once fully implemented and with planting with approx. 10 years growth (b), permitted (c) and proposed (d) simulations.

The existing (a) files were then edited to remove the stand of macrocarpa trees along the Thousand Acre Road border, to remove any livestock, machinery and where necessary the silage stack. The resulting image forms the base layer for the (b), (c) and (d) photo-simulations.

In the next step we blended the new base layer with each layer extracted from the 12D model. Visual reference points to the site were used to ensure the correct alignment and scale. Because each image used the same viewpoint, elevation and field of view (50mm focal length) there is no need to stretch, skew or warp any of the layers. The 12D images were then masked to reveal only the details of the proposed development once fully implemented and with planting with approx. 10 years growth (b), permitted (c) and proposed (d) simulations.

The final images were output as jpgs and fixed at 20cm tall at 300dpi in RGB colour space.

In my opinion the process used is the closest we can get to what the human eye might see from each location and represents a true indication of the proposed development.

SARB Investments

Thousand Acre Road, Awamoa

3 Waters Infrastructure Design Report

November 2019

SARB Investments
Thousand Acre Road, Awamoa
3 Waters Infrastructure Design Report

Task	Responsibility	Signature
Project Manager:	Rolly Hill	
Prepared By:	Rolly Hill Francesca Guthrie	
Reviewed By:	Melanie Stevenson	
Approved For Issue By:	Melanie Stevenson	

Issue Date	Revision No.	Author	Checked	Approved
11/11/2019	0	RNH/FLG	MKS	MKS
20/11/2019	1	FLG	MKS	MKS

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SARB Investments
Thousand Acre Road, Awamoa
3 Waters Infrastructure Design Report

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APPENDIX A

Potable Water Supply Drawings

1.0 Introduction

Fluent Solutions has been engaged by SARB Investments Ltd to provide a design for meeting the requirements for water, wastewater and stormwater for the proposed new rural lifestyle subdivision at Thousand Acre Road, Awamoa.

This report summarises the proposed design for the purposes of gaining consent for the development.

2.0 Background

2.1 Site

The site is a 24.8Ha block of land that lies adjacent to the coast approximately 6 kilometres (km) south west of Oamaru and 4km north of Kakanui. The land is currently zoned as rural general and is considered pastoral land.



Figure 2.1: Site Location

The site is triangular in shape and is bounded by the Beach Road to the east, Thousand Acre Road to the west and private rural land to the north.

Under lying soils are understood to be clay with silty loam topsoil on the surface.

2.2 Proposed Development

It is proposed that the 24.8Ha Lot be subdivided into 25 rural lifestyle lots ranging in size from 4,096m² to 7,566m² with access roads and the remainder of the site to be retained in its rural nature.

For the purpose of this design report, we have assumed that sites 1-5 may be occupied by a 200m², four bedroom dwelling and that each lot will be used for rural lifestyle activities.

2.3 Existing nearby WDC Water Services

2.3.1 Potable Water

There are two water supply networks near the property.

Adjacent the site (within the road corridor of Thousand Acre Road), there is a DN150 watermain that conveys water from South Hill Oamaru to Kakanui.

There is also a small diameter pipeline that feeds five Restricted connections on Gardiners Road and Thousand Acre Road. This is supplied from the rural scheme connected to the Hamnak Pipeline.

2.3.2 Foul Sewer

There is a DN90 PE foul sewer adjacent the site that is owned and operated by the WDC. This rising main conveys pumped treated sewage from the Kakanui Wastewater Treatment Plant to Oamaru for further treatment.

The foul sewer operates at full capacity and is considered to be unavailable for usage.

The nearest foul sewer reticulation is located approximately 3.5km to the south in the town of Kakanui.

2.3.3 Stormwater

There are two 300mm dia. culverts under Thousand Acre Road and a table drain that are currently all conveyed through the site, entering a naturally occurring spring and forming a second water body. The water then drains through a 250mm dia. culvert under Beach Road.

There are reportedly two other culverts to the south that are in poor condition and do not currently convey any water under Beach Road. It is recommended that the two culverts be reinstated by WDC.

3.0 Potable Water Supply

3.1 Introduction

It is proposed that the potable water supply for the subdivision is supplied by means of a restricted supply via the WDC DN150 watermain in Thousand Acre Road.

3.2 Design Flows

Domestic water demand for each lot is calculated to be as follows:

Average water demand = 2.5 px per Lot x 250L/p/day (NZS 4404:2010)
= 625L/day

Peak water demand = 1 restricted unit (1818L/day)

Domestic water demand for the development is calculated to be as follows:

Average water demand = 25 Lots x 2.5 px per Lot x 250L/p/day (NZS 4404:2010)
+10% loss allowance
= 15.6m³/day + 1.56m³/day
= 15.8m³/day

Peak water demand = 25 lots x 1 restricted unit (1.818m³/day) + 10% loss allowance
= 45.45m³/day + 4.55m³/day
= 50m³/day

3.3 Proposed Design

3.3.1 General

The proposed water supply system comprises:

- Reticulated network design for restricted supply
- On site storage to meet domestic water demands
- Fire storage located on each property to meet SNZ PAS 4509:2008

3.3.2 Reticulation

It is proposed that a DN63PE offtake from the WDC DN150 PVCo watermain on Thousand Acre Road will be installed to supply the subdivision. Water will be reticulated to the 25 Lots via a network of small diameter PE (PN12.5) pipework as indicated in Figure 3.1 below.

Each Lot will be supplied with a shutoff valve, a filter and an in-line Maric restrictor at the boundary. The restrictor is to be sized to allow a flowrate of the total daily volume over 24 hours.

A DN15 PE pipeline between the restrictor to the proposed storage will then be installed at the time of house construction.

Please note that pipe sizing is based on each Lot receiving 2 restricted units.

Alternatively, the WDC DN63 pipe that feeds five restricted properties to the north of the site, could be utilised as a feed, however, modelling may be required to assess the pressure and flow in this pipeline.

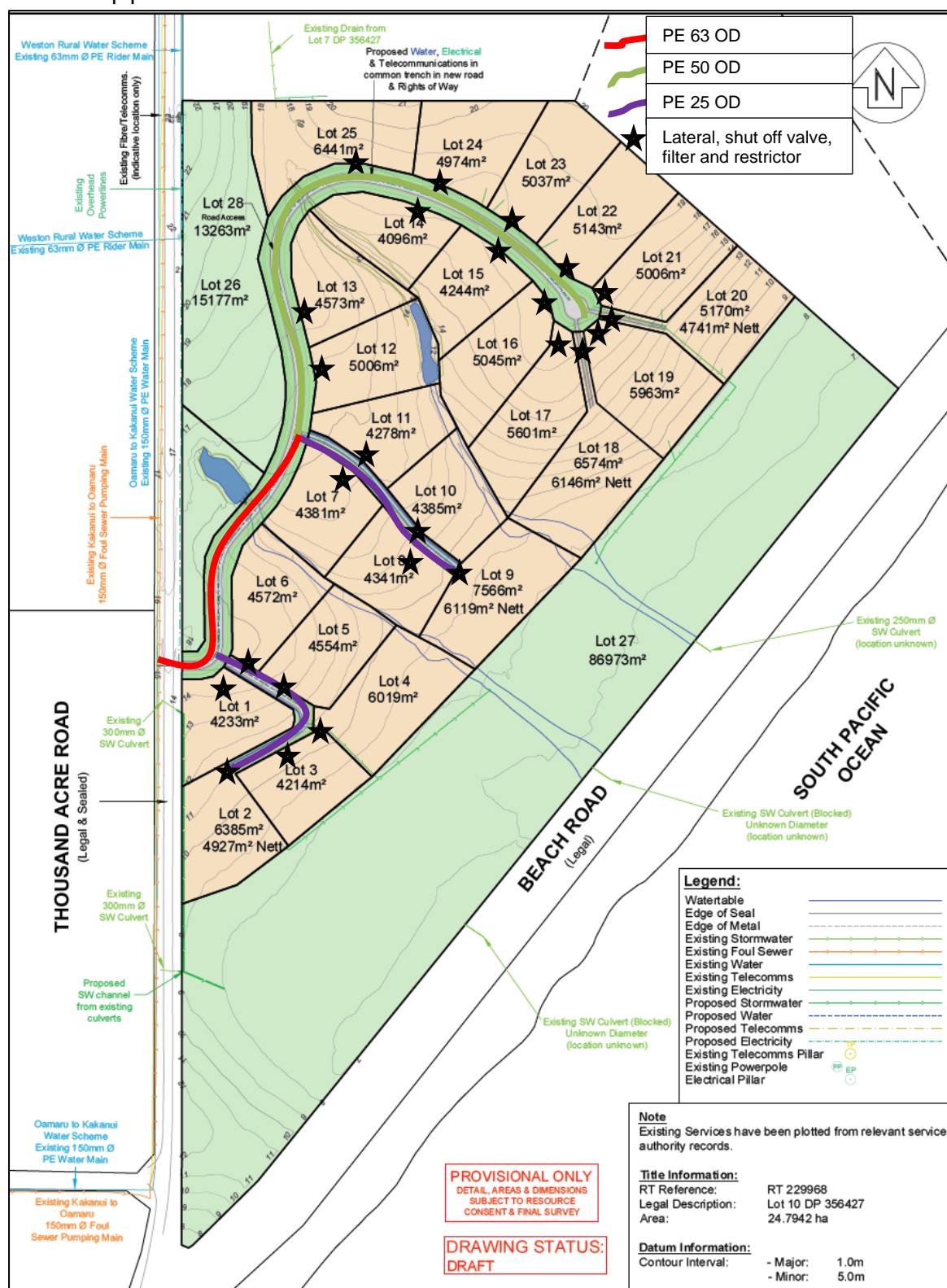


Figure 3.1 Potable Water Layout

3.3.3 Storage

3.3.3.1 Domestic Volumes

Each Lot is to have adequate storage to meet the WDC Water Supply Bylaw (2014) Section 9.5.5 that outlines each connection is to provide storage of a volume greater than three times the daily restricted flow (i.e.: 3 days of storage).

Based on 1 restricted unit per Lot, the minimum domestic storage requirements is therefore:

$$\begin{aligned} &= 3 \times 1.818\text{m}^3 \\ &= 5.45\text{m}^3 (5,450 \text{ L}) \end{aligned}$$

3.3.3.2 Fire Fighting Volumes

For a residential dwelling, SNZ PAS 4509:2008 outlines that there must be a minimum storage of 45m³ of water set aside for the use of firefighting and that the firefighting water cannot be used for any other use.

3.3.3.3 Proposed Tank and Layout

Based on domestic demand (5.45m³) and fire fighting requirements (45m³) each Lot is to have a minimum of 50.45m³ (50,450L) storage. To achieve this, each Lot should have 2 x 30,000L storage.

Key design features are as follows:

- For simplicity, tanks to operate in series.
- The first tank is to have a high level inlet with a DN15 Rojo Partfill Jobe valve mounted above the water level to provide a suitable airgap between the inlet pipe and valve shut off of at least 100mm. A minimum DN50 overflow pipe is to be located 50mm above the Top Water Level (TWL) and 40mm below the inlet pipe level.
- The pipes are to be interconnected with a DN 100mm pipe with rubber bellow to allow for tank movement.
- Reserve storage (33% required under WDC Water Bylaw) of restricted flow storage (and fire fighting storage) by the provision of a normal off-take valve at ¾ of the distance from the bottom and a reserve storage release valve as shown in the drawings.
- An approved suction 100mm firefighting coupling to be fitted on one of the tanks to provide water to a fire appliance in an emergency.
- The tanks are to be installed in accordance with the manufacturer's recommendations.
- A hardstand and access for the firefighting appliance is to be provided within 5m of the tanks in accordance with the SNZ PAS 4509:2008.

- A suitable domestic pump to provide a typical domestic house pressure of 300kPA and required domestic flowrates is a SCALA 2 Variable Speed Pump supplied by Hall Machinery Ltd.

The proposed storage tank layout is shown on the attached layout drawing in Appendix A.

4.0 Wastewater

4.1 Introduction

It is proposed that all Lots of the new subdivision will be serviced by a suitable onsite wastewater system in accordance with the Otago Regional Council, Regional Plan Water and the Australian / New Zealand Onsite Domestic Management Standard - AS/NZ 1547:2012.

Two main options were investigated:

1. A centralised, community wastewater treatment plant for the subdivision, including reticulated gravity drainage from each dwelling to the common wastewater treatment plant and large dispersal field located in the eastern Rural Lot.
2. Individual Lot on-site wastewater systems.

A brief assessment of costs highlighted that a gravity reticulation and communal treatment plant was not a cost effective option and therefore individual Lot on-site wastewater systems are proposed.

Design parameters and options for the on-site wastewater systems are discussed in the following sections. The design of each system is required to be in accordance with AS/NZS 1547:2012).

It is proposed that a design guide will be developed by Fluent Solutions and provided to Lot owners (upon land purchase) to ensure the on-site wastewater system meets any regulatory requirements and is appropriate for the site conditions including a resource consent to discharge human waste to land if required.

4.2 Design Flows

The estimated design flow is calculated by the number of persons living in the dwelling multiplied by the water usage per person. AS/NZS 1547:2012 outlines that the number of persons is directly related to the number of bedrooms in the dwelling and the water usage is taken from table H3 of the standard - Typical Domestic Wastewater Design Flow Allowances, Domestic Wastewater from Household, New Zealand.

To develop the design flow for the proposed subdivision, it is assumed that each dwelling contains 4 bedrooms. The calculation of design flow is presented in Table 4.1 below.

Table 4.1: Design Flow

Parameter	Value
Number of Bedrooms	4
Population Equivalent	6 - 7 persons
Water Usage/Person	200L/d
Estimated Peak Design Flow	1,400L/day/lot

4.3 Wastewater Treatment

4.3.1 Primary Treatment

Primary treatment is to be provided in a 4,000L (minimum) septic tank. This provides 24 hour settling volume, 24hrs emergency storage as well as storage for the buildup of sludge and scum.

The accumulated sludge and scum will need to be pumped out every 3-5 years to ensure sufficient treatment time is maintained.

4.3.2 Secondary Treatment

Secondary treatment (biological treatment stage) is to be provided in order to give a higher degree for treatment to minimise the impact on the receiving environment and to minimise any impact to the waterbodies on the proposed development.

Depending on the wastewater treatment system selected, reduction of nitrogen of 70g/m³ to ≤35g/m³ is possible.

4.3.3 Dispersal Area

Dispersal areas are required for the discharge of wastewater. The design of these is dependent on the design peak flow of each dwelling, soil type and dispersal field design.

AS/NZS 1547:2012 provides for three dispersal field designs as follows:

1. *Subsurface pressure compensating dripline irrigation* - a dispersal field of 15mm dia. pipes buried approximately 150mm below the ground surface that discharge wastewater through a series of holes in the pipe at a predetermined rate. Treatment of wastewater is undertaken in the soil column surrounding the dripline;
2. *Wisconsin mound* - a large above ground sand mound that rejuvenates the wastewater in the sand before discharge to land under the mound;
3. *Evapotranspiration seepage trenches* - a subsurface trench that rejuvenates the wastewater in a sand layer with uptake of wastewater through above ground evaporation via wind and sun and soakage to the surrounding soils;

For each discharge method listed above, a design loading rate (volume of wastewater that can be discharged to an area of land on a vertical scale in mm) is established.

To establish the dispersal field area required, it is assumed:

- Design flows are as outlined in Table 4.1 above. The dispersal field area for each dwelling will be confirmed once a design for the dwelling is confirmed and;
- The soil composition is of impermeable clay, Category 6 as defined by AS/NZS 1547:2012¹.

Table 4.2: Dispersal Land Area

Dispersal Method	Design Loading Rate	Dispersal Area Required
Subsurface Dripline Irrigation	2mm/d	700m ²
Wisconsin Mound	5mm/d	280m ²
Evapotranspiration-Seepage Trench	5mm/d	280m ²

From Table 4.2 above, based on the design flow of 1,400L/d the largest dispersal area that may be required is 700m². Due to the large section sizes, dispersal fields in this size range will be achievable with areas set aside for reserve area if further development of the Lots is required at a later date. (Note: A larger dwelling and therefore a larger design flow will require a larger dispersal field area and vice versa).

4.4 Resource Consent Requirements

The Otago Regional Council (ORC), Otago Regional Plan: Water (ORPW), rule 12.A.1.4: Discharge of Human Sewage, outlines permitted activities to discharge wastewater to land with certain conditions. If a discharge does not meet these conditions, the activity is then a discretionary activity and is required to have a resource consent.

Other relevant clauses of the RPW Rule 12.A.1.4 are as follows:

- a. A resource consent is required for any system that discharges more the 2,000L per day.
- b. The discharge does not exceed 2000 litres per day (calculated as a weekly average); and
- c. The discharge does not occur within the A zone of any Groundwater Protection Zone, as identified on the C-series maps, nor in the area of the Lake Hayes catchment, as identified on Map B6; and
- d. The system's disposal field is sited more than 50 metres from any surface water body or mean high water springs; and
- e. The system's disposal field is sited more than 50 metres from any bore which: (i) Existed before the commencement of the discharge activity; and (ii) Is used to supply water for domestic needs or drinking water for livestock; and

▪ ¹ A review of Soil Map on-line (Landcare Research) shows the soil type to vary between silty loam over clay and clay.

- f. There is no direct discharge of human sewage, or effluent derived from it, to water in any drain or water race, or to groundwater; and
- g. Effluent from the system does not run off to any other person's property; and
- h. The discharge does not cause flooding of any other person's property, erosion, land instability, sedimentation or property damage.

Of the 25 Lots, Lots 4 through 18 border or are intersected by one or in some cases, two of the water bodies on the site.

For these lots, if the dispersal area cannot be made available with separation of equal to or greater than 50m from these water bodies, the activity is then considered as a discretionary activity and a resource consent from the ORC will be required. Once the land use consent has been granted, Fluent Solutions will seek approval from the ORC for a consent under rule 12A.1.4 for each of these properties before title is issued.

5.0 Stormwater

5.1 Introduction

The site slopes from Thousand Acre Road towards Beach Road (abandoned due to erosion) and then discharges to the east coast. Drainage from site generally flows to either of the two water bodies on site. The water bodies then drain to a WDC owned 250mm culvert under the remains of Beach Road. Apparently, there are two additional culverts located under Beach Road, but these are reportedly blocked.

The following sections summarise the stormwater assessment and proposed management strategy.

5.2 Hydrological Assessment

A hydrological assessment has been completed to determine the impact of the development on the stormwater flows.

The Rational method (suitable for site <50Ha) was used to assess the impact of the development on stormwater runoff flows.

The Rational method uses the following formula to calculate flows:

$$Q_p = 1/360 \times C \times I \times A$$

Where;

- Q_p = peak discharge (m³/s),
- C = coefficient of runoff,

- I = average rainfall intensity (mm/hour),
- A = catchment area (hectares).

The following runoff coefficients and catchment areas were used:

Table 5.1: Runoff Coefficient for Different Site Areas

Area Description	Runoff Coefficient	Area (Ha)
Pre-development Grass	0.3	24.79
Post-development Grass	0.3	23.72
Post-development Road	0.85	0.52
Post-development Roof	0.9	0.50
Post-development Paths	0.8	0.05

For the rainfall intensity (I), data from NIWA HIRDS Totara Station was used with RCP8.5.

Recommended design storms for rural residential sites under NZS 4404:2010 are as follows:

- Primary System 10 year ARI storm
- Secondary System 100 year ARI storm

Pre and post development runoff for the 10 year and 100 year storm events at various durations is presented in Table 5.2 below:

Table 5.2: Runoff Coefficient for Different Site Areas

Storm Event	Duration (min)	Pre-development Peak Flowrate	Post-development Peak Flowrate	Difference
		L/s	L/s	L/s
10 year ARI	10	950	1,030	80
	15	810	880	70
	20	670	720	50
	30	550	600	50
	60	400	440	40
100 year ARI	10	1,720	1,860	140
	15	1,460	1,580	120
	20	1,200	1,300	100
	30	990	1,070	80
	60	720	780	60

Based on these calculations the critical storm in terms of flowrate is a 10 minute duration storm.

The post-development peak run off flowrates are 8% higher than pre-development. This is considered a minor increase and flow attenuation is not considered necessary as there are no affected downstream properties.

5.3 Stormwater Management

It is proposed that the stormwater runoff from the new roads is conveyed via swales to the existing water bodies. As described above, this water body will continue to pass under Beach Road through culverts and to the coast. These swales will also convey water that currently passes under Thousand Acre Road via two 300mm culverts.

Any water collected from the new roofs can be discharged to ground and runoff from the Lots will be directed safely to the swales as shown in Figure 5.1.

An assessment² of the operational 250mm culvert under Beach Road, indicates a maximum capacity of around 80L/sec. This is considered inadequate to convey the existing 10 year ARI storm pre-development peak flows and is likely resulting in the water backing up and causing ponding on Lot 27. In large storms flooding over Beach Road (RL 7m) is expected.

While flooding caused from the unmaintained culverts is not likely to result in flooding of properties in the new development (minimum RL of the boundary of the habitable properties 8.5m - 1.5m above Beach Rd) it is recommended that WDC be asked to clean out the existing culverts to provide better drainage from the site.

² Using Colebrook-White equation

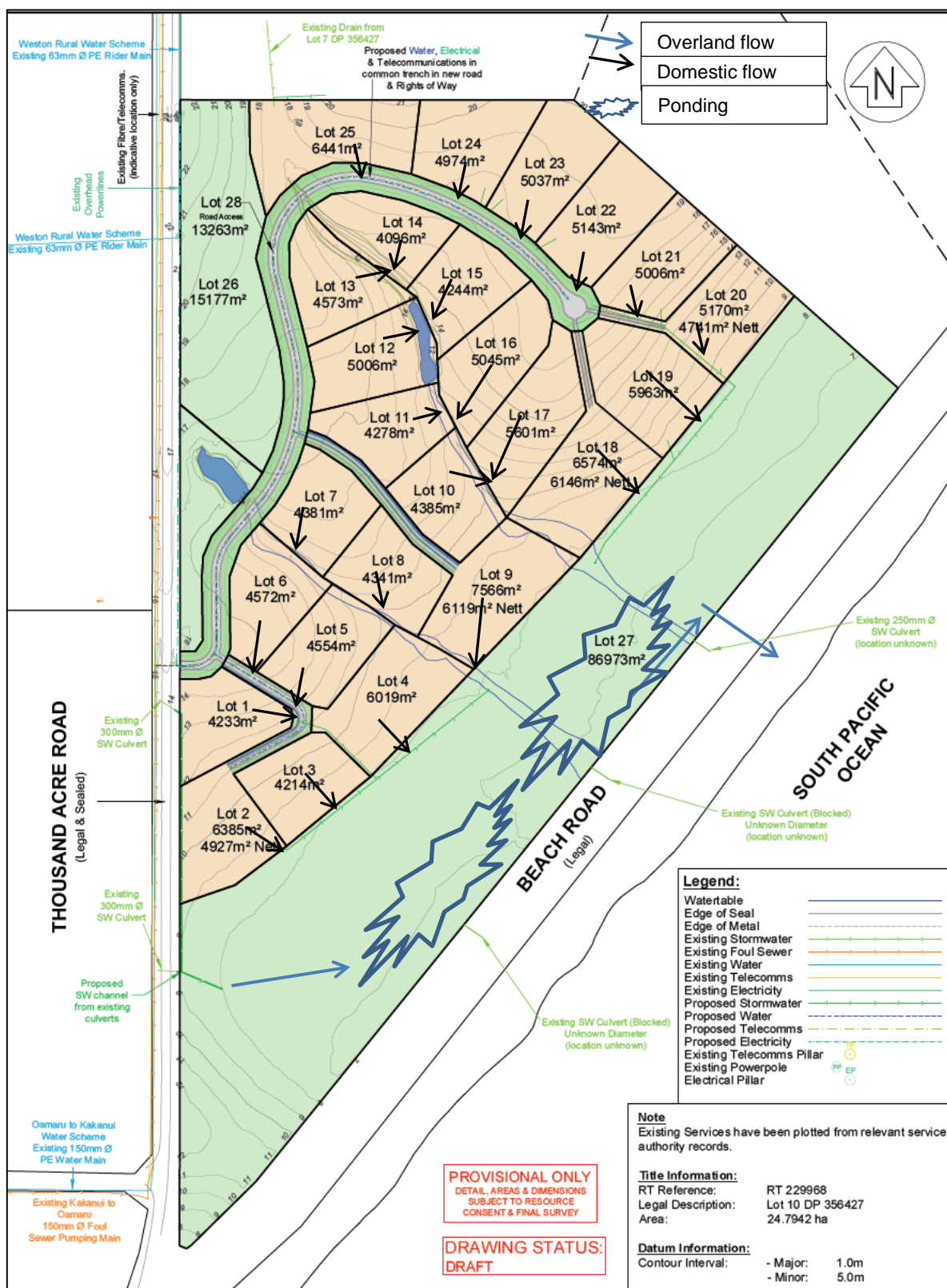


Figure 5.1: Stormwater Management Layout

APPENDIX A

Potable Water Supply Drawings

1 October 2019

Attention: Bill Brown
SARB Investments Ltd
171(a) Victoria Rd,
St. Clair
Dunedin 9012

Project Name: Coastal Hazard Assessment, Thousand Arce Road, Kakanui

Subject: Review of Coastal Erosion Setback Provisions

Dear Bill

As requested this letter reviews the provision of coastal erosion setback provisions for a proposed 25 lot rural lifestyle subdivision along the Beach Road coastal frontage north of Kakanui.

My background to undertake this review is 35 years experience undertaking coastal hazard assessments in my roles as a coastal geomorphologist for local government, universities and consultancies.

District Plan Requirements

In accordance with the Waitaki District Plan (Operative 2010) Natural Hazards Section (4.2.4), a coastal building set-back of 100 m is required based on previous erosion trends to protect building from potential coastal erosion and inundation risks over the next 50 years. However, this section of the District Plan appears to be dated from 2004, with more recent information on erosion trends being available, which may alter the need for this width of building set-back.

Recent NIWA Coastal Hazards Report

In January 2019 Otago Regional Council released the results of a recent NIWA coastal erosion and inundation assessment for the entire Waitaki District, which had as one of its purposes the need to update the Waitaki District Plan and to address the potential effects of sea level rise on coastal hazards as required under the NZ Coastal Policy Statement (2010). As part of the assessment the findings and report were independently peer reviewed for ORC by Tonkin and Taylor. We have undertaken a further independent review of the hazard assessment methods and findings of this report in the context of this consent application on the eroding coast along southern Beach Road, north of Kakanui.

From our review, we found that the methods used to determine coastal erosion hazard zones are acceptable. In summary, for the proposed development coast these methods involved:

- Determining past cliff top position from six aerial photograph dates between 1955 and 2016, and determining cliff erosion rates at 5m interval transects along the coastline. For the calculation of the long-term rate, the rates from 300m running window of transects were

1 October 2019

Subject: Review of Coastal Erosion Setback Provisions

used to remove the contribution of short-term slumps in individual locations. Shoreline detection was undertaken by identifying the vegetation line along beach environments, or the cliff top along cliff-backed shores/beaches.

- Using accepted cliff line erosion model (SCAPE) to evaluate the response of the soft-cliff shoreline to projected sea level rise. Due to a lack of data in the study area to drive the model, this was calculated from model responses for alluvial cliffs north of Oamaru where there is sufficient data.
- Calculation of short-term shoreline change (e.g. storm effects) – due to the lack of data for the study coast, this was based on the averaged value of the maximum absolute shoreline erosion between any two beach profile dates for alluvial cliffs north of Oamaru.
- To allow for uncertainty with the results, use a hybrid-probabilistic approach to mapping the hazard zones, in which the 95th percentile and 50th percentile predicted erosion are presented. The 95th percentile zone (CHZ95) represents only a small chance (5%) of the actual erosion exceeding the hazard width and is considered to be a 'conservative' approach, while with the 50th percentile (CHZ50) that there is 50% change of the actual erosion being greater than the zone width which is considered to be a 'reasonable' approach to calculating the hazard zone.
- All mapping is presented to 100 year time frames.

For coastal inundation, hazard mapping combining the results of extreme water level and wave run-up with updated sea level rise scenarios is only presented for the four most populated areas of the Waitaki coast, which does not include the study area.

We also note that the report did not assess inundation related to tsunamis, ground water flooding, river floods or urban flooding.

Relevant Report Finding for Proposed Rural Lifestyle Development

Our interpretation of the relevant findings of the report in the context of a coastal hazard assessment for the proposed rural lifestyle development include the following. Note that the supplementary material digital maps of the coastal hazard zone widths were not made available, therefore the given estimates of the hazard zone widths are only obtained from the relevant map presented in the report (Figure 3-39, Page 70; Appendix A of this letter). The resolution of these maps is poor, therefore the estimates of hazard zone widths cover the likely range rather than the calculated width.

- Long-term erosion along southern Beach Road at the proposed development site is in the order of 0.38 m/yr.
- The SCAPE modelling found that the acceleration of sea level rise would have little to no effect on cliff erosion rates.
- At a 95% confidence level, short-term erosion is not predicted to exceed 10 m along southern Beach Road.
- Applying a 'reasonable' approach, the CHZ50 coastal hazard zone widths for a 100-year timeframe are between 30-60m along southern parts of Beach Road.

1 October 2019

Subject: Review of Coastal Erosion Setback Provisions

- Applying a 'conservative' approach, the CHZ95 coastal hazard zone widths for a 100-year timeframe are between 40-80m along southern parts of Beach Road.
- The report does not show coastal inundation hazard zones for the proposed development. However, the coastal inundation maps for surrounding areas in Kakanui of a similar land elevation suggest that there is no coastal inundation risk at the proposed development for a 100-year ARI storm with +1.3 m of sea level rise. The only inundation risk in the surrounding area is at the Kakanui River mouth, which this is a significant distance from the proposed location and is not foreseen to be of any risk to the site.

Proposed Subdivision Overview Development Plan

The overview development plan for the proposed 25 lot subdivision development supplied by terramark (Appendix B of this letter) shows proposed Lot boundaries are setback 180m (southern end) to 100m (northern end) from the cliff top edge where the coastal hazard zone was calculated from in the NIWA (2019) study. It is noted that the cliff line at the time of the base photograph is shown as being a further 5 m east of the property boundary.

The setback distance of the individual Lots boundary along the coastal fronting edge of the subdivision are therefore an additional 20-80m beyond the conservative 80m wide 100-year coastal erosion hazard zone determined from the NIWA (2019) report.

Conclusion

Based on our review, we can make the following conclusions regarding set-backs along the proposed development site:

1. Recent NIWA coastal hazards assessment indicates that the existing 100m setback provision of the Waitaki District Plan is adequate to provide protection to buildings for a period considerably longer than 50 years.
2. The Overview Development Plan supplied by terramark shows that the Lot boundaries are setback an additional 20-80m beyond the conservative 100 year erosion zone from NIWA, and therefore the proposed Lot boundaries are an adequate distance from the coast over a 100 year planning timeframe.

Yours sincerely



Derek Todd
Principal Coastal and Hazards Scientist
E-mail: derek.todd@jacobs.com
Phone: 03-9404981

1 October 2019

Subject: Review of Coastal Erosion Setback Provisions

Appendix A:

Figure 3.39 (P70) from NIWA 2019: Waitaki District Coastal Hazards. Report prepared for Otago Regional Council

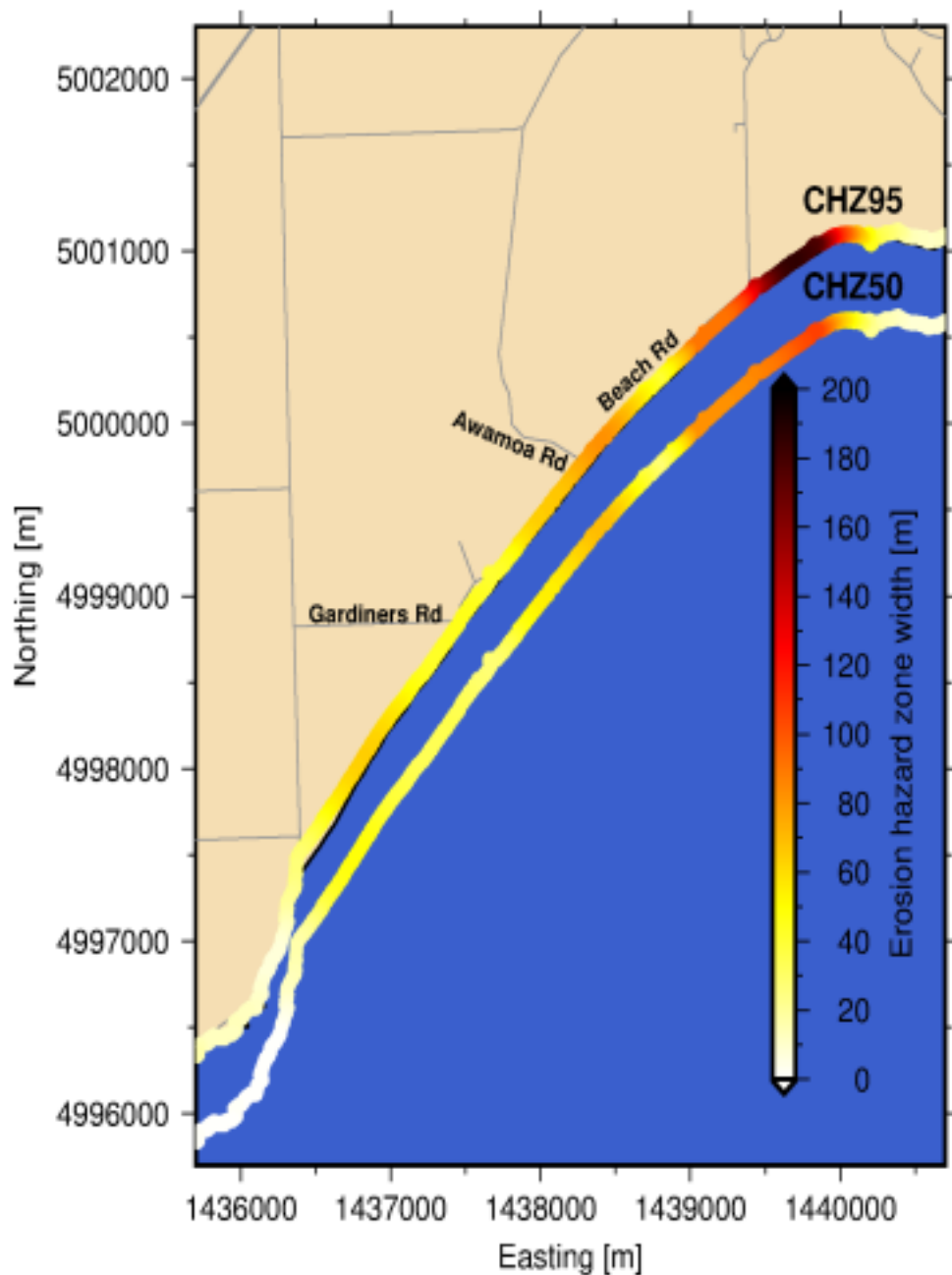


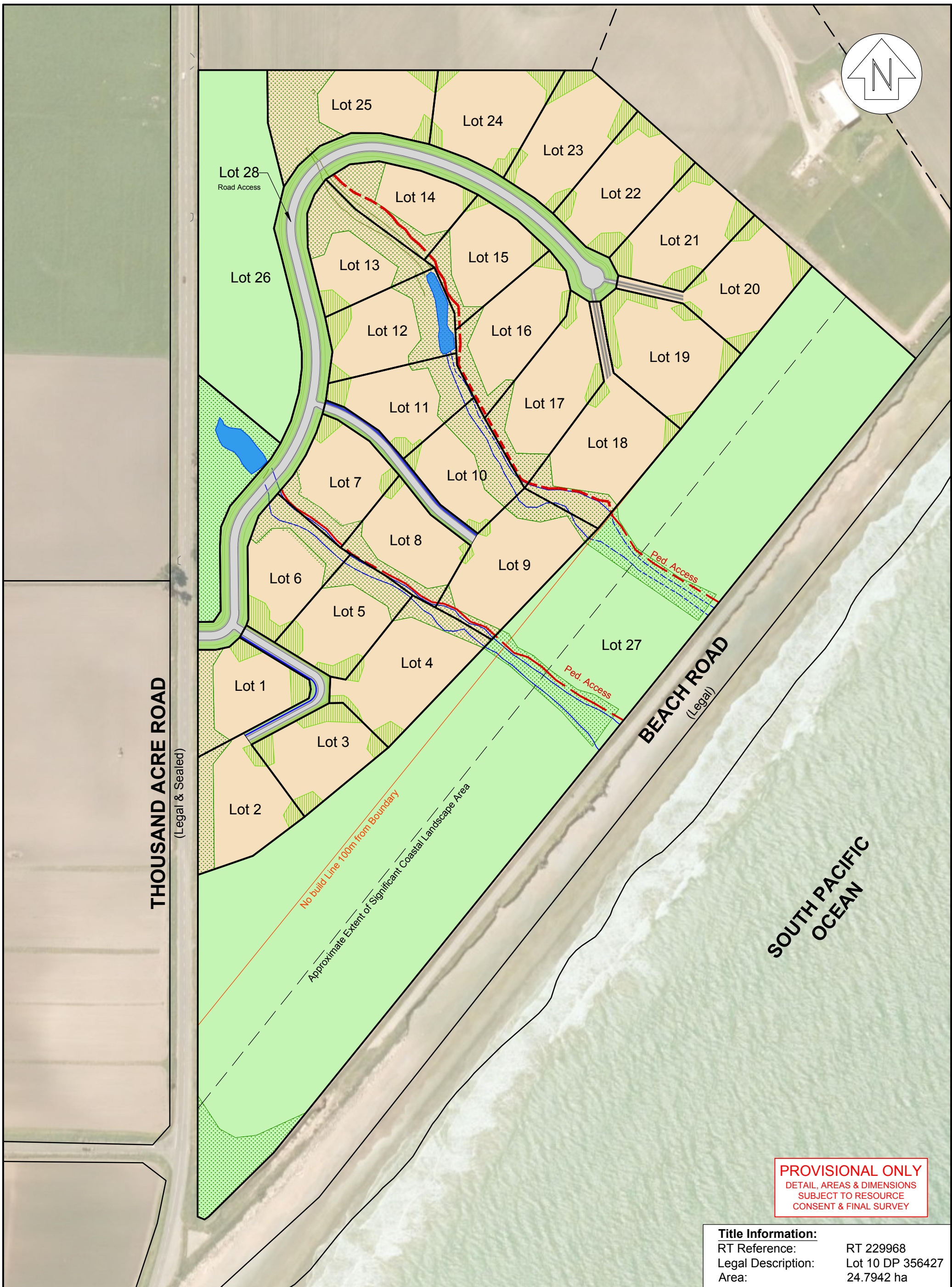
Figure 3-39: Coastal hazard zone width for 95th percentile (CHZ95) and for 50th percentile (CHZ50) for 100-year prediction for Beach Road. Note the CHZ50 points are offset to the south.



1 October 2019

Subject: Review of Coastal Erosion Setback Provisions

Appendix B: Terramark Plans for subdivision (August 2019)



PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Title Information:

RT Reference:	RT 229968
Legal Description:	Lot 10 DP 356427
Area:	24.7942 ha

Scale:	Job No:
1:2500 @ A3	D6633
Date:	Plan No:
August 2019	D6633/201/1

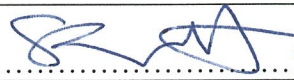
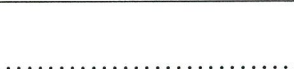
Cottleston Estates Limited

Site Investigation

August 2004

This report has been prepared solely for the benefit of Cottleston Estates Limited. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

Quality Assurance Statement	
MWH New Zealand Ltd 31 Stafford Street P O Box 4 Dunedin Tel: 64-3-477 0885 Fax: 64-3-477 0616	Project Manager: Craig Evans
	Prepared by: Bronwyn Dumbleton
	Reviewed by: Sue Bennett 
	Approved for issue by: Craig Evans 

Note that App B is no longer available, but relevant data is included in Table 1.

Cottleston Estates Limited

Site Investigation

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Appendix A - Site Photographs

Appendix B – Laboratory Results and Chain of Custody Form

Appendix C – Copy Correspondence

1. Introduction

1.1 Purpose

The purpose is to assess an area of land north of Kakanui for contamination in response to a request for further information (Section 92 RMA, 1991) from the Waitaki District Council to a subdivision application (Consent Number SRC04/71).

1.2 Scope

The assessment has involved:

- a site investigation and soil sampling
- laboratory testing, and
- result analysis.

1.3 Limitation

This investigation was limited to the assessment of the soils for contamination within the site boundaries. Potential contamination by organochlorine pesticides (especially DDT) had been identified as the primary concern by the Waitaki District Council. The investigation did not address geotechnical issues such as land stability, soil strength.

2. Site Description

2.1 Site Location

The Cottleston Estates Limited property is situated approximately 3-kilometres north of the township of Kakanui along the east coast (Figure 1). The triangular property is bound on all three sides by Beach Road, Gardiners Road and Thousand Acre Road.

2.2 Site Development

Cottleston Estates Limited (referred to hereon in as ‘the site’) plans to subdivide a 57-hectares site into 15 lots. The legal description of the property is Lot 68 DP 1616.

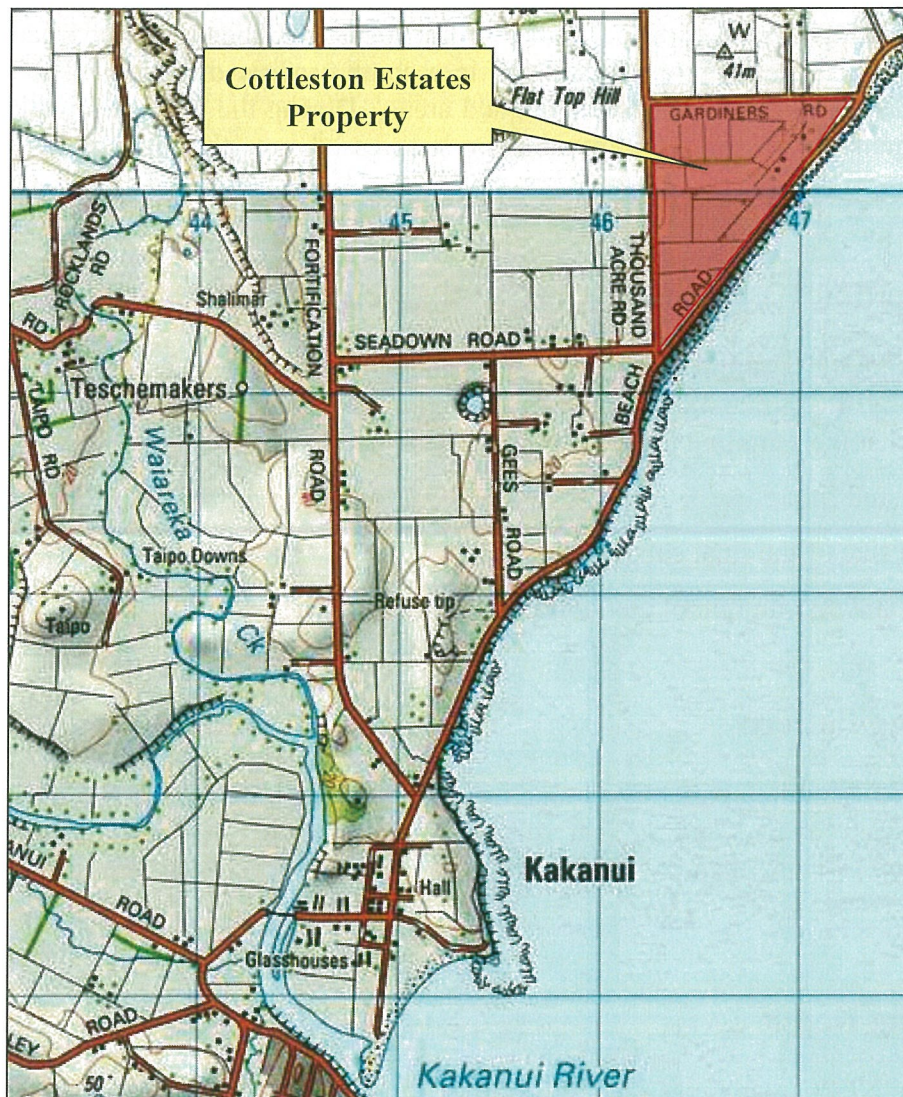


Figure 1: Site Location Map

3. Soil Investigation

3.1 Site History

The site has a history of organic market gardening from 1939-1980 (Leaman's family) in which the property was organically certified. From 1980-2001 the property has been run by the Leaman's family as a dry stock farming operation. Market gardeners have since been leasing the property from 2001-2004. None of these known activities would indicate significant potential for contamination of the site.

3.2 Site Description

The site investigation took place on the 17th August 2004. The triangular 57-hectare property is situated on undulating terrain with the highest point located at the western corner of the section. Two open drains exist on the property and run in a south-easterly direction. The site is currently planted out in market garden with some ploughed areas. During the site investigation there was no evidence of contamination die-off, browning or suppressed growth. Photographs are shown in Appendix A.

3.3 Investigation

In order to appropriately sample the Cottleston Estates property the soils samples were collected in accordance with NEPC guidelines (National Environmental Protection Council, 1999). The NEPC guidelines state that the sampling program must be designed to include:

- past, current and future use
- site area and size of the final subdivided sites
- likely shape and distribution of any potential contamination.

3.4 Sampling Pattern

A systematic (grid) sampling pattern was used in accordance with the NEPC guidelines to ensure that the whole site was covered and so that sampling points could be readily identified for further sampling (Figure 2). This scheme was also considered suitable due to the size and topography of the site.

3.5 Sampling Depth

According to the NEPC guidelines the soil samples should be taken at a depth to which people and other receptors could feasibly be exposed to contamination according to health and ecological risks. Samples were taken from a depth of 0-100mm below the ground surface. In the event that the phase 1 investigation, as reported in this report, detected contaminants above guideline levels, further

sampling would have been required (phase 2 investigation) and remediation measures would have been identified.

3.6 Sampling Density

The site covers 57-hectares (570,000 m²) and Cottleston Estates proposes to subdivide the site into 15 blocks. For sampling purposes the property was subdivided into 10 areas and within each area 5 samples were collected. This meant that there were 50 sample points across the entire 57-hectare property (Figure 2).

3.7 Composite Sampling

Within each of the 10 areas five samples were taken. These five samples were combined and thoroughly mixed in accordance with NEPC guidelines to produce a composite sample for lab testing. Composite sampling is achieved by mixing a cluster of samples to ensure a true average test result is obtained. Therefore one sample for each area was made and analysed.

3.8 Sample Integrity

Samples were collected using sterilised trowels and placed into a sterilised mixing container. They were then thoroughly mixed using sterile gloves. Decontaminated sample jars from Hill Laboratories were used that were gas tight, non-absorptive seals, allowing no headspace and kept on ice until arrival at the laboratory.

3.9 Sample Analysis

The Waitaki District Council indicated that the main contaminant of concern was DDT. Therefore the samples were analysed using the organochlorine pesticide screen, which includes DDT and its derivatives.

3.10 Quality Assurance

The NEPC guidelines state that quality assurance:

“Involves all the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analysis results.” (NEPC, 1999).

In the field this involved the selection of an appropriate sampling and presentation method, documentation and sample storage, cleaning of tools before sampling and between samples, cleaning containers, maintenance of sample environment to minimise sample contamination and delivery to the laboratory in good condition.

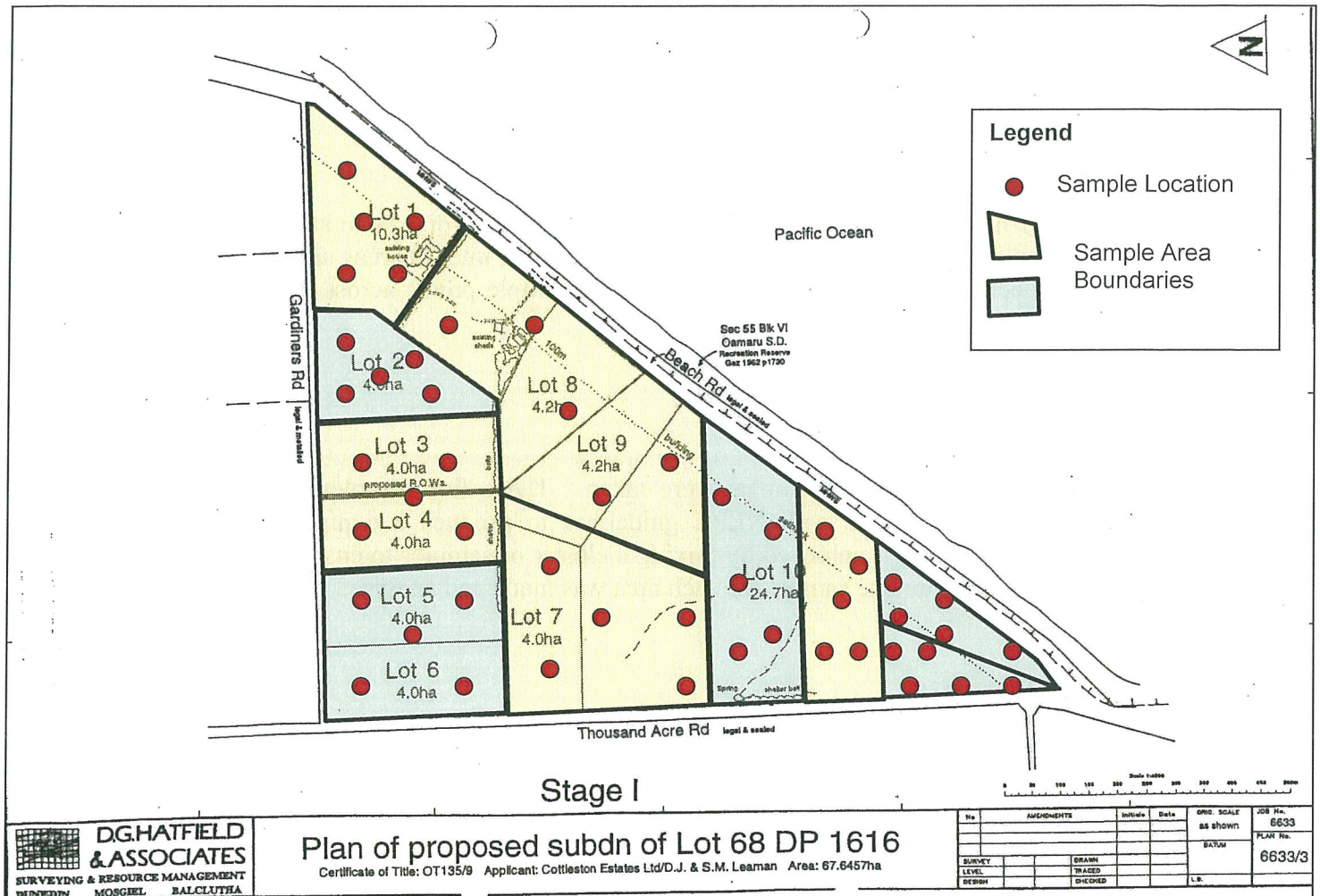


Figure 2: Soil Sample Locations

4. Results

Ten composite samples were collected from ten areas within the 57 hectare section and were all laboratory tested by Hill Laboratories, Hamilton. The NEPC 1999 were used to assess if the samples collected comply with the guidelines acceptance criteria. The laboratory report and sample chain of custody forms are appended (Appendix B).

Table 1: Laboratory Results - Organochlorine Pesticides Screen

Organochlorine Pesticides Screen						NEPC 1999
Sample Location	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Health Investigation Levels
Sample Date	17/8/04	17/8/04	17/8/04	17/8/04	17/8/04	
Soil Type	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	
Parameter	Results in mg/kg (dry weight)					
2,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
Aldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Alpha – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Beta – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Delta - BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-BHC (Lindane)	<0.01	<0.01	<0.01	<0.01	<0.01	
Cis-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Trans-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Total chlordane (cis+trans *100/42)	<0.05	<0.05	<0.05	<0.05	<0.05	50
Dieldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Endosulfan I	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan sulphate	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin aldehyde	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	<0.01	<0.01	<0.01	<0.01	<0.01	10
Heptachlor epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	10
Hexachlorabenzene	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	<0.01	<0.01	<0.01	<0.01	<0.01	

Notes:

NEPC 1999

- 1) Reference NEPC 1999 Soil Investigation Level Table (Table 5-A).
- 2) Detection limits are based on typical soil and sediment matrices. Samples are dried and ground prior to analysis, and are reported on a “dry weight” basis.
- 3) Method, OCP screen method, soil to the 0.005 mg/kg detection limit.

Table 1 continued: Laboratory Results - Organochlorine Pesticides Screen

Organochlorine Pesticides Screen						NEPC 1999
Sample Location	Lot 6	Lot 7	Lot 8	Lot 9	Lot 10	Health Investigation Levels
Sample Date	17/8/04	17/8/04	17/8/04	17/8/04	17/8/04	
Soil Type	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	
Parameter	Results in mg/kg (dry weight)					
2,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
Aldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Alpha – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Beta – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Delta - BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-BHC (Lindane)	<0.01	<0.01	<0.01	<0.01	<0.01	
Cis-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Trans-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Total chlordane (cis+trans *100/42)	<0.05	<0.05	<0.05	<0.05	<0.05	50
Dieldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Endosulfan I	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan sulphate	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin aldehyde	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	<0.01	<0.01	<0.01	<0.01	<0.01	10
Heptachlor epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	10
Hexachlorabenzene	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	<0.01	<0.01	<0.01	<0.01	<0.01	

Notes:
NEPC 1999

- 1) Reference NEPC 1999 Soil Investigation Level Table (Table 5-A).
- 2) Detection limits are based on typical soil and sediment matrices. Samples are dried and ground prior to analysis, and are reported on a "dry weight" basis.
- 3) Method, OCP screen method, soil to the 0.005 mg/kg detection limit.

Some contaminants that are tested for during laboratory analysis have no NEPC or ANZECC guidelines specified which is shown by Table 1. The NEPC guidelines specify that if this occurs the parameters that do have guidelines must be assessed and if all the samples are below the relevant guidelines then it can be presumed that the rest of the samples comply. In this case most of the contaminants that have been tested for have an appropriate NEPC guideline. All of these soils are well below and therefore comply with the NEPC guidelines. Those parameters that were tested for but do not have any relevant guidelines were all below the detection level. Therefore the results show that all the soils contained within the Cottlestons Estate property contain no traces of contamination by organochlorine pesticides.

5. Summary

A soil investigation was completed by MWH on the Cottleston Estates property. Soil testing was completed according to NEPC 1999 guidelines. The soils were then sent to Hill Laboratories that has a primary quality standard NZS/ISO/IEC 17025:1999 which incorporates the aspects of ISO 9000 relevant to testing laboratories.

The organochlorine pesticides screen was used because Waitaki District Council identified DDT contamination as being their main concern. There is no historical or physical evidence for contamination. No contamination was detected within any of the samples analysed.

Appendix A - Site Photographs



Photo : Site Layout

Appendix B – Laboratory Results and Chain of Custody Form

Appendix C – Copy Correspondence

File reference SRC 04/71
Enquiries to Planning Section

COPY



Waitaki DISTRICT COUNCIL

06 August 2004

Cottleston Estates Limited
C/- D. G. Hatfield & Associates
PO Box 235
DUNEDIN

Waitaki District Council
Private Bag 50058, Oamaru

Tel: 03-434 8060
Fax: 03-434 8442

20 Thames Street
Oamaru, New Zealand

Attention: Geoff W. Bates

Dear Sir

Resource Management Act 1991

**Resource Consent Application: SRC04/71 - Cottleston Estates Limited, 532
Beach Road, Kakanui.**

It has come to Council's attention that the subject site was used for horticultural purposes and potentially the use of agrichemicals such as DDT was utilised.

Due to the proposed use of the land, it is requested that soil sampling be undertaken for possible soil contamination from agrichemicals. Sampling shall be undertaken in accordance with standard practice for testing and be analysed by a registered soils scientist.

I also acknowledge receipt of your letter dated 5 August 2004 and its attachment (Agreement For Sale and Purchase Of Real Estate dated 4 July 2004), which has been received by Council today, the 6th of August 2004.

In the last paragraph of your letter, you have requested Council to proceed with the assessment of the application in the knowledge that the soil testing report has been commissioned and will be in Council's hands as soon as it becomes available. I wish to advise that, it has been determined that your application be put on hold until the further information requested above has been supplied to Council pursuant to Section 92 of the Resource Management Act 1991.

Yours faithfully



Patterson Ngwira
Consents Planner

N:\Planning - Previously Planning Drive\Consent Applications\SRC04-71 Cottleston\soil sampling request.doc

DOUG J LEAMAN

17 Gardiners Road, Awamoa

OAMARU 9492

Tel: (03) 434 5713

31 October 2019

The Directors
SARB Investments Limited
171a Victoria Road
Saint Clair
DUNEDIN 9012

Attention: Mr William P Brown, Director

Dear Bill

Re: Block history and soils at Beach Road / Thousand Acre Road, Awamoa

Following on from our meeting today, I set out below the matters discussed in relation to the soils and horticultural viability on your adjoining block – Lot 10, DP356427 at the above location.

1. My late father purchased the block of land within the boundaries of Thousand Acre Road, Gardiners Road and Beach Road in October 1939 (which includes your Lot 10) and the Leaman family through three generations have resided here and farmed at various stages. My son and I continue to reside on part of the original block and graze some stock.
2. In the early years, my father grew potatoes, barley and wheat on parts of the whole 67-hectare block and ran stock on other parts.
3. In 1982, myself and my wife took over the property and continued farming.
4. The block can be classified as dryland farming and is always subject to seasonal lack of moisture and sea mists in the lower part.
5. Of the land currently held by your company, SARB Investments Limited, the top corner and Lots 1-6 fronting Gardiners Road has the locally termed soils *Totara Tar*, the balance of that land being lighter and stoney soils.
6. While *Totara Tar* soils are recognised as fertile soils, they are difficult to work and manage as they form a hard crust when dry and become very sticky when wet. Moisture in the right quantity and at the right time is essential for the productive management of these soils.
7. It is not economically feasible to irrigate this coastal block and any horticultural farming is entirely at the mercy of the weather.



8. My wife and I ceased farming the property about 18 years ago as it was simply not possible to make a living, leased for a year or two and eventually sold to SARB Investments Limited.
9. The Leaman family have farmed this block for just over 80 years, have extensive, practical knowledge of its farming and horticultural prospects and I am able to say that it is simply not possible to make a living from this block and in particular, its horticultural potential is unlikely to improve.
10. I believe the land's potential from a farming point of view is no more than grazing and hay making.

Yours faithfully

Doug Leaman

A handwritten signature in black ink, appearing to read 'Doug Leaman', followed by a long horizontal flourish.

GLENMOA FARMS LIMITED

Prydes Gully Road, RD 10C
OAMARU 9491

31 October 2019

The Directors
SARB Investments Limited
171a Victoria Road
Saint Clair
DUNEDIN 9012

Attention: Mr William P Brown, Director

Dear Bill

Re: Soils at Beach Road / Thousand Acre Road

At your request to provide an opinion on the soil's fertility and viability at the block my company currently leases from SARB Investments Limited, I make the following observations:

1. My company, Glenmoa Farms Limited, has leased this land (Lot 10 – DP356427) since March 2006.
2. During that period, I have farmed various crops - barley, radish and taken both hay and silage on a seasonal basis.
3. The land is best described as a dryland pasture block significantly affected by salt laden sea mist.
4. The lower part of the block is very stoney and difficult to cultivate while the higher part of the block, although exhibiting the local soil-type known as *Totara Tar*, is limited by the presence of basalt rock making it difficult to cultivate.
5. There is very limited water available on the block and it is not economically viable to irrigate this land.
6. In my opinion, this particular block of land is not viable as a horticultural block but limited to and useful for its present use as a dryland pasture block with best use being stock grazing, silage and hay.

Yours faithfully

GLENMOA FARMS LIMITED



John J Foley, Director

Bill Brown
SARB Investments Ltd
171a Victoria Rd
St Clair
DUNEDIN 9012

18 March 2020

Re: Estimated cost to connect to NOIC system

Dear Bill

You have asked us to estimate the cost to connect the property located on Thousand Acre Rd (lot 10 DP356427) to the North Otago Irrigation Company system in order to receive water, at pressure, for the purposes of irrigation. We have estimated that cost but remind you that it is an estimate only as we have not visited the site nor done a detailed plan for connection. However, we are confident we have provided you with a fair approximation of what the cost would be.

The property is 24.8ha and so could support a maximum of 20 NOIC shares. NOIC delivers water at around 5 bar pressure, via a mix of gravity and boosting pumps in stations located around the schemes 70,000 ha command area. Your property is around 4.1km from the location off the Waiareka Creek line that we could most efficiently provide water from. Accordingly, the requirements and costs are as follows:

Pipework	4,100m x 100mm @\$58/m	\$237,000
Pump station (to boost pressure)		\$50,000
On farm offtake (50mm/20 shares)		\$8,500
NOIC shares	20@\$5,250	\$105,000
TOTAL		<u>\$400,500</u>

Please note, you will also have on-farm costs in regard to irrigation equipment. We are not suppliers of this but understand the rough rule of thumb to be \$5,000/ha irrigated. Also note, should your neighbours wish to also connect to NOIC, some of these costs would be spread among all the applicants (eg the Pump station) and so reduce your cost accordingly.

I trust this is sufficient information at this stage but don't hesitate to let us know if we can be of further help.

Sincerely



Ben Stratford
Manager of Operations



GARDINERS ROAD

Pt Section 2 of 26
Blk VI Oamaru SD
DR Martin

Lot 6 DP 356427
CA & LH Weir
& Balance Trustees Ltd

Lot 5 DP 356427
J Zhu, KHK Ho, L Liang,
N Yang & YS Wong

Lot 4 DP 356427
H & MR Martin

Lot 3 DP 356427
C Tao

Lot 1
DP 497510
DJ & GR Lucas

Lot 1
DP 356427
DJ & GJ Leaman
& S Leaman-Taylor

Lot 2
DP 497510
JL & KE Fegan
& MJ Hockly

Lot 2 DP 444369
N Canham & SE Flett

Lot 7 DP 356427
RI Foley &
HC Trustees 2017 Ltd.

Lot 9 DP 356427
JE & MD Thorpe
& Currie Trustee Services Ltd.

Lot 8 DP 356427
MJ Hall

Lot 1 DP 444369
Willowview Pastures Ltd
(C/- GNS, JMS, KJ & DS Taylor)

THOUSAND ACRE ROAD

Section 59 Blk VI
Oamaru SD
CM & NR Joyce

BEACH ROAD
(Legal)

No build Line 100m from Boundary

SOUTH PACIFIC OCEAN

DRAWING STATUS:
FOR CONSENT

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Legend:

Boundary	_____
Road	_____
Abutments	_____
Approval Obtained	_____

Title Information:

RT Reference:	RT 229968
Legal Description:	Lot 10 DP 356427
Area:	24.7942 ha

terramark
setting new boundaries
Surveying, Resource Management & Engineering
Dunedin 03-4774783 Mosgiel 03-4897107 Balclutha 03-4180470

Affected Party Approvals
Thousand Acre Road, Kakanui

Scale: 1:5500 @ A3	Job No: D6633
Date: April 2020	Plan No: D6633/206

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We:

Maxwell Ronald Martin & Helen Martin

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

67 Gardiners Road, Awamoa
Valu Roll No 26140/34505 - Lot 6 DP 356427

(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

[Signature]

FOR SELF AND Helen Martin

Date:

21.3.20

Telephone:

021 340 740 (027 434 7713) RUT

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



Lot 1
DP 444369

THOUSAND ACRE ROAD
(Legal & Sealed)

Section 59
Blk VI Oamaru SD
OT6A/1439

Pt Lot 2
DP 2400
OT172/252

Lot 7
DP 356427

Lot 9
DP 356427

Lot 25
6441m²

Lot 24
4974m²

Lot 23
5037m²

Lot 22
5143m²

Lot 21
5006m²

Lot 20
5170m²

4741m² Nett

Lot 19
5963m²

Lot 18
6574m²

6146m² Nett

Lot 17
5601m²

Lot 16
5045m²

Lot 15
4244m²

Lot 14
4096m²

Lot 13
4573m²

Lot 12
5006m²

Lot 11
4278m²

Lot 10
4385m²

Lot 9
7566m²

6119m² Nett

Lot 8
4341m²

Lot 7
4381m²

Lot 6
4572m²

Lot 5
4554m²

Lot 4
6019m²

Lot 3
4214m²

Lot 2
6385m²

4927m² Nett

No build Line 100m from Boundary
Approximate Extent of Significant Coastal Landscape Area

BEACH ROAD
(Legal)
Section 55 Blk VI Oamaru SD
Recreation Reserve NZGZ 1982-P1730

SOUTH PACIFIC
OCEAN

PROVISIONAL ONLY
DETAIL AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

DRAWING STATUS:
DRAFT

Legend:

Planting by Developer
Planting by Lot Owner

Roads, Rights of Way & Access Strips

For details pertaining to Lot 28 (Road to Vest), and Rights of Way A & B, refer to the typical cross sections on Sheet 4.

Access strips to Lots 18 & 20 feature minimum widths of 4m.

Yard & Road Setbacks

Lot 20-23 feature a 20m yard setback where adjoining Lot 9 DP 356427

Lots 23 & 24 feature a 20m yard setback where adjoining Lot 7 DP 356427

Lot 25 features a 10m yard setback where adjoining Lot 7 DP 356427

Lots 1 & 2 feature a 15m yard setback where adjoining Thousand Acre Road.

All internal yard setbacks are 6m and setbacks to new road are 10m.

Easements

All rights reserved for any easements which may be required as part of the subdivision.

Title Information:

RT Reference: RT 229968
Legal Description: Lot 10 DP 356427
Owner: Sarb Investments Limited
Area: 24.7942 ha

Proposed Easements			
Purpose	Shown	Burdened Land	Benefitted Land
Right of Way	(A)	Lot 2 Hereon	Lots 1, 3, 4 & 5 Hereon
Right of Way	(B)	Lot 9 Hereon	Lots 7, 8, 10 & 11 Hereon

Location and alignment of Pedestrian Rights of Way through Lots 7-9, Lots 14-18 & Lot 28, shown as (C) & (D) are subject to final design, construction and survey

Proposed Easements in Gross			
Purpose	Shown	Grantor	Grantee
Right of Way (Cycle and Pedestrian)	(M)	Lot 27 Hereon	Waitaki District Council

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We:

DRM
Douglas Ross Martin & ~~MarriAnn Martin~~

Being the

☐ Owner ☒ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

37 Springfield Road, Awamoa (Residence)
& owner of the property described next
Valn Roll No 26140/53100 — Pt Section 2, Sec 28 Oam.
B/K VI Oamaru S.D.

(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

DR Martin

Date:

20-3-20

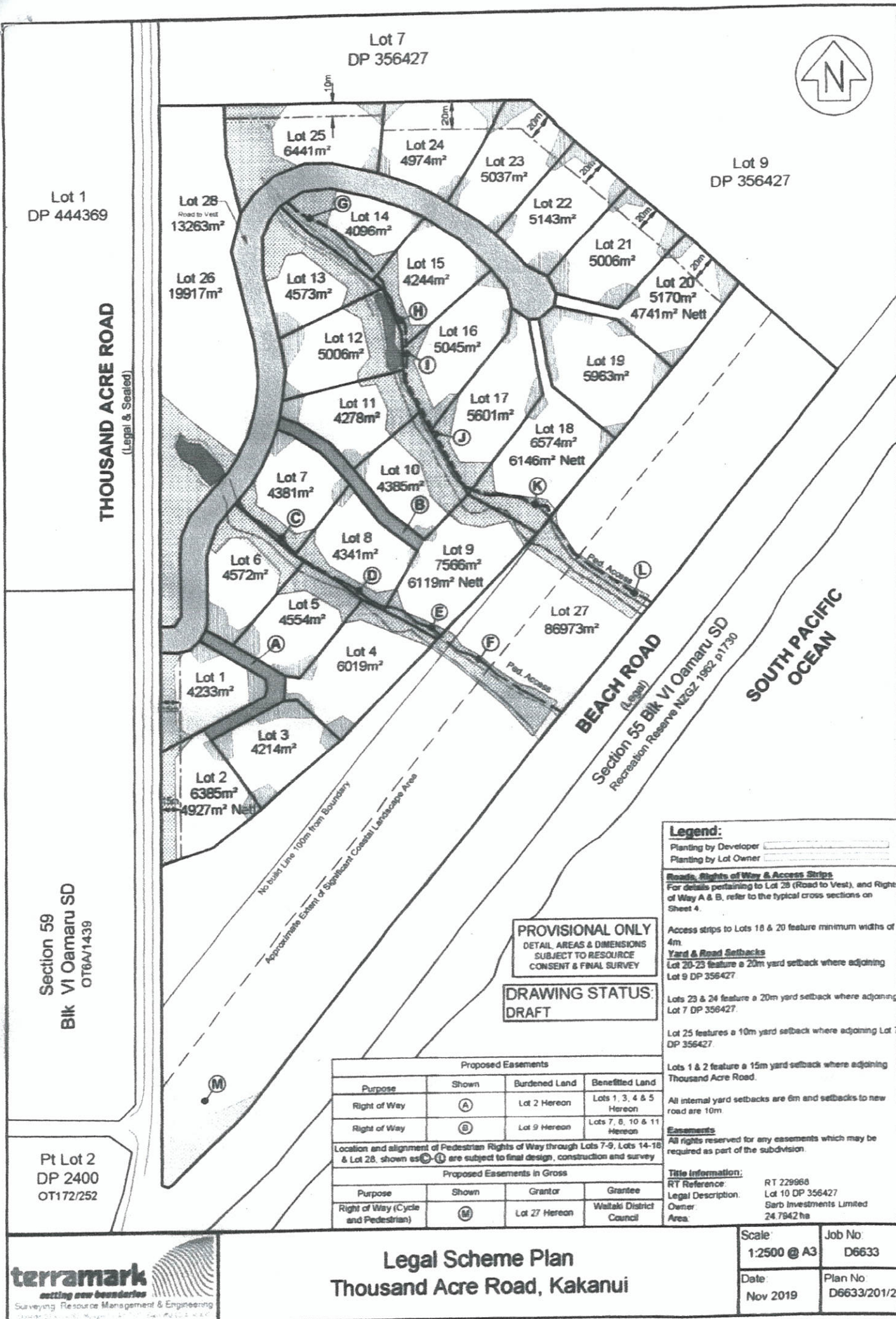
Telephone:

4349895

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We: Leslie Herbert Weir & Christine Ann Weir

Being the

☐ Owner ☒ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated: 97 Gardiners Road, Awamoa
Valn Roll N° 26/40/34507 - lot 6 DP 356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed: [Signature] [Signature]

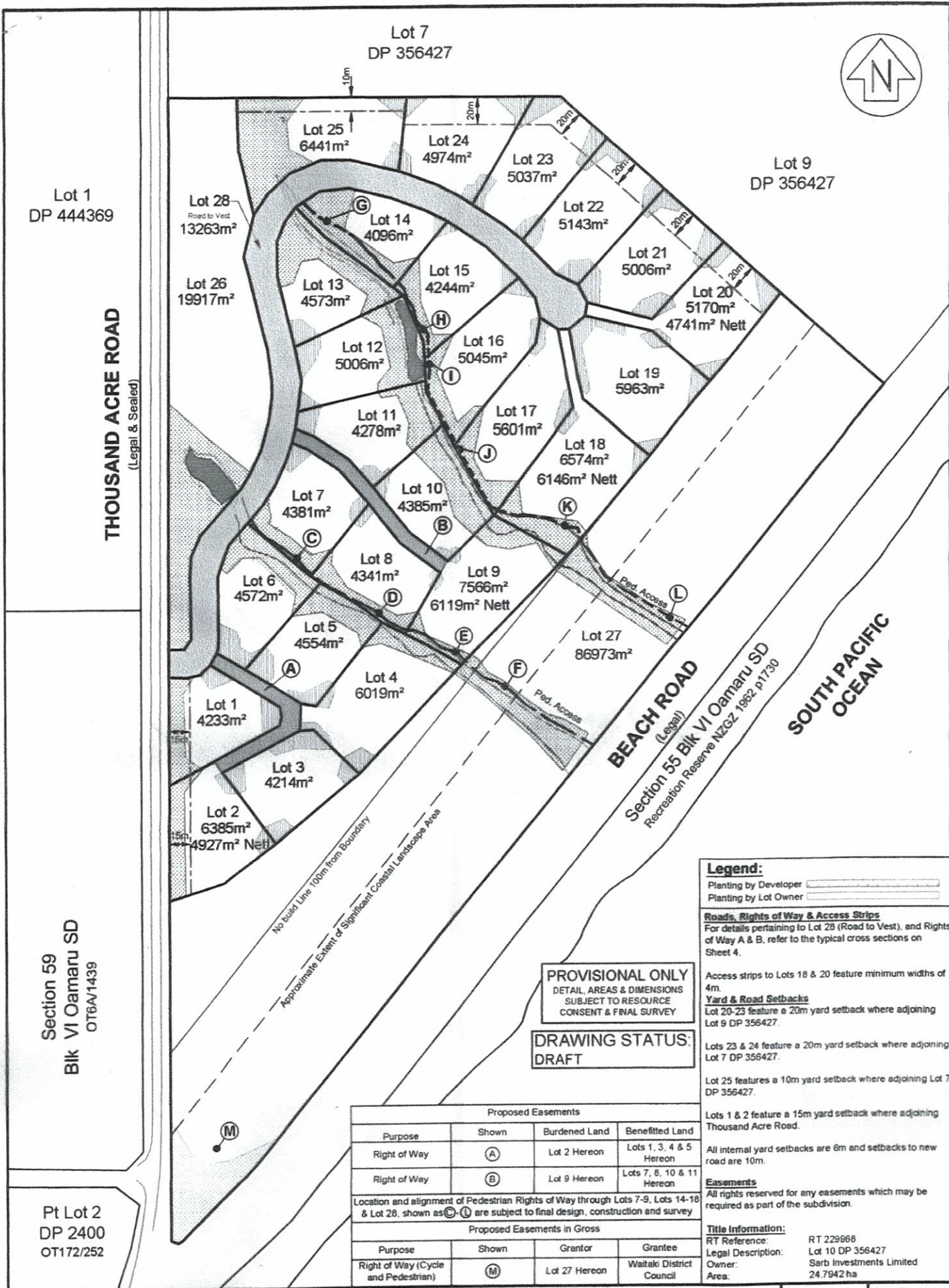
Date: 21/3/2000

Telephone: 4342367

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



Legend:
 Planting by Developer _____
 Planting by Lot Owner _____

Roads, Rights of Way & Access Strips
 For details pertaining to Lot 28 (Road to Vest), and Rights of Way A & B, refer to the typical cross sections on Sheet 4.

Access strips to Lots 18 & 20 feature minimum widths of 4m.

Yard & Road Setbacks
 Lot 20-23 feature a 20m yard setback where adjoining Lot 9 DP 356427.

Lots 23 & 24 feature a 20m yard setback where adjoining Lot 7 DP 356427.

Lot 25 features a 10m yard setback where adjoining Lot 7 DP 356427.

Lots 1 & 2 feature a 15m yard setback where adjoining Thousand Acre Road.

All internal yard setbacks are 6m and setbacks to new road are 10m.

Easements
 All rights reserved for any easements which may be required as part of the subdivision.

Title Information:
 RT Reference: RT 229968
 Legal Description: Lot 10 DP 356427
 Owner: Sarb Investments Limited
 Area: 24.7942 ha

PROVISIONAL ONLY
 DETAIL, AREAS & DIMENSIONS
 SUBJECT TO RESOURCE
 CONSENT & FINAL SURVEY

DRAWING STATUS:
 DRAFT

Proposed Easements			
Purpose	Shown	Burdened Land	Benefitted Land
Right of Way	(A)	Lot 2 Hereon	Lots 1, 3, 4 & 5 Hereon
Right of Way	(B)	Lot 9 Hereon	Lots 7, 8, 10 & 11 Hereon
Location and alignment of Pedestrian Rights of Way through Lots 7-9, Lots 14-18 & Lot 28, shown as (C)-(I) are subject to final design, construction and survey			
Proposed Easements in Gross			
Purpose	Shown	Grantor	Grantee
Right of Way (Cycle and Pedestrian)	(M)	Lot 27 Hereon	Waitaki District Council

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We: Ching Tao

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

Gardiners Road, Awamoa
Valu Roll No 26110/34502 - Lot 3 DP356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed: [Signature]

Date: 24/March 2020

Telephone: 022 652 8820

(I have signed both pages)

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

IN We: Yee Sang Lisa Wong, Kenneth Hiu Kan Ho, Lining Liang,

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated: Gardeners Road, Awamoa, Volu
Roll No 26/40/34506 - Lot 5 D.P. 356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below
accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purpose
ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

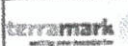
Date:

Telephone: 0852 97688529

If you have any queries regarding the resource consent process and the role and rights of adversely
affected person(s), please contact

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Yang, Nan L, Kaito 2007



AFFECTED PERSON(S) CONSENT FORM

10000 ^{Current Asset} Yee Sang Ling Wong, Kenneth Hin Kan Ho,

Of the property situated: Gardners Road, Ayrton

Roll No 26/40/34506 - lot 5 D
(Address and/or legal description of your property)

Sark Investments Limited, of Thousand Acre Road, Suva

For:
Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of
accordance with the attached scheme plan. The proposal will create 25 sites
ranging in area from 4214m² to 6441m²

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (A

Signed Antony 12

Date: Mar 27, 2020

Telephone: T852 97688529

If you have any queries regarding the resource consent process and the role any affected person(s), please contact:

Resource Consents Team
Planning Department
Westlake District Council
Private Bag 90058
Christchurch 8144

phone 0800 108 081



Figure 1 : View toward the site from Kakanui



Figure 2 : View toward the site from Beach Road approx. 500m south of the site.



Figure 3 : View north-eastward across the site from Thousand Acre Road near its intersection with Seadown Road



Figure 4 : View south-eastward across the site from Thousand Acre Road close to its northern boundary



Figure 5 : View toward the site from Thousand Acre Road approx. 150m south of its intersection with Gardiners Road.



Figure 6 : View toward the site from Gardiners Road approx. 250m from its intersection with Thousand Acre Road.



Figure 7 : View toward the site from Beach Road approx. 540m north of its intersection with Gardiners Road.



Figure 8 : View toward the site from Beach Road approx. 350m north of the site.



Figure 9 : View south-westward across the site from Beach Road adjacent to its northern boundary.



Figure 10 : View northward across the site from Beach Road approx. 200m from the southern extent of the site.



Figure 11 : View across the site from the southwestern deck of the adjacent dwelling at 67 Gardiners Road.



Figure 12 : Plan illustrating theoretical residential built density permitted by the Waitaki District Plan Rural zone provisions in the vicinity of the site (minimum 4ha lot size / residential unit)



Figure 12 A : Plan illustrating theoretical residential built density permitted by the Waitaki District Plan Rural zone provisions in the vicinity of the site (minimum 4ha lot size / residential unit) with the proposed development shown on the site.



Key

- Higher species incl Kowhai, lancewood, Halls totara, Lowland ribbonwood, Kohuhu, Lemonwood, Ngaio, Cabbage tree, Broadleaf, Kanuka, Narrow-leaved lacebark
- Medium height species e.g. Flax, Toetoe, Hebe, Manuka, Coprosma sp, Olearia sp
- Lower species e.g. Carex sp, Jointed rush

Figure 13 : Proposed Development / Landscape Concept Plan – Cottleston Downs

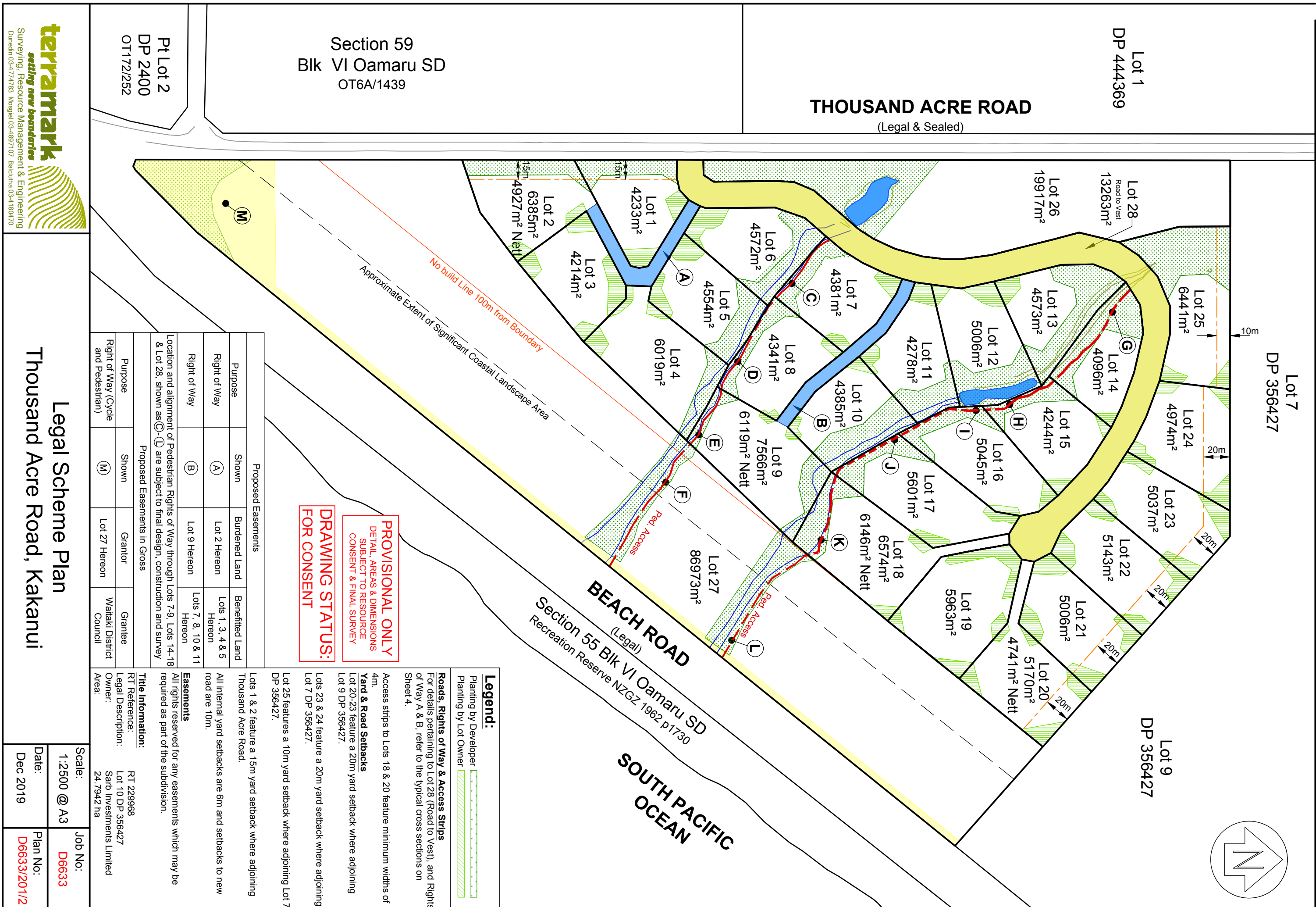




Figure 14(a) – Existing View



Figure 14(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 14 : Photo-simulation - Beach Road approx. 500m south of the site.



Figure 14(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 14(d) – Photo-simulation for comparison with Figure 14(c) illustrating indicative visual effects of dwellings as proposed.

Figure 14 : Photo-simulation - Beach Road approx. 500m south of the site.



Figure 15(a) – Existing View



Figure 15(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 15 : Photo-simulation - Thousand Acre Road near its intersection with Seadown Road



Figure 15(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 15(d) – Photo-simulation for comparison with Figure 15(c) illustrating indicative visual effects of dwellings as proposed.

Figure 15 : Photo-simulation - Thousand Acre Road near its intersection with Seadown Road



Figure 16(a) – Existing View



Figure 16(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 16 : Photo-simulation - Thousand Acre Road close to the northern boundary of the site



Figure 16(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 16(d) – Photo-simulation for comparison with Figure 16(c) illustrating indicative visual effects of dwellings as proposed.

Figure 16 : Photo-simulation - Thousand Acre Road close to the northern boundary of the site



Figure 17(a) – Existing View



Figure 17(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 17 : Photo-simulation - Thousand Acre Road approx. 150m south of its intersection with Gardiners Road.



Figure 17(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 17(d) – Photo-simulation for comparison with Figure 17(c) illustrating indicative visual effects of dwellings as proposed.

Figure 17 : Photo-simulation - Thousand Acre Road approx. 150m south of its intersection with Gardiners Road.



Figure 18(a) – Existing View



Figure 18(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 18 : Photo-simulation – Gardiners Road approx. 250m from its intersection with Thousand Acre Road.



Figure 18(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 18(d) – Photo-simulation for comparison with Figure 18(c) illustrating indicative visual effects of dwellings as proposed.

Figure 18 : Photo-simulation – Gardiners Road approx. 250m from its intersection with Thousand Acre Road.



Figure 19(a) – Existing View



Figure 19(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 19 : Photo-simulation – Beach Road approx. 350m north of the site.



Figure 19(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 19(d) – Photo-simulation for comparison with Figure 19(c) illustrating indicative visual effects of dwellings as proposed.

Figure 19 : Photo-simulation – Beach Road approx. 350m north of the site.



Figure 20(a) – Existing View



Figure 20(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 20 : Photo-simulation – Beach Road adjacent to the northern boundary of the site



Figure 20(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 20(d) – Photo-simulation for comparison with Figure 20(c) illustrating indicative visual effects of dwellings as proposed.

Figure 20 : Photo-simulation – Beach Road adjacent to the northern boundary of the site



Figure 21(a) – Existing View



Figure 21(b) – Photo-simulation illustrating the indicative visual effects of the proposed development with planting shown at approx. age 10 years.

Figure 21 : Photo-simulation – Beach Road approx. 200m from the southern extent of the site.



Figure 21(c) – Photo-simulation illustrating theoretical visual effects of dwellings permitted under the provisions of the Waitaki District Plan Rural zone.



Figure 21(d) – Photo-simulation for comparison with Figure 21(c) illustrating indicative visual effects of dwellings as proposed.

Figure 21 : Photo-simulation – Beach Road approx. 200m from the southern extent of the site.

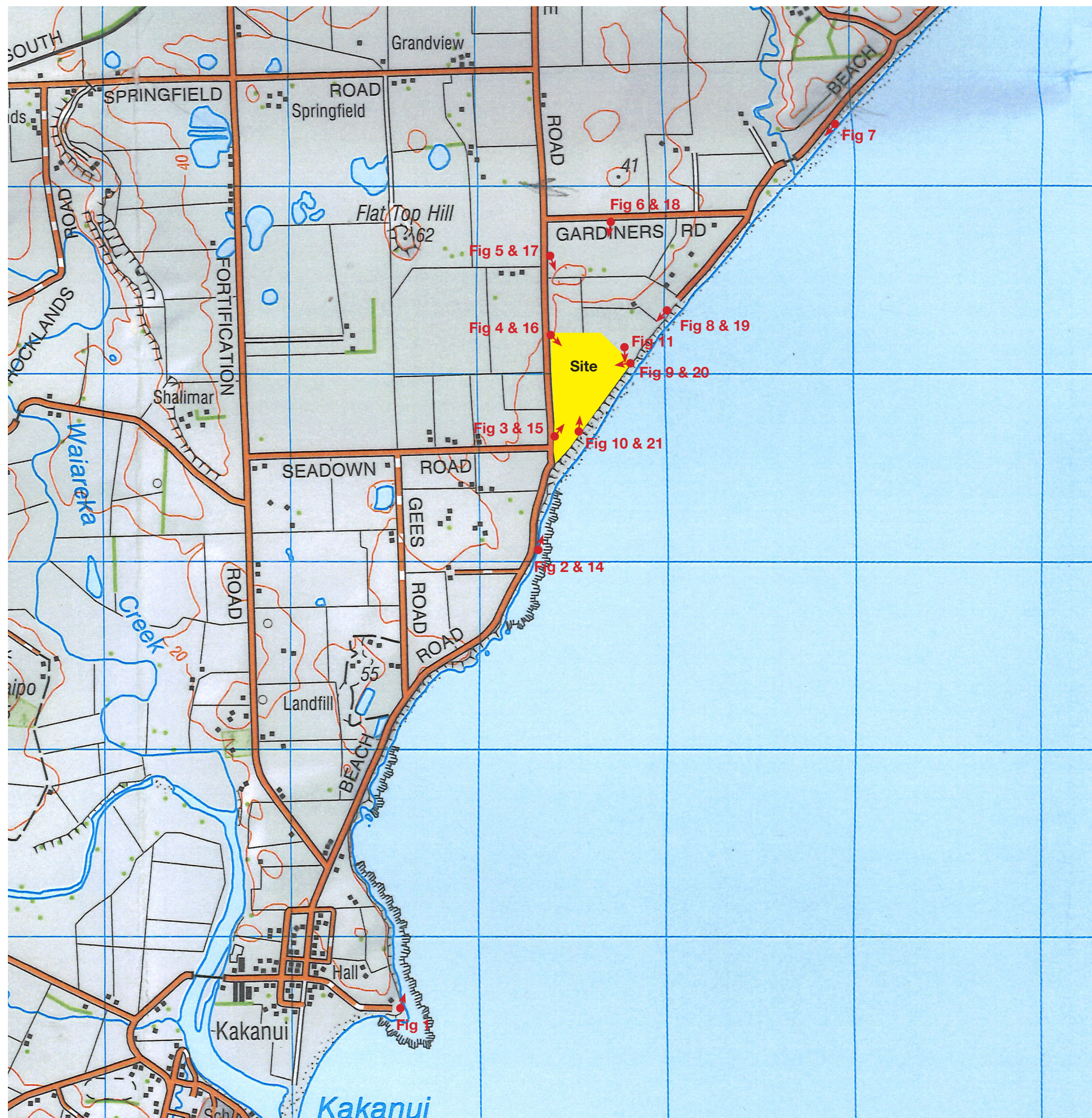
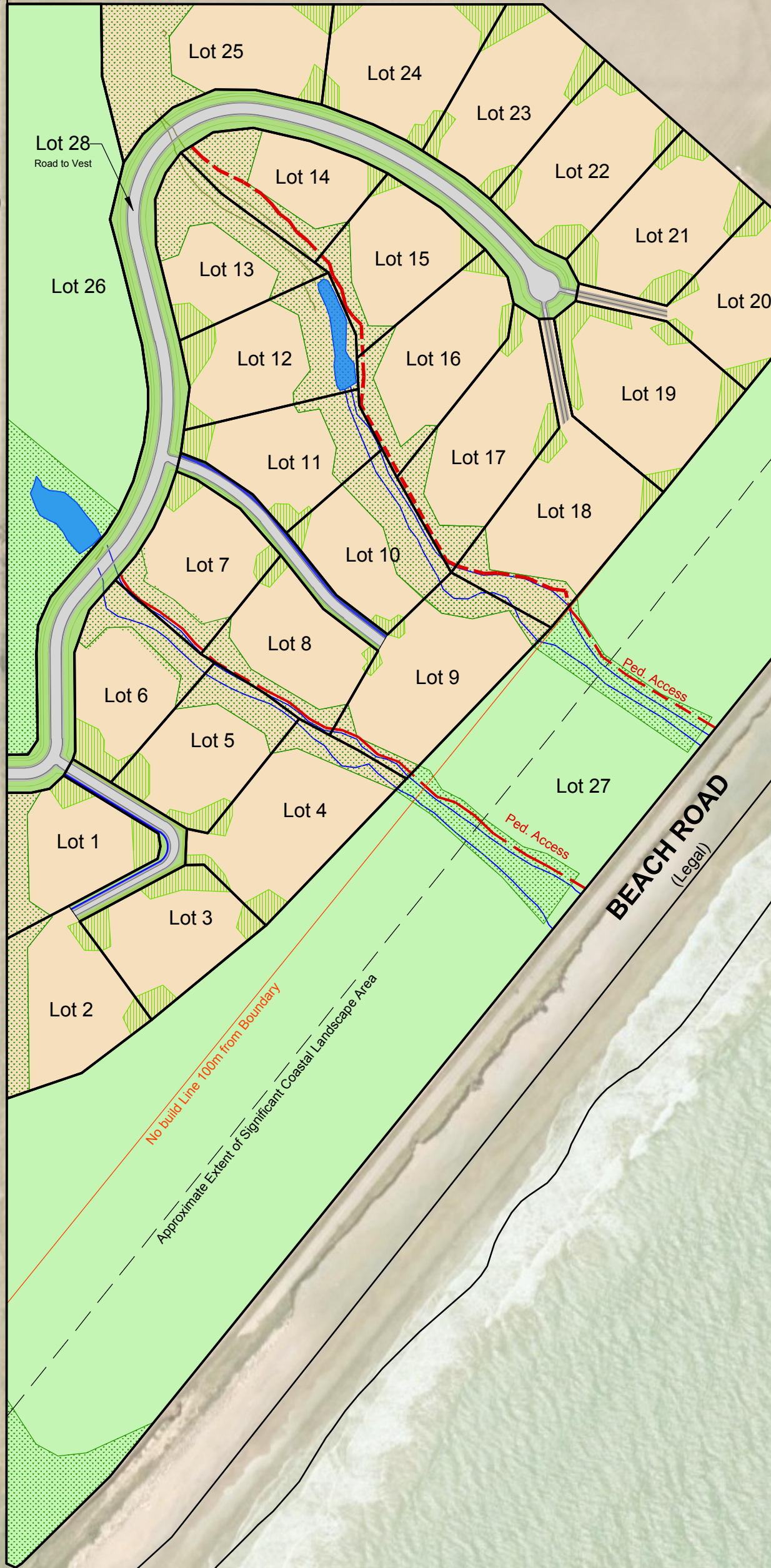


Photo-point location plan



THOUSAND ACRE ROAD
(Legal & Sealed)



DRAWING STATUS:
FOR CONSENT

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Title Information:

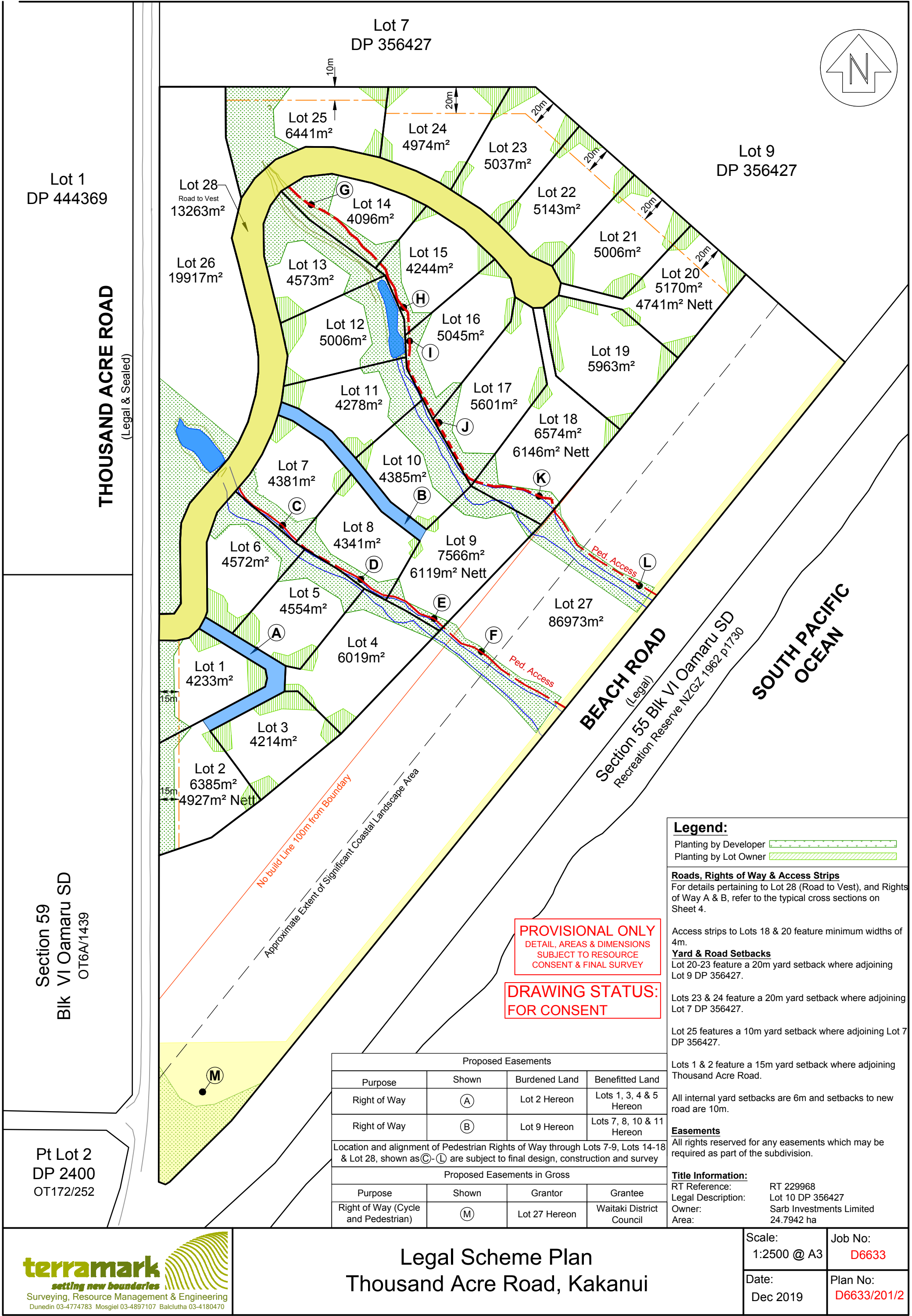
RT Reference:	RT 229968
Legal Description:	Lot 10 DP 356427
Area:	24.7942 ha

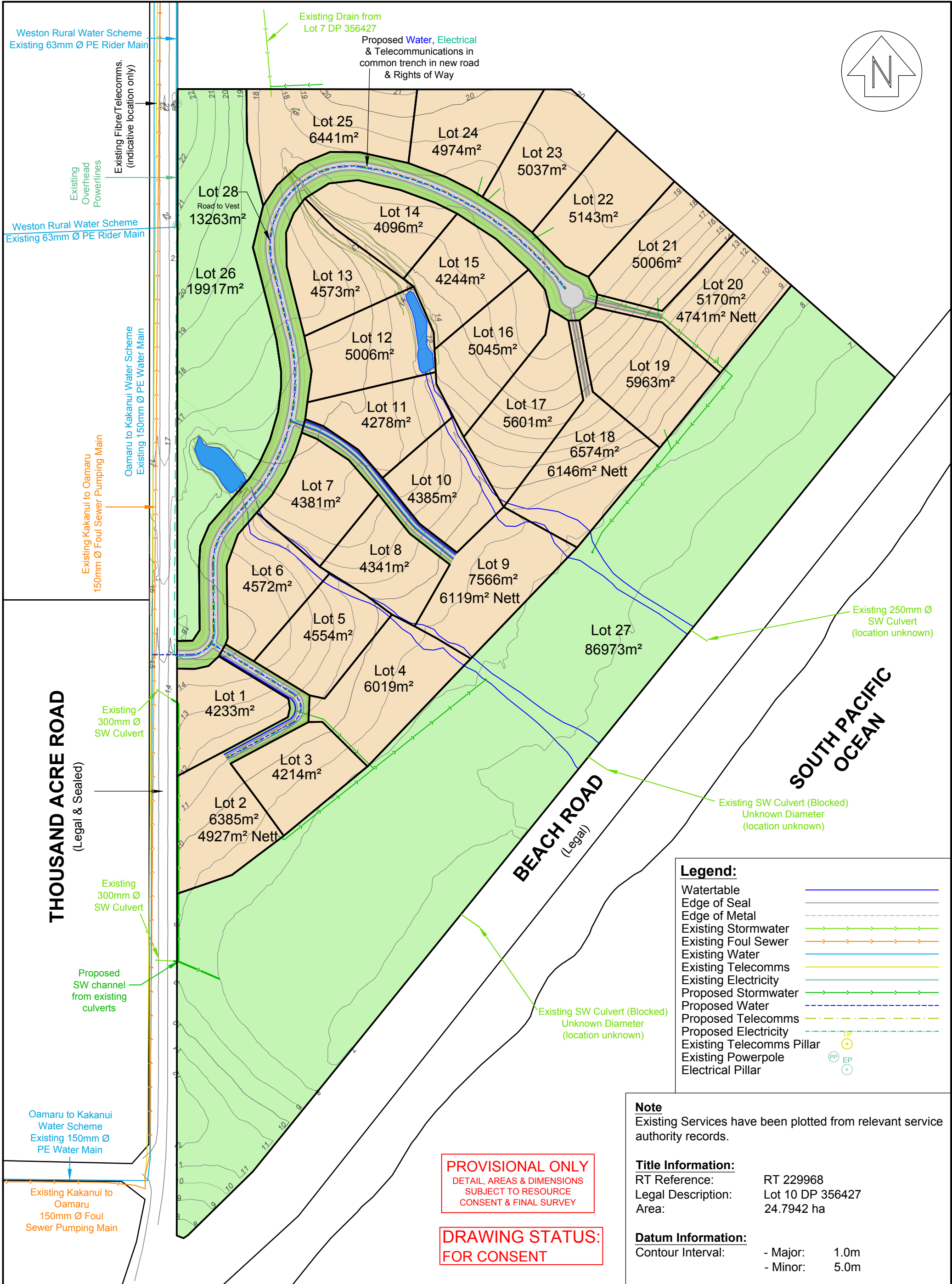
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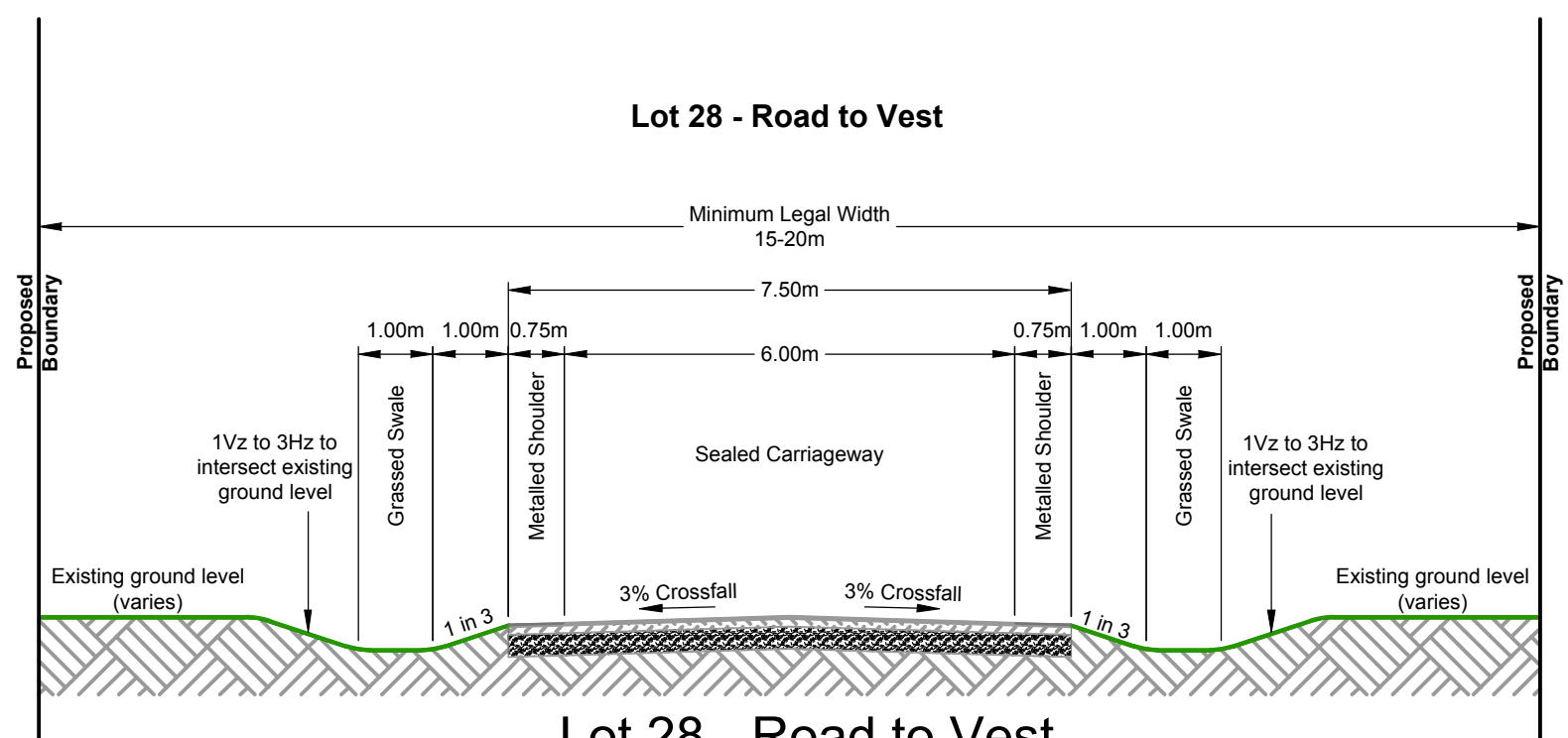
Job No:
D6633

Date:
Dec 2019

Plan No:
D6633/201/1

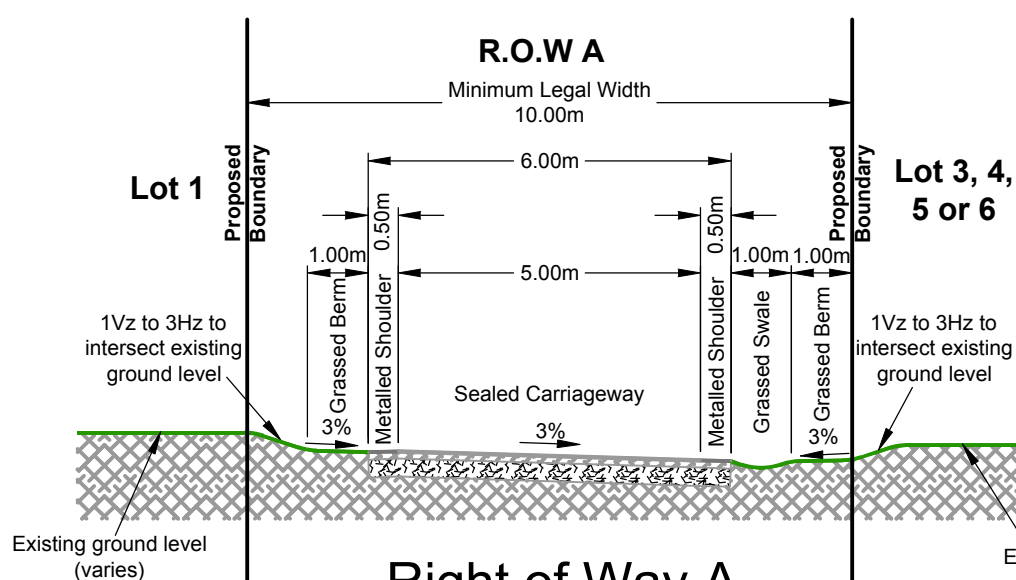




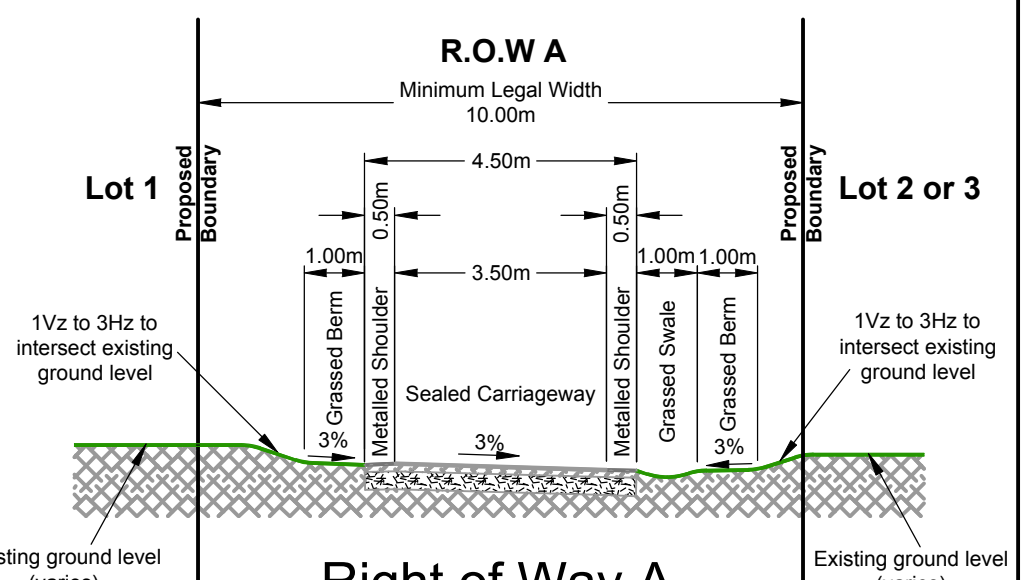


Lot 28 - Road to Vest
Typical Cross Section

Scale 1 to 100 @ A3

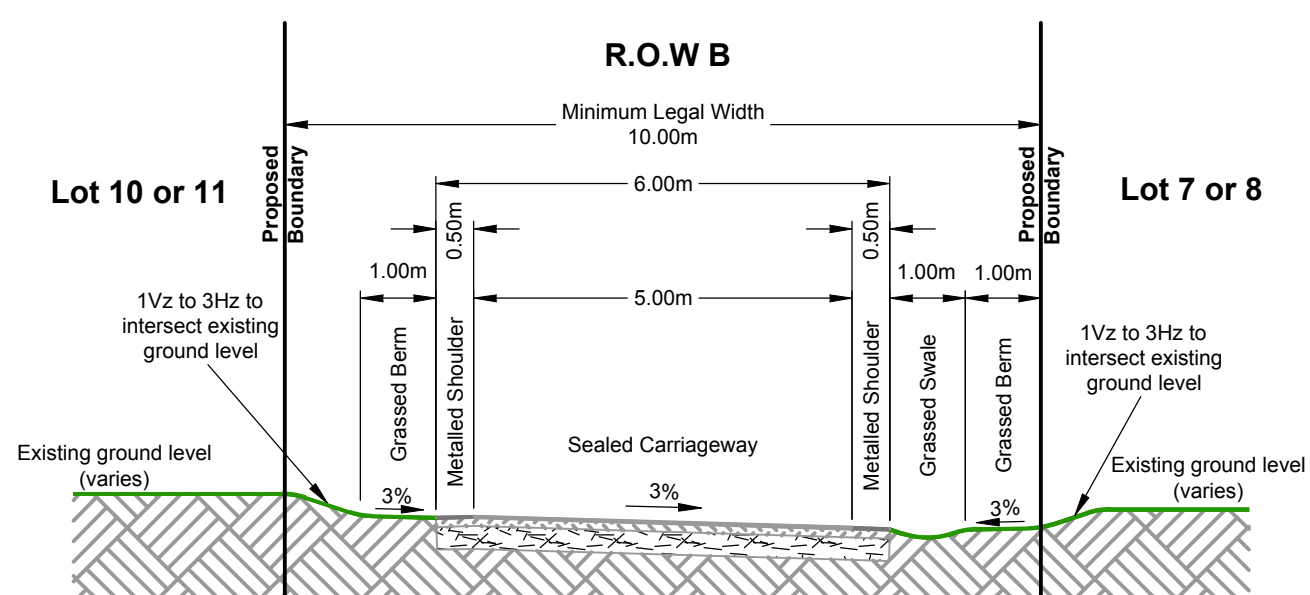


Right of Way A
Typical Cross Section
5.0m Wide Sealed Carriageway



Right of Way A
Typical Cross Section
3.5m Wide Sealed Carriageway

Scale 1 to 125 @ A3



Right of Way B
Typical Cross Section

Scale 1 to 100 @ A3

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

DRAWING STATUS:
FOR CONSENT



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **229968**
Land Registration District **Otago**
Date Issued 03 November 2005

Prior References

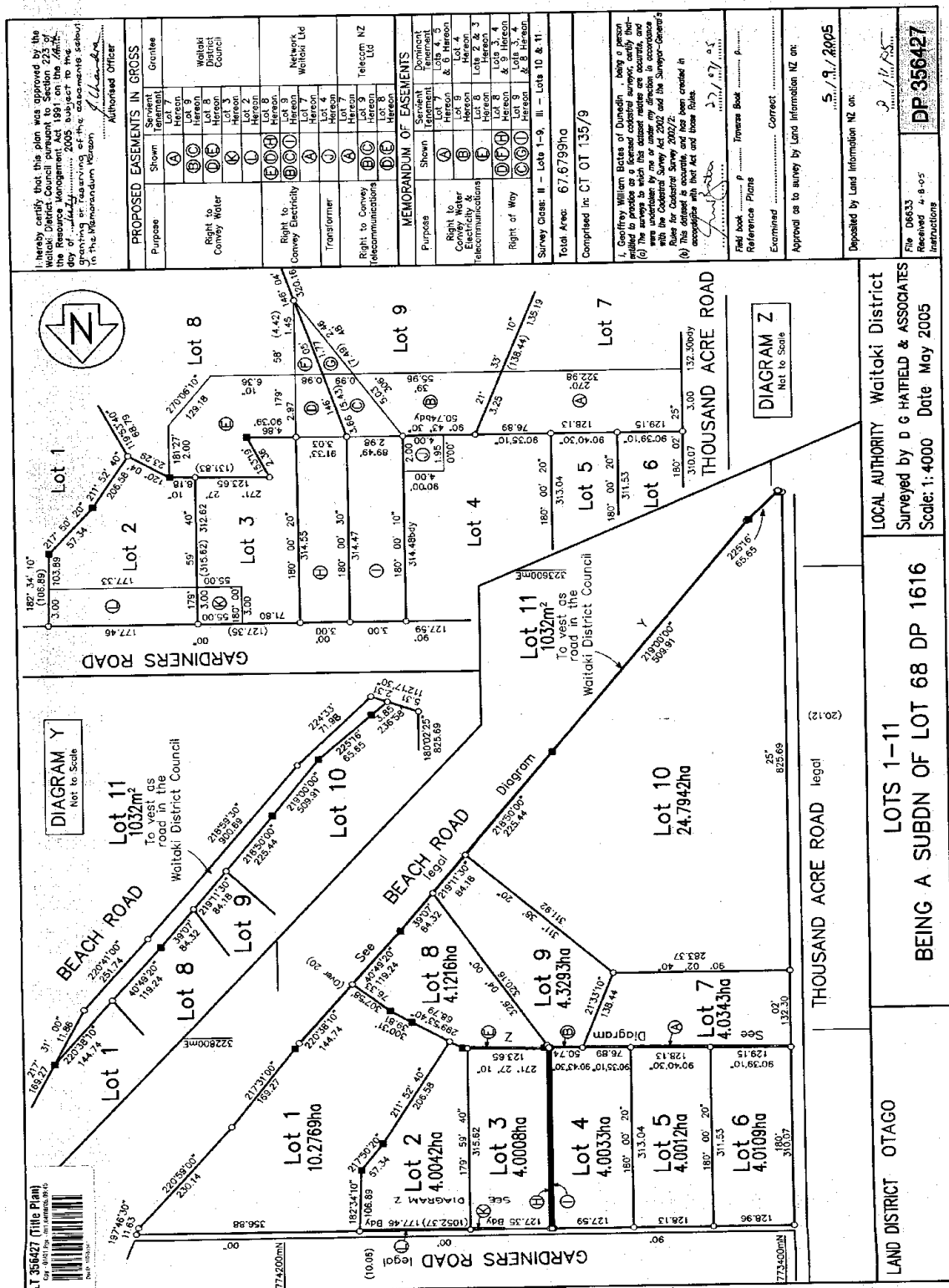
OT135/9

Estate	Fee Simple
Area	24.7942 hectares more or less
Legal Description	Lot 10 Deposited Plan 356427

Registered Owners

Sarb Investments Limited

Interests



Proposed Subdivision, Cottleston Downs, Awamoa.

Landscape and Visual Effects Assessment Report

14 April 2020



Prepared by

MIKE MOORE

BSc, Dip LA, MRRP, ANZILA

LANDSCAPE ARCHITECT

Po box 5076, Dunedin

Tel (03)479 0833 . fax (03) 479 0834 . cell 0274 360 163

Email mike@mmla.co.nz

Introduction

Sarb Investments Ltd is applying for resource consent to subdivide an approximately 24.8 ha property located between Thousand Acre Road and Beach Road, Awamoa. The subdivision will provide for 25 lifestyle blocks of between 4096 and 6441 m² with 2 balance areas of 19917 and 86973 m² to be used for hay and silage production. In terms of Waitaki District Plan (WDP) Rule 14.3.5 this will be a non-complying subdivision activity in the Rural zone which has a minimum net lot area standard of 4ha (40000 m²). This report provides a landscape and visual effects assessment of the proposed development and is structured as follows:

- Site and area description;
- Landscape values;
- The inland extent of the coastal environment
- The permitted baseline
- The proposed development;
- Landscape and visual effects illustrations;
- Landscape effects assessment;
- Visual effects assessment;
- Statutory provisions assessment;
- Conclusion.

Site and area description

The site is located between Thousand Acre and Beach Roads, adjacent to the coastline between Kakanui and Cape Wanbrow. The wider landscape context is the North Otago downlands, an area of low rolling country with occasional more resistant mesas and cuestas. The underlying geology in this part of the coast is limestone, siltstone and sandstone interspersed with more resistant volcanic rock (Deborah and Waiareka Volcanics) and the seaward edge is truncated by a degraded sea cliff. The area is drained via small water courses, two of which run through the property. Awamoa Creek is approximately 1km to the north and the Kakanui River some 4km to the south.

The site has a very gentle south-east gradient overall, and apart from the two water courses, the main topographical feature is a gentle, variably distinct coastal escarpment form that runs through the middle of the site parallel with the coast. There are currently ponds associated with each of the water courses that have been created by damming.

The property (and the area generally) has had a land use history of arable farming and the current land use on the property is grazing and silage production. Apart from a pine shelterbelt along a short length of the Thousand Acre Road boundary and some scrubby exotic vegetation (elderberry and willow) within the northern watercourse, the site vegetation is largely exotic pasture grass. There are no buildings on the site presently and the only structures are farm fences.

The surrounding landscape is rural in character with rural land uses, scattered dwellings and farm sheds, occasional (mainly exotic) shelter and amenity plantings and open pastoral paddocks. It is noticeable that the historically open rural landscape is becoming more densely settled in recent years, with built density in some areas (e.g. the southern side of Gardiners Road beginning to reflect the WDP 4ha minimum rural lot size or less.

Figures 1 – 11 (see attached graphic supplement) illustrate the character of the site and area.

Landscape Values

The values that are referenced by the Waitaki District Plan (WDP) and the New Zealand Coastal Policy Statement (NZCPS) that apply to this site and area can be summarised as:

- rural amenity including openness, privacy, spaciousness, quietness and rural outlook.
- the natural character and visual amenity of the coastal environment / identified significant coastal landscape.

The site certainly exhibits rural character due to its rural land use, openness, lack of built form and spacious qualities. More generally, the landscape in the area has rural character

also based on rural land uses such as grazing, and built density which although increasing, is clearly rural in nature.

Natural character attributes and associated visual amenity values of the site are underpinned by its largely unmodified natural landforms and lack of built form. The site is however significantly modified ecologically by its history of farming and the vegetation cover is now largely exotic. Natural coastal processes are slowly but progressively eroding the coast adjacent, and the low cliff edge forms a distinct break between the beach where natural coastal processes forms and elements are strongly dominant, and the coastal hinterland adjacent where rural land use significantly modifies the natural character. Whilst there are no buildings on the site itself, these along with associated shelter and amenity plantings, are characteristic elements in the wider coastal rural landscape.

The inland extent of the coastal environment

In the WDP, the significant coastal landscape is delineated as an approximately 100m strip along the coast from MHWS. The background Waitaki Landscape Study (Densem, 2004) discussed this coastline as being *‘a significant landscape at a district level, including the beach, cliffs, stream and river mouths and estuaries, and also land between the clifftop and coastal road, where that is in public ownership’*.

In my assessment, and considering the guidance on defining the extent of the coastal environment in Policy 1 of the NZCPS, the WDP delineation is appropriate. Whilst the cliff edge forms a distinct boundary to the area of active coastal processes, the 100m setback line includes areas at risk from coastal hazards (Policy 1 (d)) and includes some of the immediate landscape context (Policy 1 (f)). An alternative approach to the somewhat arbitrary 100m setback line which better reflects the landform, could be to delineate the top of the gentle coastal scarp as the boundary of the coastal environment in this area. This was the approach taken in the Coastal Environment of Otago Waitaki District Section Report (Moore et al, 2015), For the purposes of this report however, the extent of the coastal environment will be taken to coincide with the WDP Significant Coastal Landscape as this is a statutory document with current standing, and is substantially consistent with the NZCPS in this regard, in my assessment.

The Permitted baseline – Waitaki District Plan

Whilst the rural landscape in the vicinity of the site largely exhibits a fairly open character, the Waitaki District Plan (WDP) provisions do not protect the current level of built density but provide for a minimum lot size of 4ha per residential unit. There is no maximum area standard for buildings in the Rural Zone and the maximum height for buildings is 10m. **Figure 12** illustrates theoretically what the residential built density could be under the permitted baseline. This denser settlement pattern is likely to also involve more shelter and amenity plantings – often expressing the property boundaries. Overall, the landscape effect could be one with significantly reduced landform legibility and spaciousness. This permitted baseline is relevant to the assessment of landscape and visual effects.

The proposed development

The proposed development is illustrated in **Figure 13**. It involves subdivision of the property into 28 lots. Of these, 25 (lots 1 – 25), are to be developed for residential purposes, 2 (lots 26 and 27), are balance areas to be used for hay and silage production purposes, and one (lot 28) is to be vested as road.

The vision for the development is that it provides for country living in a coastal situation on sites that are not unduly large to manage. Open space areas are retained for rural land use along the coastal edge and adjacent to Thousand Acre Road. Whilst the development will result in a node of greater than permitted rural built density, it will include controls to effectively mitigate built impact on rural amenity and will have a comprehensive landscape / ecological enhancement focus designed to enhance natural character, which will in time, provide balance to adverse rural amenity and natural character effects associated with more buildings.

The proposed internal road will have a 15 - 20m legal width and a 6m sealed carriageway. To ensure it has a rural character there will be no kerb and channel, footpaths or street lighting and the carriageway will have soft edges (gravel shoulders and grassed swales).

The berm areas will be maintained by mowing (by adjacent landowners) and the road will have a spacious character. An entrance feature at the roadway intersection with Thousand Acre Road is proposed. There is no design concept for this as yet however, it is intended that it will be 'low-key' using materials appropriate to the local rural landscape (e.g. Oamaru Stone and heavy timber) and will be unlit.

Framework planting to be undertaken by the developer is proposed, as shown in Figure 13. This planting will be established alongside the watercourses, along part of the Thousand Acre Road frontage and at the southern end of the site near the intersection of Thousand Acre and Beach Roads. The planting concept is based on restoration of the natural character of the site and plants appropriate to the local environment are proposed as outlined in **Appendix A**. This planting will be implemented prior to Section 224C certification of the subdivision and maintained by the developer until well established, after which time maintenance will become the responsibility of the various lot owners.

Further plantings designed to soften and mitigate the visual impact of buildings are also proposed, to be established by the future lots owners (see Figure 13). These are also to be comprised of the framework species listed in Appendix A.

Proposed controls over Lots 1 - 25

Controls are proposed over the development on the residential lots to minimize adverse effects on rural amenity and natural character as follows:

(a) All buildings shall be a maximum of 5m height above existing or modified ground level and gross floor area for all buildings on each site shall be no greater than 350m².

(b) Building setbacks will be as follows, with rationale noted

Boundary	Setback	Rationale
Existing road	15m	Consistent with WDP Rural Zone standard

Existing adjacent properties	20m	Consistent with WDP Rural Zone standard (except for Lot 25 which due to lot shape has been reduced to 10m)
Proposed internal road	10m	To provide for a spacious character for the internal roadway (in conjunction with building height controls)
Other internal boundaries	6m	Consistent with the WDP Rural Zone standard for non-residential buildings over 10m ² gross floor area (except for buildings for the housing of animals).

- (c) All buildings will be clad in naturally weathered timber or locally appropriate stone, or other materials that are finished in colours that have low levels of contrast with the colours of the rural landscape setting. Painted surfaces will have light reflectivity ratings of no more than 30%.
- (d) All earthworks will be designed to blend seamlessly with the natural contours surrounding. Retaining walls are to be avoided except where screened by buildings or landform from viewpoints beyond the site. Fill is not to be imported to raise the elevation of building sites.
- (e) Access driveways are to retain an informal rural character with soft edges (i.e. no kerbs). Monumental gates and driveway lighting is not permitted.
- (f) Water tanks are to be sited, and / or buried and / or screened (by planting) to have minimal visual impact from beyond the property.
- (g) Fencing (if any) is to be confined to standard rural post and wire construction or stone walls using locally appropriate rock. Boundary planting rather than fencing is encouraged.
- (h) All outdoor lighting shall comply with the following standards to minimize adverse 'dark sky' effects and effects on rural character:
 - (i) Shielding: All outdoor lighting shall be shielded from above in such a manner that the edge of the shield shall be below the whole of the light source.

- (ii) Filtration: All outdoor lighting shall have a filter to filter out the blue or ultraviolet light, provided the light source would have more than 15% of the total emergent energy flux in the spectral region below 440nm. The filters used must transit less than 10% of the light at any wavelength less than 440nm. This therefore includes, but is not limited to, florescent, mercury vapour and metal halide lamps.
- (iii) The following outdoor lighting shall not be displayed between 11.00pm and sunrise:
 - Searchlights (except emergency services on site should need arise)
 - Outside illumination for aesthetic purposes of any building or garden feature by floodlighting.
 - Outside illumination of any car parking area.
 - Any outdoor illumination in which light is produced by high pressure sodium, metal halide, mercury vapour lighting or florescent lighting.
- (i) With the exception of plantings below 1.5m in mature height and fruit trees, all plantings on the lots will be confined to indigenous species appropriate to the character of the site. Recommended species are listed in Appendix A
- (j) The mitigation plantings within each lot as shown in Figure 13 are to be established within 1 year of any building works commencing on site. These are to be implemented in accordance with the guidelines in Appendix A.

Landscape and visual effects illustrations

To illustrate the effects of the proposed development on the landscape character, photo-simulations have been prepared from various representative viewpoints surrounding the site. These are shown in **Figures 14 - 21** and in each case illustrate the existing landscape, a photo-simulation of the proposed development showing approx. 10 years growth of the proposed plantings, and comparative photo-simulations indicating the theoretical built density that could occur on the property under the WDP permitted baseline

(see Figure 12), and as proposed by this development (see Figure 12(a)). **Appendix B** contains a method statement for the photo-simulations.

Landscape effects assessment

Landscape effects describe the impact of the proposal on the landscape elements, patterns, and processes, and its character. Their significance is determined with reference to the value and sensitivity of the landscape, and the scale and character of the proposal. The nature and magnitude of the landscape effects are described below based on the following scales:

Nature of effect

- *Positive*
- *Neutral*
- *Adverse*

Magnitude of effect

- *Very high*
- *High*
- *Moderate high*
- *Moderate*
- *Moderate - low*
- *Low*
- *Very low*

The site is part of a rural landscape with no particularly recognised landscape values, except that the coastal edge is classified as a Significant Coastal Landscape (SCL) with natural character and associated visual amenity values. As the area has been significantly modified by rural activities, it is my assessment that the main attributes that contribute to natural character are associated with its rural character generally, including low built density and openness which allows for generally high legibility of the natural landforms. Rural character is also supported by the productive rural land uses. Whilst the landscape presently exhibits relatively low built density, as discussed, the WDP does not protect the existing density and character but rather, provides for one dwelling per 4ha. Figure 12

illustrates the theoretical effect of this. Overall, it is my assessment that landscape sensitivity is high within the area identified as SCL (given that the preservation of the natural character of the coast is a matter of national importance under the RMA) and moderate more widely.

The proposed development will introduce more buildings and roading to the site. The natural landforms will be generally retained at the wider scale but there will be earthworks of modest scale associated with the internal road, each house site and access to these. The proposed development will involve establishment of an area of approximately 3.6ha in indigenous vegetation including wetland areas, and corridors and blocks of native shrubs and trees. The effect of all this will be to reduce the existing large rural scale and open, spacious character over much of the site, to enhance indigenous biodiversity, and to change the character and land use of much of the site from rural to high density rural lifestyle. Approximately 56% of the property will have a rural lifestyle use and character, whilst the remainder will remain rural. The overall density proposed (one dwelling per approx. 0.99ha) is akin to the WDP minimum site size standard for Rural-residential zones of one house per 1ha.

Whilst the scale and openness of much of the property will reduce, adverse effects on rural character associated with more buildings will be mitigated by the proposed framework plantings and controls over built development. The significance of this change in character is minimised when account is taken of the permitted baseline density of one dwelling per 4ha. Rural land use and open character will be maintained adjacent to the coast (including within the SCL) and alongside much of the Thousand Acre Road boundary.

Overall, it is my assessment that the nature of the landscape effects of the proposed development will be adverse in that part of the site will no longer have the rural character and openness values that the WDP Rural Zone envisages. I assess the magnitude of these adverse effects as moderate – low taking into account the following:

- Adverse effects on naturalness will be mitigated by the proposed planted framework and biodiversity values will be enhanced.
- Built impact will be controlled by the proposed suite of mitigation measures. In particular the proposed height and colour controls, and framework plantings will be

very effective when compared with what could occur as of right (6 dwellings and 10m high buildings uncontrolled as to colour / reflectivity) under the current consent (202-2019-1365).

- Openness will be impacted but mitigated from significant adjacent viewpoints by the retention of extensive open space adjacent to Thousand Acre Road and the coast provided by lots 26 and 27 (the rural lots).
- Rural land use will still be present on the site, albeit reduced in area.
- Essentially, the above factors will ensure that whilst the proposed development introduces uncharacteristic built density, it will integrate well with the surrounding rural landscape character.

Visual effects assessment

Visual effects describe the impact of the proposal on the views available to people and the impact of this on amenity values. Amenity values are defined in the RMA as *‘those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes’*. Visual effects are determined with reference to the sensitivity of viewers to change / the value placed on existing views, and the scale and character of the proposal. The nature and magnitude of the visual effects are described below based on the same scale as the landscape effects assessment above.

It is my assessment that the value placed on views of the rural coastal landscape in this area are moderate to high. This is on the basis that the WDP recognizes the coastal strip as a Significant Coastal Landscape with natural character and visual amenity values (Policy 16.8.3 (4)) and because it also includes an objective to maintain rural amenity generally (Objective 16.5.1). In discussing this particular area the Waitaki Landscape Study (Densem, 2004) refers to ‘lightly rolling and horticultural or farmed land right to the coast and ‘an interesting feeling of openness and conjunction of land and sea’.

Viewers potentially impacted by development on this site will include nearby residents with views toward the site from their properties, and users of the roads in the area. With the

exception of the dwelling directly adjacent to the site on the northern boundary (67 Gardiners Road) this assessment has not involved visits to private properties and is made on the basis of observations from the public roads in the vicinity or from on the property itself.

The site is visible from sections of Beach Road to the south, Thousand Acre Road, and Seadown Road. It is largely screened by landform and / or vegetation from Gardiners Road and from the open section of Beach Road to the north but can be viewed from the partially eroded portion of Beach Road adjacent. Very distant views are possible from Kakanui e.g. near the fishing club.

The following is an assessment of the effects of the proposed development from various representative viewpoints.

Kakanui Headland (see Figure 1)

Relevance of viewpoint	A long distance public viewpoint to the south of the site from which the coast to the north including the site, can be seen.
Approx distance to nearest visible building site	3.5km
Existing view description	This is a view northward up the coastline toward Cape Wanbrow. The site is visible across the water as part of the rural coastal landscape. Its character is pastoral with scattered rural buildings and shelter trees. Scenic values are at least moderately high.
Description of visual effects	Most of the proposed development will be visible from this viewpoint, with only a small area near Thousand Acre Road screened by an intervening headland. The proposed development will be seen as a node of higher built density set amongst plantings. The visual prominence of the buildings will be mitigated by the proposed height and colour controls and by the plantings once these are well established.

Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - low in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 5 – 6 visually prominent buildings visible on the site under the permitted baseline; and • Whilst the built density will introduce an area of rural lifestyle character, this will be seen at a distance and visual prominence of buildings will be muted.
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Beach Road – south of the site (see Figure 14)

Relevance of viewpoint	A viewpoint representative of coastal views northward from Beach Road
Approx distance to nearest visible building site	830m
Existing view description	This is a view northward up the coastline toward Cape Wanbrow, which is the main focal point. For motorists it will generally be experienced fairly fleetingly. The ocean, beach, low cliff and rural landscape behind contribute to a view with high scenic qualities. The landscape is pastoral and open in character with scattered houses and trees.
Description of visual effects	The development will be seen in the middle distance in its entirety and in the context of the surrounding rural landscape. It will result in a change of character, with a node of rural lifestyle scale dwellings and plantings introduced. The landscape scale and openness will be reduced in the vicinity of the site but the proposed plantings and the height and colour controls on the buildings will mitigate building

	prominence. The proposed native plantings at the southern end of the site will be relatively prominent and will enhance natural character. Overall, once plantings are well established (10 year timeframe) the development will integrate well into the rural landscape setting.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings

Thousand Acre Road adjacent to the site – south end (see Figure 15)

Relevance of viewpoint	A close proximity northward viewpoint on Thousand Acre Road directly adjacent to the property. Also generally indicative of the visual effects from Seadown Road and properties to the southwest of the site.
Approx distance to nearest visible building site	220m
Existing view description	The site is in the foreground of the view and is seen as open farmland with the sea and Cape Wanbrow beyond. Scattered dwellings are visible in the middle distance on nearby properties to

	the north and there are a few lineal shelterbelts. For motorists the view will generally be experienced fairly fleetingly.
Description of visual effects	<p>From this viewpoint views of the ocean and toward Cape Wanbrow will be retained but the existing rural character of part of the site will be altered by the proposed rural residential style development. Given the viewing angle the buildings will be mainly seen stacked behind each other rather than spread out across the width of the view. In this part of the site, the current pastoral openness will be replaced by buildings and native plantings. Whilst houses will be evident their visual impact will be mitigated by the height and colour controls and (progressively) by the structure plantings.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The possibility that under the permitted baseline, boundary plantings could be established that entirely screen views across the site to the ocean. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • Significant openness is retained adjacent to the road and the coast from this viewpoint.

Thousand Acre Road adjacent to the site – north end (see Figure 16)

Relevance of viewpoint	A close proximity south-eastward viewpoint on Thousand Acre Road directly adjacent to the property.
Approx. distance to nearest visible building site	110m
Existing view description	The site is seen as open pastoral farmland in the foreground and mid-ground of the view, sloping gently to the ocean behind. The natural landform character is legible and exotic vegetation can be seen in the northern waterway gully. For motorists the view will generally be experienced fairly fleetingly.
Description of visual effects	The proposed development will introduce a swathe of rural lifestyle land use in the middle ground with open paddock seen in front of this and the ocean still visible beyond. Rural character will be considerably modified but the proposed development will integrate with the landscape well with high amenity provided by the indigenous plantings, open foreground and buildings nestled into the planted context.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The possibility that under the permitted baseline, boundary plantings could be established that entirely screen views across the site to the ocean. • The built density will introduce an area of rural lifestyle character but the proposed development controls over

	<p>height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it.</p> <ul style="list-style-type: none"> • The positive effect of large areas of indigenous plantings • A degree of openness is retained adjacent to the road from this viewpoint.
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Thousand Acre Road north of the site (see Figure 17)

Relevance of viewpoint	A close proximity southward viewpoint on Thousand Acre Road, just north of the property. Also generally indicative of the visual effects from properties to the northwest of the site.
Approx distance to nearest visible building site	250m
Existing view description	<p>The view is southward across other small (approx. 4ha) rural properties toward the site. Both these properties and the site are seen as open pastoral farmland falling away gently toward the ocean, which is seen behind (the pond in the photograph was an ephemeral feature caused by a leakage issue and is now gone). Exotic trees adjacent to the northern watercourse on the property can be seen. Young boundary plantings are visible in the foreground which will eventually screen views toward the site and the ocean and are indicative of what is likely to happen more generally under closer (permitted) rural subdivision. For motorists the view will generally be experienced fairly fleetingly.</p>
Description of visual effects	<p>The proposed development will change the open rural character in the mid-ground of this view by introducing built development of a rural lifestyle nature. The existing exotic trees on the site (both in the gully area and along the road boundary) will be replaced by indigenous vegetation and a degree of openness will be retained close to Thousand Acre Road. The proposed building controls and</p>

	structure plantings will limit built impact and assist with integration of the development with the rural landscape context.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate - high in the short term but will reduce to adverse / moderate - low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The change to the landscape character in the foreground associated with closer (permitted) rural development i.e. less openness. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings.

Gardiners Road (see Figure 18)

Relevance of viewpoint	Views toward the site are not particularly the focus of views from Gardiners Road but this viewpoint is generally indicative of the visual effects from properties to the north of the site.
Approx distance to nearest visible building site	470m
Existing view description	Gardiners Road is at a higher elevation than the site and this viewpoint has views across the open rural land of the site in the middle distance to the ocean and Moeraki peninsula in the far distance. There is some screening by intervening shelterbelts.

Description of visual effects	<p>The proposed development will change the open rural character in the mid-ground of this view by introducing built development of a rural lifestyle nature. The existing exotic trees on the site (both in the gully area and along the road boundary) will be replaced by indigenous vegetation and a degree of openness will be retained close to Thousand Acre Road. The development will be seen about 6 sections wide with (due to the landform sloping away) much of the development screened by the closer buildings and plantings. The proposed building controls and structure plantings, along with the viewing distance will limit built impact and assist with integration of the development with the rural landscape context.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 6 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • The screening of much of the more distant development by the closer houses and plantings.

Beach Road approx. 540m north of Gardiners Road (see Figure 7)

Relevance of viewpoint	<p>A viewpoint southward along the coast toward the site from Beach Road, north of Gardiners Road – one of few places from which the site is partly visible.</p>
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Approx distance to nearest visible building site	1.46 km
Existing view description	This is a view southward along the coastline toward Kakanui and Moeraki beyond. The seaward edge of the site can be seen in the middle distance as part of the rural coastal landscape but most of the property is screened by intervening landform and vegetation.
Description of visual effects	The proposed development on the site will be substantially screened from this viewpoint. Any dwellings visible that are associated with the dwellings will have minimal visual prominence due to the viewing distance, their muted colour schemes and the much greater impact of the existing houses located closer. The visible coastal edge part of the site will retain an open rural character.
Visual effects assessment	In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / very low in both the short and long term.

Beach Road approx. 350m north of the site (see Figure 19)

Relevance of viewpoint	This is a viewpoint from close to the closed road sign and barrier fence to the north of the site on Beach Road and represents as close a viewpoint as most people (pedestrians) will get from Beach Road to the north. Viewer numbers are probably low due to the vehicle barrier further north near Gardiners Road and the lack of easy through access.
Approx distance to nearest visible building site	410m
Existing view description	This is a view southward along the coastline toward Kakanui and Moeraki beyond. The site is in the middle distance and seen as part of the open pastoral rural coastal landscape. Existing houses are

	already quite prominent features both at near proximity to the west and in the distance beyond the site.
Description of visual effects	Some of the proposed houses will be visible behind the existing dwelling at 67 Gardiners Road but many will be screened by landform. The flat land adjacent to the coastal cliff and Beach Road will retain its current open rural character but the gently rising coastal terrace slopes back from this will undergo a change to rural-residential character. Buildings will be seen within a well planted context with an indigenous character and their visual prominence will be minimised by the proposed development controls.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term but will reduce to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of at least 4 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • The screening of much of the development from this viewing angle

Beach Road adjacent to north end of the site (see Figure 20)

Relevance of viewpoint	A close proximity view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It
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	should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion.
Approx distance to nearest visible building site	140m
Existing view description	The site is seen in the foreground of inland views from this viewpoint and as open, rural pasture. The low coastal terrace is the main landform feature. There are a few houses and exotic shelterbelts visible in the distance.
Description of visual effects	Open paddock will remain on the immediately adjacent flat area and indigenous plantings will highlight the watercourse areas. Beyond this in the middle distance, the character will change with rural lifestyle development on and above the gentle terrace landform. The building design controls (height / colour etc) will effectively reduce the potential built impact, as will the structure plantings as they mature.
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / high in relation to the existing landscape. I consider however, that the potential effects associated with the permitted baseline could also be significantly adverse, and could entail the establishment of visually prominent houses as shown (see Figure 20 (c)) as well as lineal boundary plantings. Overall then and taking account of the permitted baseline, I rate the short term effects as adverse / moderate reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of at least 4 visually prominent buildings visible on the site under the permitted baseline. • The built density will introduce an area of rural lifestyle character but the proposed development controls over

	<p>height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it.</p> <ul style="list-style-type: none"> • The positive effect of large areas of indigenous plantings
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Beach Road adjacent to south end of the site (see Figure 21)

Relevance of viewpoint	A close proximity view from Beach Road adjacent to the site from the east. This viewpoint can no longer be driven to but is representative of views of the property that could be obtained by pedestrians using what remains of the Beach Road alignment. It should be noted that physical access is no longer possible above the low cliff face on the road alignment for the whole way along this part of Beach Road - due to coastal erosion.
Approx distance to nearest visible building site	200m
Existing view description	The site is seen in the foreground of inland views from this viewpoint and as open, rural pasture. The low coastal terrace is the main landform feature. There are a few houses and exotic shelterbelts visible in the distance.
Description of visual effects	Open paddock will remain on the immediately adjacent flat area and indigenous plantings will highlight the watercourse areas. Beyond this in the middle distance, the character will change with rural lifestyle type development on and above the gentle terrace landform. The building design controls (height / colour etc) will effectively reduce the potential built impact, as will the structure plantings as they mature.
Visual effects assessment	In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate-high in relation to the existing landscape. I consider however, that the potential effects associated with the permitted baseline could also be significantly adverse, and

	<p>could entail the establishment of visually prominent houses as shown (see Figure 21 (c)) as well as lineal boundary plantings. Overall then and taking account of the permitted baseline, I rate the short term effects as adverse / moderate reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of 3 - 4 visually prominent buildings visible on the site under the permitted baseline from this viewpoint. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings
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Adjacent property - 67 Gardiners Road (see Figure 11)

Relevance of viewpoint	A directly adjacent property with an existing dwelling
Approx distance to nearest visible building site	20m
Existing view description	This view is from the southwestern deck of the dwelling. Its main focus is across the low boundary plantings and the rural land of the site to the ocean and southward coastline including Kakanui and Moeraki. More widely, the open rural paddocks back toward Thousand Acre Road form part of the coastal landscape context.
Description of visual effects	The visual amenity effect of the proposed development from this property is that the existing rural character of the land adjacent to the southwest, will transform to rural lifestyle and in particular, that new dwellings are proposed on the lots adjacent to its southwestern boundary. The current WDP rural zone setbacks apply but a higher density of buildings than would occur under the permitted baseline

	<p>will result. Balancing this, the proposed building scale and height controls will place more limits on the impact of built form than what could occur as of right (per site) and the proposed plantings will also provide screening and softening mitigation. In terms of effects on the coastal views from this property, these are effectively protected already by the WDP building line restriction, which is retained and moved approx. 5m inland under the proposed development.</p>
Visual effects assessment	<p>In my assessment the effects of the development on visual amenity values associated with this landscape (naturalness, rural character / openness) will be adverse / moderate in the short term, reducing to adverse / low in the longer term once the plantings have matured to have significant impact (approx. 10 yrs). This rating takes account of:</p> <ul style="list-style-type: none"> • The possibility of buildings and / or plantings that would generally screen views over the site under the permitted baseline from this viewpoint. • The built density will introduce an area of rural lifestyle character but the proposed development controls over height and colour and the plantings will effectively mitigate the impact of built form and assist to integrate it. • The positive effect of large areas of indigenous plantings • Protection of the sea / coast views is unaffected or marginally improved by the proposed development.

Statutory provisions assessment

Waitaki District Plan

The proposed development is a non-complying subdivision activity in terms of Rule 14.3.5 in the WDP. As such, an assessment against the Subdivision and Rural Zone objectives and policies is required. Those objectives and policies considered relevant to the

landscape and visual effects of the proposed development are outlined below, along with brief comment.

<p>8.4.2 Objective 3</p> <p>The maintenance or enhancement of amenity, historic heritage, nature conservation values and landscape character through the subdivision process.</p>	<p>The proposed subdivision and development will result in a change in the existing rural character and adverse effects on the amenity values associated with this. More generally however, amenity values will be maintained through the development of a high quality rural lifestyle environment with significant plantings to enrich natural values and to mitigate the effects of more built form.</p>
<p>8.4.3 Policies</p> <p>3. To avoid or mitigate any adverse effects on visual amenity values associated with subdivision and associated development works.</p> <p>4. To encourage innovative subdivision design consistent with the maintenance of amenity value.</p>	<p>Visual amenity values associated with the site based on its existing open pastoral rural character will be adversely impacted but the existing level of openness is not assured under the WDP permitted baseline. The proposed development mitigates these adverse effects through controls to minimise the visual prominence of built form and through significant indigenous plantings designed to screen and integrate buildings. Whilst amenity values associated with the existing character of the area will be modified, the development will result in a rural lifestyle character that will have high amenity values through well integrated built form and plantings that enhance the indigenous vegetation cover in the area and emphasise the existing waterway features. The subdivision design minimises impacts on the existing landform and the openness adjacent to the coast and Thousand Acre Road.</p>

<p>5. To avoid subdivision where it is likely that the subsequent landuses would not give effect to the policies for the ... significant coastal landscapes set out for the Rural Zone under Chapter 16.8, Issue 7 – Landscapes.</p>	<p>Assessment against the Rural zone provisions is provided below.</p>
<p>16.5.1 Objective 4 – Rural Amenity</p> <p>A level of rural amenity that is consistent with the range of activities anticipated in the rural areas, but which does not create unpleasant living or working conditions for the District's residents and visitors, nor a significant deterioration of the quality of the rural environment.</p>	<p>A node of rural lifestyle land use is consistent with the range of activities encountered in rural areas (interpreted broadly). The development proposed will adversely affect the amenity values associated with the existing open pastoral landscape character but will create a high quality rural lifestyle area. This will result in more opportunities for pleasant rural living without the burden of maintaining a 4ha block and the quality of the environment will be enhanced to the extent that indigenous biodiversity will be increased by the proposed plantings.</p>
<p>16.5.2 Policies 4</p> <p>1. To encourage a wide range of rural land use and land management practices in the Rural General Zone, without increasing the potential for conflict or the loss of rural amenity, by ensuring that subdivision is limited to moderate sized rural allotments.</p> <p>6. To require that residential dwellings be setback from property boundaries so as to reduce the probability of dwellings being exposed to significant adverse effects from an activity on a neighbouring property.</p>	<p>The proposed development is inconsistent with the method component of this policy (in that the lot sizes are less than the 4ha minimum site size) but in my assessment it is generally consistent with its overall aim – i.e. encouraging a wide range of rural land use without the loss of rural amenity. The amenity values based on the current open pastoral character will be modified but a different character with its own high amenity will be introduced.</p> <p>With the exception of Lot 25, the residential setbacks proposed for this development are consistent with the WDP Rural zone standards.</p>

<p>8. To maintain clear distinctions between the urban and rural areas, in order to assist in protecting the character and quality of the surrounding rural areas.</p>	<p>The proposed development will result in a new node of relatively high density rural lifestyle land use. It will modify the existing rural character and have adverse effects on its values of openness and spaciousness but will enhance it in terms of indigenous biodiversity.</p>
<p>16.8.2 Landscape Objective</p> <p>Subdivision, use and development are managed so that:</p> <ul style="list-style-type: none"> • The values identified for the outstanding or significant natural features, the outstanding landscapes and the significant coastal landscapes are protected from inappropriate use and development ... 	<p>The values identified for the significant coastal landscapes are its natural character and [associated] visual amenity values. The area identified as SCL in this area will remain unaffected by the proposed development except for some establishment of indigenous planting, which will enhance its natural character.</p> <p>More widely, natural character and associated amenity values in this coastal area are underpinned by its largely unmodified natural landforms and relatively sparse density of built form. It is however, significantly modified ecologically by its history of farming and the vegetation cover is now largely exotic. The proposed development will adversely affect naturalness to the extent that there will be more built form of a rural lifestyle character but this will be mitigated in the long term by the proposed framework plantings which will enhance the biodiversity natural values and screen, soften and integrate the buildings.</p>
<p>16.8.3 Policies</p> <p>4. To manage the effects of use and development within the significant coastal landscapes so that:</p>	<p>If the landward extent of the coastal environment in this area is defined as coinciding with the extent of the SCL, the effects of the proposed development are positive and involve the establishment of indigenous plantings that will enhance the</p>

<p>a) the natural character of the coastal environment is preserved and protected from inappropriate use and development; and</p> <p>b) the visual amenity associated with these landscapes is maintained.</p> <p>6. To assist in achieving the outcomes in Policies 2 to 5 above, the following policies are to be considered against any subdivision, use or development applications:</p> <p>e) In the ... significant coastal landscapes buildings are to be located in areas with higher potential to absorb change and ... are to avoid skylines, ridgelines, prominent places and features within important views and are to be encouraged to be in sympathy with the dominant forms and colours in the landscape.</p> <p>f) Earthworks are encouraged to be located away from visually sensitive areas, and where practicable towards the edges of the landform and vegetation patterns;</p>	<p>natural character. If the coastal environment is defined more widely, then the development will have adverse effects on naturalness associated with more buildings but these effects will be effectively mitigated by the framework of native plantings. The coastal landscape is already highly modified by agricultural use and whilst the change in this area to rural lifestyle character will alter the character and amenity, it will not be inappropriate per se. A high quality rural lifestyle character sympathetic to the natural values of the coast will result.</p> <p>No buildings are proposed to be within the part of the site that is within the SCL. More widely however, and to assess the development against the spirit of the policy, the subdued gently rolling landform of the site means that the development will be visible within the rural coastal landscape to varying extents from viewpoints surrounding. Seen in views northward and southward along the coast it will generally have a backdrop of higher land. Its form and layout minimises change to the landform and celebrates the watercourses as features. Integration of built form with the landscape is proposed via controls over building design and colour and by the establishment of a strong planted framework. It is my assessment that a node of sensitively designed rural lifestyle development in this area with significant indigenous plantings as proposed, can be acceptably absorbed into this rural coastal landscape.</p>
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<p>h) Earthworks, where possible, should be restored and finished to a contour sympathetic to the surrounding physiography and should also, where possible, be revegetated with a cover appropriate to the site and setting;</p> <p>i) Use and development is to take into account the effects of indigenous vegetation clearance on landscape character, and in particular, clearance is to be avoided where the values identified for Significant coastal landscapes, would be irreversibly lost.</p> <p>8. To recognise that the Rural General Zone is made up of landscapes that have a greater capacity to absorb change because the land has been more intensively developed, and contains a greater range of uses with a greater dominance of buildings and structures, at the same time acknowledging that the rural amenity of this zone still needs to be managed.</p> <p>11. Any proposed development of an intensity or scale that exhibits urban-like characteristics are required to assess the impacts on landscape character and the policies in this section of the Plan need to be considered against the merits of such a re-zoning proposal.</p>	<p>In my assessment, the development proposed aligns well with Policy 8.</p> <p>In my assessment, the proposed development exhibits rural lifestyle characteristics. Whilst this will create a node of higher built density that will contrast with more sparsely settled areas surrounding, considering the mitigation measures proposed, it will acceptably integrate in this environment in my assessment. As regards the fit with the Rural Section policies, specifically rural character will not be maintained, but more widely it is my conclusion that adverse effects on amenity and natural character will be sufficiently low as to disqualify this proposal as inappropriate development.</p>
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New Zealand Coastal Policy Statement 2010

Given the coastal location of the site, the objectives and policies of the NZCPS are also relevant. Those considered relevant to landscape matters are listed below with comment provided.

<p>Objective 2</p> <p>To preserve the natural character of the coastal environment and protect natural features and landscape values through:</p> <ul style="list-style-type: none"> • Recognizing the characteristics and qualities that contribute to natural character, natural features and landscape values and their location and distribution • Identifying those areas where various forms of subdivision, use and development would be inappropriate and protecting them from such activities; and • Encouraging restoration of the coastal environment. 	<p>The characteristics and qualities that contribute to natural character and associated landscape values are as follows:</p> <ul style="list-style-type: none"> • The sea, beach and coastal cliff strongly express dynamic coastal processes • Inland of the coastal cliff, the landscape is highly modified by farming land use but there are naturalness values associated with the pastoral rural activities including legible and coherent natural landform and openness <p>Overall, it is my assessment that both natural character and the associated amenity values are moderate.</p> <p>The proposed development avoids the area identified as SCL in the WDP but will have effects on the character of the wider coastal landscape involving the establishment of a node of higher built density and associated amenity plantings. The landscape scale and openness will reduce. The landform coherence and legibility associated with the current openness will also reduce but this effect will be mitigated by the framework plantings that will emphasise the waterways. The development will enhance indigenous biodiversity and natural vegetative character. It is my</p>
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	assessment that considering the mitigation measures proposed, the development will acceptably integrate within this already modified coastal landscape and will not be inappropriate.
<p>Policy 6 Activities in the coastal environment</p> <p>(1) In relation to the coastal environment:</p> <p>(f) consider where development that maintains the character of the existing built environment should be encouraged, and where development resulting in a change in character would be acceptable.</p> <p>(h) consider how adverse visual impacts of development can be avoided in areas sensitive to such effects, such as headlands and prominent ridgelines, and as far as practicable and reasonable, apply controls or conditions to avoid those effects.</p>	<p>The proposed development will involve the establishment of a small node of rural lifestyle type settlement on the coast between Oamaru and Kakanui that is not provided for in the WDP. There are currently no rural-residential zones provided for on the Waitaki District coastline, with the townships such as Kakanui providing for higher density coastal living opportunities only. Clearly, this application raises potential precedent and cumulative effects issues as to whether and where, development of this type is appropriate. In my assessment it is important for preservation of the natural character of the coastal environment reasons that developments of this sort are not provided for too liberally along the coast and should generally be located in association with existing nodes of settlement. In this case however, considering the character of the coast southward from Oamaru, one development close to the city and carefully controlled to minimize natural character effects as proposed, can be acceptably integrated.</p> <p>As discussed above the visual effects of built form will be effectively mitigated by the proposed building scale, height and colour controls as well as the development of framework plantings.</p>

<p>(i) set back development from the coastal marine area and other water bodies, where practicable and reasonable, to protect the natural character, open space, public access and amenity values of the coastal environment.</p>	<p>The proposed development is set back from the coastal marine area and is not within the area identified as SCL in the WDP.</p>
<p>Policy 13 Preservation of natural character</p> <p>(1) To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:</p> <p>(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and</p> <p>(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment ...</p>	<p>It is my assessment that the natural character of the coastal environment is significantly modified in this area, and only moderate in significance. This is consistent with the findings of the Coastal Environment of Otago Natural Character and Outstanding Natural features and Landscapes Assessment, Waitaki District Section report dated 26 June 2015 (Moore et al, 2015). This means that the test in this case is whether significant adverse effects on natural character are avoided and other adverse effects are avoided, remedied or mitigated. It is my assessment that the adverse effects of the proposed development on natural character are not significant and that they are adequately mitigated.</p> <p>The coastal environment has been identified as an approximately 100m strip back from the coastal scarp as an area that provides the immediate context to the coast and which is potentially subject to coastal hazards. Within this area coastal erosion processes are vividly expressed at the coastal scarp and seaward of this natural character and processes are dominant. Landward however, whilst the natural landform is generally coherent, the vegetation is highly modified. The main attributes that contribute to natural character landward of the sea cliff are associated with its</p>

	<p>rural character generally, including low built density and openness which allows for generally high legibility of the natural landforms. The area is rural in character and not wild, but it does have scenic values based on the fertile, domesticated rural character in immediate juxtaposition with the sea.</p> <p>The proposed development will enhance the natural character of the area identified as Significant Coastal Landscape (SCL) in the WDP as areas are proposed to be re-established in indigenous vegetation. More widely than the identified SCL area, existing naturalness and rural amenity will be adversely affected by new dwellings. These effects will not be unduly significant however because natural character is already significantly modified and the proposed building controls and indigenous plantings will soften and mitigate the impact of buildings. Controls are also proposed on lighting to limit the extent of adverse effects on the natural darkness of the night sky.</p> <p>Overall, it is my assessment that the effects of the proposed development on the natural character of the coastal environment will be adverse in nature but low in magnitude. This rating factors in the following:</p> <ul style="list-style-type: none"> • The area identified as significant coastal landscape in the WDP will not be impacted by buildings, will retain its rural character and will be enhanced by indigenous plantings. • Natural coastal and stream processes will be largely unaffected by the development except that the natural
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	<p>character of the watercourses will be enhanced by indigenous plantings.</p> <ul style="list-style-type: none"> • The coastal hinterland is already significantly modified and is rural and settled in character. The WDP permitted baseline which allows a minimum rural lot size of 4ha provides for a significant increase in built form than currently exists. • The proposed development will increase the impact of buildings and modify the rural character in the vicinity but the proposed development controls and plantings will effectively mitigate the impact of this in the long term (once plantings have a significant visual impact in softening and providing context to the buildings).
<p>Policy 14 Restoration of natural character</p> <p>Promote restoration or rehabilitation of the natural character of the coastal environment, including by:</p> <p>(a) identifying areas and opportunities for restoration or rehabilitation;</p> <p>(c) where practicable, imposing or reviewing restoration or rehabilitation conditions on resource consents and designations, including for the continuation of activities; and recognizing that where degraded areas of the coastal environment require restoration or rehabilitation, possible approaches include:</p> <p>(i) restoring indigenous habitats and ecosystems, using local genetic stock where practicable; or</p> <p>(ii) encouraging natural regeneration of indigenous species, recognizing the</p>	<p>A major component of the proposed development is the restoration of indigenous vegetation appropriate to the site. This will mitigate the effects of more built form on natural character and also enrich the area ecologically.</p>

<p>need for effective weed and animal pest management; or</p> <p>(iii) creating or enhancing habitat for indigenous species; or</p> <p>(iv) rehabilitating dunes and other natural coastal features or processes</p> <p>(v) restoring and protecting riparian and intertidal margins; or</p>	
<p>Policy 15 Natural features and natural landscapes</p> <p>To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:</p> <p>(a) avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and</p> <p>(b) avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment.</p>	<p>The coastal landscape in this area is not outstanding and there are no outstanding natural features in my assessment. This is consistent with the findings of the Coastal Environment of Otago Natural Character and Outstanding Natural afeatures and Landscapes Assessment, Waitaki District Section report dated 26 June 2015 by myself and others (Moore et al, 2015). This means that the test in this case is whether significant adverse effects on natural features and landscapes are avoided and other adverse effects are avoided, remedied or mitigated. As discussed above, it is my assessment that the adverse effects of the proposed development on the coastal landscape are not significant and that they are adequately mitigated.</p>

Conclusion

The property in question is within the rural landscape on the coast between Oamaru and Kakanui. This area is not recognized for outstanding natural landscape values but a narrow band directly adjacent to the coast has is identified as a 'significant coastal landscape' in the WDP. The landscape values associated with the site and its wider

landscape context are rural character, natural coastal character and the amenity values associated with these.

The development proposed will result in a localized modification to the rural character and the establishment of a small node of rural lifestyle land use. Whilst it will clearly contrast with the rural character in terms of built density and land use and modify natural character through increased built form, it has been designed to integrate with minimal impact to both the rural character and the natural coastal character. This is through a suite of development controls to mitigate the visual impact of buildings and through establishment of a comprehensive planted framework that will mitigate the built elements and enhance the indigenous biodiversity and visual character.

In my assessment whilst the development will result in a change in character it will acceptably sustain the rural and natural coastal character amenity values.

Mike Moore

Registered NZILA Landscape Architect

References

Densem G (2004), Waitaki Landscape Study, Waitaki District Council.

Moore M et al (2015), Coastal Environment of Otago Natural Character and Outstanding Natural Features and Landscapes Assessment, Waitaki District Section Report, Otago Regional Council.

Appendix A : Planting guidelines – Cottleston Downs, Awamoa

The following species are recommended for the framework plantings shown in Figure 13. Planting establishment and management is to be carried out in accordance with the guidelines outlined below.

1. Where required, fencing should be carried out to protect the areas to be planted from grazing by stock.
2. The areas to be planted are to be sprayed to kill existing grasses using a non-residual systemic herbicide.
3. Planting densities are to be approximately 1.5m
4. Plant grades are to be Pb3 or equivalent, minimum.
5. One slow release fertilizer tablet will be used per plant.
6. A circle of mulch (100mm deep woodchip or sacking or similar) is to be applied around each plant to assist in plant establishment and weed suppression.
7. The area around each plant is to be maintained weed free until well established by hand weeding or spraying where this is possible without adversely affecting the plants.
8. Plants should be watered as / if required during dry spells until well established.
9. Survival should be monitored and any dead plants replaced immediately. Animal pests should be controlled and if required, plants should be provided with an eco-shelter for protection against rabbit and possum browse.
10. The plantings are to be managed to ensure their ongoing health and vitality.

Species	Common name	Wetland / wetland margins	Waterway margins / framework plantings
<i>Aristotelia serrata</i>	Wineberry		X
<i>Austroderia richardii</i>	Toetoe	X	
<i>Carex secta</i>	Purei	X	
<i>Carex virgata</i>		X	
<i>Carpodetus serratus</i>	Putaputaweta		X
<i>Coprosma crassifolia</i>			X

<i>Coprosma propinqua</i>	Mingimingi	X	X
<i>Cordyline australis</i>	Cabbage tree		X
<i>Dacrycarpus dacrydioides</i>	Kahikatea	X	X
<i>Griselinia littoralis</i>	Broadleaf		X
<i>Hebe elliptica</i>	Shore hebe		X
<i>Hoheria angustifolia</i>	Narrow-leaved lacebark		X
<i>Isolepsis nodosa</i>	Club rush	X	
<i>Kunzea robusta</i>	Kanuka		X
<i>Leptocarpus similis</i>	Jointed rush	X	
<i>Leptospermum scoparium</i>	Manuka	X	
<i>Melicope simplex</i>			X
<i>Melicytus ramiflorus</i>	Mahoe		X
<i>Myoporum laetum</i>	Ngaio		X
<i>Olearia fragrantissima</i>			X
<i>Phormium tenax</i>	Flax	X	
<i>Pittosporum eugenoides</i>	Lemonwood		X
<i>Pittosporum tenuifolium</i>	Kohuhu		X
<i>Plagianthus regius</i>	Lowland ribbonwood		X
<i>Podocarpus hallii</i>	Halls totara		X
<i>Pseudopanax crassifolius</i>	Lancewood		X
<i>Pseudopanax ferox</i>	Fierce lancewood		X
<i>Sophora microphylla</i>	Kowhai		X

Appendix B : Photo-simulation method

Purpose and limitations

The photo-simulations (Figures 14 – 21) are presented as indicative guides to the likely visual effects of the proposed development. Four images are presented per viewpoint as follows:

- (a) The existing view (stitched photograph).
- (b) Photo-simulation illustrating the likely overall visual effect of the proposed development once fully implemented and with planting with approx. 10 years growth. This shows:
 - houses 300m² (24 x 12.5m) in footprint and 5m high. These are located on the lots in locations considered to be the most likely, and aligned with the contours to facilitate consistency with proposed mitigation measure (d). The built form illustrated, whilst less than the 350m² maximum gross floor area provided for, is considered to be a reasonable indication of likely development scale per section (as a single entity in this case). The grey colour used is indicative of the darker tones required by proposed mitigation measure (c).
 - the proposed framework plantings (both those to be established by the developer and by the lot purchasers) between 0.5m and 6m in height in the locations shown in Figure 13.

Note that no attempt has been made to make the buildings appear realistic given the variables / uncertainty about actual house locations and designs. Likewise, whilst the plant forms illustrated are generally consistent with the species proposed, for consistency with the buildings and to emphasise the theoretical / indicative nature of the illustrations, no attempt has been made to make these look realistic. The planting scale is considered to be generally indicative of what can be expected after about 10 year's growth. In reality, whilst the framework plantings to be established by the developer are likely to be implemented more or less at once (possibly over 1 – 3 seasons), the plantings on the residential lots may be implemented considerably later.

- (c) Photo-simulation illustrating a possible scenario for subdivision and associated development of houses under the WDP Rural Zone permitted baseline. This shows:

- houses 300m² in floor area over two levels (15 x 10m) in footprint and 10m high (the maximum height permitted in the WDP Rural zone provisions. The subdivision layout is based on an existing scheme and the house locations are considered to be non-fanciful possibilities. Whilst there is no maximum floor area in the WDP, 300m² is used for fair comparison with the proposed development. The same grey tone is used as per simulation (b) and (d) for consistency but it should be noted that there are no colour or light reflectivity value (LRV) controls applying to permitted buildings in the WDP Rural zone.
- No plantings are shown as these (if established) are not required by the Plan and could take a wide variety of forms.

(d) Photo-simulation for comparison with (c) above showing the proposed buildings (as per (b) above minus the proposed mitigation framework plantings.

Photography (Adventure Media Group Ltd)

The photography for the base images in the photo-simulations are shot using a full-frame Canon EOS 5D MkIV camera using a Canon EF24-70mm f/2.8 L-series lens locked off at 50mm. To achieve the range of the proposed development the images are a composite of 3-7 panning shots, each photographed on a tripod at an elevation of 1.6m directly above the GPS marker for each photo site. Overlap of around 25% assures accuracy between frame stitches using Adobe Photoshop's photomerge tool to create the final images. The merge process used was the same for each of the final images. The final images form the existing views (a) and the base layer for the subsequent photo-simulations (b), (c) and (d).

Computer model (Terramark Ltd)

Computer modelling of plantings and dwellings at the site has been undertaken using a 3D visualization module within the surveying & engineering design software, 12d Model v14.

The location, and extent of vegetated areas were supplied by the landscape architect. These areas were further broken into sub-areas defined by the plant types and planting

densities. Within the overall planting areas a total of three types of sub-areas were defined, generically described by the general height of the plants, and known as 'high plantings', 'medium plantings', and 'low plantings & sedge'.

Each sub-area was assigned a user-defined foresting file used to populate the area with vegetation, containing the following details:

- Types of plants to be located within each area;
- Percentage of each plant within the area (e.g. 5% of total)
- Height range of each type of plant (max & min);
- Spread variation (percentage)

In addition to defining a foresting file for each sub area, during the application of this information, the planting density was also specified as follows:

- High Plantings – 4,000 plants/hectare
- Medium Plantings – 10,000 plants/hectare
- Low Plantings – 20,000 plants/hectare
- Sedge Plantings – 20,000 plants/hectare

The placements of all plants within the specified area is undertaken in a random manner by the software but based upon the details contained within the foresting file and the overall specified plant density for the area.

The various trees within the imagery have been generated by first creating a 2-dimensional 'billboard' of a digital image of a tree and rotating this image about a central axis to create a series of interleaved 2-dimensional images, giving the impression of a 3-dimensional tree. Trees are automatically given correct heights by 12d Model on the basis of the desired tree height and the horizontal and vertical size of the digital image from which the 'billboard' tree is generated.

Image rendering (Terramark Ltd and Adventure Media Group Ltd)

Imagery of the plantings have been generated from 12d Model. 12d Model enables users to specify a viewing location, viewing height, target location and target height to generate 3-dimensional imagery of a viewshed.

A total of ten image viewpoints external to the subject site were survey fixed via GPS. In addition, the centroid of the site has been determined (geometric center of the site) and used as the target location. This line between viewing point and the site centroid forms the central baseline for generating imagery within 12d for each viewpoint. The height at both the view location and the target location have been set at 1.6m, producing a horizontal view-plane known as a plane of collimation. The view-plane has been rotated left and right of the central baseline in a series of 31.5° movements to create as many overlapping viewsheds as required to capture the entirety of the site from the specified viewpoint.

Imagery from 12d has been output as a series of gridded high-resolution rasters which have subsequently been exported and combined to produce a series of PDF images to be stitched together by the photographer based upon their overlap.

Buildings within the imagery have been created within 12d Model by creating simple triangulated irregular networks (TINs) to produce a simple house-shaped object of dimensions specified by the landscape architect. The colour applied to the house TINs is known as *Resene Ironsand*, (RGB Value 142, 89, 60). Variation within this colour upon the imagery is a result of the necessity of 12d Model to create shading to render a 3-dimensional effect. All shading has been applied at a 45° angle.

From the output PDF files created from the digital model in 12D, we have extracted the 3-9 image tiles and stitched these together, again using the same process as for the actual photographs. The points of reference to the site have been included with these stitches and the negative data (where no digital information existed) has been deleted from the final panorama for each photo site. This process was repeated for the proposed development once fully implemented and with planting with approx. 10 years growth (b), permitted (c) and proposed (d) simulations.

The existing (a) files were then edited to remove the stand of macrocarpa trees along the Thousand Acre Road border, to remove any livestock, machinery and where necessary the silage stack. The resulting image forms the base layer for the (b), (c) and (d) photo-simulations.

In the next step we blended the new base layer with each layer extracted from the 12D model. Visual reference points to the site were used to ensure the correct alignment and scale. Because each image used the same viewpoint, elevation and field of view (50mm focal length) there is no need to stretch, skew or warp any of the layers. The 12D images were then masked to reveal only the details of the proposed development once fully implemented and with planting with approx. 10 years growth (b), permitted (c) and proposed (d) simulations.

The final images were output as jpgs and fixed at 20cm tall at 300dpi in RGB colour space.

In my opinion the process used is the closest we can get to what the human eye might see from each location and represents a true indication of the proposed development.

SARB Investments

Thousand Acre Road, Awamoa

3 Waters Infrastructure Design Report

November 2019

SARB Investments
Thousand Acre Road, Awamoa
3 Waters Infrastructure Design Report

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SARB Investments
Thousand Acre Road, Awamoa
3 Waters Infrastructure Design Report

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APPENDIX A

Potable Water Supply Drawings

1.0 Introduction

Fluent Solutions has been engaged by SARB Investments Ltd to provide a design for meeting the requirements for water, wastewater and stormwater for the proposed new rural lifestyle subdivision at Thousand Acre Road, Awamoa.

This report summarises the proposed design for the purposes of gaining consent for the development.

2.0 Background

2.1 Site

The site is a 24.8Ha block of land that lies adjacent to the coast approximately 6 kilometres (km) south west of Oamaru and 4km north of Kakanui. The land is currently zoned as rural general and is considered pastoral land.



Figure 2.1: Site Location

The site is triangular in shape and is bounded by the Beach Road to the east, Thousand Acre Road to the west and private rural land to the north.

Under lying soils are understood to be clay with silty loam topsoil on the surface.

2.2 Proposed Development

It is proposed that the 24.8Ha Lot be subdivided into 25 rural lifestyle lots ranging in size from 4,096m² to 7,566m² with access roads and the remainder of the site to be retained in its rural nature.

For the purpose of this design report, we have assumed that sites 1-5 may be occupied by a 200m², four bedroom dwelling and that each lot will be used for rural lifestyle activities.

2.3 Existing nearby WDC Water Services

2.3.1 Potable Water

There are two water supply networks near the property.

Adjacent the site (within the road corridor of Thousand Acre Road), there is a DN150 watermain that conveys water from South Hill Oamaru to Kakanui.

There is also a small diameter pipeline that feeds five Restricted connections on Gardiners Road and Thousand Acre Road. This is supplied from the rural scheme connected to the Hamnak Pipeline.

2.3.2 Foul Sewer

There is a DN90 PE foul sewer adjacent the site that is owned and operated by the WDC. This rising main conveys pumped treated sewage from the Kakanui Wastewater Treatment Plant to Oamaru for further treatment.

The foul sewer operates at full capacity and is considered to be unavailable for usage.

The nearest foul sewer reticulation is located approximately 3.5km to the south in the town of Kakanui.

2.3.3 Stormwater

There are two 300mm dia. culverts under Thousand Acre Road and a table drain that are currently all conveyed through the site, entering a naturally occurring spring and forming a second water body. The water then drains through a 250mm dia. culvert under Beach Road.

There are reportedly two other culverts to the south that are in poor condition and do not currently convey any water under Beach Road. It is recommended that the two culverts be reinstated by WDC.

3.0 Potable Water Supply

3.1 Introduction

It is proposed that the potable water supply for the subdivision is supplied by means of a restricted supply via the WDC DN150 watermain in Thousand Acre Road.

3.2 Design Flows

Domestic water demand for each lot is calculated to be as follows:

Average water demand = 2.5 px per Lot x 250L/p/day (NZS 4404:2010)
= 625L/day

Peak water demand = 1 restricted unit (1818L/day)

Domestic water demand for the development is calculated to be as follows:

Average water demand = 25 Lots x 2.5 px per Lot x 250L/p/day (NZS 4404:2010)
+10% loss allowance
= 15.6m³/day + 1.56m³/day
= 15.8m³/day

Peak water demand = 25 lots x 1 restricted unit (1.818m³/day) + 10% loss allowance
= 45.45m³/day + 4.55m³/day
= 50m³/day

3.3 Proposed Design

3.3.1 General

The proposed water supply system comprises:

- Reticulated network design for restricted supply
- On site storage to meet domestic water demands
- Fire storage located on each property to meet SNZ PAS 4509:2008

3.3.2 Reticulation

It is proposed that a DN63PE offtake from the WDC DN150 PVCo watermain on Thousand Acre Road will be installed to supply the subdivision. Water will be reticulated to the 25 Lots via a network of small diameter PE (PN12.5) pipework as indicated in Figure 3.1 below.

Each Lot will be supplied with a shutoff valve, a filter and an in-line Maric restrictor at the boundary. The restrictor is to be sized to allow a flowrate of the total daily volume over 24 hours.

A DN15 PE pipeline between the restrictor to the proposed storage will then be installed at the time of house construction.

Please note that pipe sizing is based on each Lot receiving 2 restricted units.

Alternatively, the WDC DN63 pipe that feeds five restricted properties to the north of the site, could be utilised as a feed, however, modelling may be required to assess the pressure and flow in this pipeline.

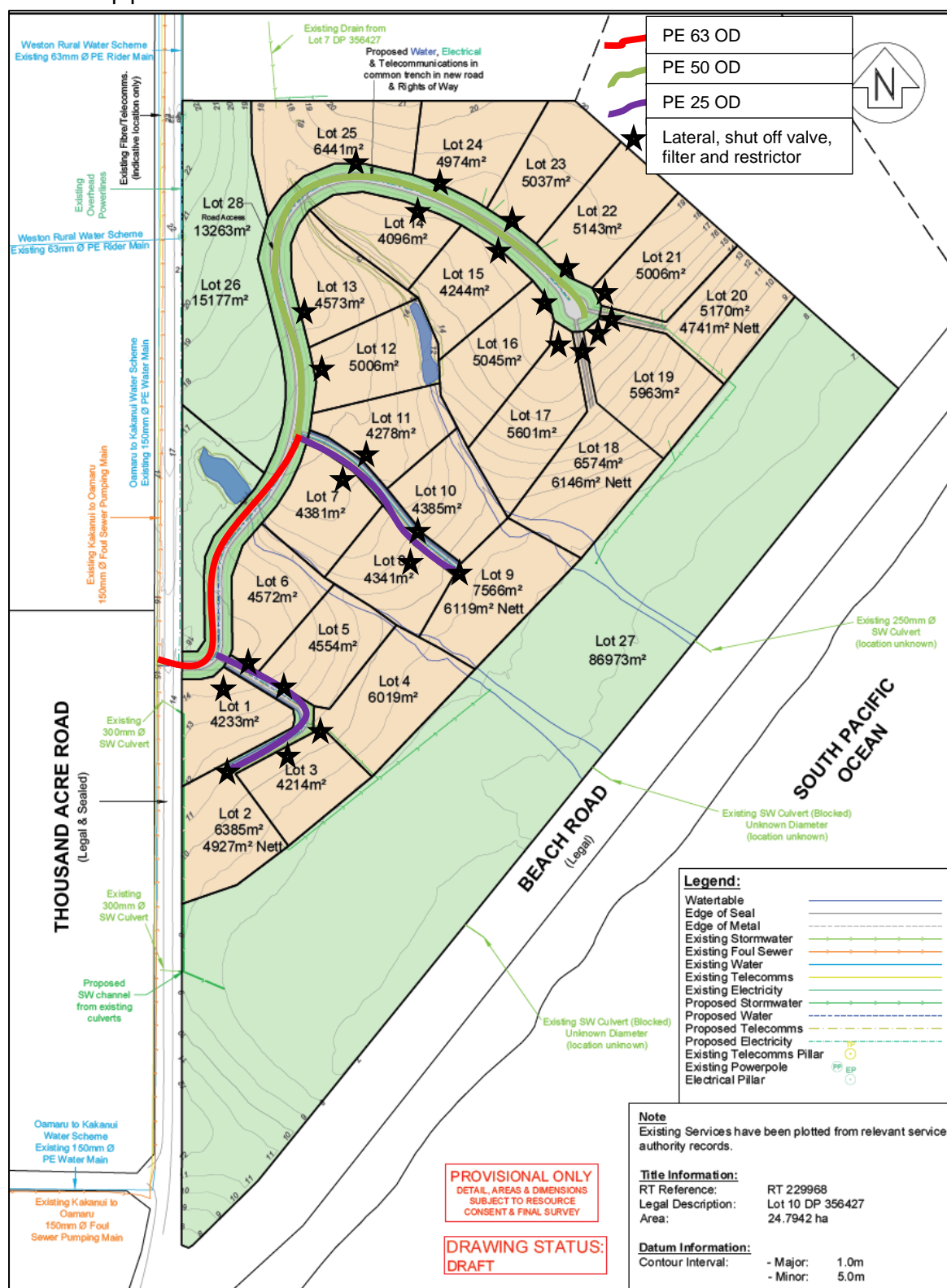


Figure 3.1 Potable Water Layout

3.3.3 Storage

3.3.3.1 Domestic Volumes

Each Lot is to have adequate storage to meet the WDC Water Supply Bylaw (2014) Section 9.5.5 that outlines each connection is to provide storage of a volume greater than three times the daily restricted flow (i.e.: 3 days of storage).

Based on 1 restricted unit per Lot, the minimum domestic storage requirements is therefore:

$$\begin{aligned} &= 3 \times 1.818\text{m}^3 \\ &= 5.45\text{m}^3 (5,450 \text{ L}) \end{aligned}$$

3.3.3.2 Fire Fighting Volumes

For a residential dwelling, SNZ PAS 4509:2008 outlines that there must be a minimum storage of 45m³ of water set aside for the use of firefighting and that the firefighting water cannot be used for any other use.

3.3.3.3 Proposed Tank and Layout

Based on domestic demand (5.45m³) and fire fighting requirements (45m³) each Lot is to have a minimum of 50.45m³ (50,450L) storage. To achieve this, each Lot should have 2 x 30,000L storage.

Key design features are as follows:

- For simplicity, tanks to operates in series.
- The first tank is to have a high level inlet with a DN15 Rojo Partfill Jobe valve mounted above the water level to provide a suitable airgap between the inlet pipe and valve shut off of at least 100mm. A minimum DN50 overflow pipe is to be located 50mm above the Top Water Level (TWL) and 40mm below the inlet pipe level.
- The pipes are to be interconnected with a DN 100mm pipe with rubber bellow to allow for tank movement.
- Reserve storage (33% required under WDC Water Bylaw) of restricted flow storage (and fire fighting storage) by the provision of a normal off-take valve at ¾ of the distance from the bottom and a reserve storage release valve as shown in the drawings.
- An approved suction 100mm firefighting coupling to be fitted on one of the tanks to provide water to a fire appliance in an emergency.
- The tanks are to be installed in accordance with the manufacturer's recommendations.
- A hardstand and access for the firefighting appliance is to be provided within 5m of the tanks in accordance with the SNZ PAS 4509:2008.

- A suitable domestic pump to provide a typical domestic house pressure of 300kPA and required domestic flowrates is a SCALA 2 Variable Speed Pump supplied by Hall Machinery Ltd.

The proposed storage tank layout is shown on the attached layout drawing in Appendix A.

4.0 Wastewater

4.1 Introduction

It is proposed that all Lots of the new subdivision will be serviced by a suitable onsite wastewater system in accordance with the Otago Regional Council, Regional Plan Water and the Australian / New Zealand Onsite Domestic Management Standard - AS/NZ 1547:2012.

Two main options were investigated:

1. A centralised, community wastewater treatment plant for the subdivision, including reticulated gravity drainage from each dwelling to the common wastewater treatment plant and large dispersal field located in the eastern Rural Lot.
2. Individual Lot on-site wastewater systems.

A brief assessment of costs highlighted that a gravity reticulation and communal treatment plant was not a cost effective option and therefore individual Lot on-site wastewater systems are proposed.

Design parameters and options for the on-site wastewater systems are discussed in the following sections. The design of each system is required to be in accordance with AS/NZS 1547:2012).

It is proposed that a design guide will be developed by Fluent Solutions and provided to Lot owners (upon land purchase) to ensure the on-site wastewater system meets any regulatory requirements and is appropriate for the site conditions including a resource consent to discharge human waste to land if required.

4.2 Design Flows

The estimated design flow is calculated by the number of persons living in the dwelling multiplied by the water usage per person. AS/NZS 1547:2012 outlines that the number of persons is directly related to the number of bedrooms in the dwelling and the water usage is taken from table H3 of the standard - Typical Domestic Wastewater Design Flow Allowances, Domestic Wastewater from Household, New Zealand.

To develop the design flow for the proposed subdivision, it is assumed that each dwelling contains 4 bedrooms. The calculation of design flow is presented in Table 4.1 below.

Table 4.1: Design Flow

Parameter	Value
Number of Bedrooms	4
Population Equivalent	6 - 7 persons
Water Usage/Person	200L/d
Estimated Peak Design Flow	1,400L/day/lot

4.3 Wastewater Treatment

4.3.1 Primary Treatment

Primary treatment is to be provided in a 4,000L (minimum) septic tank. This provides 24 hour settling volume, 24hrs emergency storage as well as storage for the buildup of sludge and scum.

The accumulated sludge and scum will need to be pumped out every 3-5 years to ensure sufficient treatment time is maintained.

4.3.2 Secondary Treatment

Secondary treatment (biological treatment stage) is to be provided in order to give a higher degree for treatment to minimise the impact on the receiving environment and to minimise any impact to the waterbodies on the proposed development.

Depending on the wastewater treatment system selected, reduction of nitrogen of 70g/m³ to ≤35g/m³ is possible.

4.3.3 Dispersal Area

Dispersal areas are required for the discharge of wastewater. The design of these is dependent on the design peak flow of each dwelling, soil type and dispersal field design.

AS/NZS 1547:2012 provides for three dispersal field designs as follows:

1. *Subsurface pressure compensating dripline irrigation* - a dispersal field of 15mm dia. pipes buried approximately 150mm below the ground surface that discharge wastewater through a series of holes in the pipe at a predetermined rate. Treatment of wastewater is undertaken in the soil column surrounding the dripline;
2. *Wisconsin mound* - a large above ground sand mound that rejuvenates the wastewater in the sand before discharge to land under the mound;
3. *Evapotranspiration seepage trenches* - a subsurface trench that rejuvenates the wastewater in a sand layer with uptake of wastewater through above ground evaporation via wind and sun and soakage to the surrounding soils;

For each discharge method listed above, a design loading rate (volume of wastewater that can be discharged to an area of land on a vertical scale in mm) is established.

To establish the dispersal field area required, it is assumed:

- Design flows are as outlined in Table 4.1 above. The dispersal field area for each dwelling will be confirmed once a design for the dwelling is confirmed and;
- The soil composition is of impermeable clay, Category 6 as defined by AS/NZS 1547:2012¹.

Table 4.2: Dispersal Land Area

Dispersal Method	Design Loading Rate	Dispersal Area Required
Subsurface Dripline Irrigation	2mm/d	700m ²
Wisconsin Mound	5mm/d	280m ²
Evapotranspiration-Seepage Trench	5mm/d	280m ²

From Table 4.2 above, based on the design flow of 1,400L/d the largest dispersal area that may be required is 700m². Due to the large section sizes, dispersal fields in this size range will be achievable with areas set aside for reserve area if further development of the Lots is required at a later date. (Note: A larger dwelling and therefore a larger design flow will require a larger dispersal field area and vice versa).

4.4 Resource Consent Requirements

The Otago Regional Council (ORC), Otago Regional Plan: Water (ORPW), rule 12.A.1.4: Discharge of Human Sewage, outlines permitted activities to discharge wastewater to land with certain conditions. If a discharge does not meet these conditions, the activity is then a discretionary activity and is required to have a resource consent.

Other relevant clauses of the RPW Rule 12.A.1.4 are as follows:

- a. A resource consent is required for any system that discharges more the 2,000L per day.
- b. The discharge does not exceed 2000 litres per day (calculated as a weekly average); and
- c. The discharge does not occur within the A zone of any Groundwater Protection Zone, as identified on the C-series maps, nor in the area of the Lake Hayes catchment, as identified on Map B6; and
- d. The system's disposal field is sited more than 50 metres from any surface water body or mean high water springs; and
- e. The system's disposal field is sited more than 50 metres from any bore which: (i) Existed before the commencement of the discharge activity; and (ii) Is used to supply water for domestic needs or drinking water for livestock; and

▪ ¹ A review of Soil Map on-line (Landcare Research) shows the soil type to vary between silty loam over clay and clay.

- f. There is no direct discharge of human sewage, or effluent derived from it, to water in any drain or water race, or to groundwater; and
- g. Effluent from the system does not run off to any other person's property; and
- h. The discharge does not cause flooding of any other person's property, erosion, land instability, sedimentation or property damage.

Of the 25 Lots, Lots 4 through 18 border or are intersected by one or in some cases, two of the water bodies on the site.

For these lots, if the dispersal area cannot be made available with separation of equal to or greater than 50m from these water bodies, the activity is then considered as a discretionary activity and a resource consent from the ORC will be required. Once the land use consent has been granted, Fluent Solutions will seek approval from the ORC for a consent under rule 12A.1.4 for each of these properties before title is issued.

5.0 Stormwater

5.1 Introduction

The site slopes from Thousand Acre Road towards Beach Road (abandoned due to erosion) and then discharges to the east coast. Drainage from site generally flows to either of the two water bodies on site. The water bodies then drain to a WDC owned 250mm culvert under the remains of Beach Road. Apparently, there are two additional culverts located under Beach Road, but these are reportedly blocked.

The following sections summarise the stormwater assessment and proposed management strategy.

5.2 Hydrological Assessment

A hydrological assessment has been completed to determine the impact of the development on the stormwater flows.

The Rational method (suitable for site <50Ha) was used to assess the impact of the development on stormwater runoff flows.

The Rational method uses the following formula to calculate flows:

$$Q_p = 1/360 \times C \times I \times A$$

Where;

- Q_p = peak discharge (m^3/s),
- C = coefficient of runoff,

- I = average rainfall intensity (mm/hour),
- A = catchment area (hectares).

The following runoff coefficients and catchment areas were used:

Table 5.1: Runoff Coefficient for Different Site Areas

Area Description	Runoff Coefficient	Area (Ha)
Pre-development Grass	0.3	24.79
Post-development Grass	0.3	23.72
Post-development Road	0.85	0.52
Post-development Roof	0.9	0.50
Post-development Paths	0.8	0.05

For the rainfall intensity (I), data from NIWA HIRDS Totara Station was used with RCP8.5.

Recommended design storms for rural residential sites under NZS 4404:2010 are as follows:

- Primary System 10 year ARI storm
- Secondary System 100 year ARI storm

Pre and post development runoff for the 10 year and 100 year storm events at various durations is presented in Table 5.2 below:

Table 5.2: Runoff Coefficient for Different Site Areas

Storm Event	Duration (min)	Pre-development Peak Flowrate	Post-development Peak Flowrate	Difference
		L/s	L/s	L/s
10 year ARI	10	950	1,030	80
	15	810	880	70
	20	670	720	50
	30	550	600	50
	60	400	440	40
100 year ARI	10	1,720	1,860	140
	15	1,460	1,580	120
	20	1,200	1,300	100
	30	990	1,070	80
	60	720	780	60

Based on these calculations the critical storm in terms of flowrate is a 10 minute duration storm.

The post-development peak run off flowrates are 8% higher than pre-development. This is considered a minor increase and flow attenuation is not considered necessary as there are no affected downstream properties.

5.3 Stormwater Management

It is proposed that the stormwater runoff from the new roads is conveyed via swales to the existing water bodies. As described above, this water body will continue to pass under Beach Road through culverts and to the coast. These swales will also convey water that currently passes under Thousand Acre Road via two 300mm culverts.

Any water collected from the new roofs can be discharged to ground and runoff from the Lots will be directed safely to the swales as shown in Figure 5.1.

An assessment² of the operational 250mm culvert under Beach Road, indicates a maximum capacity of around 80L/sec. This is considered inadequate to convey the existing 10 year ARI storm pre-development peak flows and is likely resulting in the water backing up and causing ponding on Lot 27. In large storms flooding over Beach Road (RL 7m) is expected.

While flooding caused from the unmaintained culverts is not likely to result in flooding of properties in the new development (minimum RL of the boundary of the habitable properties 8.5m - 1.5m above Beach Rd) it is recommended that WDC be asked to clean out the existing culverts to provide better drainage from the site.

² Using Colebrook-White equation

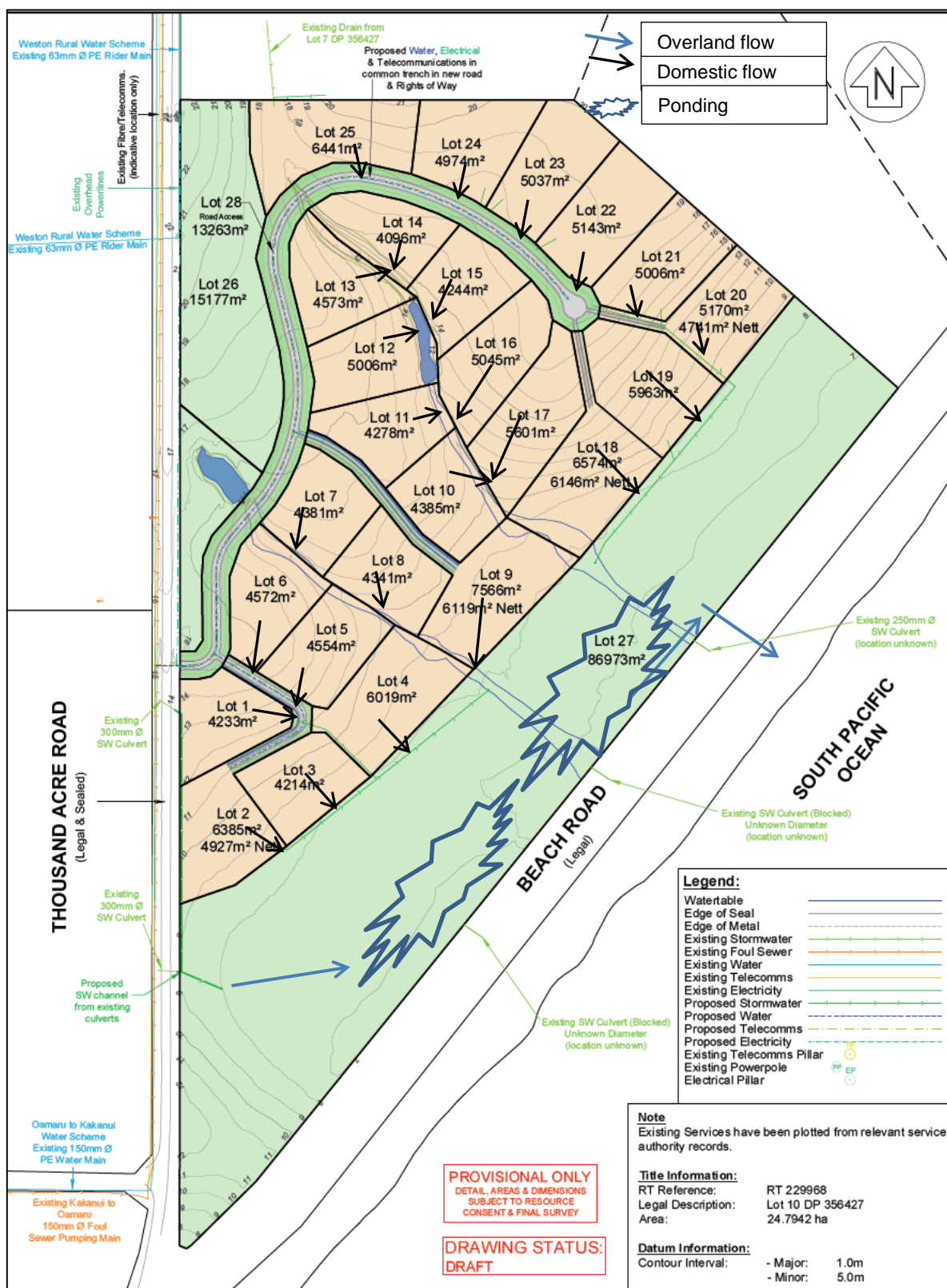


Figure 5.1: Stormwater Management Layout

APPENDIX A

Potable Water Supply Drawings

1 October 2019

Attention: Bill Brown
SARB Investments Ltd
171(a) Victoria Rd,
St. Clair
Dunedin 9012

Project Name: Coastal Hazard Assessment, Thousand Arce Road, Kakanui

Subject: Review of Coastal Erosion Setback Provisions

Dear Bill

As requested this letter reviews the provision of coastal erosion setback provisions for a proposed 25 lot rural lifestyle subdivision along the Beach Road coastal frontage north of Kakanui.

My background to undertake this review is 35 years experience undertaking coastal hazard assessments in my roles as a coastal geomorphologist for local government, universities and consultancies.

District Plan Requirements

In accordance with the Waitaki District Plan (Operative 2010) Natural Hazards Section (4.2.4), a coastal building set-back of 100 m is required based on previous erosion trends to protect building from potential coastal erosion and inundation risks over the next 50 years. However, this section of the District Plan appears to be dated from 2004, with more recent information on erosion trends being available, which may alter the need for this width of building set-back.

Recent NIWA Coastal Hazards Report

In January 2019 Otago Regional Council released the results of a recent NIWA coastal erosion and inundation assessment for the entire Waitaki District, which had as one of its purposes the need to update the Waitaki District Plan and to address the potential effects of sea level rise on coastal hazards as required under the NZ Coastal Policy Statement (2010). As part of the assessment the findings and report were independently peer reviewed for ORC by Tonkin and Taylor. We have undertaken a further independent review of the hazard assessment methods and findings of this report in the context of this consent application on the eroding coast along southern Beach Road, north of Kakanui.

From our review, we found that the methods used to determine coastal erosion hazard zones are acceptable. In summary, for the proposed development coast these methods involved:

- Determining past cliff top position from six aerial photograph dates between 1955 and 2016, and determining cliff erosion rates at 5m interval transects along the coastline. For the calculation of the long-term rate, the rates from 300m running window of transects were

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Subject: Review of Coastal Erosion Setback Provisions

used to remove the contribution of short-term slumps in individual locations. Shoreline detection was undertaken by identifying the vegetation line along beach environments, or the cliff top along cliff-backed shores/beaches.

- Using accepted cliff line erosion model (SCAPE) to evaluate the response of the soft-cliff shoreline to projected sea level rise. Due to a lack of data in the study area to drive the model, this was calculated from model responses for alluvial cliffs north of Oamaru where there is sufficient data.
- Calculation of short-term shoreline change (e.g. storm effects) – due to the lack of data for the study coast, this was based on the averaged value of the maximum absolute shoreline erosion between any two beach profile dates for alluvial cliffs north of Oamaru.
- To allow for uncertainty with the results, use a hybrid-probabilistic approach to mapping the hazard zones, in which the 95th percentile and 50th percentile predicted erosion are presented. The 95th percentile zone (CHZ95) represents only a small chance (5%) of the actual erosion exceeding the hazard width and is considered to be a 'conservative' approach, while with the 50th percentile (CHZ50) that there is 50% change of the actual erosion being greater than the zone width which is considered to be a 'reasonable' approach to calculating the hazard zone.
- All mapping is presented to 100 year time frames.

For coastal inundation, hazard mapping combining the results of extreme water level and wave run-up with updated sea level rise scenarios is only presented for the four most populated areas of the Waitaki coast, which does not include the study area.

We also note that the report did not assess inundation related to tsunamis, ground water flooding, river floods or urban flooding.

Relevant Report Finding for Proposed Rural Lifestyle Development

Our interpretation of the relevant findings of the report in the context of a coastal hazard assessment for the proposed rural lifestyle development include the following. Note that the supplementary material digital maps of the coastal hazard zone widths were not made available, therefore the given estimates of the hazard zone widths are only obtained from the relevant map presented in the report (Figure 3-39, Page 70; Appendix A of this letter). The resolution of these maps is poor, therefore the estimates of hazard zone widths cover the likely range rather than the calculated width.

- Long-term erosion along southern Beach Road at the proposed development site is in the order of 0.38 m/yr.
- The SCAPE modelling found that the acceleration of sea level rise would have little to no effect on cliff erosion rates.
- At a 95% confidence level, short-term erosion is not predicted to exceed 10 m along southern Beach Road.
- Applying a 'reasonable' approach, the CHZ50 coastal hazard zone widths for a 100-year timeframe are between 30-60m along southern parts of Beach Road.

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Subject: Review of Coastal Erosion Setback Provisions

- Applying a 'conservative' approach, the CHZ95 coastal hazard zone widths for a 100-year timeframe are between 40-80m along southern parts of Beach Road.
- The report does not show coastal inundation hazard zones for the proposed development. However, the coastal inundation maps for surrounding areas in Kakanui of a similar land elevation suggest that there is no coastal inundation risk at the proposed development for a 100-year ARI storm with +1.3 m of sea level rise. The only inundation risk in the surrounding area is at the Kakanui River mouth, which this is a significant distance from the proposed location and is not foreseen to be of any risk to the site.

Proposed Subdivision Overview Development Plan

The overview development plan for the proposed 25 lot subdivision development supplied by terramark (Appendix B of this letter) shows proposed Lot boundaries are setback 180m (southern end) to 100m (northern end) from the cliff top edge where the coastal hazard zone was calculated from in the NIWA (2019) study. It is noted that the cliff line at the time of the base photograph is shown as being a further 5 m east of the property boundary.

The setback distance of the individual Lots boundary along the coastal fronting edge of the subdivision are therefore an additional 20-80m beyond the conservative 80m wide 100-year coastal erosion hazard zone determined from the NIWA (2019) report.

Conclusion

Based on our review, we can make the following conclusions regarding set-backs along the proposed development site:

1. Recent NIWA coastal hazards assessment indicates that the existing 100m setback provision of the Waitaki District Plan is adequate to provide protection to buildings for a period considerably longer than 50 years.
2. The Overview Development Plan supplied by terramark shows that the Lot boundaries are setback an additional 20-80m beyond the conservative 100 year erosion zone from NIWA, and therefore the proposed Lot boundaries are an adequate distance from the coast over a 100 year planning timeframe.

Yours sincerely



Derek Todd
Principal Coastal and Hazards Scientist
E-mail: derek.todd@jacobs.com
Phone: 03-9404981

1 October 2019

Subject: Review of Coastal Erosion Setback Provisions

Appendix A:

Figure 3.39 (P70) from NIWA 2019: Waitaki District Coastal Hazards. Report prepared for Otago Regional Council

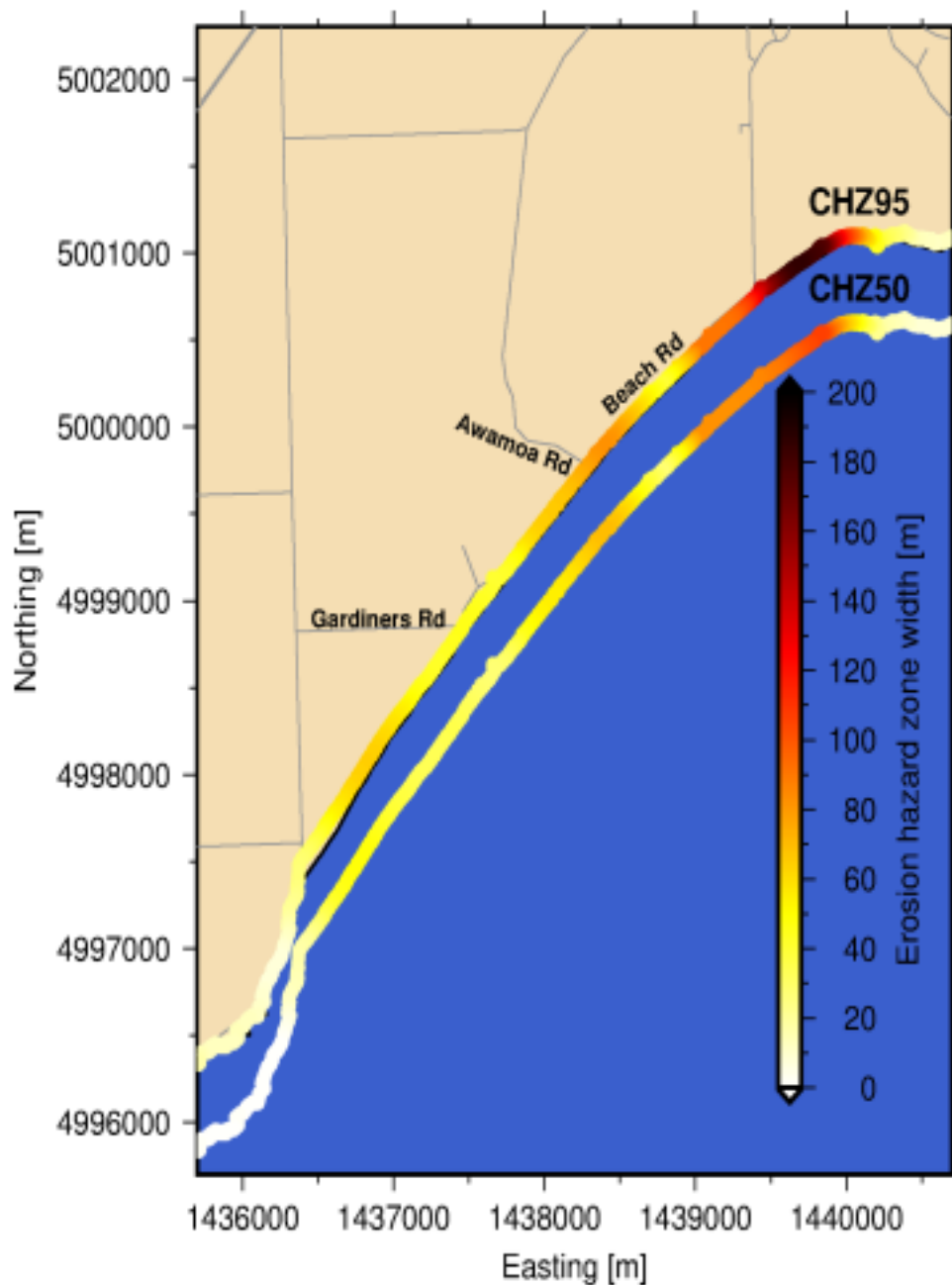


Figure 3-39: Coastal hazard zone width for 95th percentile (CHZ95) and for 50th percentile (CHZ50) for 100-year prediction for Beach Road. Note the CHZ50 points are offset to the south.



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Subject: Review of Coastal Erosion Setback Provisions

Appendix B: Terramark Plans for subdivision (August 2019)



THOUSAND ACRE ROAD
(Legal & Sealed)

BEACH ROAD
(Legal)

SOUTH PACIFIC
OCEAN

Lot 28
Road Access

Lot 26

Lot 25

Lot 24

Lot 23

Lot 22

Lot 21

Lot 20

Lot 19

Lot 18

Lot 17

Lot 16

Lot 15

Lot 14

Lot 12

Lot 11

Lot 10

Lot 7

Lot 8

Lot 9

Lot 5

Lot 6

Lot 4

Lot 3

Lot 1

Lot 2

No build Line 100m from Boundary

Approximate Extent of Significant Coastal Landscape Area

Ped. Access

Ped. Access

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Title Information:

RT Reference: RT 229968
Legal Description: Lot 10 DP 356427
Area: 24.7942 ha

Scale:
1:2500 @ A3

Job No:
D6633

Date:
August 2019

Plan No:
D6633/201/1

Overview Development Plan
Thousand Acre Road, Kakanui

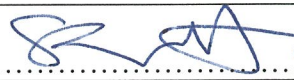
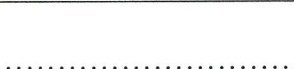
Cottleston Estates Limited

Site Investigation

August 2004

This report has been prepared solely for the benefit of Cottleston Estates Limited. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

Quality Assurance Statement	
MWH New Zealand Ltd 31 Stafford Street P O Box 4 Dunedin Tel: 64-3-477 0885 Fax: 64-3-477 0616	Project Manager: Craig Evans
	Prepared by: Bronwyn Dumbleton
	Reviewed by: Sue Bennett 
	Approved for issue by: Craig Evans 

Note that App B is no longer available, but relevant data is included in Table 1.

Cottleston Estates Limited

Site Investigation

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Appendix A - Site Photographs

Appendix B – Laboratory Results and Chain of Custody Form

Appendix C – Copy Correspondence

1. Introduction

1.1 Purpose

The purpose is to assess an area of land north of Kakanui for contamination in response to a request for further information (Section 92 RMA, 1991) from the Waitaki District Council to a subdivision application (Consent Number SRC04/71).

1.2 Scope

The assessment has involved:

- a site investigation and soil sampling
- laboratory testing, and
- result analysis.

1.3 Limitation

This investigation was limited to the assessment of the soils for contamination within the site boundaries. Potential contamination by organochlorine pesticides (especially DDT) had been identified as the primary concern by the Waitaki District Council. The investigation did not address geotechnical issues such as land stability, soil strength.

2. Site Description

2.1 Site Location

The Cottleston Estates Limited property is situated approximately 3-kilometres north of the township of Kakanui along the east coast (Figure 1). The triangular property is bound on all three sides by Beach Road, Gardiners Road and Thousand Acre Road.

2.2 Site Development

Cottleston Estates Limited (referred to hereon in as ‘the site’) plans to subdivide a 57-hectares site into 15 lots. The legal description of the property is Lot 68 DP 1616.

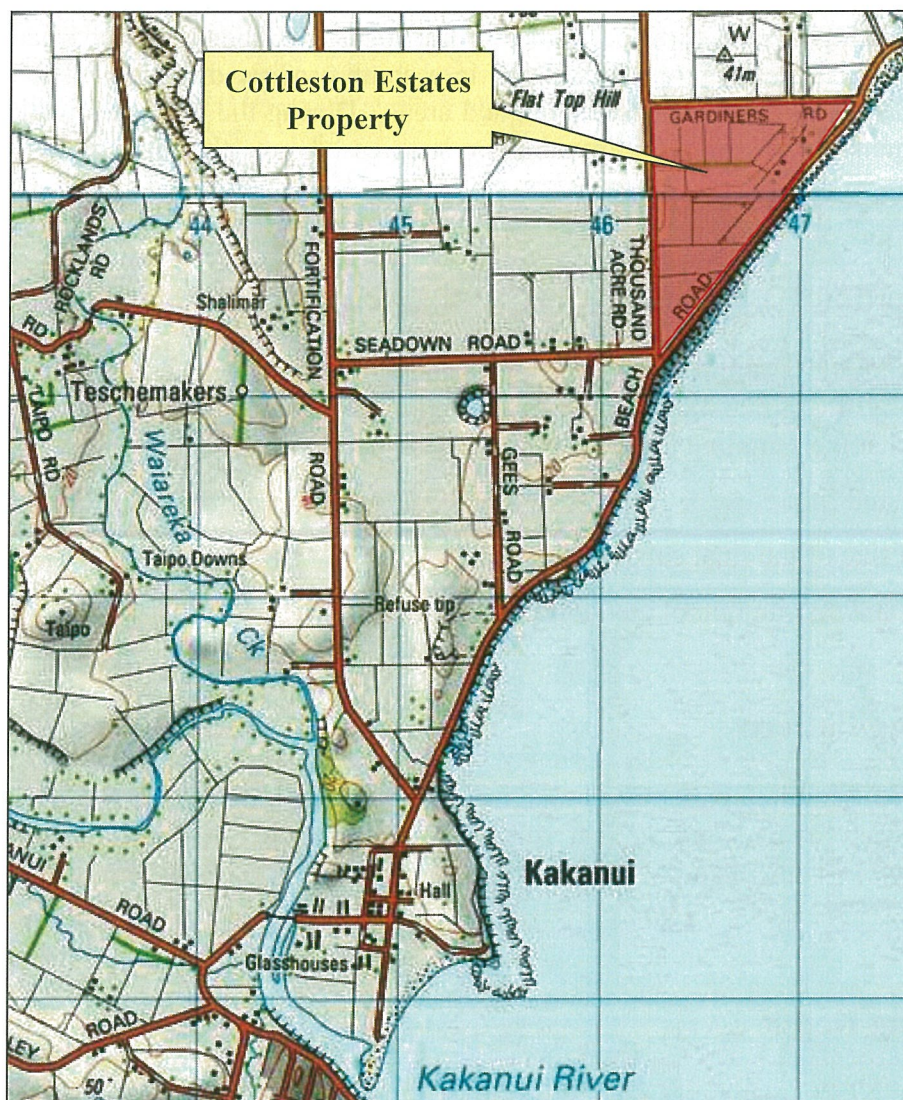


Figure 1: Site Location Map

3. Soil Investigation

3.1 Site History

The site has a history of organic market gardening from 1939-1980 (Leaman's family) in which the property was organically certified. From 1980-2001 the property has been run by the Leaman's family as a dry stock farming operation. Market gardeners have since been leasing the property from 2001-2004. None of these known activities would indicate significant potential for contamination of the site.

3.2 Site Description

The site investigation took place on the 17th August 2004. The triangular 57-hectare property is situated on undulating terrain with the highest point located at the western corner of the section. Two open drains exist on the property and run in a south-easterly direction. The site is currently planted out in market garden with some ploughed areas. During the site investigation there was no evidence of contamination die-off, browning or suppressed growth. Photographs are shown in Appendix A.

3.3 Investigation

In order to appropriately sample the Cottleston Estates property the soils samples were collected in accordance with NEPC guidelines (National Environmental Protection Council, 1999). The NEPC guidelines state that the sampling program must be designed to include:

- past, current and future use
- site area and size of the final subdivided sites
- likely shape and distribution of any potential contamination.

3.4 Sampling Pattern

A systematic (grid) sampling pattern was used in accordance with the NEPC guidelines to ensure that the whole site was covered and so that sampling points could be readily identified for further sampling (Figure 2). This scheme was also considered suitable due to the size and topography of the site.

3.5 Sampling Depth

According to the NEPC guidelines the soil samples should be taken at a depth to which people and other receptors could feasibly be exposed to contamination according to health and ecological risks. Samples were taken from a depth of 0-100mm below the ground surface. In the event that the phase 1 investigation, as reported in this report, detected contaminants above guideline levels, further

sampling would have been required (phase 2 investigation) and remediation measures would have been identified.

3.6 Sampling Density

The site covers 57-hectares (570,000 m²) and Cottleston Estates proposes to subdivide the site into 15 blocks. For sampling purposes the property was subdivided into 10 areas and within each area 5 samples were collected. This meant that there were 50 sample points across the entire 57-hectare property (Figure 2).

3.7 Composite Sampling

Within each of the 10 areas five samples were taken. These five samples were combined and thoroughly mixed in accordance with NEPC guidelines to produce a composite sample for lab testing. Composite sampling is achieved by mixing a cluster of samples to ensure a true average test result is obtained. Therefore one sample for each area was made and analysed.

3.8 Sample Integrity

Samples were collected using sterilised trowels and placed into a sterilised mixing container. They were then thoroughly mixed using sterile gloves. Decontaminated sample jars from Hill Laboratories were used that were gas tight, non-absorptive seals, allowing no headspace and kept on ice until arrival at the laboratory.

3.9 Sample Analysis

The Waitaki District Council indicated that the main contaminant of concern was DDT. Therefore the samples were analysed using the organochlorine pesticide screen, which includes DDT and its derivatives.

3.10 Quality Assurance

The NEPC guidelines state that quality assurance:

“Involves all the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analysis results.” (NEPC, 1999).

In the field this involved the selection of an appropriate sampling and presentation method, documentation and sample storage, cleaning of tools before sampling and between samples, cleaning containers, maintenance of sample environment to minimise sample contamination and delivery to the laboratory in good condition.

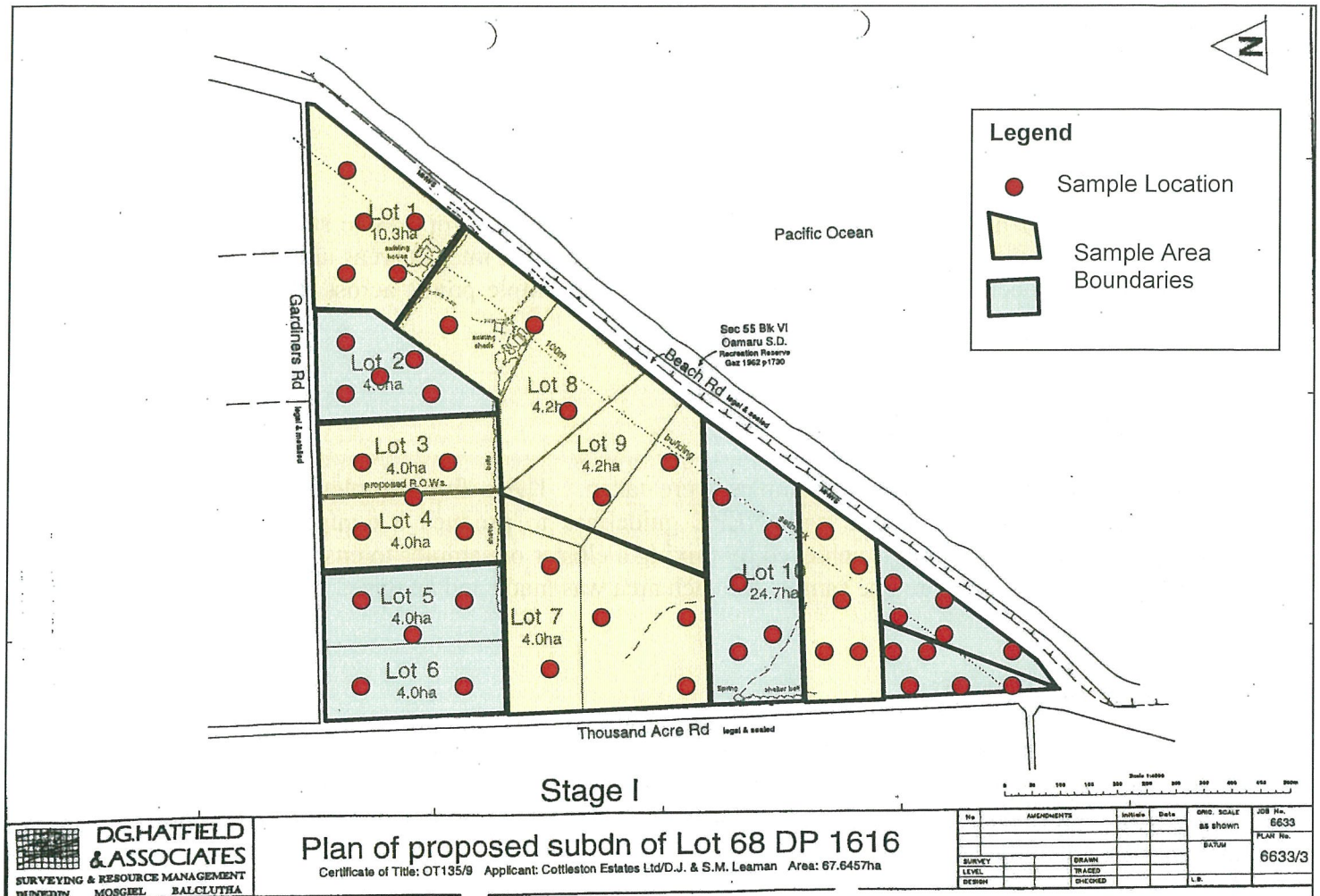


Figure 2: Soil Sample Locations

4. Results

Ten composite samples were collected from ten areas within the 57 hectare section and were all laboratory tested by Hill Laboratories, Hamilton. The NEPC 1999 were used to assess if the samples collected comply with the guidelines acceptance criteria. The laboratory report and sample chain of custody forms are appended (Appendix B).

Table 1: Laboratory Results - Organochlorine Pesticides Screen

Organochlorine Pesticides Screen						NEPC 1999
Sample Location	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Health Investigation Levels
Sample Date	17/8/04	17/8/04	17/8/04	17/8/04	17/8/04	
Soil Type	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	
Parameter	Results in mg/kg (dry weight)					
2,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
Aldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Alpha – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Beta – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Delta - BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-BHC (Lindane)	<0.01	<0.01	<0.01	<0.01	<0.01	
Cis-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Trans-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Total chlordane (cis+trans *100/42)	<0.05	<0.05	<0.05	<0.05	<0.05	50
Dieldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Endosulfan I	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan sulphate	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin aldehyde	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	<0.01	<0.01	<0.01	<0.01	<0.01	10
Heptachlor epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	10
Hexachlorabenzene	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	<0.01	<0.01	<0.01	<0.01	<0.01	

Notes:

NEPC 1999

- 1) Reference NEPC 1999 Soil Investigation Level Table (Table 5-A).
- 2) Detection limits are based on typical soil and sediment matrices. Samples are dried and ground prior to analysis, and are reported on a “dry weight” basis.
- 3) Method, OCP screen method, soil to the 0.005 mg/kg detection limit.

Table 1 continued: Laboratory Results - Organochlorine Pesticides Screen

Organochlorine Pesticides Screen						NEPC 1999
Sample Location	Lot 6	Lot 7	Lot 8	Lot 9	Lot 10	Health Investigation Levels
Sample Date	17/8/04	17/8/04	17/8/04	17/8/04	17/8/04	
Soil Type	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	
Parameter	Results in mg/kg (dry weight)					
2,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
2,4' – DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' – DDD	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDE	<0.01	<0.01	<0.01	<0.01	<0.01	200
4,4' DDT	<0.01	<0.01	<0.01	<0.01	<0.01	200
Aldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Alpha – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Beta – BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Delta - BHC	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-BHC (Lindane)	<0.01	<0.01	<0.01	<0.01	<0.01	
Cis-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Trans-chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	50
Total chlordane (cis+trans *100/42)	<0.05	<0.05	<0.05	<0.05	<0.05	50
Dieldrin	<0.01	<0.01	<0.01	<0.01	<0.01	10
Endosulfan I	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan II	<0.01	<0.01	<0.01	<0.01	<0.01	
Endosulfan sulphate	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	
Endrin aldehyde	<0.01	<0.01	<0.01	<0.01	<0.01	
Heptachlor	<0.01	<0.01	<0.01	<0.01	<0.01	10
Heptachlor epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	10
Hexachlorabenzene	<0.01	<0.01	<0.01	<0.01	<0.01	
Methoxychlor	<0.01	<0.01	<0.01	<0.01	<0.01	

Notes:
NEPC 1999

- 1) Reference NEPC 1999 Soil Investigation Level Table (Table 5-A).
- 2) Detection limits are based on typical soil and sediment matrices. Samples are dried and ground prior to analysis, and are reported on a "dry weight" basis.
- 3) Method, OCP screen method, soil to the 0.005 mg/kg detection limit.

Some contaminants that are tested for during laboratory analysis have no NEPC or ANZECC guidelines specified which is shown by Table 1. The NEPC guidelines specify that if this occurs the parameters that do have guidelines must be assessed and if all the samples are below the relevant guidelines then it can be presumed that the rest of the samples comply. In this case most of the contaminants that have been tested for have an appropriate NEPC guideline. All of these soils are well below and therefore comply with the NEPC guidelines. Those parameters that were tested for but do not have any relevant guidelines were all below the detection level. Therefore the results show that all the soils contained within the Cottlestons Estate property contain no traces of contamination by organochlorine pesticides.

5. Summary

A soil investigation was completed by MWH on the Cottleston Estates property. Soil testing was completed according to NEPC 1999 guidelines. The soils were then sent to Hill Laboratories that has a primary quality standard NZS/ISO/IEC 17025:1999 which incorporates the aspects of ISO 9000 relevant to testing laboratories.

The organochlorine pesticides screen was used because Waitaki District Council identified DDT contamination as being their main concern. There is no historical or physical evidence for contamination. No contamination was detected within any of the samples analysed.

Appendix A - Site Photographs



Photo : Site Layout

Appendix B – Laboratory Results and Chain of Custody Form

Appendix C – Copy Correspondence

File reference SRC 04/71
Enquiries to Planning Section

COPY



Waitaki DISTRICT COUNCIL

06 August 2004

Cottleston Estates Limited
C/- D. G. Hatfield & Associates
PO Box 235
DUNEDIN

Waitaki District Council
Private Bag 50058, Oamaru

Tel: 03-434 8060
Fax: 03-434 8442

20 Thames Street
Oamaru, New Zealand

Attention: Geoff W. Bates

Dear Sir

Resource Management Act 1991

**Resource Consent Application: SRC04/71 - Cottleston Estates Limited, 532
Beach Road, Kakanui.**

It has come to Council's attention that the subject site was used for horticultural purposes and potentially the use of agrichemicals such as DDT was utilised.

Due to the proposed use of the land, it is requested that soil sampling be undertaken for possible soil contamination from agrichemicals. Sampling shall be undertaken in accordance with standard practice for testing and be analysed by a registered soils scientist.

I also acknowledge receipt of your letter dated 5 August 2004 and its attachment (Agreement For Sale and Purchase Of Real Estate dated 4 July 2004), which has been received by Council today, the 6th of August 2004.

In the last paragraph of your letter, you have requested Council to proceed with the assessment of the application in the knowledge that the soil testing report has been commissioned and will be in Council's hands as soon as it becomes available. I wish to advise that, it has been determined that your application be put on hold until the further information requested above has been supplied to Council pursuant to Section 92 of the Resource Management Act 1991.

Yours faithfully



Patterson Ngwira
Consents Planner

N:\Planning - Previously Planning Drive\Consent Applications\SRC04-71 Cottleston\soil sampling request.doc

DOUG J LEAMAN

17 Gardiners Road, Awamoa

OAMARU 9492

Tel: (03) 434 5713

31 October 2019

The Directors
SARB Investments Limited
171a Victoria Road
Saint Clair
DUNEDIN 9012

Attention: Mr William P Brown, Director

Dear Bill

Re: Block history and soils at Beach Road / Thousand Acre Road, Awamoa

Following on from our meeting today, I set out below the matters discussed in relation to the soils and horticultural viability on your adjoining block – Lot 10, DP356427 at the above location.

1. My late father purchased the block of land within the boundaries of Thousand Acre Road, Gardiners Road and Beach Road in October 1939 (which includes your Lot 10) and the Leaman family through three generations have resided here and farmed at various stages. My son and I continue to reside on part of the original block and graze some stock.
2. In the early years, my father grew potatoes, barley and wheat on parts of the whole 67-hectare block and ran stock on other parts.
3. In 1982, myself and my wife took over the property and continued farming.
4. The block can be classified as dryland farming and is always subject to seasonal lack of moisture and sea mists in the lower part.
5. Of the land currently held by your company, SARB Investments Limited, the top corner and Lots 1-6 fronting Gardiners Road has the locally termed soils *Totara Tar*, the balance of that land being lighter and stoney soils.
6. While *Totara Tar* soils are recognised as fertile soils, they are difficult to work and manage as they form a hard crust when dry and become very sticky when wet. Moisture in the right quantity and at the right time is essential for the productive management of these soils.
7. It is not economically feasible to irrigate this coastal block and any horticultural farming is entirely at the mercy of the weather.



8. My wife and I ceased farming the property about 18 years ago as it was simply not possible to make a living, leased for a year or two and eventually sold to SARB Investments Limited.
9. The Leaman family have farmed this block for just over 80 years, have extensive, practical knowledge of its farming and horticultural prospects and I am able to say that it is simply not possible to make a living from this block and in particular, its horticultural potential is unlikely to improve.
10. I believe the land's potential from a farming point of view is no more than grazing and hay making.

Yours faithfully

Doug Leaman

A handwritten signature in black ink, appearing to read 'Doug Leaman', followed by a long horizontal flourish.

GLENMOA FARMS LIMITED

Prydes Gully Road, RD 10C
OAMARU 9491

31 October 2019

The Directors
SARB Investments Limited
171a Victoria Road
Saint Clair
DUNEDIN 9012

Attention: Mr William P Brown, Director

Dear Bill

Re: Soils at Beach Road / Thousand Acre Road

At your request to provide an opinion on the soil's fertility and viability at the block my company currently leases from SARB Investments Limited, I make the following observations:

1. My company, Glenmoa Farms Limited, has leased this land (Lot 10 – DP356427) since March 2006.
2. During that period, I have farmed various crops - barley, radish and taken both hay and silage on a seasonal basis.
3. The land is best described as a dryland pasture block significantly affected by salt laden sea mist.
4. The lower part of the block is very stoney and difficult to cultivate while the higher part of the block, although exhibiting the local soil-type known as *Totara Tar*, is limited by the presence of basalt rock making it difficult to cultivate.
5. There is very limited water available on the block and it is not economically viable to irrigate this land.
6. In my opinion, this particular block of land is not viable as a horticultural block but limited to and useful for its present use as a dryland pasture block with best use being stock grazing, silage and hay.

Yours faithfully

GLENMOA FARMS LIMITED



John J Foley, Director

Bill Brown
SARB Investments Ltd
171a Victoria Rd
St Clair
DUNEDIN 9012

18 March 2020

Re: Estimated cost to connect to NOIC system

Dear Bill

You have asked us to estimate the cost to connect the property located on Thousand Acre Rd (lot 10 DP356427) to the North Otago Irrigation Company system in order to receive water, at pressure, for the purposes of irrigation. We have estimated that cost but remind you that it is an estimate only as we have not visited the site nor done a detailed plan for connection. However, we are confident we have provided you with a fair approximation of what the cost would be.

The property is 24.8ha and so could support a maximum of 20 NOIC shares. NOIC delivers water at around 5 bar pressure, via a mix of gravity and boosting pumps in stations located around the schemes 70,000 ha command area. Your property is around 4.1km from the location off the Waiareka Creek line that we could most efficiently provide water from. Accordingly, the requirements and costs are as follows:

Pipework	4,100m x 100mm @\$58/m	\$237,000
Pump station (to boost pressure)		\$50,000
On farm offtake (50mm/20 shares)		\$8,500
NOIC shares	20@\$5,250	\$105,000
TOTAL		<u>\$400,500</u>

Please note, you will also have on-farm costs in regard to irrigation equipment. We are not suppliers of this but understand the rough rule of thumb to be \$5,000/ha irrigated. Also note, should your neighbours wish to also connect to NOIC, some of these costs would be spread among all the applicants (eg the Pump station) and so reduce your cost accordingly.

I trust this is sufficient information at this stage but don't hesitate to let us know if we can be of further help.

Sincerely



Ben Stratford
Manager of Operations



GARDINERS ROAD

Pt Section 2 of 26
Blk VI Oamaru SD
DR Martin

Lot 6 DP 356427
CA & LH Weir
& Balance Trustees Ltd

Lot 5 DP 356427
J Zhu, KHK Ho, L Liang,
N Yang & YS Wong

Lot 4 DP 356427
H & MR Martin

Lot 3 DP 356427
C Tao

Lot 1
DP 497510
DJ & GR Lucas

Lot 2
DP 497510
JL & KE Fegan
& MJ Hockly

Lot 1
DP 356427
DJ & GJ Leaman
& S Leaman-Taylor

Lot 2 DP 444369
N Canham & SE Flett

Lot 7 DP 356427
RI Foley &
HC Trustees 2017 Ltd.

Lot 9 DP 356427
JE & MD Thorpe
& Currie Trustee Services Ltd.

Lot 8 DP 356427
MJ Hall

Lot 1 DP 444369
Willowview Pastures Ltd
(C/- GNS, JMS, KJ & DS Taylor)

THOUSAND ACRE ROAD

Section 59 Blk VI
Oamaru SD
CM & NR Joyce

BEACH ROAD

(Legal)

No build Line 100m from Boundary

SOUTH PACIFIC OCEAN

DRAWING STATUS:
FOR CONSENT

PROVISIONAL ONLY
DETAIL, AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

Legend:

Boundary	
Road	
Abutments	
Approval Obtained	

Title Information:

RT Reference:	RT 229968
Legal Description:	Lot 10 DP 356427
Area:	24.7942 ha



Affected Party Approvals Thousand Acre Road, Kakanui

Scale: 1:5500 @ A3	Job No: D6633
Date: April 2020	Plan No: D6633/206

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We:

Maxwell Ronald Martin & Helen Martin

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

67 Gardiners Road, Awamoa
Valu Roll No 26140/34505 - Lot 6 DP 356427

(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

[Signature] FOR SELF AND Helen Martin

Date:

21.3.20

Telephone:

021 340 740 (027 434 7713) RUT

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



Lot 1
DP 444369

THOUSAND ACRE ROAD
(Legal & Sealed)

Lot 7
DP 356427

Lot 9
DP 356427

Lot 28
Road to Vest
13263m²

Lot 25
6441m²

Lot 24
4974m²

Lot 23
5037m²

Lot 22
5143m²

Lot 21
5006m²

Lot 20
5170m²
4741m² Nett

Lot 19
5963m²

Lot 18
6574m²
6146m² Nett

Lot 17
5601m²

Lot 16
5045m²

Lot 15
4244m²

Lot 14
4096m²

Lot 13
4573m²

Lot 12
5006m²

Lot 11
4278m²

Lot 10
4385m²

Lot 9
7566m²
6119m² Nett

Lot 8
4341m²

Lot 7
4381m²

Lot 6
4572m²

Lot 5
4554m²

Lot 4
6019m²

Lot 3
4214m²

Lot 2
6385m²
4927m² Nett

Section 59
Blk VI Oamaru SD
OT6A/1439

Pt Lot 2
DP 2400
OT172/252

No build Line 100m from Boundary
Approximate Extent of Significant Coastal Landscape Area

BEACH ROAD
(Legal)
Section 55 Blk VI Oamaru SD
Recreation Reserve NZGZ 1982-P1730

SOUTH PACIFIC
OCEAN

PROVISIONAL ONLY
DETAIL AREAS & DIMENSIONS
SUBJECT TO RESOURCE
CONSENT & FINAL SURVEY

DRAWING STATUS:
DRAFT

Legend:

Planting by Developer
Planting by Lot Owner

Roads, Rights of Way & Access Strips

For details pertaining to Lot 28 (Road to Vest), and Rights of Way A & B, refer to the typical cross sections on Sheet 4.

Access strips to Lots 18 & 20 feature minimum widths of 4m.

Yard & Road Setbacks

Lot 20-23 feature a 20m yard setback where adjoining Lot 9 DP 356427

Lots 23 & 24 feature a 20m yard setback where adjoining Lot 7 DP 356427

Lot 25 features a 10m yard setback where adjoining Lot 7 DP 356427

Lots 1 & 2 feature a 15m yard setback where adjoining Thousand Acre Road.

All internal yard setbacks are 6m and setbacks to new road are 10m.

Easements

All rights reserved for any easements which may be required as part of the subdivision.

Title Information:

RT Reference: RT 229968
Legal Description: Lot 10 DP 356427
Owner: Sarb Investments Limited
Area: 24.7942 ha

Proposed Easements			
Purpose	Shown	Burdened Land	Benefitted Land
Right of Way	(A)	Lot 2 Hereon	Lots 1, 3, 4 & 5 Hereon
Right of Way	(B)	Lot 9 Hereon	Lots 7, 8, 10 & 11 Hereon

Location and alignment of Pedestrian Rights of Way through Lots 7-9, Lots 14-18 & Lot 28, shown as (C) - (I) are subject to final design, construction and survey

Proposed Easements in Gross			
Purpose	Shown	Grantor	Grantee
Right of Way (Cycle and Pedestrian)	(M)	Lot 27 Hereon	Waitaki District Council

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We:

DRM
Douglas Ross Martin & ~~MarriAnn Martin~~

Being the

☐ Owner ☒ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

37 Springfield Road, Awamoa (Residence)
& owner of the property described next
Valn Roll No 26140/53100 — Pt Section 2, Sec 28 Oam.
B/K VI Oamaru S.D.

(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

DR Martin

Date:

20-3-20

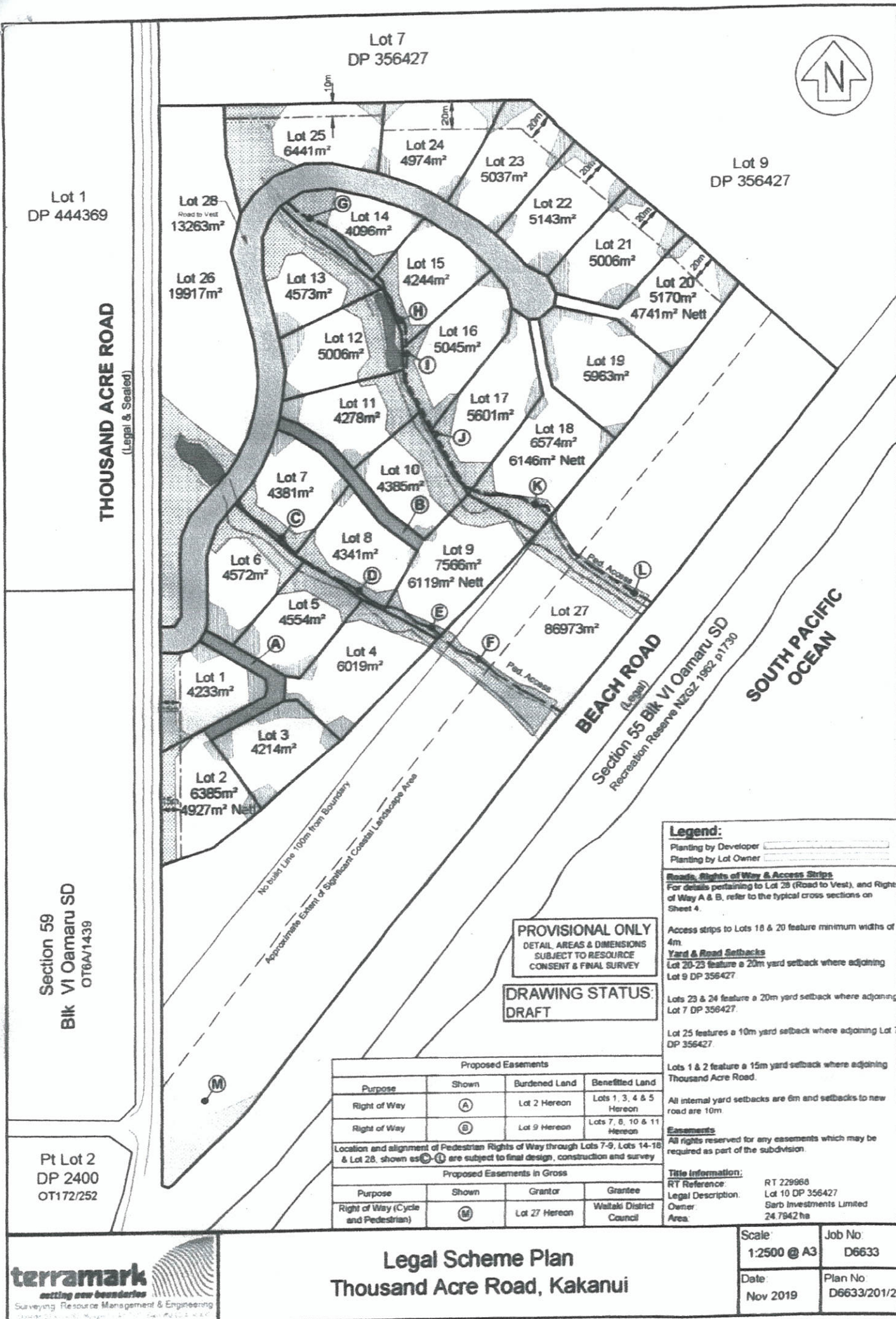
Telephone:

4349895

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We: Leslie Herbert Weir & Christine Ann Weir

Being the

☐ Owner ☒ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated: 97 Gardiners Road, Awamoa
Valn Roll N° 26/40/34507 - lot 6 DP 356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed: [Signature] [Signature]

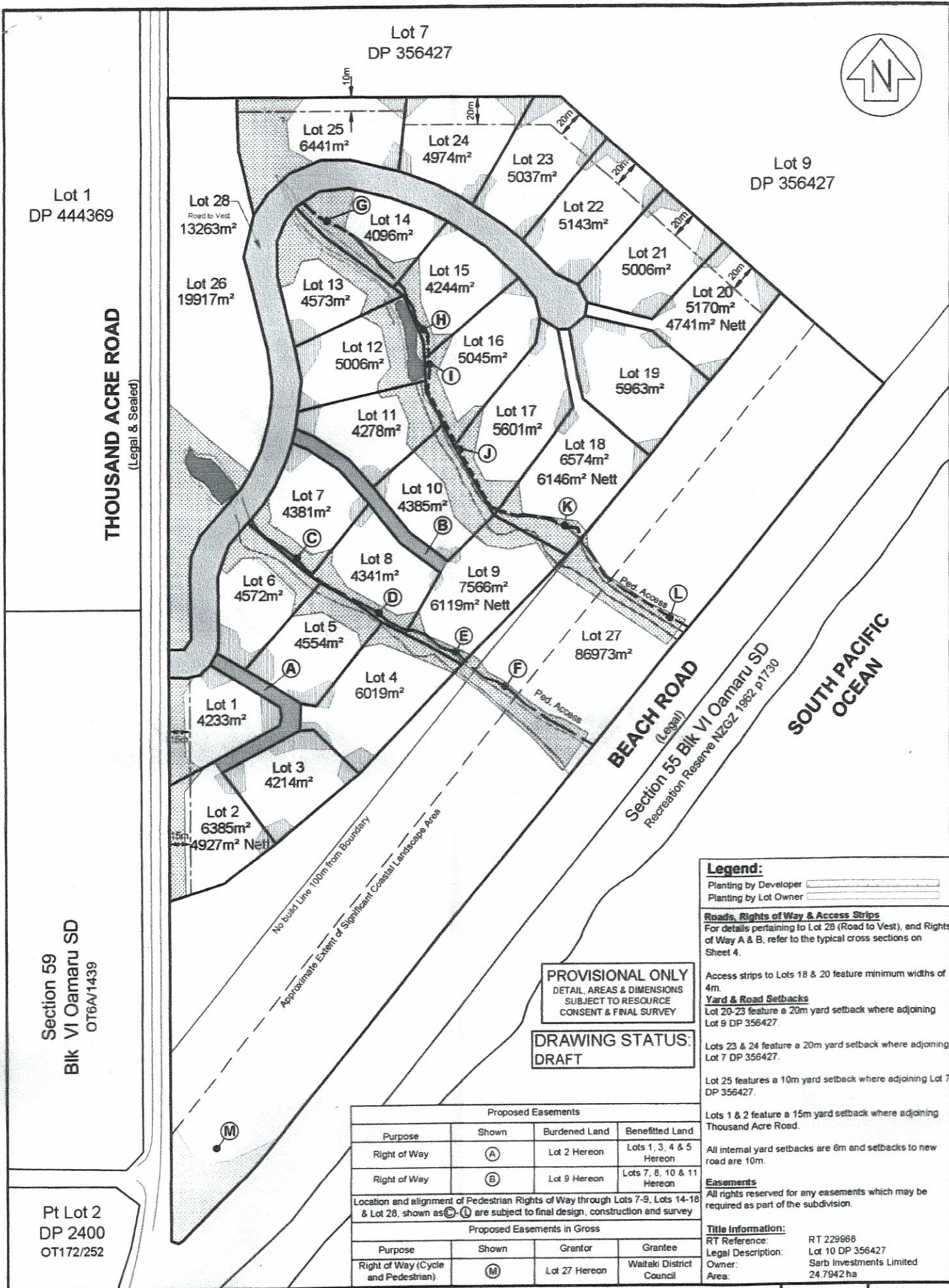
Date: 21/3/2000

Telephone: 4342367

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081



Legend:
 Planting by Developer
 Planting by Lot Owner

Roads, Rights of Way & Access Strips
 For details pertaining to Lot 28 (Road to Vest), and Rights of Way A & B, refer to the typical cross sections on Sheet 4.

Access strips to Lots 18 & 20 feature minimum widths of 4m.

Yard & Road Setbacks
 Lot 20-23 feature a 20m yard setback where adjoining Lot 9 DP 356427.

Lots 23 & 24 feature a 20m yard setback where adjoining Lot 7 DP 356427.

Lot 25 features a 10m yard setback where adjoining Lot 7 DP 356427.

Lots 1 & 2 feature a 15m yard setback where adjoining Thousand Acre Road.

All internal yard setbacks are 6m and setbacks to new road are 10m.

Easements
 All rights reserved for any easements which may be required as part of the subdivision.

Title Information:
 RT Reference: RT 229968
 Legal Description: Lot 10 DP 356427
 Owner: Sarb Investments Limited
 Area: 24.7942 ha

PROVISIONAL ONLY
 DETAIL, AREAS & DIMENSIONS
 SUBJECT TO RESOURCE
 CONSENT & FINAL SURVEY

DRAWING STATUS:
 DRAFT

Proposed Easements			
Purpose	Shown	Burdened Land	Benefitted Land
Right of Way	(A)	Lot 2 Hereon	Lots 1, 3, 4 & 5 Hereon
Right of Way	(B)	Lot 9 Hereon	Lots 7, 8, 10 & 11 Hereon
Location and alignment of Pedestrian Rights of Way through Lots 7-9, Lots 14-18 & Lot 28, shown as (C)-(I) are subject to final design, construction and survey			
Proposed Easements in Gross			
Purpose	Shown	Grantor	Grantee
Right of Way (Cycle and Pedestrian)	(M)	Lot 27 Hereon	Waitaki District Council

[Handwritten signatures]

For the attention of: Planning Department, Waitaki District Council

AFFECTED PERSON(S) CONSENT FORM

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

I/We: Ching Tao

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated:

Gardiners Road, Awamoa
Valu Roll No 26110/34502 - Lot 3 DP356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below in accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purposes, ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed: [Signature]

Date: 24/March 2020

Telephone: 022 652 8820

(I have signed both pages)

If you have any queries regarding the resource consent process and the role and rights of adversely affected person(s), please contact:

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Phone 0800 108 081

To: Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

IN We: Yee Sang Lisa Wong, Kenneth Hiu Kan Ho, Lining Liang,

Being the

☒ Owner ☐ Owner and Occupier ☐ Occupier ☐ Statutory Authority

Of the property situated: Gardeners Road, Awamoa, Volu
Roll No 26/40/34506 - Lot 5 D.P. 356427
(Address and/or legal description of your property)

Have read and understood the information provided and consent to the proposal by:

Sarb Investments Limited, of Thousand Acre Road, Awamoa.

For:

Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of the site described below
accordance with the attached scheme plan. The proposal will create 25 sites for rural lifestyle purpose
ranging in area from 4214m² to 6441m².

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (RT229968)

Signed:

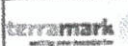
Date:

Telephone: 0852 97688529

If you have any queries regarding the resource consent process and the role and rights of adversely
affected person(s), please contact

Resource Consents Team
Planning Department
Waitaki District Council
Private Bag 50058,
Oamaru 9444

Yang, Nan L, Products 2007



AFFECTED PERSON(S) CONSENT FORM

10000 ^{Current Asset} Yee Sang Ling Wong, Kenneth Hin Kan Ho,

Of the property situated: Gardners Road, Ayrton

Roll No 26/40/34506 - lot 5 D
(Address and/or legal description of your property)

Sark Investments Limited, of Thousand Acre Road, Awanui

For:
Subdivision and Land Use Consent to facilitate a rural – lifestyle subdivision of
accordance with the attached scheme plan. The proposal will create 25 sites
ranging in area from 4214m² to 6441m²

On the following property:

Thousand Acre Road, Awamoa, being legally described as Lot 10 DP 356427 (A

Signed Antony 12

Cluster _____ Mar 27, 2020

Telephone 7852 97688529

If you have any queries regarding the resource consent process and the role any affected person(s), please contact:

Resource Consents Team
Planning Department
Westlake District Council
Private Bag 50058
Christchurch 8144

Phone 800 108 081