MALCOLM SMITH CONSULTING

ADVISING AND FACILITATING ON LAND DEVELOPMENT AND SUBDIVISION

STAIG & SMITH

Subdivision Application and Residential Land Use Application for Vicarage Views Limited at 2 MT FYFFE ROAD, KAIKOURA

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Appendices

1.0 INTRODUCTION

1.1 This application has been prepared in accordance with the requirements of Section 88 of, and the Fourth Schedule to, the Resource Management Act 1991 (RMA) to accompany the application by **Vicarage Views Limited** to:

a. Undertake a Fee-Simple type subdivision to create 67 vacant residential allotments (Proposed Lots 1 – 65, 91 and 92) and new Roads and Reserves to Vest within the subject property as shown on the Scheme Plan in **Appendix C**, Sheet 1.

b. Land Use consent to build one residential unit on Proposed Lots 1-65 generally in accordance with Residential A standards and to create a Multi Unit Residential Complex (MURC) for up to 10 residential units on each of Proposed Lots 91 and 92, with specific Performance Standards as shown on the Land Use Plan in **Appendix C**, Sheet 2.

1.2 Considered as a bundle, the proposed Subdivision and Land Use applications are Restricted Discretionary Activities.

1.3 The following information is provided within this report which will cover all aspects needed to make a comprehensive decision on the subdivision and land use consent sought:

- Background.
- Site Details.
- Proposal.
- Kaikoura District Plan Rules Assessment.
- RMA Assessment.
- Consultation Undertaken.
- Assessment of Environmental Effects.
- Kaikoura District Plan Objectives and Policies Assessment.
- Consideration of National Environmental Statements.
- Consideration of National Policy Statements.
- Consideration of Regional Policy Statement and Plans.
- Assessment against National Environmental Standards.
- Part 2 RMA Matters.
- Other Consents required relating to the proposal.
- Development Contributions.

1.4 The appendices referenced on Page 3 are attached in support of, and form part of, the application.

1.5 The Applicant requests that the Kaikoura District Council (Council) process the two resource consent applications under the Public Notification provisions.

1.6 The Applicant requests an invoice to be prepared for the deposit fee, and the Applicant will then pay the deposit amount directly to Council.

2.0 BACKGROUND

2.1 There is an important background development sequence that is relevant to this proposal.

2.2 The Applicant has met with Council staff on several occasions to discuss how the Council, and the town in general, should enable growth and development by encouraging new residential activity that will contribute to the overall growth and development of the town.

2.3 Additional housing opportunities within Kaikoura will encourage new residents to the town who will add and contribute to the community in an economic and socially positive manner.

2.4 An increased population base will provide an expanded domestic customer base for the business sector. They will also bolster the employee pool that will support business growth – a matter that is particularly important for the tourism sector.

2.5 New residents into the township will also contribute to the social fabric of the town, bolster the school rolls, and will add to the relationships and connections within the community that shape the unique society of Kaikoura.

2.6 New housing opportunities may also enable existing residents to relocate into new accommodation that is suitable for their changing circumstances and lifestyles. In doing so, they provide further accommodation options for new residents who may purchase or alternately rent the vacated housing units.

2.7 New housing opportunities also enable an increase to the number of dwellings which will meet the latest building code standards, making for an improved housing stock with passive solar gain and increased insulation making for a healthier living environment, as well as providing greater resilience for earthquake standards. It also provides opportunities for the community to build housing types specific to need, whether that be increased shared family requirements, or smaller single units for the elderly.

2.8 A well-planned subdivision is able to contribute to a well-functioning, urban environment that enables all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, both now and into the future.

2.9 The discussions between the Applicant and Council staff about growth and development of the town, have centred on two matters; being affordable housing and suitable accommodation for elderly persons.

2.10 Affordable housing is a generic term that refers to the provision for residential ownership that is realistic for low to moderate income people within a community. Affordability is dominated by land area and the efficiency of producing residential sections, as well as building cost. The Applicant is not seeking to construct dwellings, and therefore the application seeks to provide the opportunity for affordability in both section design and seeking land use consents to enable purchasers to be able to build with minimal delays.

2.11 Provision of suitable accommodation for elderly persons focuses around smaller size dwellings, affordable ownership, lower maintenance as well as a sense of neighbourhood and community. This type of accommodation allows elderly residents to manage their living circumstances and enjoy being part of the community.

2.12 The discussions with Council staff have also touched on the recent National Policy Statement for Urban Development (NPS-UD). This Policy Statement sets out the Objectives and Policies for planning for well-functioning urban environments under the Resource Management Act. These include provisions for urban intensification, and a focus on ensuring that urban areas work for all people and communities and with particular focus given to access, climate change and housing affordability.

2.13 Whilst Kaikoura is a town that is not required to have regard to the NPS-UD due to its population size, it is important that it recognises the circumstances that will enable it to grow and develop as a well-functioning urban environment. The Objectives and Policies of the NPS-UD are therefore relevant guidelines to follow.

2.14 The Applicant wishes to assist Kaikoura, in so far as they can draw on their considerable experience and expertise with urban property development. The Applicant is willing to undertake a residential development and invest considerable effort and finances to see it realised.

2.15 Noting the above, it is a challenge to enable development within the town that provides the well-functioning, affordable and elderly housing outcomes whilst also being economically feasible.

2.16 The operative Kaikoura District Plan provides for two residential density outcomes, with the Residential A zoned lands supporting higher densities and the Residential B zoned lands providing for lower densities.

2.17 At present Kaikoura's available land for Residential A subdivision and development is almost fully allocated. The majority of these lands are located in South Bay, with a southerly aspect, which makes designing appropriately oriented housing stock to make most of passive solar gain thus improving long term affordable living opportunities, more challenging.

2.18 As such, and to cater for increasing demands over both the short-medium term (10 years) to the long term (10 to 30 years), it is sensible to look towards the Residential B zoned areas for higher density development. The Applicant and Council staff have been discussing such opportunities for the future demand anticipated for Kaikoura.

2.19 In addition, it seems likely, if not inevitable, that the lower density urban outcomes envisaged by the Residential B zone will not align with the future requirements of the town.

2.20 The obvious conclusion is to propose a higher density of development on the lower density Residential B zoned lands. In addition, the Residential B Zoned land located at the subject property and south to the Sea Views Subdivision, are northerly facing, providing greater opportunity for solar passive housing stock.

2.21 The broad nature of the proposed development is to create a number of smaller sized allotments that will accommodate a mix of specific house types that will reflect perceived demand and will result in overall property values that will fit into specific price bands or brackets. Specifically, the Applicant considers that the proposed development will enable both affordable as well as elderly persons housing. These two matters have directed and underpin the proposed subdivision layout.

2.22 Council has already initiated actions to assist growth and development proposals that will support new residential units including housing for the elderly persons and those on low to medium incomes. Kaikoura has been successful with a $7.8M contribution confirmed from Kainga Ora's Infrastructure Acceleration Fund. This contribution provides an incredible boost to the development of Kaikoura and shows the level of support from central government to Kaikoura's future urban development needs.

2.23 The contribution will assist the proposal and the wider community by enabling some of the off-site upgrades works for roading, pedestrian and cycling access. The Applicant is grateful for this assistance and happy to facilitate the development that will provide affordable and elderly persons housing options.

2.24 It is noted that the subject property has recently been used to accommodate the NCTIR temporary accommodation facility associating with the reinstatement of infrastructure following the 2016 earthquake located northeast of Culverden. The accommodation facility comprised a collection of Portacom type units placed about the property and providing bedroom and en-suite facilities. Other Portacom buildings provided communal recreation facilities including a dining hall, laundry and gymnasium.

2.25 Internal roading and parking facilities were also provided, and off-site works were undertaken to upgrade the intersection of Mt Fyffe and Ludstone Roads, as well as the widening and sealing of Mt Fyffe Road.

NCTIR temporary accommodation facility

2.26 The NCTIR accommodation facility has now been decommissioned, and the deconstruction works involved the removal of the buildings and infrastructures as well as restoration of the ground to an essentially pre-development form. This included both reshaping of the ground and re-establishing grass pasture. The off-site improvements to Mt Fyffe Road have been retained.

2.27 The important background matter in relation to this application is the use of the subject property for a period of time in an urban and somewhat high-density manner. Albeit for a temporary period, the property has provided an urban outcome that has been accepted by the community and has resulted in residential and traffic effects that were managed and mitigated to an acceptable extent.

2.28 Another relevant background matter concerns the proposed street lighting for the development. In short, the proposed outdoor lighting designed for the subdivision will be of a type that is endorsed by the Kaikoura Dark Sky Trust. The outcome is lighting that mitigates light pollution and will provide a standard for others to follow.

2.29 The Applicant has also been in on-going discussions with KiwiRail in relation to both development adjacent to the railway network, as well as for works within the railway corridor. As a result of these discussions, the Applicant is volunteering conditions which are not specific matters of control under the Kaikoura District Plan.

3.0 SITE DETAILS

3.1 The details of the subject property are as follows:

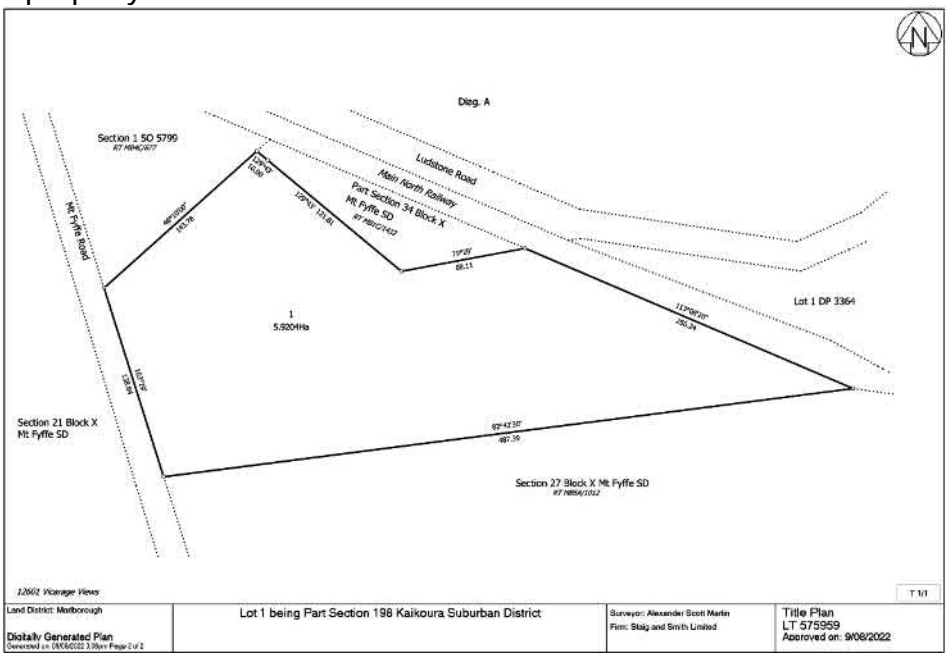
Location	2 Mt Fyffe Road, Kaikoura
Master Plan View of Site 	
Legal Description	Pt Sec 198 Kaikoura Suburban Registration District and Pt Sec 34 Blk X Mount Fyffe SD
Record of Title (RoT)	MB1C/1433 Ltd and MB1C/1432
Area	6.4746ha
Registered Owner	Vicarage Views Limited

3.2 The subject property is comprised in two separate RoT being MB1C/1433 Ltd and MB1C/1432. Copies of these are attached in **Appendix B**.

3.3 MB1C/1432 was part cancelled, leaving Pt Sec 34 Blk X Mount Fyffe SD in the ownership of the Applicant, with an area of 0.5542ha.

3.4 The Applicant has commenced the process to define the Limited as to Parcel title, MB1C/1433 Ltd, which had two portions of land removed in both 1972 and 1981. The Applicant has had the new Land Transfer Plan LT 575959 Approved as to Survey by LINZ and is waiting the legal process to Deposit the new Record of Title. Lot 1 LT 575959 is 5.9204ha and has been allocated RoT 1058371.

3.5 The subject property therefore totals 6.4746 hectares.



Lot 1 LT 575959

3.6 There is one interest registered on RoT MC1C/1432, as shown below. This interest is an historical and redundant interest, as it deals with a reservation of coal on alienations of land from the Crown.

Subject to Sec 8 Coal Mines Amendment Act 1950 (affects Pt Sec 34 Blk X Mount Fyffe Survey District)

3.7 There is no registration on either Record of Title restricting subdivision of the subject property.

3.8 The subject property was formerly the vicarage site for Kaikoura's Anglican Church. This historic link has been a factor in the name of the Applicant as well as the design and intent of the subdivision.

3.9 The subject property is approximately triangular in shape, with the railway line (and Ludstone Road) on its northern boundary. A Mainpower NZ substation is located in the northwest apex at the intersection of Ludstone and Mt Fyffe Roads. Mt Fyffe Road forms the western boundary, with the sealed carriageway terminating just beyond the entrance to the subject property. Farmland adjoins the southern boundary.

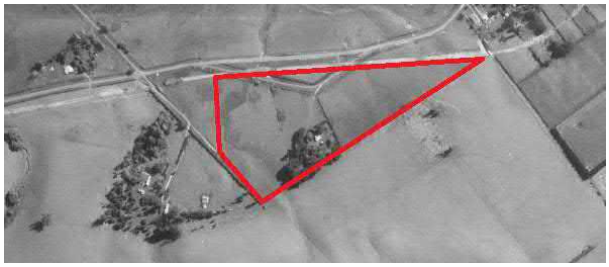
3.10 The subject property is located adjacent to the residential centre of Kaikoura. Existing residential development is located to the east of the subject property, accessed off Fyffe Avenue. The Sea Views Subdivision is development of Residential B land to the south of the subject property, separated by pasture which is also zoned Residential B.

3.11 The subject property is approximately 700m inland from the coast. It is a gentle, north facing slope with a maximum elevation difference of 13m with the highpoint at the existing vehicle crossing on Mt Fyffe Road and the low point near the Mainpower NZ substation. A small gully runs parallel to and just inside the Mt Fyffe Road boundary.

3.12 An area adjacent to Mt Fyffe Road has been "mounded" and planted with a number of plant species, as mitigation for the NCTIR temporary accommodation facility. The photograph below illustrates this area.

Landscape mounding on east side of Mt Fyffe Road

3.13 The subject property is rolling pasture, used in part for grazing cattle. It contains one residential dwelling and accessory buildings on the southern boundary. Retrolen's photographic data illustrates the main dwelling existing in the early 1940's. The photographs below illustrate the residential activity from the 1940s and today.



Early 1940's

Present Time

3.14 Vehicle access to the site is via Mt Fyffe Road adjoining the southern boundary.

3.15 The subject property is presently "serviced" in so far as a wastewater connection extends into the eastern sector and then continues along the south boundary. This connection is a pressure pumping pipeline that was installed in conjunction with the recent NCTIR temporary accommodation facility. It discharges into the main gravity network. The connection is not in present use since the decommissioning of the temporary accommodation facility.

3.16 The existing dwelling has a separate and traditional "on-site" wastewater treatment and disposal system, which is to be decommissioned when the dwelling is removed.

3.17 There is no nearby stormwater pipeline network, and the site discharges stormwater in an overland flow sense via natural ephemeral "watercourses" resulting from the ground contours.

3.18 The Council water supply network extends within Mt Fyffe Road, and a connection is provided into the site about the southwest corner. This connection services the existing dwelling.

3.19 There is an existing overhead power supply that spans over the western portion of the subject property. The conductors supply both 11kVA and 33kVA "high voltage" power from the substation on the north side of Ludstone Road. The infrastructure is part of the Mainpower NZ power network.

3.20 As part of the recent NCTIR temporary accommodation facility, Mainpower NZ relocated and undergrounded an 11kVA powerline which used to run within the property between the above substation and a second substation adjoining to the west, The undergrounded conductor is <u>not</u> located within the subject property.

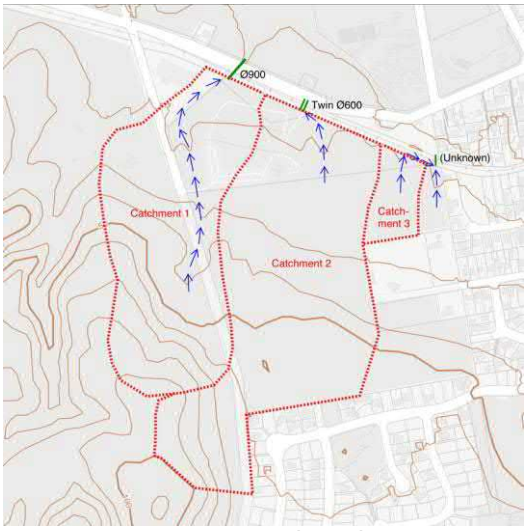
3.21 A Chorus communication network is in Mt Fyffe Road and underground connections extend to the existing dwelling.

3.22 There is a *contoured ephemeral watercourse* about the western side of the subject property that grades to the north and provides drainage to an existing culvert extending through the railway corridor and Ludstone Road to the north. Note that the *contoured ephemeral watercourse* has a catchment that extends into adjoining lands to the south and west.

3.23 There is a second *contoured ephemeral watercourse* through the mid portion of the subject property that also grades to the north and provides drainage to another existing culvert extending through the adjoining railway corridor and then turning east into open swales along the south side of Ludstone Road. Again, the *contoured ephemeral watercourse* has a catchment that extends into adjoining lands to the south.

3.24 A small portion of the site at the east corner grades to the north and provides drainage to a further existing culvert extending through the railway corridor. The catchment area is quite small and it includes the east corner of the site and adjoining lands to the south.

3.25 The sketch below broadly illustrates the above *contoured ephemeral watercourses* and associating catchments. The sketch also indicates the culverts through the adjoining rail lands to the north of the site.



Watercourses and catchments

3.26 The subject property is not located over an unconfined, semi-confined or coastal confiner aquifer. In addition, there are no nearby bores as identified on the Environment Canterbury (ECan) GIS.

3.27 Groundwater is estimated be at least 7m below ground level in the lower (north-eastern) part of the site and at least 5m below ground level in the upper (south-western) part of the site.

3.28 The ground conditions of the property are well understood as there have been extensive geotechnical assessments for the former NCTIR temporary accommodation activity. The Applicant has engaged Tetra Tech Coffey who were involved in this former activity, and they have provided an initial report on the nature of the ground. Subsequent to the initial report, a supplementary report has been provided in relation to the potential for karst formations within the property and further comments concerning potential liquefaction in the event of seismic activity. Both reports are attached in **Appendix D**.

3.29 In summary, Tetra Tech Coffey provide an opinion that the identified natural hazards are low risk so long as stormwater is appropriately controlled. The supplementary report considers the presence of 'open' karstic features (voids) below the site as low. Further, they consider that the subject property is *unlikely to experience liquefaction triggering as the limestone typically weathers to clayey soils which are less susceptible to liquefaction.*

3.30 Tetra Tech Coffey confirm that the site is suitable for development under s106 and in particular NZS3604:2011 type foundations.

3.31 Nearby activities can be summarised as follows:

- Mt Fyffe Road pastured farm area to the south of the application site, zoned Residential B. The property is owned by Lilian Alice Margetts and Wensley Margaret Smart.

- 21 Mt Fyffe Road residential dwelling within a pastured farm area to the west of the application site, zoned Rural. The property is also owned by Lilian Alice Margetts and Wensley Margaret Smart.

- 22 Mt Fyffe Road residential dwelling and power substation to the west of the application site owned by Mainpower New Zealand Ltd. Zoned Residential B with a Designation.

- 136 Ludstone Road residential dwelling to the north of the application site, zoned Rural. The property is owned by Matthew Edward Jacobsen and Genna Kaye Wells.

- Ludstone Road pastured farm area to the north of the application site (Lots 1 and 2 DP 547624), zoned Rural. The property is owned by Cynthia Margaret Boyd.

- Ludstone Road power substation to the north of the application site. The property is owned by Mainpower New Zealand Ltd. Zoned Rural.

- 115 Ludstone Road is the Department of Conservation's Base Facility and is part of the Residential A Zone.

- Coastal Pacific Railway to the north of the application site. The rail system is owned and operated by Kiwi Rail and is zoned Residential with a Designation.

3.32 The subject property is in close proximity to various urban facilities and amenities. Kaikoura High School is approximately 175m from the site and on the corner of Ludstone and Rorrisons Roads. St Josephs School is also on Ludstone Road and approximately 240m from the site. The Public Hospital is approximately 1.5km away by road, and the town centre is approximately 850m by road.

3.33 Mt Fyffe Road is a Legal Road and comprises a formed and sealed carriageway varying in width generally 6m wide. The carriageway is typical "rural road" with side shoulders and shallow stormwater swales. The road narrows as it passes beneath the railway line, with north bound traffic to give way. The overbridge has a span between piers of 7.8m and has a height restriction of 4.0m. The Mt Fyffe and Ludstone intersection was upgraded to allow safe movement into and out of Mt Fyffe Road as a result of the NCTIR temporary accommodation facility resource consent. An assessment has been undertaken on the effects of traffic from the proposed, which attached in **Appendix O**.

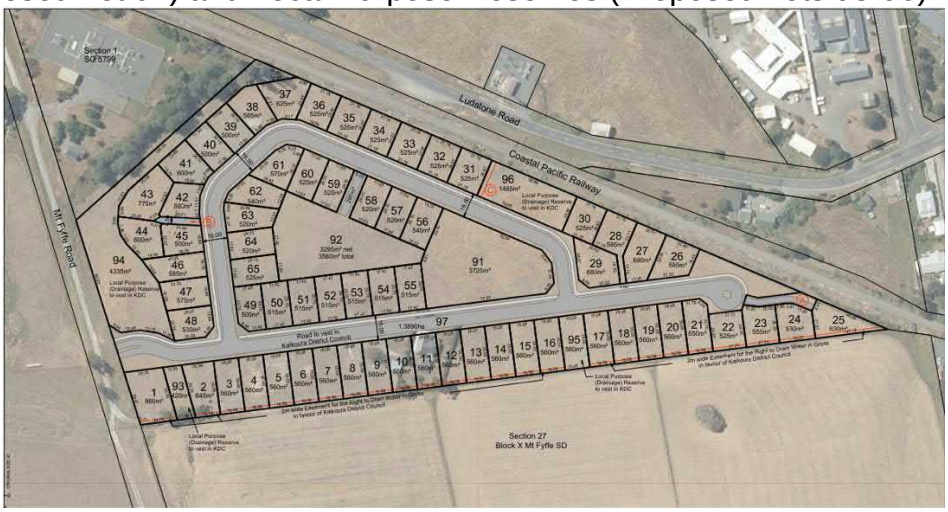
3.34 The subject property is not recorded in ECan's Listed Land Use Register (LLUR) as shown in **Appendix E**. The land has likely been used as pasture for farm grazing purposes and historical aerial photographs support this. Please refer to the desktop assessment in **Appendix F**. As such, there is no expectation that any activities have occurred to give rise to ground contamination that may be harmful to humans.

3.35 The subject property is not within a Statutory Acknowledgement Area or Deed of Recognition. Nor is the subject property a known Cultural Heritage Site or archaeological/heritage site.

4.0 PROPOSAL

Subdivision

4.1 The overall proposal is to undertake a 67-allotment subdivision to provide separate fee-simple ownerships for the new allotments as shown in the snapshot below and the Scheme Plan in **Appendix C**. The Applicant also seeks to create associated Road to Vest (Proposed Lot 97) and Local Purpose Reserves (Proposed Lots 93-96).



Snapshot of the Scheme Plan

4.2 Proposed Lots 1- 65 range from 500m^2 net area to 860m^2 net area, and with an average size of 553m^2. These allotments are proposed to be used for standard residential use with one dwelling per allotment.

4.3 Proposed Lots 91 and 92 are to have a net area of 3,725m^2 and 3,295m^2 respectively and are sought to be developed as a Multi Unit Residential Complex (MURC) with up to 10 residential units per allotment.

4.4 Easements A and B are proposed as Rights of Way and to convey services for three allotments each, being Lots 23-25 and Lots 42-44 respectively.

4.5 The Local Purpose Reserves to vest (Proposed Lots 93-95) include overland flow paths from the land to the south of the application site, whilst Proposed Lots 94 and 96 are to accommodate a stormwater detention pond each addressing the subject development and the upstream rural use. The reserves vary in size and shape based on catchment requirements.

4.6 Council has requested a 2m wide drainage easement in Gross along the southern boundary of the subject property to drain stormwater to Proposed Lots 93 and 95.

4.7 An easement will be required to convey electricity and communications through Proposed Lot 96.

4.8 The Road to Vest, Proposed Lot 97, has been designed to be 16m wide, in general accordance with NZS4404:2010 Land Development and Subdivision Infrastructure (NZS4404) standards for an E22 road design. Proposed Lot 97 is wider at the entrance from Mt Fyffe Road and the eastern boundary to provide a statement entrance and landscaping areas, as recommended in the Proposed Land Development Concept Design Report in **Appendix G** and the Landscape Report in **Appendix J**.

4.9 The subdivision development can be described on terms of the following items.

Existing Buildings, Service and Vegetation Removal.

4.10 The existing dwelling and associated accessory buildings will be removed. These demolition works will also involve the disconnection of the present services, and the decommissioning of the on-site wastewater treatment and disposal system.

4.11 The vegetation about the existing dwelling will be removed.

4.12 Some of the existing vegetation about Mt Fyffe Road will also be removed. This vegetation is presently about the “mounded area” beside the east side of Mt Fyffe Road and will not be compatible with the final landscaping and entrance features proposed for the development.

Construction Earthworks.

4.13 Earthworks are proposed to service the proposed subdivision and provide for two detention basins within the subject property to ensure that post-development flows do not exceed pre-development flow rates. Works are also proposed to ensure that within the subject property all discharges are able to be achieved by gravity means.

4.14 The earthworks exercise will comprise a site strip and stockpile of the organic “topsoil” layer about a portion of the site where ground levels will be altered. The stockpiles will be located centrally within the site and the soils will be tidily mounded and compacted to minimise sediment runoff and dust nuisance. Note that some of the organic “topsoil” may be removed from the site where it is surplus or unsuitable to the development.

4.15 Conceptual details of the earthworks as shown on Sheets 2 and 3 of the Proposed Land Development Concept Design Plans in **Appendix G**. Note that the maximum depth of excavations will be in the order of 2m with a typical excavation depth of 0.7m. The maximum depth of fills will be in the order of 3.5m with a typical fill depth of 1.5m.

4.16 The Applicant volunteers that at the time of applying for Engineering Plan approval, that a Detailed Dust, Erosion and Sediment Control Plan (DESCP) will be included in the plan set.

Roading.

4.17 External to the subject property, in **Appendix O**, Urban Connection recommend that the carriageway within Mt Fyffe Road be widened to 8m wide to accommodate the additional traffic flows, except under the Railway over bridge where the current formation is appropriate. A Flag light is recommended at the intersection with Ludstone Road.

4.18 Urban Connection acknowledges that Council is undertaking a project to provide a Shared Pathway along both the southern side of Ludstone Road and the eastern side of Mt Fyffe Road which will connect the subject property within the existing footpath network on Ludstone Road.

4.19 Urban Connection recommend that the Council considers reducing the posted speed limit on Ludstone Road in the vicinity of the intersection with Mt Fyffe Road to 50 km/h.

4.20 Within the subject property, the subdivision includes the provision of a new roading network. The main road is aligned parallel to the south boundary with a 9.5m diameter turning circle in the cul-de-sac. A secondary Road will "crescent" off the above Road. Both of these Roads will vest with Council.

4.21 The proposed Roads have been designed to generally comply with the NZS4404 E22 standards. This includes a 16m legal width with an 8m carriageway, enabling on street parking, and with a 2m wide footpath on one side, as shown in the Proposed Land Development Concept Design Report in **Appendix G**.

4.22 The proposed internal intersection of the two roads will breach the setback between intersections, with the first intersection being ~65m back from Mt Fyffe Road.

4.23 Note that street lighting will be provided within the new Roads as shown in the Proposed Land Development Concept Design Report in **Appendix G**.

4.24 Urban Connection recommend a posted speed limit of 40km/h on Mt Fyffe Road and within the subdivision is recommended as suitable for this residential area.

4.25 The Applicant appreciates the naming of new Roads is addressed by Council once a Subdivision Consent has issued. When this occurs, the Applicant will continue discussions with Council and work towards agreed Road names. To be in keeping with the historic occupation of the site, the Applicant proposes that road names have an historic link to the Anglican Church.

4.26 Continuing to connect with the Vicarage theme, the Applicant seeks to construct an entrance structure into the subdivision over the footpath in the form of a lychgate. This will link the subdivision to the pastoral care notion of community.

Vehicle Access.

4.27 A shared private Right of Way access is proposed about the eastern corner of the site. Right of Way A will extend from the cul-de-sac head and will provide access to three allotments (Proposed Lots 23 – 25). A second shared Right of Way access is proposed to the west of the site and will provide access to two allotments (Proposed Lots 43 and 44) with an opportunity for a 3rd lot (Proposed Lot 42) to also have access if required. The Applicant proposes to form and seal these Rights of Way.

4.28 The Applicant seeks to not form a turning head on the two Rights of Way as required by NZS4404, as all allotments have sufficient room "on site" to enable turning.

4.29 A wide private accessway leg will be provided for Proposed Lot 92; where 10 residential units as a MURC are proposed. The Applicant proposes to form the associated vehicle crossing to the boundary.

4.30 The Applicant seeks to not form vehicle crossings to the remaining allotments, instead leaving this to the purchasers upon determining proposed building design and placement. A Consent Notice is volunteered advising that the crossings are to be formed to Council's standards.

4.31 Urban Connection recommend in their Traffic Impact Assessment attached as **Appendix O** that vehicle crossings for corner allotments are to be provided from the lower volume road.

Urban Services – Stormwater.

4.32 A gravity stormwater network will be provided to collect stormwater from all of the proposed allotments, Roads and private access's and discharge it into the Council network via pipelines beneath the Coastal Pacific Railway and open swales in Ludstone Road.

4.33 The Applicant has sought to ensure that the development runoff from the subject property will not exceed pre-development flows. The Applicant has consulted with Council over the stormwater requirements, and the Council has sought on site detention. The proposed Stormwater layout is shown on Sheet 4 of the Proposed Engineering Works in **Appendix G.**

4.34 The proposed stormwater design has been peer reviewed by Storm Environmental Ltd and a report from them is also attached in **Appendix G**.

4.35 The network will comprise individual lateral pipelines into each allotment, sumps within the carriageways of the new Roads and private access's, main pipelines generally within the Roads and two detention ponds in Proposed Lots 94 and 96 that have been designed to ensure adequate sizing and volume capacity.

4.36 The first detention pond is Proposed Lot 94 will capture water from the catchment above the application site. No additional stormwater is being directed into this gully.

4.37 The second, larger detention pond is located within Proposed Lot 96. The location of the detention pond is by a low point which collects stormwater and drains under the rail corridor via an existing culvert. The Applicant proposes to undertake works within the rail corridor to extend the entrance of the existing culvert into the subject property, thereby removing detention within the corridor.

4.38 Council has also indicated that they would like to have an Easement in Gross for the drainage of stormwater along a proposed drain on the southern boundary of the subject property, as shown on Lots 1-25 on the Subdivision Proposal Plan on Sheet 1 of **Appendix C**.

4.39 Note that the existing discharges through the west portion of the site will remain, and the development will not add to the same to any material extent. The new Road extending off Mt Fyffe Road will incorporate a culvert structure to enable discharges from the catchment to the south and west to continue.

Urban Services – Wastewater.

4.40 A gravity wastewater network will be provided to collect wastewater from the proposed allotments and discharge it to the existing reticulated network in Ludstone Road, as shown on Sheet 5 of the Proposed Engineering Works in **Appendix G**.

4.41 The proposed network will comprise individual lateral pipelines into each allotment and main pipelines generally within the Roads. The system will then extend beneath the Coastal Pacific Railway and discharge into the existing pipeline within Ludstone Road.

Urban Services - Water Supply.

4.42 A pressure water supply network will be provided to convey domestic water to all of the proposed allotments. This will comprise mains and submains within the new Roads, and individual connections to each allotment, as shown on Sheet 6 of the Proposed Engineering Works in **Appendix G**.

4.43 The new network will connect into the Kaikoura Urban Water Supply from the existing water supply network in Mt Fyffe Road.

4.44 Note that the new network will also provide firefighting capability; fire hydrants will be provided on the water mains.

Electricity.

4.45 The Applicant is liaising with Mainpower NZ for the provision of power supplies to all of the proposed allotments.

4.46 There are existing overhead 11 and 33kVA lines crossing the subject property which run from the Ludstone Road Substation, across the railway corridor and then extend south to Mt Fyffe Road and beyond. These lines are to be undergrounded through the proposed subdivision. An easement will be included on Proposed Lot 96, and then the lines will be located within the Road Reserves. The lines will reconnect with the existing power pole on Mt Fyffe Road.

4.47 The new network (cables and transformers etc) to service each allotment within the subdivision will be installed within the new Roads and distribution boxes will be provided at the Road boundaries. Ducts will be provided the Rights of Way to enable power cables to be laid to the net area of those allotments using the same.

4.48 The nature of the new power supplies will be in terms of Mainpower NZ's reticulation requirements. All new reticulation will be underground as shown in the concept servicing plans attached in **Appendix H**.

Communications.

4.49 The Applicant is also liaising with Chorus for the provision of communications to all of the proposed allotments. The new network (fibre cables and associated infrastructure etc) will be installed within the new Roads and "connections" will be provided at the Road boundaries. Ducts will be provided within all private accesses to enable communications cables to be laid to the net area of those allotments using the same.

4.50 The nature of the new communication supplies will be in terms of Chorus's reticulation requirements, which requires upgrading the fibre network and extend it within Mt Fyffe Road, as shown in the concept servicing plans attached in **Appendix I**. All new reticulation will be underground.

Railway Corridor.

4.51 As infrastructure works will cross the Coastal Pacific Railway corridor, a Deed of Grant is required to occupy KiwiRail land. The Applicant has been consulting with KiwiRail regarding this.

4.52 Two matters were raised, one in relation to the Deed of Grant process in relation to services crossing the corridor, and the second in relation to future land use in relation to reserve sensitivity.

4.53 The Applicant has provided KiwiRail with copies of the Proposed Engineering Works in **Appendix G** and has advised KiwiRail that once consent is issued, they will undertake a topographic survey around the existing swale on either side of the twin 600mm pipes to allow the detailed design to proceed. The engineering design for the detention pond will ensure that there will be no ponding of water about the scruffy dome manhole from the existing reticulation. The engineering plan will be provided to KiwiRail for approval, as required by the Property Grant process.

Reserves.

4.54 A total of four Local Purpose Reserves are proposed within the development. These are all for the primary purpose of accommodating portions of the stormwater network and enabling the continuation of the existing overland flow type stormwater discharges from the catchments to the south and west.

4.55 The Road Reserves will primarily accommodate the new roadways, and will also accommodate some of the landscape features, about the main entrance from Mt Fyffe Road and about the turning facility at the east corner of the site.

Landscaping.

4.56 The Applicant proposes a number of landscape features to enhance the amenity of the development. Details of the landscaping features are attached in **Appendix J**.

4.57 The features include carriageway treatments, decorative walls about the Road boundaries for the main Mt Fyffe Road entrance and intersections with built in seating, vegetation planting within the Road corridors, and themed structures about the Road footpath and turning facility. Note that the landscaping features will be located within the Road corridors and not within the proposed allotments.

4.58 Continuing to connect with the Vicarage theme, the Applicant seeks to construct an entrance into the subdivision over the footpath in the form of a lychgate. This will link the subdivision to the pastoral care notion of community.

Future Land Uses within the Vacant Allotments

4.59 The Applicant does not intend to build dwellings within the subdivision themselves. However, to provide certainty to Council and the community as to the on-going development nature of the subdivision, the Applicant seeks to obtain a Land Use Consent to waiver some of Council's Residential B Planning Standards and also to volunteer some additional standards.

Density, Building Coverage and Height.

4.60 The Applicant seeks to use two development types when considering the future residential activities within the proposed allotments.

4.61 Housing Type 1 is associated with Proposed Lots 1-65. This housing type provides the most flexible opportunities on the allotments depending on purchasers needs, enabling development with a maximum site coverage of 35% and a maximum build height of 8m, being the same as the permitted standards within the Residential A Zone. This is shown as Green areas on the Land Use Plan attached as Sheet 2 in **Appendix C**.

4.62 Housing Type 2 is associated with Proposed Lots 91 and 92. This is sought to be a MURC – a multi unit residential complex. The Applicant seeks to have up to 10 residential units as a MURC on each of Proposed Lots 91 and 92, or a yield of one residential unit per 300m^2, with a maximum site coverage of 35% and a volunteered maximum build height of 5.5m. This is shown as Yellow/Hatched areas on the Land Use Plan attached as Sheet 2 in **Appendix C**.

Land Use Plan

4.63 As such, the Applicant seeks to waiver the density requirements from the Residential B performance standard of 25%, to a Residential A performance standard that enables a maximum site coverage of 35%.

4.64 The Applicant seeks that Lots 1-65 comply with the Residential B performance standard that enables building up to 8m high, whilst they volunteer a limited building height restriction of 5.5m on Proposed Lots 91-92 for the MURC.

4.65 The Applicant also volunteers a density of one dwelling per allotment on Proposed Lots 1-65 (shown Green) and as part of a MURC for up to 10 dwellings on Proposed Lots 91 and 92 (shown Yellow), or one residential unit per 300m^2.

Ownership of Multi Unit Residential Complex (MURC).

4.66 There is an expectation that individual ownership of each of the residential units within each MURC will be required once the units have been erected. The nature of the land tenure may be via a Unit Title Development (UTD), and each residential unit will comprise a Principal Unit, and Accessory Unit for parking if not attached to the dwelling. A Body Corporate will be formed as part of the UTD and this will provide for the ongoing management of MURC.

4.68 It is important to note that any such subdivision under the UTD format is not part of this application. If and as the MURC's are developed and require separate ownership, a separate subdivision application will be prepared and submitted to Council for processing and approval. Clearly the subdivision proposal details will fully reflect the details of the MURC.

Setbacks.

4.69 The Applicant seeks to comply with Front Boundary Setbacks, as well as side and rear boundary setbacks, with some minor exceptions.

4.70 The Applicant seeks to reduce the side boundary setbacks against either reserves, Rights of Way or accesses to rear sites to 1m. Details of which sites are affected by this reduction are shown as red lines on the Land Use Plan attached as Sheet 2 in **Appendix C**. The reason for this reduction to boundary setbacks is that these areas are not part of an outdoor living space and will not be adversely affected by in terms of daylight or privacy.

4.71 The Applicant also seeks to reduce the side boundary setbacks to 1m within proposed Lots 91 and 92.

Recession Planes.

4.72 The Applicant seeks to comply with Recession Planes as set out in the operative District Plan, with a noted exception.

4.73 The Applicant volunteers a new performance standard, that where there is a common wall between buildings on adjoining lots, Recession Planes do not apply.

4.74 In relation to the MURCs on Proposed Lots 91 and 92, the Applicant seeks that Recession Planes only relate to the perimeter of the property boundary and not within the site.

Garage Setbacks.

4.75 The Applicant volunteers a new performance standard in relation to garages. The Applicant volunteers that where the garage door is to open parallel with the road boundary, the garage door is to be setback a minimum of 5m from the front boundary. This is to enable adequate parking on the driveway in front of the garage.

Kaikoura District Plan Powerline setbacks.

4.76 There is an existing overhead 11 and 33kVA electricity line crossing the subject property which is recorded in the Planning Maps as a 66kVA line. An additional line is also recorded along the boundary of the subject property with the Railway Corridor. The latter has already been relocated off the subject property and undergrounded.

4.77 As part of the subdivision, the Applicant will replace the existing overhead 11 and 33kVA lines with underground lines located within Council Reserves. As such, a building setback from the lines is not required.

4.78 The Council has advised that as a technicality, as the electricity lines are recorded on the District Plan Planning Maps, even through the subdivision will remove the lines, a consent is required to build within 20m of the same.

Outdoor Living Spaces.

4.79 For Housing Type 1 allotments, being the Green areas shown on the Land Use Plan attached as Sheet 2 in **Appendix C**, the Applicant proposes that Outdoor Living Spaces shall be provided in accordance with the provisions of the operative District Plan, being 70m^2 with a diameter of 5m.

4.80 For the MURC housing on Housing Type 2, being the Yellow areas shown on the Land Use Plan attached as Sheet 2 in **Appendix C**, the Applicant seeks a waiver from the operative District Plan Performance Standards. The Applicant seeks a varying scale of Outdoor Living Space, depending on the number of bedrooms provided for each residential unit as follows.

- Min area 10m^2 with 2m min diameter for a 1 bedroom unit.
- Min area 20m^2 with 3m min diameter for a 2 bedroom unit.
- Min area 30m^2 with 4m min diameter for a 3 + bedroom unit.
- Up to 5m^2 of Outdoor Living Space may be roofed and one side may be enclosed to provide a sheltered area.

Fencing.

4.81 The Applicant volunteers a new performance standard in relation to fencing along the southern boundary of the subject property, to be registered as a Consent Notice on the Records of Titles. Whilst the property to the south of the subject property is being used for rural purposes, the southern boundary fencing of Proposed Lots 1-25 shall be a farm fence, of at least a five-strand post and wire type.

Railway Corridor.

4.82 In consultation with KiwiRail, the Applicant volunteer's new performance standards in relation to noise and vibration restrictions within proximity to the railway corridor.

4.83 The Applicant seeks to retain the existing permitted building setback from rear boundaries of 2m.

4.84 The Applicant volunteers that a Consent Notice be registered on the Records of Title of those properties within the 40m Railway Noise Buffer, as shown on the Land Use Plan attached as Sheet 2 in **Appendix C** with the following requirements:

- New buildings or alterations to existing buildings containing noise sensitive activities, must be designed, constructed and maintained to achieve train-traffic vibration levels complying with class C of Norwegian Standard NS 8176.E:2005 "Vibration and Shock – Measurement of vibration in buildings from land based transport and guidance to evaluation of its effects on human beings".

- Indoor design noise level as a result of noise from Rail traffic must not exceed the following levels:

  (i) Bedrooms: 35dB$_{LAeq(1h)}$

  (ii) Other habitable spaces: 40dB$_{LAeq(1h)}$

  (iii) If windows must be closed to achieve the design noise levels in above, the building must be ventilated to meet clause G4 of the Building Code (Schedule 1)

4.85 The Applicant also volunteers a "No Compliant" Covenant be registered on the titles of those lots within the 100m Railway Noise Buffer.

<u>MURC Access.</u>

4.86 The operative District Plan has a limitation through NZS4404 that the number of users off a shared access is limited to 6. The Applicant seeks that for the MURC developments on Proposed Lots 91 and 92, that up to 10 users are able to be accessed off a shared access.

4.87 The operative District Plan requires that where more than 2 residential units share an access, there shall be a turning area provided to ensure vehicles exit in a forward direction. At the time of developing Lots 91 and 92, such matters will need to be taken into consideration.

4.88 In addition, the operative District Plan requires two car parks per residential unit. The Applicant seeks that for the MURC developments on Proposed Lots 91 and 92, that one car park is provided per residential unit. The Applicant volunteers a dedicated visitors park be provided for every 5 residential units.

<u>MURC Waste Management.</u>

4.89 The Applicant volunteers that for the MURC developments on Proposed Lots 91 and 92, that all waste which is stored outside shall be screened from public view and adjacent residential properties.

5.0 KAIKOURA DISTRICT PLAN RULES ASSESSMENT

5.1 The application area is located within the Residential B Zone, as shown on Map 45 of the operative District Plan – copied below.

5.2 The application area is adjacent to Designation D31 (KiwiRail's Coastal Pacific Railway) along its northern boundary and D42 (Mainpower NZ electricity substation) to the northwest.

5.3 The Planning Maps show two high voltage transmission lines (66kV or higher). The northern line has already been removed from the application site and is now located (underground) within the road and rail corridor. It is noted that both powerlines are not 66kVA or higher, being 11kVA and 33kVA.

5.4 The application area is within a Liquefaction Hazard Overlay as defined in the recent Plan Change 3 relating to Natural Hazards. This Plan Change is now operative.

5.5 Under Appendix M of the operative District Plan both Ludstone and Mt Fyffe Roads are Collector Roads. That noted, it is arguable that the portion of Mt Fyffe Road to the application property is more a Local Road as this is a minor no-exit road currently servicing three properties and physically ending about the south west corner of the application property. Mt Fyffe Road then continues to the south as an unformed legal road.

5.6 A detailed assessment of the Performance Standards set by the operative District Plan is attached in **Appendix K** of the application.

5.7 Note that the application property is not located in any other specific operative District Plan areas or overlays.

Subdivision

5.8 The writer has assessed the proposal against the Chapter 13: Subdivision Performance Standards, and the full details are provided in **Appendix K**. In summary, the Applicant seeks to breach allotment sizes as shown on the Subdivision Proposal Plan on Sheet 1 within **Appendix C**, with allotments having a minimum area of 500m^2. This results in an activity status of Restricted Discretionary in 13.11.2(1).

5.9 The writer has also assessed the proposal against the Chapter 12: Transport Performance Standards noting the provision of new Roads with intersections and requirement to provide vehicle crossings to all new allotments. Again, the full details are provided in **Appendix K**. Under Rule 12.7, where the proposal does not comply with one or more of the Performance Standards, it shall be a Restricted Discretionary Activity.

5.10 In this instance, the proposed roading design seeks to reduce the spacing between intersections from 125m to ~65m, and to construct only one footpath, albeit 2m wide. The Applicant seeks to undertake landscaping features such as a lychgate over the footpath as an entrance feature to the subdivision and seating within the roadside berm. These departures from the standards, results in the roading being a Restricted Discretionary Activity.

5.11 The Chapter 12 Transport matters also identify high traffic generating activities; that generate more than 100 traffic movements per day. Where this threshold is met, the activity is Restricted Discretionary. The proposed subdivision will involve in excess of 100 daily traffic movements, and a Traffic Impact Assessment has been provided in **Appendix O**.

5.12 From a vehicle crossing perspective, the Applicant seeks to defer this until the land use consent stage, by way of a consent notice. Accesses are to be formed to Council standards.

5.13 The writer has also assessed the proposal against the Chapter 10: Utilities Performance Standards noting the provision of relocating the existing powerlines and installing new connections to both Council's reticulated services and electricity and communications to all new allotments. Again, the full details are provided in the assessment in **Appendix K**. The proposal complies with the Permitted Activity standards set in Rule 10.5.1.

5.14 Considering Chapters 10, 12 and 13, the subdivision and associated roading is therefore a Restricted Discretionary Activity.

Future Land Uses within the Vacant Allotments

5.15 Residential activities are controlled by specific provisions within Chapter 18 of the operative District Plan. Additional standards in Chapters 12 Transport and 13 Subdivision are also relevant to residential activities. A detailed assessment of compliance with the Performance Standards is provided in **Appendix K**.

5.16 As a result of the subdivision creating allotments less than 1000m^2, the future residential land use on each of Proposed Lots 1-65 will require resource consent. The Applicant is volunteering specific Performance Standards for those matters where operative District Plan's Performance Standards for a permitted residential activity cannot be met.

5.17 The Applicant is also seeking consent for purchasers of Proposed Lots 91 and 92 to be able undertake a MURC with up to 10 residential units per Record of Title. Again, the Applicant is volunteering specific Performance Standards for those matters where the operative District Plan's Performance Standards for a permitted residential activity cannot be met, including to breach the Residential B Zone's Performance Standards for Outdoor Living Space for the two MURCs depending on the number of bedrooms in each unit.

5.18 Where residential activities in the Residential B Zone can comply with the Performance Standards set in Rule 18.7, they are permitted activities. Breaching those standards is a Restricted Discretionary Activity.

5.19 In particular, the Applicant seeks to breach the Residential B Zone's Performance Standards for building coverage, in favour of the Residential A performance standard of 35% across the subject property.

5.20 The Applicant seeks to enable proposed Lots 1-65 (the green area shown on the Land Use Plan on Sheet 2 within **Appendix C**) to have a density the same as the Residential A performance standard, being one dwelling per title or 500m^2. Within the Yellow area, being the MURCs on proposed Lots 91 and 92, the Applicant seeks to have up to 10 residential units or one dwelling per 300m^2.

5.21 The Applicant seeks to comply with the Residential B building height performance standard, being 8m, on proposed Lots 1-65 (the green area shown on the Land Use Plan on Sheet 2 within **Appendix C**). Within the Yellow area, being the MURCs on proposed Lots 91 and 92, the Applicant volunteers a reduced building height of 5.5m.

5.22 The Applicant seeks to breach some internal boundary setbacks (reducing to 1m subject to the exceptions Rule under 18.8 as shown as a red line on the Land Use Plan on Sheet 2 within **Appendix C**).

5.23 The Applicant seeks clarification via a volunteered condition for recession planes where there is building with a common wall along a boundary.

5.24 The writer has assessed the roading design for the subdivision against the Performance Standards Chapter 12: Transport. As part of the subdivision, the Applicant sought to not form the Rights of Way A and B to Council's standard with turning bays and this being a Restricted Discretionary Activity Under Rule 12.7. The purchasers of those lots which access off the shared accesses will need to show turning curves at the time of building consent, to show that vehicles are able to exit in a forward direction.

5.25 In relation to the MURCs on Proposed Lots 91 and 92, the Applicant seeks to be able to have up to 10 users on an access, with turning to be provided on site. The Applicant seeks to waive the requirements for two car parks per residential unit within the MURCs, instead having one park per unit and a visitor park per five residential units. These are Restricted Discretionary Activities Under Rule 12.7.

5.26 As part of the subdivision, the Applicant sought to not form vehicle crossings, leaving this to the purchasers by way of Consent Notice. All accesses not created at the time of the subdivision are to be formed to Council's standards.

5.27 An assessment of the installation of services under Chapter 10: Utilities was undertaken in relation to the Subdivision. No additional services are required for the land use.

5.28 Under Rule 18.6, the proposed Future Land Use of one dwelling per allotment for Proposed Lots 1-65 and a MURC with a maximum number of 10 residential units on each of Proposed Lots 91-92 is a Restricted Discretionary Activity.

6.0 RMA ASSESSMENT

6.1 In addition to the specific requirements of the operative District Plan, Council is required to consider various matters detailed in the Resource Management Act, and as specified in sections 106, 108 and 220. Comments on these matters are provided below.

Section 106 Resource Management Act

6.2 Section 106 RMA deals with circumstances where a subdivision application can be further controlled or refused if the land is subject to natural hazards, future activities will contribute to adverse effects resulting from natural hazards or there is insufficient provision for legal and physical access.

6.3 Tetra Tech Coffey have provided reports on the geotechnical conditions of the property, attached as **Appendix D**. The two reports comment on natural hazards of a type that reference to s106 RMA, and these are detailed in section 8 of their report.

6.4 In summary, the reports conclude:

Erosion	*risk is low.*
Falling Debris	*probability is negligible and therefore risk is similar.*
Slippage	*risk of slope failure is very low.*
Inundation	*risk is considered to be low.*
Subsidence	*Karst Formation – the presence of 'open' karstic features (voids) below the site is considered low.* *Liquefaction Induced Settlement – effects of settlement are low and therefore risk is similar.* *Static Settlement – risk is low provided earthworks are carried out to relevant standards.*

6.5 In light of these comments, the risks associated with natural hazards is considered to be low.

6.6 To mitigate potential static settlements, all earthworks involving filling will be carried out in accordance with the standards in NZS4431:2022. Again, a consent condition requiring this is appropriate and will be accepted.

6.7 In respect of the access criteria, there is adequate provision for legal and physical access and egress to/from the properties via the new Roads and private accessways that, in turn, connect to Mt Fyffe Road.

6.8 Given the above, we consider that there are no grounds to refuse to grant a subdivision consent pursuant to s106 RMA.

Section 108 Resource Management Act

6.9 Section 108 addresses the types of conditions which may be imposed on resource consents. It allows the consent authority to impose conditions that are considered to be appropriate, such as where the condition is required to mitigate an adverse effect, or to address an applicable regional rule or a national environmental standard.

6.10 Council may also accept the conditions volunteered by the Applicant.

6.11 Financial contributions can be imposed via a condition. However, we understand that Kaikoura District Council does not utilise this opportunity, and now imposes Development Contributions under the Local Government Act 2002. We comment on this later in the application.

Section 220 Resource Management Act

6.12 As it relates more so to subdivisions, the consent authority can impose conditions described in s220. A specific analysis of this is provided below.

6.13 Section 220 deals more so with conditions specific to subdivision consents. It allows the consent authority to impose conditions that are considered to be appropriate, and may include:

- Provision of esplanades and vesting ownership of land.
- Amalgamations.
- Controls on future structures within allotments.
- Protection of land from natural hazards.
- Control of filling.
- Creation of easements.
- Surrender of redundant easements.

6.14 Some of these matters are referenced within the operative District Plan via the Rules, however others are not. A specific analysis of the matters not specifically referenced is provided below.

6.15 Esplanade provisions and vesting ownership of lands in a coastal marine area or the bed of a lake or river is not applicable to the proposal.

6.16 There are no proposed amalgamations within the proposal.

6.17 Land Use consent is being sought for the controls of future structures within the allotments. The matters of control reflect a mixture of the Permitted performance standards for the Residential B zone, except where sought and volunteered by the Applicant in the body of the application.

6.18 The subdivision is subject to assessment and control under s106 Resource Management Act. The controls to mitigate adverse effects from natural and other hazards is addressed within this part of the Act and we refer you to the comments relating to the same.

6.19 The proposal involves earthworks and areas of filling. The earthworks will be undertaken in accordance with the requirements of NZS 4431:1989 Code of Practice for Earth Fill for Residential Development. A GeoProfessional will certify that any fill is in accordance with Appendix A of that standard.

6.20 A number of easements will be required to fully protect access, services and discharge of stormwater. These will be detailed on the legal survey dataset, and where a requirement of the subdivision, will be detailed in a Memorandum. This ensures that the easements will be "conditional" and referenced on the Record of Title with a s243(a) Resource Management Act memorial.

Section 243 Resource Management Act

6.21 There are no existing subject easements noted on the Records of Title. Hence no formal revocations are necessary.

7.0 CONSULTATION

7.1 The Applicant has considered the effects of the proposal on the surrounding area.

7.2 The Applicant has liaised with KiwiRail who own and operate the Coastal Pacific Railway adjoining the north boundary, as part of the infrastructure required to service the subject property crosses the Coastal Pacific Railway corridor. A copy of the Subdivision Proposal Plan (**Appendix C**) and the Proposed Engineering Works (**Appendix G**) was provided to them for their review. At this time we have not received their formal written approval, however they have raised two matters, one in relation to the Deed of Grant process in relation to services crossing the corridor, and the second in relation to future land use in relation to reserve sensitivity.

7.3 We can summarise the nature and extent of the consultation as follows.

Would the developer be accepting of the following consent notices?

1 A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of Lot [insert here] to require noise attenuation as follows:

1. Buildings within 100m of the Railway:

a. New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 100 metres from the railway must be designed, constructed and maintained to achieve train-traffic vibration levels complying with class C of NS 8176E:2005.

b. New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 100 metres from the railway must be designed, constructed and maintained to ensure that the following internal design levels are not exceeded:

- *35 dB LAeq(1 hour) inside bedrooms*
- *40 dB LAeq(1 hour) inside other habitable rooms*

2. A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of [insert here] to advise future owners/occupiers that the said lots are located adjacent to a designated railway corridor, the owners/occupiers of Lot [insert here] must accept the effects of the railway use permitted by the designation of the adjacent corridor without complaint.

7.4 The Applicant has reviewed case law regarding KiwiRail and possible inclusion of Item 1 in District Plans around the Country. The review of case law shows that this is an acceptable condition to impose on new buildings adjacent to the railway network, however in a number of RMA 2nd generation Plans the 100m buffer has been reduced to 40m. The Applicant therefore has gone back to KiwiRail with a 40m Noise Buffer Setback as shown on the Land Use Plan on Sheet 2 of **Appendix C**, which has been accepted.

7.5 The Applicant has agreed to register a 'No Complaints' Covenant on those allotments within 100m of the railway line.

7.6 The Applicant is awaiting further response to these preliminary volunteered conditions, as set out in the Volunteered Subdivision Performance Standards in **Appendix L**.

7.7 In relation to the Deed of Grant process, the Applicant has advised KiwiRail that once consent is issued, they will undertake a topographic survey around the existing swale on either side of the twin 600mm pipes to allow the detailed design to proceed. The engineering design for the detention pond will ensure that there will be no ponding of water about the scruffy dome manhole from the existing reticulatoin. The engineering plan will be provided to KiwiRail for approval, as required by Property Grant process.

7.8 The Applicant has also liaised with Mainpower in relation to the works adjacent to their substation and the proposal to underground the 11KVa and 33KVa lines through the application site. They have also considered the servicing of the subdivision. They have indicated support for the proposal, and noted the need for easements through Proposed Lot 96, as included in the Volunteered Subdivision Performance Standards in **Appendix L**.

7.9 The Applicant also liaised with Chorus in relation to servicing the subdivision. They have indicated support for the proposal, with services coming from Mt Fyffe Road.

7.10 The Applicant has undertaken pre-application consultation with adjoining landowners. Following completion of the application, a new round of consultation will be undertaken with these parties.

7.11 Attached in **Appendix N**, are the summary documents relating to the pre-application consultations undertaken with adjoining land owners, and service providers. We acknowledge that the Land Use components of the application have altered from that included in the pre application documentation. Notwithstanding, these documents provide a clear illustration if the general support to and approval of the overall development by may, if not most, of the adjoining owners.

7.12 One neighbour indicated that they would not support the application, nor even a complying Residential B style subdivision. As such, the Applicant seeks to continue with the current application, subject to public notification.

8.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

8.1 Every resource consent application is required under the Fourth Schedule of the Act to be accompanied by an assessment of effects on the environment appropriate with the nature and scale of the proposed activities. The following sets out the actual and potential effects on the environment:

Subdivision Activity

8.2 The assessment of environmental effects should cover the specific matters of non-compliance with the subdivision rules that result from the subdivision activity. In this instance we note that the proposal is fully compliant with all but one of the present Performance Standards.

8.3 The proposal does not comply with Performance Standard 13.12.1 relating to allotment sizes. The consequence of this is an activity status of Restricted Discretionary under 13.11.2. Given this, a focused assessment is necessary in respect of the same.

8.4 The writer considers that the allotment sizes, based on the Residential A standards, is appropriate as a consequence of a broader and earlier consideration of how the township of Kaikoura should promote growth and development within its urban environs, given the exhausted allocation of Residential A land.

8.5 The proposed subdivision seeks to encourage new residents who will contribute to the overall growth and development of the town. These new residents will add and contribute to the community in a socially positive manner, as well as providing an expanded domestic customer base for the business sector. They will also bolster the “employee pool” that will support new business growth.

8.6 In order to encourage new residents, it is important to consider the nature of residential accommodation that meets their needs and provides a realistic opportunity for home ownership.

8.7 New residents can either accommodate within existing residences that are available, or in new residences that they build. To make existing residences available, the existing residents need the opportunity to move into new accommodation that is suitable for their changing circumstances and lifestyles.

8.8 The operative District Plan provides the frame for development of residential allotments. It provides for two densities of development within the town. In a broad sense the Residential A zone enables allotments of 500m^2 average net area, and Residential B enables allotments of 1,000m^2 average net area.

8.9 A high proportion of the Residential A zone is already developed, whereas the Residential B zone lands are far less developed. There seems little, if any, opportunity to develop existing Residential A lands to provide a significant number of vacant allotments in an immediate, efficient and cost effective manner. Vacant Residential B lands are more available and of a size and shape that makes them more attractive to urban development.

8.10 The view is that there is limited opportunity for affordable new medium density accommodation in the town, and it is important to undertake some development to provide vacant allotments of this density that can be built on.

8.11 That said, care is required to provide vacant allotments that are “fit for purpose” and will provide accommodation that meets the needs of those who are looking for opportunities for new residences.

8.12 It is considered that the proposed ~500m^2 allotments will be more appropriate to meet the needs of the community at this time and looking into the future. Smaller allotments will better suit modern residences that provide high levels of internal amenity and do not rely on expansive outdoor spaces. Smaller allotments also suit smaller residences that appeal to smaller family units and some senior residents, with a reduced area for on-going maintenance. Smaller allotments with corresponding smaller residences enable an economical ownership option that is more achievable to those with limited finances and funding options.

8.13 The National Policy Statement on Urban Development is a useful study into the future needs of communities and how urban areas can respond to growth to enable improved housing affordability and community wellbeing. A strong theme of the Policy Statement is intensification of existing urban areas and provision of residences that reflect the evolving and changing needs of residents. Traditional urban development is considered to be not necessarily “fit for purpose” for our communities both today and looking into the future.

8.14 Given the small extent of developable lands within the Residential A zone, the alternate option is to consider development within the Residential B zone albeit at the higher densities. A substantial area of Residential B land is presently undeveloped, and given the above, it is questionable if it should be developed to provide for a low density (1,000m^2 average net area) residential outcome based on the changed housing demand.

8.15 The view is that providing the higher density allotments within the subject property will at least realise urban development of lands that have already been assigned for residential activities. This is preferred to an alternate option to use other lands assigned/zoned for differing purposes.

8.16 As all subdivisions have a Controlled Activity status at best, there are a number of matters of control that need to be considered. These are noted in Chapter 13 item 13.11.1 and we can comment on the relevant matters as follows.

Allotment Sizes and Dimensions.

8.17 The proposed allotments do not meet the criteria in 13.12.1 and this provides a Restricted Discretionary activity status for this particular matter. The above comments detail our assessment of the circumstances within the town that support the provision of the proposed allotments with sizes typically below the Residential B standard.

8.18 Proposed Lots 1-65 range from 500m^2 net area to 860m^2, and these allotments are proposed to be used for standard residential use with one dwelling per allotment, with an average size of 553m^2. These allotments are consistent with the density requirement of the Residential A zone.

8.19 Along the south boundary, allotments have an average width of 16m, which enables a future residential unit of around 12m width. The allotments have an average depth of 35m. A 2m wide stormwater drainage easement is proposed along the rear of the allotments, which will set any buildings back from the southern boundary. Whilst Proposed Lots 22-25 are not as deep, there still remains a reasonable future building site on the allotments.

8.20 Proposed Lots 1, 48, 49 and 29 are corner allotments, and the potential building are restricted from the front boundary setback, however each allotment has suitable room on site for a future residential unit.

8.21 Proposed Lots 91 and 92 are to have a net area of 3,725m^2 and 3,295m^2 respectively and are sought to be developed as MURC with up to 10 units per allotment.

Subdivision Design.

8.22 The layout of the allotments has evolved in response to a number of existing environment aspects.

8.23 Access can only be from Mt Fyffe Road and it is sensible to provide only one access given the property has a frontage to the same in the order of 139m. This access provides for vehicle, cycle and pedestrian movements.

8.24 The existing stormwater catchments noted in the application have been recognised and it is necessary to maintain the overland flow paths through the property and continuing towards the lower lands to the north. The proposed Local Purpose Reserves (Lots 93 to 96 incl) enable this in a manner that broadly replicates the pre-development contours and overland flow paths.

8.25 The layout of the proposed allotments reflects a desire to maximise direct access to the proposed Roads and minimise the necessity for accessways (both singular and shared Right of Ways).

8.26 When considering Proposed Lots 1-65, less than 10% of the subdivision development is accessed via Right of Way. This is considered to give a range of options for purchasers. It also supports desirable passive surveillance outcomes for future residents.

8.27 The subdivision has been designed for most allotments to have a north-south orientation. This is preferred, and will provide for a good northerly aspect for the majority of allotments and enable dwelling design to make most use of passive solar gain within houses, an important design factor for affordable houses.

8.28 The allotment layout is also reflective of the provision to ensure that each allotment is serviced by gravity stormwater and wastewater reticulation.

8.29 The Applicant has purposely avoided a specific recreational reserve space within the development. Rather, passive recreational areas such as seating, have been designed into the Road Reserve and around the cul-de-sac. The intention of the latter is to enable residents to enjoy the area and have splendid views to the ocean, coastal Kaikoura mountains and rural lands. The area will be largely free of vehicle traffic and therefore enhancing pedestrian safety.

8.30 Proposed Lots 93-95 are to be reserves associated with stormwater overland flow paths. These are ephemeral and are able to be planted, if supported by Council staff. The detention basins in Proposed Lots 94 and 96 have been designed specifically for the detention purposes. Being a detention basin, it is able to be used for passive recreation when outside of a heavy rainfall event.

8.31 Note that the property presently has overhead power lines that run in a northeast – southwest orientation over the western sector. These overhead lines are being replaced by underground reticulation within the roadways, and this avoids the obvious constraint in terms of the allotment layout.

<u>External Roading Environment.</u>

8.32 The subject property is accessed via Mt Fyffe Road. Mt Fyffe Road is approximately 350m long, and runs south from its intersection with Ludstone Road. The carriageway is approximately 6m wide and sealed to the existing vehicle crossing to the subject property, which is almost at its southern boundary. The formation has limited centreline or edgeline markings. The carriageway narrows to 4.6m wide in the vicinity of the Railway Overbridge. The north bound lane has a give way requirement, giving priority for southbound traffic. The vertical clearance underneath the bridge is 4m.

8.33 An informal shared path is currently provided in the vicinity of the subject property. This shared path was formed as part of the NCTIR temporary accommodation facility. The Council are in the process of designing a 2.5m wide shared user path along both the southern side of Ludstone Road and along the eastern side of Mt Fyffe Road. This upgrade is part of the IAF grant from the Government, and construction is due to commence in 2023. This will connect the subject property within the existing footpath network on Ludstone Road.

8.34 As noted by Urban Connection's Traffic Impact Assessment in **Appendix O**, it is recommended that Mt Fyffe Road be upgraded to an 8m wide carriageway. This will improve access to not only the subject property, but also the adjacent rural property, as well as the future extent of the Residential B lands to the south of the subject property. Urban Connection also recommend a Flag light at the intersection with Ludstone Road, and a 40 km/h speed limit along both Mt Fyffe Road and the roads within the subject property.

8.35 Urban Connection also note that Council might like to consider changing the posted speed limit on Ludstone Road in the vicinity of the intersection with Mt Fyffe Road to 50 km/h.

8.36 KiwiRail strongly discourages any access across the Coastal Pacific Railway corridor, and as such, this has been avoided.

Internal Roading Environment, Access and Vehicle Crossings.

8.37 Within the subject property, the roading network has been designed to minimise cul-de-sac type roadways and also maximise "front" lots that have direct access to the roadways. The resulting Road layout achieves these outcomes.

8.38 The proposed road design, as illustrated in the Road Layout Plan (Sheet 1 of the Proposed Engineering Works) in **Appendix G**, generally complies with NZS4404 E22 standard. This includes a 16m legal width with an 8m carriageway that enables on street parking. The cul-de-sac has a radius of 10m. A wider entrance is proposed off Mt Fyffe Road to provide a sense of place, and to separate the traffic flows.

8.39 The proposed layout includes a 2m wide footpath along one side, rather than two footpaths of 1.5m.

8.40 Street lighting will also be provided in a manner to comply with the recent night sky protocols, with a luminaire output of 2200k, as shown in **Appendix G**.

8.41 The roadways will also incorporate additional landscape enhancements that will comprise areas of planting as well as pavement enhancements and landscape related structures. The proposed landscape enhancements are illustrated on the Landscape Plan set attached with this application – refer to **Appendix J**.

8.42 As noted above, the subject property was the Vicarage for Kaikoura's Anglican Church. The Applicant has designed the subdivision around the church based theme and seeks to create a sense of place entering the subject site by installing a lychgate over the footpath.

8.43 Easement A is a reciprocal Right of Way in favour of proposed Lots 23-25. Easement B is a reciprocal Right of Way in favour of proposed Lots 42-44. The Rights of Way are to have a legal width of 4.5m, and are to be formed in accordance with NZS4404 with an exception that there is no turning area within the formation. The reason for not provided a turning area, is that each allotment has sufficient room on site for turning.

8.44 The accessway to proposed Lot 28 is to be 4m wide. The access into Proposed Lot 92 is 9m wide, which enables a wider formation entrance into the future MURC, enabling a dual carriageway along the access leg.

8.45 The matter of providing vehicle crossings to the new allotments as a condition of the development has been considered. The Applicant accepts the requirement to provide a vehicle crossing to each allotment however notes the difficulty in placing the crossings in locations that will suit the ultimate development of the allotments. In short, the crossings should sensibly align with the driveways associating with the future residences.

8.46 In order to provide for both outcomes, the Applicant proposes to defer the construction of most of the vehicle crossings until the development of the allotments occurs. This can be managed via a Consent Notice type mechanism that requires/ensures the construction of the crossing (and therefore meeting the subdivision requirement) by the owner of the allotment at that time.

8.47 The exception to this is where a vehicle crossing enables access to an access leg or Right of Way. This occurs in four locations and clearly these can be constructed as part of the main roading development works.

Esplanade Provisions.

8.48 Esplanade facilities are not applicable to the development. There are no permanently running watercourses about the property and any such future facilities are unlikely.

Natural Hazards.

8.49 The Applicant has received a report from Tetra Tech Coffey who has investigated the ground conditions and then commented about natural hazards and potential mitigations pursuant to s106 Resource Management Act 1991, as attached in **Appendix D**.

8.50 The summary, the risks associated with natural hazards is considered to be low and consistent with Section 106 and 6(h).

Erosion	*risk is low.*
Falling Debris	*probability is negligible and therefore risk is similar.*
Slippage	*risk of slope failure is very low.*
Inundation	*risk is considered to be low.*
Subsidence	*Karst Formation – the presence of 'open' karstic features (voids) below the site is considered low.* *Liquefaction Induced Settlement – effects of settlement are low and therefore risk is similar.* *Static Settlement – risk is low provided earthworks are carried out to relevant standards.*

8.51 The Applicant understands that the property accommodates an area where tree stumps and similar vegetation has been buried as part of the former NCTIR temporary workers accommodation. These areas have been located and the organic materials will be removed as part of the earthworks for the development. The area will then be filled in an engineered manner, and this will be incorporated into the overall earthworks activities associating with the development.

8.52 To mitigate potential static settlements, all earthworks involving filling will be carried out in accordance with the standards in NZS4431:2022. Again, a consent condition requiring this is appropriate and will be accepted.

Earthworks.

8.53 The subject property site is gentle rolling pasture, generally falling towards the north with trees and shrubs planted along the western boundaries. In order to service the application site (namely proposed Lots 31-46) through gravity means, and to create roads and detention basins, earthworks are proposed.

8.54 As shown in the earthworks plans in the Engineering Plans attached in **Appendix G** - refer to the Earthworks Cut/Fill plan on Sheets 2 and 3, roads and the detention basins will be formed mostly through cut, while the area around proposed Lots 31-46 will be filled to ensure the sites are able to discharge via gravity to sewer and stormwater reticulation. The balance of the site will mostly remain in its current site.

8.55 The earthworks exercise comprises mostly a cut to fill process, utilizing material sourced on site, however around 5,000m^3 of imported fill will be required. The maximum depth of cut is 2.0m, and the maximum depth of fill is 3.5m.

8.56 The earthworks will be undertaken in a controlled manner and broadly in accordance with the practices and standards in NZS4431:2022 Engineered fill construction for lightweight structures. This provides for fills of satisfactory stability for residential development for NZS3604:2011 type foundations.

8.57 Prior to s224 approval, a GeoProfessional shall confirm that each residential allotment has an area suitable for the construction of residential buildings in accordance with NZS 4404:2010 Land development and subdivision infrastructure - Schedule 2A.

8.58 At the time of applying for Engineering Plan approval, details will be shown of the extent of earthworks, and shall include a DESCP specific to the site.

8.59 The Applicant proposes to operate under an Accidental Discovery Protocol, which requires consultation with Te-Runanga-o-Kaikoura upon any discovery of a cultural site. It is proposed that a consent notice is registered against each allotment advising future owners of this requirement as well.

Water Supply.

8.60 A reticulated urban water supply will be provided to the net area of all allotments. The existing urban supply network will be extended with this occurring from the reticulation in Mt Fyffe Road, as shown on Sheet 6 of the Engineering Plans attached in **Appendix G**.

8.61 The extended network will provide a potable water supply to the allotments and the network will also provide water supplies for fire fighting. Hydrants will be installed within the network and these facilities will be located within the roadways, as shown on Sheet 6 of the Engineering Plans attached in **Appendix G**.

8.62 The details of the network extension have been discussed with and supported by Council engineers.

Stormwater Disposal.

8.63 Council has an existing stormwater discharge consent issued by ECan. This is referred to as the “Global Consent” and is referenced as CRC144682. Importantly the consent identifies those portions of the town within which discharges are covered by the same.

8.64 The subject property is just outside the area that is covered by the global consent, and it has been determined that a separate discharge consent is required from ECan for the ongoing and operational discharges from the proposed allotments and impervious roadway surfaces. The Applicant is presently applying for this consent.

8.65 Note that the Applicant asks that Council provides a Subdivision Consent for the proposal separate from ECan providing the abovementioned Stormwater Discharge Consent. The Discharge Consent is clearly unnecessary until a Subdivision Consent has issued and the Applicant commits to undertake the development. It follows that a Subdivision Consent condition requiring the issue of a Stormwater Discharge Consent will be accepted.

8.66 On the basis that the above new stormwater discharge consent issues, and the development is completed, the Applicant will transfer the same to Council. This aligns with the vesting of the new infrastructures with Council on completion of the development.

8.67 As discussed with Council's Engineeering Department, the requirement of the stormwater discharge is for post development flows to not exceed pre development flows. This is to be achieved by way of on-site detention basins that will store stormwater for a period prior to discharge into the Council's reticulated network.

8.68 As noted in the Site Details, the subject property has three catchments, each with an ephermal overland flow path. The proposed conceptual stormwater design, as shown on Sheet 4 of the Engineering Plans attached in **Appendix G**, seeks to not alter the discharge rates from the western and eastern catchments. Rather, the additional stormwater discharges will be captured through the proposed reticulated network and discharged via the central discharge point, through the railway corridor to Council's reticulation network, which is an open drain along Ludstone Road.

8.69 The essence of the proposed stormwater reticulation is a piped network that will connect to an existing pipeline within the Coastal Pacific Railway corridor. That existing pipeline connects to an open drain in Ludstone Road that drains stormwater to the existing town stormwater network about the intersection of Ludstone and Rorrisons Roads. This existing network eventually discharges into Lyell Creek.

8.70 To ensure that post development flows to not exceed pre development flows, on site detention is proposed. The Applicant has considered the two alternatives of each allotment providing on site detention, or the Applicant providing detention as part of the subdivision design. As the Applicant is seeking to create these as affordable sections, the Applicant does not want to pass this cost onto purchasers. Therefore, the Applicant has included two detention basins within proposed Lots 94 and 96, designed around the requirements set out in the Global Discharge Consent.

8.71 The general conditions within CRC144682, Council's existing stormwater consent for Kaikoura Township, are to be matched including:

- Treatment of runoff using a volume-based device sized for a storm depth of 22.5 mm (or equivalent flow-based device)
- Partial attenuation of runoff for the critical duration 50%, and 10% AEP storm events
- HIRDS shall be used for sizing.

8.72 The detention basins have therefore been designed around a number of design criteria:

- Time of concentration of 3 hours;
- Partial attenuation of all events up to and including the 3-hour 10% AEP event (this can be split across the two sub-catchments on site, as long as the net effect is a reduction);
- Use of the latest version of NIWA's High Intensity Rainfall Design System (HIRDS) for rainfall;
- Treatment of runoff from the first 22.5mm of rainfall (or the flow-based equivalent);

- Flows greater than this shall be discharged via the existing railway culvert, utilising road storage where necessary.

8.73 The detention basins will have batter slopes of 1V:3H, and a maximum depth of 2.0m.

8.74 The proposed stormwater reticulation has been peer reviewed by Storm Environmental Ltd, and copy of their report is attached in **Appendix G**.

Sewage Disposal

8.75 Council has an existing wastewater network servicing the town, and this extends within Ludstone Road directly north of the property. This network will be extended into the property and new piped connections will extend into the net area of all allotments. The network extension will be operate on a gravity basis, as shown on Sheet 5 of the Engineering Plans attached in **Appendix G**.

8.76 The details of the network extension have been discussed with and supported by Council engineers. We understand that this approval confirms sufficient capacity in the existing system to accommodate the additional discharges.

Trade Waste Disposal.

8.77 This matter is not applicable to the subdivision proposal.

Energy Supply and Communications.

8.78 The Applicant has liaised with Mainpower NZ for the supply of power to the allotments and provision for street lighting. Mainpower NZ has confirmed their ability to provide suitable power supplies via their existing network.

8.79 The existing 11kVA and 33kVA overhead power cables extending across the western portion of the subject property will be removed. Replacement underground cables will be installed by Mainpower NZ, and these will be installed through porposed Lot 96 and within the new Roads, prior to reconnecting with the existing 13m tall power pole on Mt Fyffe Road.

8.80 A small extension will also run within the main Reserve (proposed Lot 96) adjoining the Coastal Pacific Railway and then extending through the rail corridor to service the subdivision. Suitable easements and licences will be provided in conjunction with this.

8.81 Works to bury the 11kVA and 33kVA overhead power cables will be undertaken in conjunction with Mainpower NZ. At the time of transferring the power from the overhead to underground lines, a minor disruption will occur along the network to the south of the township.

8.82 The Applicant has also liaised with Chorus for the provision of fibre optic communications to the allotments. Chorus has confirmed their ability to provide suitable communications via their existing network.

8.83 The communications network will be extended from Mt Fyffe Road via new underground cables, and individual supply facilities wil be provided at the net area of all allotments.

Vegetation and Landscape.

8.84 The subject property has little existing vegetation, and much of this is confined to the curtilege area about the existing dwelling. As part of the subdivision, the dwelling and associated curtilege vegetation will be removed.

8.85 There is a further small area of vegetation adjacent to Mt Fyffe Road around an area of "mounding". A portion of this will be removed to form the proposed roading access into the subject property from Mt Fyffe Road.

8.86 Additional landscaping is proposed along the boundary of Mt Fyffe Road, where it will not interfere with the overland flow path.

8.87 The landscape proposal for the development incorporates new vegetation about the road corridors. Please refer to the landscape plans in **Appendix J**. We consider these areas of vegetation will enhance the general amenity and appeal of the development.

8.88 In line with the Vicarage theme, the Applicant seeks to construct a lychgate entrance into the subdivision over the footpath. Lychgates consist of a roofed, porch-like structure over an access way.

Structures, Works and Items in Public Places Bylaw 2022.

8.89 The Applicant seeks to create a sense of public space within the road reserve. This includes proposed seats adjacent to the footpath and a lychgate entrance over the footpath. The proposed structures require specific approval under the new Bylaw.

8.90 For structures within public spaces, Council has the ability under under Clause 3.2 to impose conditions relating to materials and design of the structure to ensure public place is protected and that maintenance and cleaning of the public place is not hindered. In particular, the lychgate roof is to be waterproof with guttering as required to collect and discharge rainwater to the stormwater system.

8.91 Clause 3.4 of the Bylaw requires the underside of the lychgate to be 2.8m above the footpath, and Clause 3.5 requires the structure to be back 0.5m from the face of the kerb unless otherwise approved by Clause 3.15.

8.92 The proposed seats, which are setback from the footpath and lychgate will not effect the operation of the footpath or berm, and will not create a nuisance or health hazard as per Clause 11.1. All works will ensure a 2m wide footpath under Clause 11.2(a) and the structures will not be attached to the footpath 11.2(c).

Easements.

8.93 The proposal will involve the provision of access and urban services, and some of these will be within private land. Final details of easements will be included on the LT Plan once services have been installed.

8.94 Council requests a drainage easement along the rear of Lots 1-25 to enable these lots to drain to the drainage lots to vest. This is to be a 2m wide easement In Gross to Council to enable them access for maintenance if required.

8.95 An easement to convey electricity is required through Proposed Lot 96 in favour of Mainpower NZ.

8.96 Rights of Way will be included on the Legal Survey Plan, as shown on the Subdivision Proposal Plan in **Appendix C**.

Building Location.

8.97 The existing ground conditions and proposed earthworks will result in no specific restrictions on the placement of future dwellings and associated structures within the proposed allotments. There will also be no floor height restrictions for future habitable buildings as the property is not subject to any meaningful inundation or flooding scenarios.

Deed of Grant.

8.98 The proposal will involve the provision of stormwater, sewer and electricity across the Coastal Pacific Railway, and a Deed of Grant will be required from KiwiRail.

8.99 These are being addressed with KiwiRail, and the expectation is that the licences will shortly issue.

8.100 The Applicant is progressing these with KiwiRail, and has provided them with copies of the Subdivision Proposal Plan *(**Appendix C**) and the* Proposed Engineering Works in **Appendix G.** The Applicant has advised KiwiRail that once consent is issued, they will undertake a topographic survey around the existing swale on either side of the twin 600mm pipes to allow the detailed design to proceed. The engineering design for the detention pond will ensure that there will be no ponding of water about the scruffy dome manhole from the existing reticulation. The engineering plan will be provided to KiwiRail for approval, as required by Property Grant process.

Soil Contamination.

8.101 A copy of the ECan Listed Land Use Register (LLUR) has been obtained, in **Appendix E**. The LLUR does not identify the application site as having been used for Hazardous or Industrial Activities.

8.102 A ground contamination desktop assessment has been prepared and is provided in **Appendix F**. Based on research of historical photography (extending back to 1942), the subject property has been used for farm activities that likely include stock grazing of pastured paddocks and growing feed crops for animals. There is no evidence of stock and other farm yards and the like, and it is expected that no farm type activities have occurred that may give rise to potential ground contaminations.

8.103 The conclusion from the above is that it is less likely than not that an activity described in the HAIL is being or has been undertaken on it (the land). The extension to this is that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land.

8.104 It is noted that the recent land use consent for the NCTIR temporary accommodation facility did not raise the site as being a HAIL site under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES-CS).

8.105 As such, it is considered that the subject property is not "a piece of land" as described in Clause 5(7) of the NES-CS. Accordingly, the Regulations do not apply pursuant to Clause 5(1)(a) and that as a result it is highly unlikely that there will be a risk to human health from the subdivision and change of use from rural to residential activities.

8.106 Furthermore, the land is zoned Residential, although has been used as pasture land. Attached in **Appendix F** is a prelimiary assessment, similar to what has been accepted previously in respect of the NCTIR Land Use Consent for Temporary Workers Accommodation that was granted in 2017. As such is it considered that the subdivision activity therefore has a Permitted Activity status 8(4)(a) and report/plan in terms of 8(4)(c) and (d).

Construction effects.

8.107 The Applicant accepts that during the construction phase of the subdivision, there will be a level of disruption as there is with any subdivision development. The Applicant will undertake this subdivision in one stage, and is limiting construction to earthworks, servicing and roading only. As the Applicant is not proposing to create building platforms for this subdivision, earthworks will be minor.

8.108 The construction of the subdivision will be undertaken in accordance with the requirements of the NZS4404, including provision of a DESCP. Construction will be undertaken in accordance with the NZ Standards for Construction Noise, which includes controls over hours of operation.

Rural Zone Cross Boundary Effects.

8.109 The subject property is opposite the Rural Zone on both Mt Fyffe and Ludstone Roads. The operative District Plan has for some time recognised that the subject property will be developed into resident allotments. It follows that cross boundary effects must be treated as considered and accepted if future land use activities are in accordance with the activity standards.

8.110 That said, we note that Mt Fyffe Road will combine well with proposed Lot 94 to provide a substantial "buffer" between future residential zone activities on proposed Lots 41-48 and rural lands to the west.

8.111 In a similar manner, Ludstone Road combined with the Coastal Pacific Railway will provide a substantial "buffer" between the future residential zone activities on proposed Lots 25-37 and rural lands to the north.

8.112 It is acknowledged the lands to the south of the subject property are presently operating as a farm. It therefore presents as further rural activities. However, the lands to the south are presently also zoned Residential, and it has to be recognised that this is the outcome envisaged by the operative District Plan and equally envisaged by the community. It follows that any perceived potential adverse effects between the application property and the lands to the south need to be seen as temporary and acceptable in the circumstances. This is implied by virtue of the zoning being proposed and then becoming operative via the District Plan process.

Railway Cross Boundary Effects.

8.113 Railway sound and vibration can cause a range of adverse effects on people living, working, or studying nearby. These effects are well researched and have been comprehensively documented by authoritative bodies such as the World Health Organisation. It is not practical to achieve appropriate external amenity, but in most cases it is practical to achieve acceptable internal sound and vibration levels.

8.114 In consultation with KiwiRail, the Applicant volunteers new performance standards in relation to noise and vibration restrictions within reasonable proximity to the railway corridor, as set out in the volunteered standards in **Appendix L**.

8.115 That said, these performance standards are preliminary and possibly subject to amendment, as the consultation with KiwiRail has not yet been finalised and details of the performance standards may therefore change.

8.116 The Applicant preliminary volunteers that a Consent Notice be registered on the titles of those properties within the 40m Railway Noise Buffer, as shown on the Land Use Plan attached as Sheet 2 in **Appendix C** with the following requirements:

1 A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of Lot [insert here] to require noise attenuation as follows:

1. Buildings within 40m of the Railway:

a. New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 40 metres from the railway must be designed, constructed and maintained to achieve train-traffic vibration levels complying with class C of NS 8176E:2005.

b. New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 40 metres from the railway must be designed, constructed and maintained to ensure that the following internal design levels are not exceeded:

- *35 dB LAeq(1 hour) inside bedrooms*
- *40 dB LAeq(1 hour) inside other habitable rooms*
- *If windows must be closed to achieve the design noise levels in above, the building must be ventilated to meet clause G4 of the Building Code (Schedule 1)*

8.117 The Applicant also volunteers to register a 'No Complaints' Covenant on those allotments within 100m of the railway line.

2. A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of [insert here] to advise future owners/occupiers that the said lots are located adjacent to a designated railway corridor, the owners/occupiers of Lot [insert here] must accept the effects of the railway use permitted by the designation of the adjacent corridor without complaint.

<u>District Plan Mapped Powerline setbacks.</u>

8.118 The operative District Plan maps show two 66kVA electricity line crossing the subject property and the performance standards requires a 20m buffer from the lines.

8.119 The northern recorded line has been removed from the subject property by Mainpower NZ. It is now underground and is positioned within the railway and road corridors. As such, the setbacks from this powerline are not required.

8.120 The southern line shown to cross the subject property are overhead 11kVA and 33kVA lines. As such, technically the operative District Plan rules relating to a setback from a 66kVA line are not triggered. That said, Council's Planning staff have advised that regardless of the actual voltage of the line, they consider that the setbacks are relevant and must be considered in the context of this proposal.

8.121 In short, the remaining overhead power lines are to be relocated within the development and laid underground. The Applicant has consulted with Mainpower NZ about this and in conjunction with the servicing of the proposed allotments.

8.122 The Proposal includes routing the 11kVA and 33kVA lines through proposed Lot 96 reserve, and then within the road reserve corridor to the existing power pole network on Mt Fyffe Road. The easement and 1m offset from the east side boundary of proposed Lot 18 will ensure that there is suitable setback from the lines, as approved by Mainpower NZ.

Future Land Uses within the Vacant Allotments

8.123 As noted above, the Applicant does not intend to build dwellings within the subdivision. However, the Applicant does seek to provide certainty to Council and the community as to the on-going development nature of the subdivision.

Build Typology.

8.124 The Applicant has identified two building typologies across the subject property. These are shown on the Land Use Plan attached as Sheet 2 in **Appendix C**.

8.125 Housing type 1 is associated with Proposed Lots 1-65, and seeks to enable one dwelling on a lot which has a minimum area of 500m^2. The Applicant seeks that these allotments may be developed to have a multi level style residential development, with the maximum building height complying with the operative District Plan's permitted Performance Standard of 8m. The Applicant seeks a maximum site coverage of 35%, which is consistent with the performance standard from Residential A. Housing type 1 is shown as Green areas on the Land Use Plan.

8.126 Housing type 2 is for a MURC within Proposed Lots 91 and 92. The Applicant seeks to have up to 10 residential units per allotment, which corresponds to a density of one unit per 300m^2. The Applicant volunteers a reduced maximum build height of 5.5m to ensure an affordable building option, and a housing type more in line with the demands required of elderly persons housing. The Applicant seeks a maximum site coverage of 35%, which is the Residential A site coverage performance standard. Housing Type 2 is shown as Yellow/Hatched areas on the Land Use Plan.

8.127 Having two different building typologies across the subject property will provide variety in building design. The standard build height with a greater site coverage will enable those sections to have greater diversity of building design, enabling interesting roof lines, whilst Housing type 2 enables more comprehensive building options of smaller builds.

Density.

8.128 As noted above, the subdivision design is to create sections of 500m^2 and above. As such, the Applicant volunteers that one dwelling be provided for on proposed Lots 1-65, or a density of 1 per 500m^2 in line with the Residential A standards.

8.129 Within Proposed Lots 91 and 92, the Applicant seeks to have up to 10 residential units per allotment, which corresponds to a density of one unit per 300m^2. This exceeds the Residential A standards, however this area of development is within the central part of the subject property and no other parties are affected by the development on these two allotments.

Site Coverage.

8.130 As noted above, the Applicant seeks to waive the density requirements from the Residential B standard of 25%, to have a maximum site coverage 35%.

8.131 The effect of the amended coverage is similar to that of Residential A standards, and still retaining large open areas on each allotment. It is noted that each allotment is of sufficent size to accommodate Outdoor Living Spaces.

Building Height.

8.132 As noted above, the Applicant seeks to retain the permitted 8m building heights for Proposed Lots 1-65, subject to compliance with recession planes.

8.133 The Applicant volunteers a reduced maximum build height of 5.5m within the MURCs on Proposed Lots 91 and 92, to ensure an affordable building option for smaller comprehensive housing design.

Front Yards.

8.134 The Applicant accepts the performance standards within the operative District Plan for Front Boundary Setbacks.

8.135 The Applicant however accepts that there can be an adverse effect if garages are located close to the Front Boundary where the back end of a car parked in front of the garage door extends over the road boundary. As such, the Applicant volunteers a condition that where the garage door is to open parallel with the road boundary, that the garage door is to be setback at least 5m from the front boundary.

Side and Rear Boundary Setbacks.

8.136 The Applicant seeks to comply with the 4.5m wide Front Boundary setback. This includes for the allotments on intersections where there are two street frontages.

8.137 The Applicant proposes to mostly comply with side and rear boundary setbacks, with some exceptions:

8.138 The Applicant seeks to reduce the side boundary setbacks against either reserves, Rights of Way or accessways, to 1m. Details of which sites are affected by this reduction are shown as red lines on the Land Use Plan attached as Sheet 2 in **Appendix C**. The reason for this is that a reduction to boundary setbacks will not impact on shading of outdoor living spaces and nor will it impact upon fire rating of the buildings.

8.139 Of particular note, Proposed Lots 1 and 2, 16 and 17, 30 and 31, 47 and 48 are adjacent to the proposed Reserves to Vest. The reduced setbacks takes into account the perception of open space of the reserves into the sections. A reduction in setback will not affect any adjoining residence.

8.140 Proposed Lots 27 and 29 are where we propose reduced setbacks from an accessway. The reduced setback enables better placement of buildings on site, particulary for Proposed Lot 29 which has two Front Boundary setbacks. A reduction to 1m will not effect an outdoor living space on Proposed Lot 28 as this is used for acess, and the 1m setback will broadly comply with fire code requirements.

8.141 Proposed Lots 42 and 45, 58 and 59 are where we propose reduced setbacks from shared accesses. Similar to above, a reduction to 1m from the shared access boundary will not effect adjoining daylight emissions into outdoor living spaces or invade privacy, and the 1m setback will broadly comply with fire code requirements.

8.142 Within the MURCs on Proposed Lots 91-92, the Applicant seeks to reduce the internal side boundary setbacks to 1m. This will enable greater use of the site in relation to placement of units and the provision of outdoor living spaces. The Applicant also seeks to reduce internal setbacks between residential units within the MURCs, retaining at least a 2m offset between buildings unless one unit meets with the Building Code's fire resistance rating.

8.143 Along the southern boundary of Proposed Lots 1-25, no additional setbacks are proposed. It is noted that all buildings are to be outside of the drainage easement, which will result in a 2m offset from this boundary.

Recession Planes.

8.144 The Applicant seeks to comply with Recession Planes as set out in the operative District Plan. It is noted that where setbacks are reduced on internal boundaries, as shown in red on the Land Use Plan in **Appendix C**, any building will still be required to comply with the Recession Plane performance standard.

8.145 The Applicant volunteers a new performance standard, that where there is a common wall between buildings on adjoining allotments, that Recession Planes will not apply.

8.146 In relation to the MURCs on Proposed Lots 91 and 92, the Applicant seeks that Recession Planes only relate to the perimeter of the property boundary and not within the site between the residential units.

Building Design.

8.147 The Applicant acknowledges that the Council has "Landscape Guidelines" which encourage buildings to consider energy efficiency and external colours. The Applicant does not seek to enter into specifics of building design, however note that allotments have been designed to enable each site to be built on in an energy efficiency position, facing north.

Outdoor Living Spaces.

8.148 The Applicant accepts the Permitted Performance Standards for Outdoor Living Spaces, being 70m^2 with a diameter of 5m, for Proposed Lots 1-65.

8.149 For the MURC housing on Proposed Lots 91 and 92, the Applicant seeks a varying scale of Outdoor Living Space, depending on the number of bedrooms provided for each residential unit, with the Outdoor Living Space increasing in both area and width with additional bedrooms, as set out in Part 4.77 above. In addition, the Applicant seeks that up to 5m^2 of the Outdoor Living Space may be roofed and one side may be enclosed to provide a sheltered area.

Rural Zone Cross Boundary Effects.

8.150 The subject property is opposite Rural Zone on both Mt Fyffe and Ludstone Roads. The operative District Plan recognises that the subject property will be developed into resident allotments and the anticipated effects of building close to boundaries is therefore considered.

8.151 On Proposed Lot 1, the permitted Front Boundary setback is proposed. This is a 4.5m offset from the road boundary. The Applicant is seeking to reduce the rear setback to Proposed Lot 93 to 1m, enabling greater flexibility to position the residential unit back on the site.

8.152 Proposed Lots 43, 44, 46 - 48 are setback from the zone boundary by Proposed Lot 94 which is to vest as Local Purpose Reserve.

8.153 Although the land to the south of the application site is zoned Residential B, the land use is farming based. The Applicant notes that any building must be located outside of the Drainage Easement, ensuring the permitted setback of 2m.

8.154 The Applicant also volunteers a condition to ensure that there is a farm fence of at least a five-strand post and wire type in good working order along the southern boundary of Proposed Lots 1 - 25. This is to be secured by a Consent Notice for the period that Section 27 Block X Mt Fyffe Survey District is a farm.

Railway Cross Boundary Effects.

8.155 The Applicant seeks to retain the existing permitted building setback from rear boundaries of 2m.

8.156 Railway sound and vibration can cause a range of adverse effects on people living, working, or studying nearby. These effects are well researched and have been comprehensively documented by authoritative bodies such as the World Health Organisation. It is not practical to achieve appropriate external amenity, but in most cases it is practical to achieve acceptable internal sound and vibration levels.

8.157 In consultation with KiwiRail, the Applicant volunteers new performance standards in relation to noise and vibration restrictions within reasonable proximity to the railway corridor, as per 8.113 and 8.114 above.

District Plan Mapped Powerline setbacks.

8.158 As noted in 8.115-8.119 above, the proposal seeks to relocate and underground the 11kVA and 33kVA through the application site. The lines shall be located within the easement in Lot 96 and within road reserve. This provides adequate setback for housing from these powerlines.

Multi Unit Residential Complex - Proposed Lots 91 and 92.

8.159 The Applicant seeks Land Use Consent for a MURC with up to 10 residential units on each of Proposed Lots 91 and 92.

8.160 The Applicant volunteers a maximum build height of 5.5m, in keeping with the surrounding land use. This is shown as Hatched area on the Land Use Plan.

8.161 The Applicant seeks a maximum site coverage of 35%, which is the Residential A site coverage performance standard. This is shown as Yellow area on the Land Use Plan.

8.162 Within the MURCs on Proposed Lots 91 and 92, the Applicant seeks to reduce the internal side boundary setbacks to 1m from Lots 50-65. This will enable greater use of the site in relation to placement of units and the provision of outdoor living spaces.

8.163 The Applicant also seeks to reduce internal setbacks between residential units within the MURCs, retaining at least a 2m offset between buildings unless the units comply the Building Code's fire resistance rating, for instance where they have a common wall.

8.164 In relation to the MURCs on Proposed Lots 91 and 92, the Applicant seeks that Recession Planes only relate to the perimeter of the property boundary and not within the site between the residential units.

8.165 The Applicant seeks a varying scale of Outdoor Living Space, depending on the number of bedrooms provided for each residential unit. The standard sought is similar to Elderly Persons Housing, however varies depending on the number of residents.

- Min area 10m^2 with 2m min diameter for a 1 bedroom unit.
- Min area 20m^2 with 3m min diameter for a 2 bedroom unit.
- Min area 30m^2 with 4m min diameter for a 3 + bedroom unit.

8.166 The Applicant also seeks to enable up to 5m^2 of the Outdoor Living Space to be roofed and one side may be enclosed. This is proposed in order to provide a sheltered area outside of the residential unit.

8.167 There is an expectation that individual ownership of each of the residential units within each MURC will be required once the units have been erected. The nature of the land tenure may be via a Unit Title Development (UTD), and each residential unit may comprise a Principal Unit and accessory unit for parking if not attached to the dwelling. A Body Corporate will be formed as part of the UTD and this will provide for the ongoing management of MURC.

8.168 It is important to note that any such subdivision under the UTD format is not part of this application. If and as the MURC's are developed and require separate ownership, a separate subdivision application will be prepared and submitted to Council for processing and approval. Clearly the subdivision proposal details will fully reflect the details of the MURC.

8.169 Through NZS4404, the operative District Plan limits the number of users off a shared access to 6. The Applicant seeks that for the MURC developments on Proposed Lots 91 and 92, that up to 10 users are able to be accessed off a shared access.

8.170 Where more than 2 residential units within a MURC share an access, there shall be a turning area provided to ensure vehicles exit in a forward direction. One car parking space is to be provided for each residential unit within the MURC. For every 5 residential units, one visitor car park shall also be provided. Within the MURCs, the access, turning areas and parking areas are to be sealed.

8.171 The Applicant volunteers that all external waste collection areas within the MURCs shall be screened from public view and adjacent residential properties.

9.0 KAIKOURA DISTRICT PLAN OBJECTIVES AND POLICIES

9.1 Section 104(1)(b)(vi) of the Act requires the Council have regard to any relevant provisions of the operative District Plan. This Plan contains a number of objectives and policies that are of relevance, and the subdivision proposal is not considered to be contrary to any of these.

9.2 Chapter 5 : Tangata Whenua Values

Objective 1	Effective partnership between the Council & Te Runanga o Ngai Tahu through its kaitiaki Papatipu Runanga, Te Runanga o Kaikoura, in the management of the District's natural & physical resources in recognition of the principles of the Treaty of Waitangi, the relationship of the tangata whenua & with their ancestral lands, water, sites, waahi tapu, & other taonga, & in accordance with kaitiakitanga	The subject property is not within a Statutory Acknowledgement area and it has been heavily modified through the NCTIR Village development. As such, the Applicant has not consulted with tangata whenua over the application. The overland flow paths are all protected by way of reserves to vest, and may be enhanced with plantings which will improve the mauri and wairua of its downstream catchment. The Applicant volunteers to undertake construction in accordance with an Accidental Discovery Protocol, which requires consultation with iwi upon any discovery of a cultural site. A consent notice is to be registered to advise the owners of the allotments, of this on-going requirement.
Policy 5.2.3.1	To develop a system of on-going consultation with Te Runanga o Ngai Tahu through its kaitiaki Papatipu Runanga, Te Runanga o Kaikoura, relating to all resource management responsibilities of the Council with which the tangata whenua have a particular interest.	
Policy 5.2.3.3	To recognise & provide for those sites of past Maori occupation & use in the District, & implement procedures for tangata whenua involvement regarding any proposed excavation or construction in & around those identified areas, or in the case of the discovery of any burial sites or Maori artefacts.	
Policy 5.2.3.4	To maintain & enhance tangata whenua access to & use of the District's forests & significant waterbodies, wetlands, high country & coastal areas, having regard to their status as taonga, & traditional importance as sources of mahinga kai.	

9.3 Chapter 6 : Recreation and Open Space

Objective 1	To provide open space, recreational areas & facilities that are equitably distributed or conveniently located throughout the district to meet the diverse needs of residents & visitors.	Through the use of roads and reserves around the overland flow paths and detention areas, around 32% of the site is open space. Specific recreation areas have not been identified, rather passive recreational areas such as seating, have been designed into the Road Reserve and around the top of the cul-de-sac. Although not riparian streams, the Applicant will protect the ephemeral overland flow paths by way of reserves to vest, and will enhance them with plantings.
Policy 6.2.2.1	To develop or facilitate the development & maintenance of a wide variety of recreation areas & facilities, ranging from indoor facilities to neighbourhood & District recreation areas, in locations that are convenient & accessible for the anticipated users.	
Policy 6.2.2.2	To take into consideration the following matters when deciding whether to acquire or receive land for recreation areas, or whether to dispose of existing areas: a. the amount of use the land is likely to get & whether the activities that could potentially take place on the land can be easily accommodated elsewhere; b. whether the land has or is able to have, legal & physical access & how close the land is to people who will use it; c. the amount of other land serving the same or similar functions in the same area & the ability of such other areas to accommodate additional use; d. the role of land in providing access linkages, for example, walkway & cycleway links.; e. the size of the land & its ability to accommodate its likely or intended use including the provision of car parking.; f. the role of the land in providing open space & plantings which enhance the amenity of the environment or which protect significant landscapes or views; g. the proximity of the land to river margins, lake shores, wetlands or the coast & its role in providing for public access to or along such waterbodies for the protection of the natural values of the water margins or the maintenance of water quality & aquatic habitats; h. any effect of the recreational area on the natural character of the coastal environment, wetlands, lakes & rivers & their margins; i. the role of the land in protecting & enhancing significant areas of indigenous vegetation, habitats of indigenous fauna & trout & salmon, or the margins of lakes, rivers, wetland & the coast; j. the role of the land & the buildings or structures on it in protecting historic & cultural values of significance to the District's communities.	
Policy 6.2.2.3	To require financial contributions towards public recreation areas & facilities from subdivision & development in urban areas to provide for the following: a. additional neighbourhood parks including waterfront areas, walkways & cycleways. needed as a result of additional household & visitor accommodation growth across the District; b. additional recreation areas to enhance the visual amenity of the built environment; c. development & maintenance of existing land set aside for neighbourhood parks & recreation areas.	
Objective 2	To provide for activities on the surface of water where adverse effects on other activities & on amenity, ecological functioning & habitat values are adequately avoided, remedied or mitigated.	
Policy 6.3.2.4	To encourage the use of riparian plantings in & along the margins of waterbodies to control surface runoff.	

9.4 Chapter 7 : Development and Tourism

Objective 1	To provide for urban growth where any adverse effects on natural & physical resources are mitigated, avoided, or remedied	The subject property has been zoned Residential B, suitable for residential development. A geotechnical assessment of the subject property has been undertaken in **Appendix D**, and the site has been deemed as having a low natural hazard. The site is accessed from Ludstone Road, a collector road. The intersection and roading design has been considered to meet safety standards, with the recommendation of a Flag Light. Mt Fyffe Road is to be upgraded. The proposed subdivision has been developed with the philosophy of providing affordable housing opportunities. In relation to the Applicant, this can only be addressed in terms of the cost of the land and any impediments imposed on the future land use. Importantly, the proposed layout has taken into account its north facing aspect to ensure that residential units are able to make the most benefit of passive solar gain. The proposed subdivision will enable additional housing stock to become available for both permanent residents, holiday makers as well as the seasonal staff for tourism operators. Policy 7.2.2.7 seeks to provide comprehensive living. The application seeks to provide a mixture of this with smaller section sizes and two MURCs. The proposal works are around the existing infrastructure and the railway corridor. Solutions which are acceptable to both Mainpower NZ, Council staff and KiwiRail have been drafted in the land use and engineering plans.
Policy 7.2.2.1	To accommodate additional urban development only where the risk from flooding, land instability & coastal erosion or inundation are low.	
Policy 7.2.2.2	To ensure additional urban growth does not adversely affect traffic safety & efficiency of the State Highway.	
Policy 7.2.2.3	To ensure that additional urban growth does not adversely impact on the ability of the drinking water supply & sewerage systems to protect public health.	
Policy 7.2.2.4	To provide for peripheral urban development where the adverse effects on other activities are able to be avoided or mitigated	
Policy 7.2.2.5	To ensure that any proposals for urban growth respect the obligations under the Treaty of Waitangi, & the needs of Te Runanga o Ngai Tahu.	
Policy 7.2.2.7	To provide for a comprehensive living environment just west of Kaikoura Township	
Objective 2	To encourage an urban form where existing physical infrastructure & energy is used efficiently & where any adverse effects on natural & physical resources, including infrastructure, are mitigated, avoided, or remedied.	
Policy 7.3.2.1	To ensure that existing physical infrastructure is used efficiently by accommodating additional urban development within the existing urban areas or on the periphery of these areas.	
Policy 7.3.2.2	To reduce the need for the use of fossil fuels by accommodating additional urban development within existing urban areas or on the periphery of these areas.	
Policy 7.3.2.4	To ensure that population & visitor growth does not place undue demand on existing infrastructure & services.	
Objective 3	To provide for a pattern of land use that promotes a close relationship between areas having different characteristics while recognising the distinction between commercial & non-commercial activities.	
Objective 4	To provide for sustainable development, including tourism in a way which avoids or mitigates adverse effects on Kaikoura's amenity values & distinctive character.	
Policy 7.5.2.1	To encourage developers & tourist operators to undertake activities in a manner which recognises & enhances Kaikoura's "small coastal village" character	
Policy 7.5.2.3	To promote & encourage building design & tourist facilities which reflect & incorporate elements of a small coastal village.	
Policy 7.5.2.4	To encourage development to proceed in accordance with the design guidelines in Appendix F.	
Policy 7.6.2.2	To recognise & encourage the opportunities for new tourist & non-tourist activities throughout the District.	
Policy 7.6.2.5	To balance the economic importance of tourism & associated growth opportunities with the needs of the community & the desire to retain Kaikoura's small coastal village character.	

9.5 Chapter 8 : Natural Hazards

Objective 8.2.1	To avoid or mitigate loss of life, damage to assets or infrastructure & disruption to the community as a result of natural hazard events.	A geotechnical assessment of the subject property has been undertaken in **Appendix D**, and the site has been deemed as having a low natural hazard and is suitable for residential development. The Reserves to Vest, being Proposed Lots 93-96, have been designed to ensure that a Q_{100} is contained within the allotment boundaries. Detention ponds have been designed to ensure that post development flows do not exceed pre-development flows. Standard building code requirements will be required for minimum floor levels. Proposed planting and seating areas are proposed with the Road Reserve which will provide shade in the public areas. A lychgate will provide some public shading.
Objective 8.3.1	To avoid loss of life, damage to assets or infrastructure & disruption to the community as a result of flooding.	
Policy 8.3.2.2	To avoid expansion of urban areas of Kaikoura township & the establishment of residential units & habitable buildings on land prone to high flood risk that have been identified on the Flood Hazard Maps, or where the probability of flooding is greater than 0.2% AEP .	
Policy 8.3.2.3	To discourage expansion of urban areas of Kaikoura township, & the establishment of residential units & habitable buildings, on land prone to moderate flood risk that have been identified on the Flood Hazard Maps, or where the probability of flooding is greater than 0.2% AEP.	
Policy 8.3.2.4	To mitigate against the effects of flooding on buildings & people by providing for measures such as raised floor levels, setbacks from stopbanks, & clear floodways.	
Objective 8.5.1	To avoid or mitigate adverse effects such as damage to assets or infrastructure, disruption to the community, loss of life, or sedimentation, as a result of development on unstable land.	
Policy 8.5.2.1	To avoid the building & subdivision on unstable land unless damage to assets or infrastructure can be avoided or mitigated.	
Objective 8.6.1	To avoid or mitigate adverse health effects on people from over-exposure to the sun.	
Policy 8.6.2.1	To retain & enhance natural shade, such as trees, in public areas such as reserves & parks.	
Policy 8.6.2.2	To erect structures to provide shade in public areas where there is no shade from natural features.	

9.6 Chapter 9 : Hazardous Substances

Objective 1	To prevent adverse effects on the environment or public health & safety arising from the use, manufacture, storage, transportation, & disposal of hazardous substances in the District.	The subject property is not considered to be a “Piece of Land” under the NES-CS.
Policy 9.2.2.6	To ensure that land previously affected by hazardous substances is not used for activities where the health & safety of the community could be compromised.	

9.7 Chapter 10 : Utilities

Objective 1	To provide for the establishment, use, maintenance & upgrading of utilities in a way that promotes sustainable management of natural & physical resources & which avoids, remedies or mitigates adverse effects on the environment.	The Applicant has consulted with Council's Engineering department over servicing: Each allotment is to be provided with a connection or provision by way of ducting for: electricity, communications and reticulated water, sewer and stormwater. The subdivision has been designed to ensure that pre development and post development stormwater flows remain the same. This is to be achieved by way of detention ponds within Proposed Lots 94 and 96. The 11kVA and 33kVA lines are to be re-routed within the reserves and undergrounded. Removing both the visual effect and reducing the setback requirements for building, consistent with Policy 10.2.2.5. Any above ground transformer shall be ground mounted within road reserve. The works shall be undertaken in accordance with Mainpower NZ's requirements to ensure the least amount of disturbance to the network south of Kaikoura. A DESCP shall be provided prior to works commencing. The Applicant volunteers to vest and plant within Proposed Lots 93-96 which will protect and maintain overland flow paths. The detention shall only have minimal if any landscape planting. A cut off drain along the southern boundary shall be protected by way of easement in favour of Council.
Policy 10.2.2.3	To avoid, remedy or mitigate the adverse environmental effects arising from the construction, installation, operation, maintenance & upgrading of utilities to maintain the level of amenity expected within different areas & to enable people to provide for their health, safety & wellbeing.	
Policy 10.2.2.5	Where practicable, to require the undergrounding of all lines within Residential, Comprehensive Living, Business, Tourism & Settlement zones & to encourage the systematic replacement of existing overhead lines with underground reticulation within all Zones	
Objective 2	To provide for the health, safety, & well-being of people & their communities by making provision for the establishment, use, maintenance & upgrading of essential utility services.	
Policy 10.3.2.1	To recognise the need for maintenance, upgrading & future modification or extension of utilities to ensure their on-going use & efficiency.	
Policy 10.3.2.4	To encourage development of utilities in areas where excess service capacity exists in order to promote the efficient use of physical resources.	
Policy 10.3.2.5	To ensure the costs of establishing utilities are met by the developer &/or those that will use the utility.	
Policy 10.3.2.6	To ensure costs of upgrading & maintaining existing utilities are met by those who benefit from the utilities provided.	
Policy 10.3.2.7	To encourage community or public sewage reticulation & treatment in areas where it is necessary to enhance surface & groundwater quality, values of Te Runanga o Ngai Tahu &/or to lessen the risks to public health.	
Policy 10.3.2.8	Where water is required for human consumption, to require the supply of potable water, preferably through reticulation, to: — enhance reliability of supply; — ensure water quality is maintained & enhanced; & — ensure the values of Te Runanga o Ngai Tahu are not adversely affected.	
Policy 10.3.2.9	To ensure the provision of utilities to service new development prior to buildings being occupied & activities commencing.	
Policy 10.3.2.10	To maintain existing urban land drainage systems.	
Policy 10.3.2.11	To avoid reverse sensitivity issues between high voltage electricity transmission lines & residential activities in the Residential, Settlement & Rural Zones.	
Policy 10.3.2.12	To ensure upon subdivision in the Residential, Rural & Settlement zones that access to existing high voltage electricity transmission lines is not restricted or prohibited.	

9.8 Chapter 11 : Landscape and Visual Amenity

Objective 1	To protect areas of Outstanding Landscape Values from inappropriate subdivision, use & development.	The subject property is not within an Outstanding Landscape or Outstanding natural feature, and is located below the terrace. The subject property is zoned for Residential use. Most of the subject property will comply with the permitted height, although the MURCs are to have a reduced, more affordable building height of 5.5m above finished ground level at the time of the s224 approval. Recession Planes and side boundary setbacks will ensure that view shafts are available through sections. Earthworks on the subject property are to be kept to a minimum in relation to servicing this site via gravity, which means a slight building up of the western sections to ensure adequate fall for stormwater and sewer. The existing bunding and planting alongside Mt Fyffe Road is to be retained except for the new entrance into the subject property, and may be extended along the road boundary if there excess fill. To encourage purchasers to adhere to the "Landscape Guidelines" in **Appendix J**, in particular in relation to energy efficiency and external colours.
Objective 2	To maintain & enhance areas having significant landscape values	
Objective 3	To support & encourage the consideration of landscape qualities when landuse activities are undertaken.	
Policy 11.2.2.2	To ensure that activities such as earthworks, vegetation clearance, tree planting & the establishment of buildings, utilities or structures do not adversely affect the values of outstanding natural features & landscapes.	
Policy 11.2.2.3	To promote the maintenance, & where practicable the enhancement, of the landscape & visual amenity values of areas that have been identified as having significant landscape values.	
Policy 11.2.2.7	To encourage landowners to adhere to the "Landscape Guidelines" in appendix F.	
Objective 6	To protect the geological uniqueness of the Outstanding & Significant Landscape Areas from inappropriate use & development.	
Policy 11.4.2.1	To recognise that the close proximity of the Seaward Kaikoura range to the coast is a unique geological feature.	
Policy 11.4.2.3	To recognise the relationship between the underlying geology of the district & the dominant landscape features.	
Objective 7	To retain the visual amenity values of the District.	
Policy 11.5.2.1	To avoid built form which detracts from the visual amenity of the District.	
Policy 11.5.2.2	To control the effects of activities in order to maintain & enhance the visual amenity values of the Kaikoura District.	

9.9 Chapter 12 : Transport

Objective 12.2.1	To provide for the safe & efficient use of the District's existing & future transportation infrastructure.	The external roading network has been assessed. Some minor improvements are recommended in terms of Mt Fyffe Road in relation to lighting, width and speed which have been adopted by the Applicant. The Traffic Impact Assessment in **Appendix O** also recommends that Council
Policy 12.2.2.1	To promote the efficient use of all roads within the District by adopting & applying design & access standards within different zones of the District, based on the intended function of each road, & the expected vehicle generation.	
Policy 12.2.2.2	To protect the efficiency of through traffic on State Highway 1 due to its role as a carrier of through traffic.	

Policy 12.2.2.4	To promote the efficient use of roads by ensuring the size, location & type of access to properties is appropriate.	consider lowering the speed limit of Ludstone Road. The Applicant has designed the proposed internal roading in accordance with the provisions of NZS4404. The road width is 8m wide which enables on road parking. There are two exceptions to the roading design, the first in relation of footpath design, to have one footpath of 2m in width. The second to reduce the western intersection spacing of the crescent. As the speed environment is slow from turning into the subject property, it is considered that the reduced intersection setback is suitable. Each allotment has sufficient frontage for access. The Applicant seeks to not form turning bays on the two Rights of Way as there is sufficient room on site for turning. Each of Proposed Lots 1-65 are of sufficient size to accommodate on site parking. The Applicant seeks reduced parking within the MURCs to one park per residential unit and visitor parkin for every 5 units. Accesses are to be formed at the time of development, enabling purchasers to make the most use of their allotments. The subdivision has been designed so that there are no additional access links across the railway reserve. The Applicant takes on board the response from KiwiRail in relation to reverse sensitivity of the operation of the Railway network and volunteers conditions on building design and complaints.
Policy 12.2.2.5	To reduce congestion & loss of efficiency of roads by ensuring off-road parking & loading is provided for activities.	
Policy 12.2.2.6	To promote & encourage cycling as a safe & efficient use of the Districts roads.	
Policy 12.2.2.10	To support the new development of safe pedestrian links, & to upgrade existing pedestrian links, in order to promote & provide for the safe, direct & pleasant movement of pedestrians & to reduce short vehicle trips & congestion.	
Policy 12.2.2.11	To improve connections between rail & other transport modes, particularly pedestrian access, to the commercial areas of the township.	
Policy 12.2.2.12	To encourage any new urban development in Settlement Zones to locate within or on the periphery of existing settlements to reduce the length of, & need for, vehicle trips.	
Objective 12.3.1	To avoid remedy or mitigate actual & potential adverse effects of transportation.	
Policy 12.3.2.1	To encourage new residential development to locate within or on the periphery of existing settlements to reduce the length of & need for vehicle trips.	
Policy 12.3.2.3	To support the development of pedestrian & cycling links within the settlements & urban areas, having regard to the needs of disabled persons by making these facilities safe & pleasant.	
Policy 12.3.2.5	To ensure new roads are designed to visually complement the surrounding area.	
Policy 12.3.2.6	To encourage the incorporation of tree & landscape plantings within new roads & roading improvements, wherever possible, having due regard to traffic & pedestrian safety.	
Policy 12.3.2.7	To ensure any adverse effects arising from road or railway maintenance, protection, upgrading, construction or realignment on the following are avoided, remedied or mitigated: significant habitats of indigenous fauna, indigenous plants; the natural character of the coastal environment & waterbodies; outstanding landscapes & natural features; mahinga kai & taonga; & habitats of salmon & trout &; people & communities.	
Policy 12.3.2.8	To ensure parking & loading associated with activities, does not adversely affect the amenity enjoyed by neighbours.	
Objective 12.4.1	To maintain & provide for access & ease of pedestrian & vehicle movement throughout the District.	
Policy 12.4.2.1	To encourage the development of pedestrian areas, walking routes, & cycleways, having regard to the needs of disabled persons.	
Policy 12.4.2.2	To ensure access is available through the provision of new roads & related facilities.	

9.10 Chapter 13 : Subdivision

Objective 1	To avoid subdivision in localities where it is likely to increase risk to people or property from erosion, sea level rise, subsidence, slippage or inundation from any source, unless this risk can be remedied, avoided or mitigated without significant adverse effects on the environment.	The subject property is zoned for Residential use and the geotechnical assessment considers that the site is suitable for subdivision and development. The subject property is not a "Piece of Land" under the NES-CS. Each allotment is of suitable size and width to accommodate residential units. The subdivision has been designed to be north facing to enable use of passive solar gain within housing design. The subdivision has been designed so that the Q_{100} overland flow paths are contained within the proposed reserves to vest. The Applicant will enhance the stormwater reserves with plantings. The Applicant will also plant within the road reserve corridor to enhance the amenity of the subdivision. The proposed allotments shall be serviced to enable gravity discharge. Provision for both electricity and communications shall also be made to each allotment. Where the allotments are accessed by Right of Way, services shall be provided to the net of the allotments. It is noted that sufficient servicing shall be provided to the boundary of Proposed Lots 91 and 92 for the MURCs for 10 units on each site. The Applicant has designed the proposed internal roading in accordance with the provisions of NZS4404. Each allotment has sufficient frontage for access. Accesses are to be formed at that the allotments are built on.
Policy 13.2.21	To avoid or control subdivision where there is a 0.2% or higher probability that people or property will be affected by flooding from rivers in any one year	
Policy 13.2.2.2	To avoid subdivision where there is a risk of erosion, subsidence, slippage, or inundation from coastal hazards, & where the effects from such risks cannot be avoided or suitably mitigated. In respect of subdivision within the coastal environment, consideration will be given to possible future sea level rise.	
Policy 13.2.2.3	To ensure that any remedial measures do not give rise to adverse effects on the environment.	
Objective 2	To provide essential services at the time of subdivision, subject to any adverse effects on the environment from the provision of these services being mitigated, avoided or remedied.	
Policy 13.3.2.1	To require upon subdivision, that new lots within Residential, Comprehensive Living, Settlement, Tourism & Business zones are provided with a means of connection to a Council or community reticulated water supply system, where available, & that water supplies are of a potable standard, & of sufficient capacity for anticipated land use & for firefighting purposes.	
Policy 13.3.2.2	To require upon subdivision, that anticipated development is provided with a means of disposing of sanitary sewage & trade waste in a manner which is consistent with maintaining public health & where adverse effects on the environment are avoided.	
Policy 13.3.2.4	Upon subdivision in Residential, Comprehensive Living, Settlement, Tourism & Business Zones, to require that all new lots are provided with a means of connection to a Council or community reticulated sewage disposal & treatment system, where such a system exists.	
Policy 13.3.2.6	To require that underground reticulated energy & communication services are provided to lots within Residential, Comprehensive Living, Settlement, Tourism & Business Zones.	
Policy 13.3.2.7	To require the integration of subdivision roading with the existing roading network in a manner which reflects expected traffic levels, & achieves safe & effective vehicular access to allotments.	
Policy 13.3.2.8	To encourage the provision of pedestrian & cycle linkages where possible as well as linkages to & along water bodies.	
Policy 13.3.2.9	To encourage the retention of natural open waterbodies & to require the disposal of stormwater in a manner that avoids inundation of land within or adjoining the subdivision & maintains or enhances the quality of surface & ground water.	

Objective 3	To provide for allotments which are suitable for a range of sustainable land uses, except where special sites are required as provided for in Issue 4.	The Applicant seeks to not form turning bays on the two Rights of Way as there is sufficient room on site for turning. The Applicant seeks reduced parking within the MURCs to one park per residential unit and visitor parkin for every 5 units.
Policy 13.4.2.1	To require all allotments created as a result of subdivision to be of a size & shape which is suitable for a range of sustainable land uses, except where special sites are required as provided for in Issue 4.	
Objective 4	To recognise the need for special lots to be created for activities where small lot sizes are required for activities such as utilities, recreation, roading & access or to protect values such as heritage, conservation or Ngai Tahu values.	
Policy 13.5.2.1	To provide for small lots to be created to provide for activities such as utilities, recreation, roading or access & the protection of heritage, conservation & Ngai Tahu values.	
Objective 5	At the time of subdivision, to avoid, remedy or mitigate adverse effects on sites having ecological, conservation or, heritage values or on sites of importance to Ngai Tahu.	
Policy 13.6.2.1	To encourage the protection of sites of ecological, conservation, heritage value or sites of importance to Ngai Tahu at the time of subdivision through the use of mechanisms such as voluntary agreements, esplanade reserves, esplanade strips, access strips, conservation covenants, bonds & caveats.	
Policy 13.6.2.2	To encourage the maintenance & enhancement of indigenous biodiversity within & adjacent to areas of subdivision.	
Objective 6	To ensure subdivisions are designed & constructed to create a pleasant amenity, so that solar energy is taken advantage of & so that erosion is avoided.	
Policy 13.7.2.1	At the time of subdivision, to encourage the retention of existing vegetation where possible & to consider alternative methods of run-off control, such as bunding & mechanical silt traps, in order to improve amenity, reduce erosion & reduce the amount of run-off.	
Policy 13.7.2.2	To encourage subdivision design & construction which results in the creation of pleasant environments.	
Policy 13.7.2.3	To encourage developers to take advantage of the benefits of solar energy wherever possible.	
Objective 7	To ensure that subdivision of potentially contaminated sites is either avoided or undertaken so that there is no increase in risk to human health from contaminants.	

9.11 Chapter 15 : Historic Heritage and Tree Protection

Objective 1	To promote the conservation & preservation of the District's historic heritage, including: historic buildings, places & sites, waahi tapu & archaeological sites.	The application site is not a recorded historic or archaeological site, and is not a Statutory Acknowledgment Area. The Applicant has taken on board the historic use of the site as the Anglican Vicarage, and tied this into the design philosophy of the subdivision to create a community based on pastoral or community care. Included in this is design features linking to various aspects of the church cultural including the road layout and proposed naming and the proposed entrance feature of the lychgate. The subject property does not contain any notable trees.
Policy 15.2.2.1	To give suitable protection to heritage value of buildings, places, sites & areas, in consultation with the New Zealand Historic Places Trust, Te Runanga o Ngai Tahu, the Department of Conservation, the Kaikoura Historical Society, & the local community.	
Policy 15.2.2.2	To increase people's awareness of historic heritage values of the District by including an inventory in the Plan of significant historic heritage including heritage buildings, objects, places, & waahi tapu & archaeological sites.	
Policy 15.2.2.3	To encourage the use of protected buildings, sites & features in the District, while ensuring that their valued historic features are not altered or destroyed.	
Policy 15.2.2.4	To ensure that all development & building proposals in the vicinity of sites recorded by the New Zealand Archaeological Association does not adversely affect those sites, unless appropriate authorisations have been obtained from Kaikoura District Council & New Zealand Historic Places Trust & to advise Te Runanga o Ngai Tahu & the NZHPT of any development proposals relating to those sites.	
Policy 15.2.2.8	To recognise that heritage values may include historic, scientific, technological, aesthetic, cultural, spiritual, social, contextual & archaeological values.	
Policy 15.2.2.9	To ensure that any potential adverse effects on heritage values are taken into account in assessing applications.	
Policy 15.2.2.10	To encourage active public participation in the promotion, protection & preservation of heritage & cultural values throughout the district.	
Objective 2	To protect & preserve the District's notable trees.	

9.12 Overall, it is considered that the proposed subdivision and land use activities are consistent with the Objectives and Policies of the operative District Plan.

10.0 NATIONAL ENVIRONMENTAL STANDARDS

10.1 Section 104 (1)(b)(i) of the Act requires the Council have regard to any relevant provisions of a National Environmental Standard.

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011

10.2 We have already commented on the potential for soil contamination that may give rise to human harm. We refer you to 8.98 – 8.103.

10.3 In summary, the subject property is not considered to be a "piece of land" under NES-CS as defined in Regulation 5(7) as it is not considered that the site has, or has had a HAIL activity undertaken on it, as identified in **Appendix F**.

10.4 The 2017 application for the NCTIR temporary accommodation facility did not require specific PSI or DSI reporting, and is it considered that Council may adopt the same practice in this instance.

10.5 Although the site was formerly used for production, the land is zoned residential, the land use was changed to residential use as the NCTIR temporary accommodation facility.

10.6 It is therefore concluded that the application met the permitted activity status for the subdivision and land use change under Clause 8.

National Environmental Standards for Telecommunication Facilities 2016

10.7 The Regulations in the National Environmental Statement for Telecommunication Facilities 2016 (NES-TF) sets out performance standards and activity status for above ground communication infrastructure.

10.8 The development will incorporate new communications to each allotment and that network extension will be designed and managed by Chorus. The details of the network extension will clearly be in terms of their requirements as the Supply Authority for the area. It is understood that these details will qualify as a Permitted Activity.

National Environmental Standards for Electricity Transmission Activities 2009

10.9 The National Environmental Statement for Electricity Transmission Activities 2016 (NES-ETA) applies to the electricity transmission network on the national grid as owned and operated by Transpower New Zealand Limited. The lines through the subject property are Mainpower's lines, and therefore the NES-ETA is not triggered.

10.10 The Applicant will be undertaking the works to replace and underground the 11kVA and 33kVA lines through the development area in association with the detailed requirements of Mainpower as the Supply Authority.

National Environmental Standards for Freshwater 2020

10.11 The National Environmental Standard for Freshwater (NES-F) does not deal with the functions of territorial authorities under Section 31 of the Act, however district rules may be included.

10.12 The subject property is a modified, pasture environment. There are existing ephemeral overland flow paths, however these are not considered to be wetlands given the gullies are dominated (over 50%) by exotic pasture species.

10.13 The subdivision's stormwater has been designed so that no additional runoff is occurring on the western or eastern catchment. All additional flows are directed to the central catchment.

10.14 Consideration of the NES-F will be had with ECan application for stormwater discharge in relation to the culverts and stormwater detention ponds, as required by Regulations 61-63 and 66.

11.0 NATIONAL POLICY STATEMENTS

11.1 Section 104(1)(b)(iii) of the Act requires the Council have regard to any relevant provisions of a National Policy Statement.

National Policy Statement on Electricity Transmission 2008

11.2 The National Policy Statement on Electricity Transmission 2008 (NPS-ET) sets out the objective and policies to enable the management of the effects of the electricity transmission network on the national grid as owned and operated by Transpower New Zealand Limited. The lines through the subject property are Mainpower NZ lines. Therefore, the NPS-ET is not duly relevant, but is for consideration.

11.3 The Objective of the NPS-ET is to *recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations, while: managing the adverse environmental effects of the network; and managing the adverse effects of other activities on the network.*

11.4 The subdivision has been designed in consultation with Mainpower NZ as per Policy 5. The proposal is consistent with Policy 7 which seeks to *minimise adverse effects on urban amenity* by removing the above ground lines and locating the underground powerlines within the roading corridor. This improves both the amenity of the application site whilst also complying with Policy 6 by reducing *existing adverse effects of transmission on residences*.

11.5 The writer considers that the proposal is able to meet with the objectives and policies of the NPS-ET.

National Policy Statement for Freshwater Management 2020 (NPS-FW)

11.6 The National Policy Statement for Freshwater Management 2020 (NPS-FW) applies to all freshwater (including groundwater) and, to the extent they are affected by freshwater, to receiving environments (which may include estuaries and the wider coastal marine area.

11.7 The objective of the NPS-FW is to ensure that natural and physical resources are managed in a way that prioritises firstly the health and well-being of water bodies and freshwater ecosystems, secondly the health needs of people and thirdly the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

11.8 Stormwater is to be connected in a piped network through the subdivision, to then discharge to an open drain alongside Ludstone Road and eventually into Council's reticulated stormwater network. The Applicant requires a new stormwater discharge consent, which is then able to be transferred to Council as network operator.

11.9 The proposed subdivision has been designed to ensure that overland flow paths are contained within areas to vest as reserve, which are to be planted, which will enhance the overland flow paths. This is consistent with Policy 5 to improve the health and well-being of water bodies, albeit ephemeral.

11.10 The writer considers that the proposal is able to meet with the objectives and policies of the NPS-FM.

National Policy Statement on Urban Development 2020

11.11 The National Policy Statement for Urban Development 2020 (NPS-UD) requires Tier 1-3 Councils to provide at least sufficient development capacity in its region or district to meet expected demand for housing. Tier 3 Council's are those which have an urban environment (over 10,000 people) as directed by Clause 1.3(1)(b). As Kaikoura has around 2,500 permanent residents, the NPS-UD is not a requirement for consideration by the Council, however it is a document to which they can refer.

11.12 Kaikoura has a demand for housing, and at present is not able to met that demand, through existing housing stock of both permanent residents and absentee landowners.

11.13 Objective 1 seeks a *well-functioning urban environment*, whilst Object 2 requires planning decisions to *improve housing affordability by supporting competitive land and development markets.* The Applicant has designed the subdivision with three types of housing demand and affordability. Proposed Lots 1-65 are the sections with greatest flexibility for building, enabling a wide range of building and housing options based on the affordability of construction available to purchasers. The two MURCs in Proposed Lots 91-92 are able to provide an even more affordable build cost capacity. This is also supportive of Policy 1(a)(ii).

11.14 Of note, Objective 4 recognises that over time, our urban environments and planning framework need to change in *response to the diverse and changing needs of people, communities, and future generations*. Residential A zoned land is mostly developed in a range of section sizes from 500m^2 to 2000m^2. To enable the larger sections to action the principles of Residential A will require individuals to take action, and this will only incrementally provide development opportunity. The proposal seeks to enable a number of smaller allotments to be released which provide for the smaller housing type. As noted above, the proposed layout, size and shape of the allotments provides some opportunity for future intensification without adversely effecting existing housing stock, thereby providing a variety of options within the township.

11.15 Policy 11 enables Councils to remove car parking requirements subject to supply and demand of parking spaces. It is noted that Proposed Lots 1-65 have sufficient room to accommodate at least 2 parks on site, whilst the MURCs will have one park per residential unit plus a guest park per 5 units. The road has been designed with an 8m wide carriage to enable on street parking.

11.16 The writer considers that the proposal is able to meet with the objectives and policies of the NPS-UD.

New Zealand Coastal Policy Statement 2010

11.17 Section 104 (1)(b)(iv) of the Act requires the Council have regard to any relevant provisions of a National Policy Statement.

11.18 The purpose of the New Zealand Coastal Policy Statement 2010 (NZCPS) is to state policies in order to achieve the purpose of the Act in relation to the coastal environment of New Zealand.

11.19 The proposed stormwater from the subdivision is being detention to ensure that their flow rates do not result in an increase peak of stormwater flows into Lyell Creek.

11.20 The subject property is located around 600m from the coastline, set behind existing commercial and residential development and would not be considered to be Coastal, although it does have views. As such, the writer considers that the NZCPS is not triggered.

National Policy Statement for Highly Productive Land 2022.

11.21 National Policy Statement for Highly Productive Land 2022 (NPS-HPL) seeks to protect highly productive land for use in land-based primary production, both now and for future generations.

11.22 The application site has been mapped by ECan as being Land Use Capability Class 3 (LUC 3), even though the land is already zoned Residential B.

ECan's Land Use Capability Class Map

11.23 Regulation 3.4(2) notes that *land that, at the commencement date, is identified for future urban development must not be mapped as highly productive land.* Therefore, it is considered that the land is not to be considered as Highly Productive Land under the NPS-HPL.

12.0 REGIONAL POLICY STATEMENT AND PLANS

Canterbury Regional Policy Statement

12.1 Section 104(1)(b)(v) of the Act requires the Council have regard to any relevant provisions of a Regional Policy Statement. The Canterbury Regional Policy Statement provides an overview of the resource management issues in the Canterbury region, and the objectives, policies and methods to achieve integrated management of natural and physical resources.

12.2 Objective 5.2.1 and its relevant policies seek that development as *located and designed achieves consolidated, well designed and sustainable growth in and around existing urban areas,* whilst Objective 5.3.1 seeks to enable urban growth. The proposed subdivision is within the Residential B Zone, set aside for development. The proposal seeks to increase the density within the subject property and the subdivision has been designed to accommodate the growth including with provision of services as per Objective 5.3.6.

12.3 Objective 5.2.3 seeks a *safe, efficient and effective transport system*. The Traffic Impact Assessment in **Appendix O** confirms that this is able to be achieved both within the subject property and along Mt Fyffe Road.

12.4 Objective 7.2.1 seeks *sustainable management of fresh water.* The proposed subdivision has been designed to ensure that overland flow paths are contained within areas to vest as reserve which will improve access under Policy 10.3.5. These reserves are able to be planted, which will enhance the overland flow paths, also in line with Policy 9.3.4. Stormwater is to be connected in a piped network through the subdivision, to then discharge to an open drain alongside Ludstone Road and eventually into Council's reticulated stormwater network. The Applicant requires a new stormwater discharge consent, which is then able to be transferred to Council as network operator.

12.5 Objective 11.2.1 seeks to avoid *subdivision and development of land that increases risks associated with natural hazards*. The subject property has been considered to have low natural hazard risk and is suitable for subdivision. The reserve areas Proposed Lots 93-96 have been designed to accommodate a Q_{100} event. Therefore, the subdivision complies with Policy 11.3.2.

12.6 The application site is not within an Outstanding Landscape, nor is it a Heritage site. However, the subdivision has been designed around the theme of its former use, being a vicarage, with the proposal to provide a community that looks internal to provide care and support as per Policy 13.3.3.1.g and h.

12.7 Chapter 15 deals with Soils. The land has been zoned Residential B and therefore an assessment on the loss of productive soils is not being undertaken. The land is considered to not be hazardous, complying with Objective 17.2.1. Earthworks are to be undertaken in accordance with DESCP as per Objective 15.2.2.

12.8 The writer considers that the proposal is able to meet with the objectives and policies of the Canterbury Regional Policy Statement.

Canterbury Land and Water Regional Plan

12.9 The writer considers that the proposal is able to meet with the objectives and policies of the Canterbury Land and Water Regional Plan.

12.10 Objective 3.2 requires that water management apply *the ethic of ki uta ki tai – from the mountains to the sea – and land and water are managed as integrated natural resources recognising the connectivity between surface water and groundwater, and between fresh water, land and the coast*. Consideration of catchments has been made to ensure that no additional waters enter into the western or eastern catchments. On site detention is provided to ensure that post development flows do not exceed pre development flows. This has been spread across two catchments which feed into the one lower catchment.

12.11 Objective 3.5 seeks that land uses *continue to develop and change in response to socio-economic and community demand*. The proposal is achieving this by way of providing a variety of housing types across the subdivision.

12.12 The Applicant acknowledges the requirement to obtain a discharge consent addressing the effects of stormwater management.

13.0 APPLICATION FOR RESTRICTED DISCRETIONARY ACTIVITY

13.1 Pursuant to Section 104C(1), after considering an application for resource consent for a restricted discretionary activity, a consent authority must consider only those matters which-

(a) a discretion is restricted in national environmental standards or other regulations:
(b) it has restricted the exercise of its discretion in its plan or proposed plan.

13.2 Under Section 104C(2), the consent authority may grant or refuse the application based on the effects of the matters that have been restricted only. Furthermore, if granted, Council may only impose conditions under Section 104C(3) for those matters that have been restricted.

13.3 In terms of the above, our assessment has concluded that the adverse effects of the subdivision on the environment will be no more than minor and will not be contrary to the objectives and policies of the operative District Plan or the various National Environmental Standards.

13.4 We therefore anticipate that the application will be granted, and we also anticipate imposed conditions in respect of matters where control is expressly provided for within the operative District Plan.

14.0 RESOURCE MANAGEMENT ACT 1991 - PART 2

14.1 The Applicant seeks two consents from the Council, being a subdivision of the subject property into 65 standard residential allotments of at least 500m^2 within the Residential B Zone, and two larger allotments for future MURCs. The subdivision includes vesting of Roads and Reserves.

14.2 The Applicant is also seeking Land Use consent for the development of one residential unit on each of Proposed Lots 1-65, subject to specific standards as outlined in the application. The Applicant is also seeking Land Use consent for the development of a MURC for up to 10 residential units on each of Proposed Lots 91 and 92, also subject to specific standards as outlined in the application.

14.3 Consent is also required from ECan for the earthworks and the stormwater discharge from the development into the Council's reticulated network but which is outside of Council's Global Stormwater Consent.

14.4 The proposed subdivision has been designed in a sustainable manner, to meet the foreseeable needs of future growth needs of Kaikoura.

14.5 Based on the former use as a vicarage, the Applicant seeks to create a community that looks out to one another, and this reflects the churches pastoral care philosophy. To achieve this, the Applicant has centralised development around a triangle roading system, enabling connection through the site, and has provided a sense of place with the lychgate entrance. Furthermore, as community has a diversity of peoples, and as such the development includes two development types, providing a range of allotments and development types in relation to affordability. It is therefore considered that the proposal enables communities to provide for their social, economic, and cultural wellbeing.

14.6 The inclusion of reserves along the overland flow paths enables both the safeguarding and enhancement of the overland flows and improves runoff through the site.

14.7 The subdivision breaches two main rules in relation to density of sections, and site coverage, however the effects are mitigated by the inclusion of reduced building heights across of the application site.

14.8 Section 6 of the Resource Management Act provides for recognising and providing for matters of National Importance, whilst Section 7 deals with other matters for which regard must be had. In the subject case, those matters of potential relevance are:

- The subject property contains overland flow paths which run from time to time, and there are three discharge points from the property. The Applicant seeks to protect the overland flow paths in Proposed Lots 93-96 as reserves and these may be planted to enhance water quality. This is consistent with Sections 6(a) and (b) and Section 7(d).

- The subject property is not within an Outstanding Landscape or contain an Outstanding Natural Feature. Nor does is contain areas of significant indigenous vegetation and significant habitats of indigenous fauna. Therefore Sections 6(b) and (c) are not applicable.

- The Applicant acknowledges the relationship and history that iwi have had within the Kaikoura area. The application is outside of a Statutory Acknowledgment Area, and there are no recorded cultural sites, however this does not preclude the area from having significance to iwi. The Applicant acknowledges that only iwi can comment on whether Section 6(e) has been recognised and provided to and Sections 7(a) and (aa) have regarded.

  The Applicant is volunteering to undertake construction in accordance with an Accidental Discovery Protocol, which requires consultation with iwi (Te-Runanga-o-Kaikoura) upon any discovery of a cultural site, in accordance with Section 6(f) and 3.4.2.5 of Te-Runanga-o-Kaikoura Environmental Management Plan.

3.4.2.10 of Te-Runanga-o-Kaikoura Environmental Management Plan seeks to ensure that the scale of building does not unreasonably detract from the natural landscape and character of the Kaikoura area. The subject property is located within the Residential B zone, and contains a mixture of housing types that do not detract from the residential nature of the site. Each allotment will connect to Council's reticulation in accordance with 3.4.2.11 and 3.4.11.4.

- The subject property has been assessed as being suitable for subdivision and building on the proposed allotments under Section 6(h) and Section 106.

- The subject property is zoned Residential B and the proposed subdivision layout is an efficient use of the site as per Section 7(b).

- The development has been designed with a sense of place with the lychgate entrance and planting within the reserves. The two development types provide a range of allotments and development types which provides variety. The proposal also includes undergrounding the powerlines. As such, the proposal is considered to maintain and enhance the residential amenity value of the site, albeit that it differs from its current amenity.

14.9 It is therefore considered that the proposal is a sustainable use of the application site.

15.0 OTHER CONSENTS RELATING TO THE PROPOSAL

15.1 The overall proposal involves development activities that will be considered and controlled via other approvals and consents. We can comment on these as follows:

15.2 The construction works associated with the development needs to be considered by ECan via their Land and Water and Canterbury Air Regional Plans. This will particularly impact on stormwater and dust discharges.

15.3 Construction discharges will be managed via the implementation of DESCP that will be prepared by the project engineers. This will form the substance of an application to ECan for consent for the construction phase stormwater discharges, and provided to the Council as part of the Engineering Plans. This application is being prepared and will shortly be submitted to ECan for processing.

15.4 Following the completion of the development, the future ongoing stormwater discharges from the future land use activities within the allotments will be an activity to be considered by Environment Canterbury via their Land and Water Regional Plan. This is the case as the present "global" stormwater discharge consent issued to Council by ECan will not cover these discharges; the site is not within the lands covered by this "global" consent.

15.5 We have discussed the situation with both ECan and staff at Council, and it has been determined that a new Discharge Consent is required. This will be applied for by the Applicant, and on completion of the development the Consent will be transferred to the Council. This transfer is necessary as the stormwater system will vest with Council on the completion of the development.

15.6 The Applicant is presently preparing the ECan discharge application and will shortly submit it together with the above applications for the construction discharges.

15.7 The Applicant is happy to provide Council with copies of the applications if necessary. In any event we will provide a copy of the application for the ongoing stormwater discharge given the resulting Consent will transfer to Council.

16.0 DEVELOPMENT CONTRIBUTIONS

16.1 The assessment and payment of Development Contributions is not a matter within the Resource Management Act. It is addressed in terms of the Local Government Act 2002.

16.2 It is Council policy to consider all developments and impose a Development Contribution (cash or land) where there is a perceived additional demand for reserves, network infrastructure and community infrastructure created as a result of growth.

16.3 The matter of Development Contributions for the proposal is being discussed at this time, and a Private Developer Agreement is being prepared by the Applicant. This is provided for via the Council's Development Contributions Policy.

17.0 CONCLUSION

17.1 The application has addressed all of the assessment criteria relevant to this proposal and concludes that any effects that may arise from the proposed subdivision are likely to be less than minor.

17.2 It is considered that the proposal is in general accordance with the purpose of the Resource Management Act 1991.

17.3 Accordingly, we ask that Council grant the consent sought in accordance with Sections 104 and 104C of the Resource Management Act 1991.

Appendices

Appendix A:	Council Form 9.
Appendix B:	Records of Title.
Appendix C:	Subdivision and Land Use Proposal Plans.
Appendix D:	Geotechnical Report and s106 RMA Assessment.
Appendix E:	Environment Canterbury LLUR Report.
Appendix F:	NES-CS: Soil Contamination Memo.
Appendix G:	Development Concepts: Proposed Engineering Works and Land Development Concept Design Report.
Appendix H:	Development Concepts: Power Supply.
Appendix I:	Development Concepts: Communications.
Appendix J:	Development Concepts: Landscaping.
Appendix K:	Compliance Schedules: District Plan Rules and Standards.
Appendix L:	Volunteered Subdivision Performance Standards.
Appendix M:	Volunteered Land Use Performance Standards.
Appendix N:	Received Written Approvals.
Appendix O:	Traffic Impact Assessment.

APPENDIX A

Council Form 9.

KAIKŌURA DISTRICT COUNCIL

FORM 9
Application for Resource Consent
(SUBDIVISION AND/OR LAND USE)
Resource Management Act (1991) Sec 88

Name of Applicant: Vicarage Views Ltd

Address of Applicant: c/o Hill Lee & Scott
Tourism House Level 1/36 Sir William
Pickering Drive, Burnside, Christchurch 8053

Location of Activity: 2 Mount Fyffe Road, Kaikōura 7300, New Zealand

Legal Description: Lot 1 Deposited Plan 3364 and Section 34 Block X Mount Fyffe Survey District & Part Section 198 Kaikoura Suburban Registration District
(from your rates notice)

Valuation Number: 2107031900 & 2107031902
(from your rates notice)

Telephone Number: (Home)_____ (Work)_____
(Cell) 027 228 9410 Fax No:_____

To be contacted by email; please provide address:

Email: captaincargill@gmail.com

Are additional Resource Consents Required From Other Consent Authorities? Yes / No
If yes, which consents are required? Stormwater Discharge ECan

If consent has been granted please attach a copy of consent.

Information to be supplied on all applications:

☐ All required information as per the attached information sheet. **Please submit all site plans in A3 or smaller. If detail requires a larger size please also submit copy in A3 for photocopying.**

☐ Written approvals from all potentially affected parties. Please note that the affected parties must sign all plans and/or maps associated with the application and the affected parties' approval form and these have been included. **Please note: all owners and occupiers of a property must sign both approval form and site plans.**

☐ A copy of the Certificate of Title no more than six month old for all subject sites.

☐ A Brief Description of activity to which the application relates (use separate sheet if necessary)

CONTINUED

Fees

I enclose the base fee as indicated below and I understand that I will be invoiced for any additional actual costs relating to this application:

Subdivision Consent	Base fee $1,800
Sub division – more than two lots	The above base fee applies, plus $400 per lot over two lots
If public or limited notification of an application requires a hearing	All additional Base Fee of $1600 plus additional actual costs if any.
Subdivision Consent (Post Decision) – this is invoiced on completion of the consent. These fees are charged on an hourly rate based on time spent. These fees and charges relate to the processing and administration of a subdivision consent post decision up to the S224 stage and include the following:- **Planner's time per hour**:- - Title plan checking and certification (S223) - Consent notice preparation & issue - Refundable bond preparation - Checking and issuing conditions certification (S224) - Registering bond preparation & releases **Engineering Time per hour**: - Engineering plan checking and approval - Roads, access ways and services	Planning Officers $135.00 Senior Planner $150.00 Asset Manager $160.00 Engineering Technical Support Officer $145.00 Environment Health Officer $150.00 Administration $90.00 Building Control Officer: $150.00

Name & Address of Appointed Agent (if applicable):

KPMO

43, Lovers lane 7300 Kaikoura

Telephone Number: (Home)_____ (Work)_____

(Cell) 027 571 7399 Fax No:_____

To be contacted by email; please provide address:

Email: william.loppe@kpmo.co.nz

NOTE:

The applicant and his/her agent are liable for all fees and charges relating to this application. In the event of non- payment the applicant and/or the agent will be liable for all legal and other costs of recovery.

Where this application is completed and signed by an agent, the invoice for the fees will be sent to the agent and all communication regarding the application will be with the agent.

Date: 16/12/2022

SIGNATURE OF APPLICANT
(OR APPROVED AGENT)

INFORMATION TO BE SUPPLIED WITH A RESOURCE CONSENT APPLICATION FOR SUBDIVISION

1. An assessment of any actual or potential effects that the activity may have on the environment and the ways in which any adverse effect may be avoided, remedied or mitigated.

2. The assessment should:
   - Be in such detail as corresponds with the scale and significance of the actual or potential effects that the activity may have on the environment; and
   - Where relevant, include the following details:
     i. A description of the proposal
     ii. A description of any possible alternative locations or methods of undertaking the activity, Where it is likely that the that the activity will result in significant adverse effects on the environment
     iii. An assessment of the actual or potential effects on the environment of the proposed activity
     iv. Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use
     v. Where the activity includes the discharge of any contaminant, a description of:
        1. the nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects
        2. any possible alternative methods of discharge, including discharge into any other receiving environments
     vi. A description of the mitigation measures (safeguards and contingency plans where relevant), to be undertaken to help prevent or reduce the actual or potential effects
     vii. An identification of those persons affected by the proposal, the consultation undertaken and any response to the views of those consulted
     viii. Where the scale or significance of the activity's effect is such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.

3. A statement specifying all other resource consents that the application may require from any consent authority in respect of the activity to which the application relates, and whether or not the application has applied for such consents.

4. A copy of the certificate of title no more than six months old.

5. A drawing showing the location of the site such that its location can be readily determined, with road names, property names, north point and any significant built or topographical features.

6. Where relevant, an assessment of visibility onto and of the development site
.
7. A full description of any geological or other natural hazards to which the site may be subject, its suitability for the subdivision, and the means by which any adverse effects of the hazards are to be avoided, remedied or mitigated.

8. A completed NESC declaration form (insert web link). It should be completed in conjunction with the Appendix 1 of HAIL (To attach)

Plans

The following plans must be supplied and drawn to an appropriate stated metric scale to show sufficient details of the proposal to enable the Council to determine its effects. Please provide at least one complete copy in no larger size than A3.

l. Two scaled copies of the site plan showing accurate dimensions in meters. The site plans must show:

a. A north point accurately orientated
b. A unique plan number and title describing the proposal and the site;

and

The site plan should also show, where relevant:

a) Topographical information (including New Zealand map grid references), wherever possible in terms of the Kaikoura Datum, together with a certificate as to its origin and accuracy
b) Details of hazardous areas (for example , un-compacted filling or flood-prone areas)
c) Existing building and buildings on adjacent sites and their location in relation to existing and proposed boundaries
d) Landforms and landscape elements
e) Watercourses, Wetlands, and catchments orientation and whether or not any adjoining river has an average width of3 meters or more
f) The location and areas of any existing esplanade reserves, strips or access Strips
g) All significant nature conservation areas including indigenous vegetation, ecosystems, the margins of Water bodies or Wetlands
h) All significant individual trees
i) The existing street names and numbers
j) The position of the existing water, sewer, and storm water services and the position of existing water supply bores and effluent disposal fields on the site and on adjacent sites
k) Existing easements and covenant areas
l) The formation standards o froads adjoining the subject land and the location of the carriageway and any kerb and channel or footpath

Two scaled copies of a subdivision plan showing the following detail, where relevant

a) The position of all proposed lots, and certificates oftitle, boundaries, and their dimensions
b) The area of all new lots, including net areas
c) Existing indicative building positions and services and their location in relation to existing and proposed boundaries
d) Indicative vehicle access points and driveway on street edges
e) Location and type of all proposed trees and other vegetation, including all existing vegetation to be retained
f) Proposed earthworks and retaining walls, their scale and dimensions
g) Proposed methods of servicing the new lots with water, effluent disposal, electricity supply and storm water disposal
h) Any land proposed to be set aside as new road and/or public open space for recreational purposes
i) Levels on the new lot boundaries and except where lots are less than lO0Om2 in area or have a uniform grade of less than 1 in l0, contours of each lot
j) Formation widths and grades of proposed roads and right of way, parking bays and bus stops
k) Proposed easements and covenant areas
Where reserves and /or roads are to be vested in the Council, the location and areas of the proposed reserves and /or walkways and any tree planting proposed for the reserves and/or roads to vest in the Council; including esplanade reserves and strips, and access strips
l) The location of any part of the bed of a river or lake, which is requires under Section 237A of the resource management Act to be shown on a survey plan as land to be vested in the Crown
m) Information to show compliance with any other District Plan rule
n) The location of any waahi tapu or waahi taonga or rnahinga kai areas
o) The location of any listed heritage items

Please note: further information may be required from an applicant where it is considered necessary to better understand the nature of the activity, the effect it may have on the environment, or the ways

in which adverse effects may be mitigated, Council may also commission a report, at the applicant's expense, on any matters in relation to the application or any environmental assessments of effects.

FOURTH SCHEDULE
S88(6)(b)

1 Matters that should be included in an assessment of effects on the environment
Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of section [88] should include—
(a) A description of the proposal:

(b) Where it is likely that an activity will result in any significant adverse effect 011 the environment, a description of any possible alternative locations or methods for undertaking the activity:

(c) Repealed.

(d) An assessment of the actual or potential effect on the environment of the proposed activity:

(e) Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use:

(f) Where the activity includes the discharge of any contaminant, a description of-— _
(i) The nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and
(ii) Any possible alternative methods of discharge, including discharge into any other receiving environment

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

(h) identification of the persons affected by the proposal, the consultation undertaken, if any, and any response to the views of any person consulted:]

(i) Where the scale or significance of the activity's effect are such that monitoring is required, a description of how, once the proposal is approved, effects will be monitored and by whom.

2 **Matters that should be considered when preparing an assessment of effects on the environment**

Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:

(a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:

(b) Any physical effect on the locality, including any landscape and visual effects:

(c) Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:

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

(e) Any discharge of contaminants into the environment, including any unreasonable emission of noise
and options for the treatment and disposal of contaminants:

(f) Any risk to the neighbourhood, the wider community, or the environment through natural hazards or

the use of hazardous substances or hazardous installations.

LODGING A CONSENT APPLICATION

The following notes will help you to ensure that you prepare the basic information required for Council Officers to begin processing your consent application.

The Form 5

It will save you time and money to fill out this form out completely as possible. Please provide a brief description of your proposal on the application form and attach complete details on a separate sheet. Please use both sides of the paper Whenever possible.

If you require consents form Canterbury regional Council this should be indicated on Form 5 and whether they have been obtained or are in the process of being applied for.

Address for service refers to Whom the Council should contact regarding this application as it is being processed (ie your consultant/Agent if any).

Application Fees ‘

The correct application fee must be paid when you lodge your application. Council officers can explain which fee you need to pay. Please be aware that these fees (With the exception of the signs permits) are base fees and the actual cost of your consent will be based on the time spent to process your application. If time spent exceeds the base fee you will be invoiced for the difference. You may be “progressively invoiced” if your application is time-consuming and extends over many months.

Site Plans

Site plans should be to scale in metrics and indicate the location of any existing and proposed buildings. It is also likely that you will need to include details of elevation of existing and proposed buildings. Please insure that one copy of the plans are no larger that A3.

Assessment of Environmental Effects (AEE)

An AEE is required under section 88 of the Resource Management Act 1991 and should be written in accordance with the Fourth Schedule of the Act (see proceeding page). It is perhaps the most important feature of the application and influences the Council’s decision to grant or refuse resource consent.

Case law has established that a consent authority cannot make a decision on a consent application if the AEE does not sufficiently address any actual or potential effects a proposal might have on the environment.

Affected Parties

Non-notified consent applications require Written approval for a proposal is obtained from any potentially adversely affected party. Who is potentially adversely affected can be difficult to identify, but you should attempt to identify and consult with affected parties before you lodge your application. Council Planning staff may be able to offer guidance. If a party refuses to grant consent which is Within their right, please note their concerns on the application. The application may or may not need to be notified if approval can not be obtained. You may be required to further consult with additional parties after Council assesses your application. **Please note**! You need to obtain written approval from all owners of a property and/or any occupier.

Please remember!

Council officers are here to help you at any stage of the application process and will endeavour to process your application as quickly as possible. Requests for further information are common to

complete an application or to clarify details. While Council officers try to request this information in the early stages of the process,,requests for information may be required until a decision is reached.

APPENDIX B

Records of Title.

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **MB1C/1432**

Part-Cancelled

Land Registration District **Marlborough**

Date Issued 15 November 1967

Prior References

MB52/284 MB53/154

Estate	Fee Simple
Area	1.2768 hectares more or less
Legal Description	Lot 1 Deposited Plan 3364 and Section 34 Block X Mount Fyffe Survey District

Registered Owners

Vicarage Views Limited

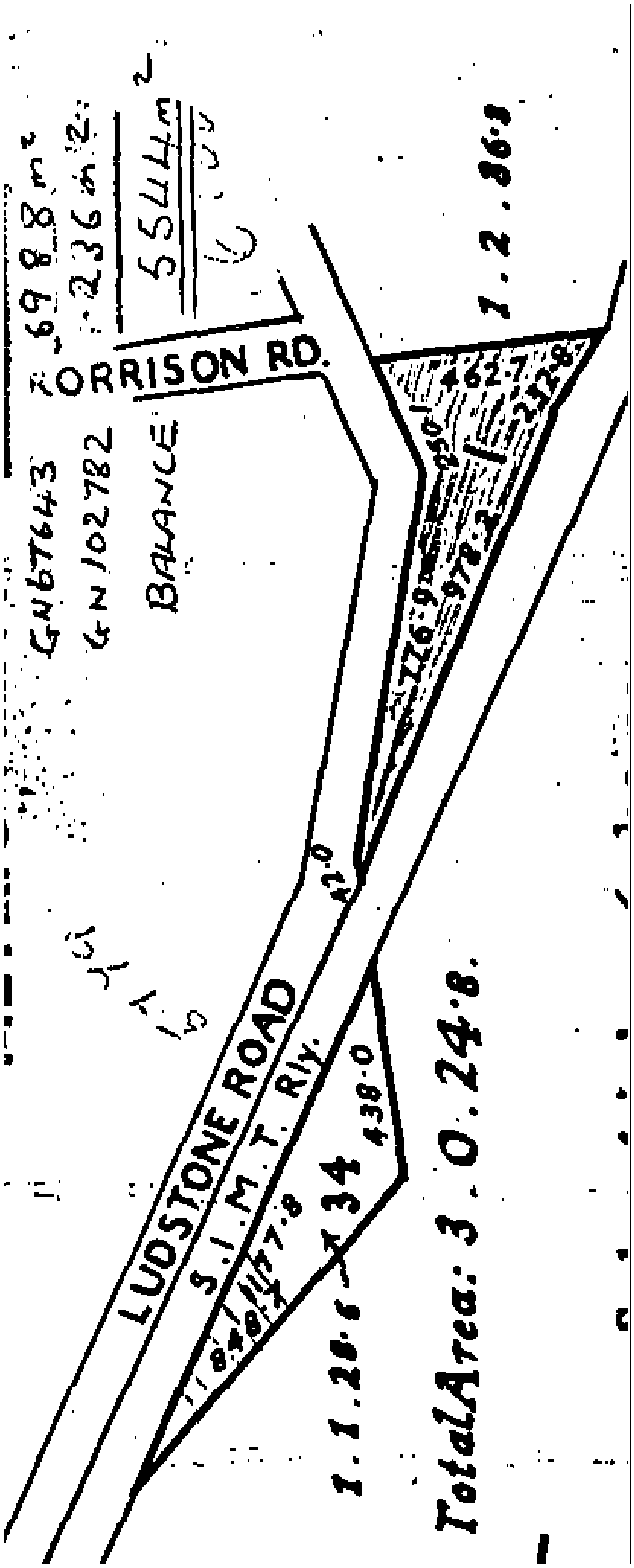
Interests

Subject to Section 8 Coal Mines Amendment Act 1950 (affects Section 34 Block X Mount Fyffe Survey District)

66125 Compensation Certificate against Lot 1 DP 3364 under Section 17 Public Works Amendment Act 1948 - 12.1.1972 at 9.07 am

67643 Gazette Notice declaring part (1 acre 2 roods 36.3 perches) of the within land, being also Lot 1 DP 3364 taken for buildings of General Government from and after the 5th day of June 1972 - 12.6.1972 at 9.00 am

102782 Gazette Notice taking part of the within land shown B on SO 5799 for the transmission of electricity (substation) from and after 19.3.1981 - 21.4.1981 at 11.14 am


ORRISON RD.
LUDSTONE ROAD
S.I.M.T. Rly.
BALANCE
GN67643
GN102782
Total Area: 3.0.24.8.

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Limited as to Parcels
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **MB1C/1433**

Part-Cancelled

Land Registration District **Marlborough**

Date Issued 15 November 1967

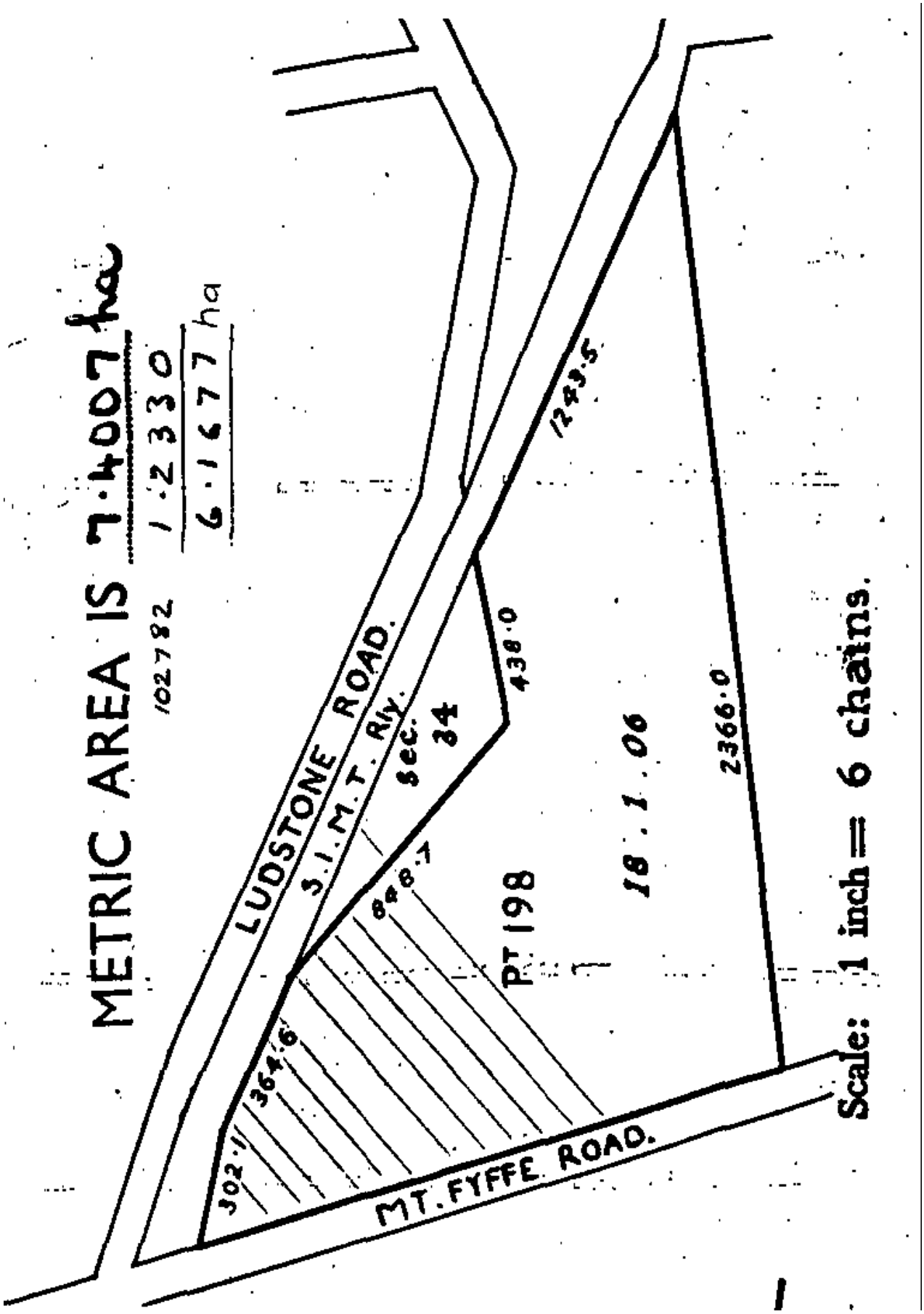
Prior References
MB52/284

Estate	Fee Simple
Area	7.4007 hectares more or less
Legal Description	Part Section 198 Kaikoura Suburban Registration District

Registered Owners
Vicarage Views Limited

Interests

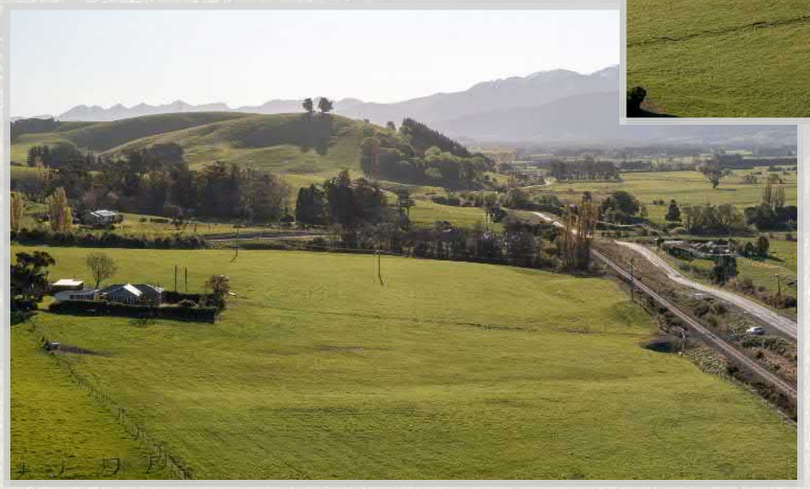
102782 Gazette Notice taking part of the within land shown A on SO 5799 for the transmission of electricity (substation) from and after 19.3.1981 - 21.4.1981 at 11.14 am


METRIC AREA IS 7·4007 ha
1:2330
6·1677 ha
102782
LUDSTONE ROAD.
S.I.M.T. Rly.
Sec. 34
438·0
1243·5
2366·0
18.1.06
PT 198
848·1
364·6
302·1
MT. FYFFE ROAD.
Scale: 1 inch = 6 chains.

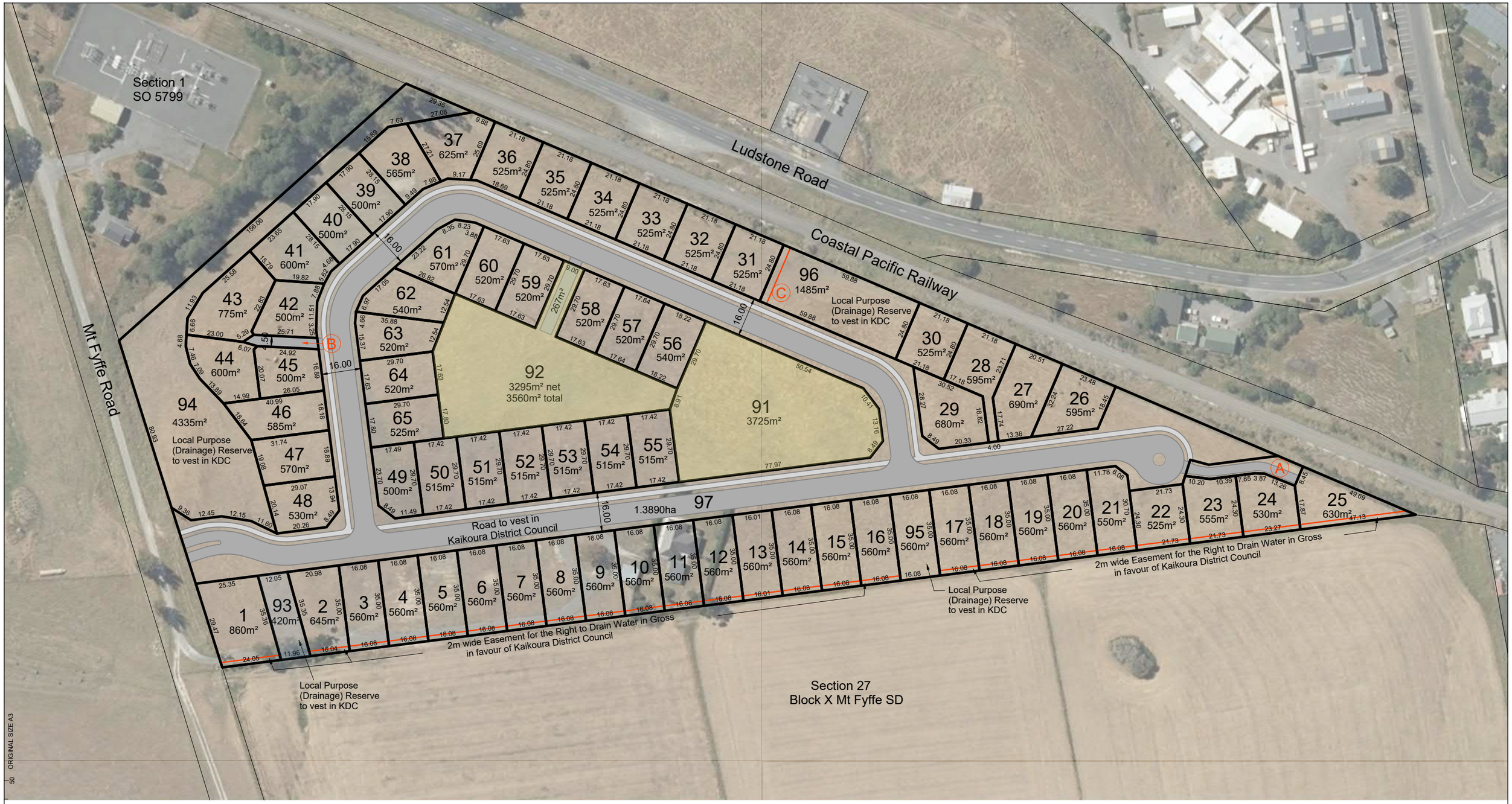
APPENDIX C

Subdivision and Land Use Proposal Plans.

VICARAGE VIEWS DEVELOPMENT



STAIG & SMITH LTD



NOTES :
1) DO NOT SCALE FROM DRAWING.
2) AREAS AND DIMENSIONS ARE APPROXIMATE ONLY AND SUBJECT TO FINAL SURVEY.
3) THIS IS A SUBDIVISION PROPOSAL PLAN ONLY.
4) A SUBDIVISION CONSENT HAS NOT ISSUED FOR THIS PROPOSED LAYOUT. CONFIRMATION OF THE LAYOUT CAN ONLY BE ACHIEVED THROUGH THE ISSUE OF A SUBDIVISION CONSENT.
5) ADDITIONAL EASEMENTS MAY BE REQUIRED.
6) AERIAL PHOTOGRAPH IS FOR CONTEXT ONLY.

Lots 1 - 65 & 91 - 96 being a Proposed Subdivision of Lot 1 DP 575959

PROPOSED EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND / GRANTEE
Right of Way, Drain Sewage, Convey Water, Electricity & Telecommunications	A	Lots 23, 24, 25	Lots 23, 24, 25
	B	Lots 43, 44	Lots 42,43, 44
Convey Electricity in gross	C	Lot 96	MainPower NZ Ltd
Drain Water in gross	Lots 1 - 25	Lots 1 - 25	Kaikorua District Council

STAIG & SMITH LTD
81 Selwyn Place, Nelson
248 Montreal St, Christchurch
Ph: 0800 807 818
www.staigsmith.co.nz
enquiries@staigsmith.co.nz

AMENDMENT | DATE

JOB/CLIENT: Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING: Scheme Plan

Survey:
Drawn: SA/RS
Checked: JB
Approved:

ISSUE: G
DATE: 15 Dec 2022

PROJECT NO. 12601-SCH-01
SCALE: A3 A1
Hz 1:1500 -
Vt - -

SHEET 1 OF 3

ORIGINAL SIZE A3

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Scheme

Section 1
SO 5799

40m RAILWAY
NOISE BUFFER

Ludstone Road

Coastal Pacific Railway

Mt Fyffe Road

1 860m²
93 420m²
2 645m²
3 560m²
4 560m²
5 560m²
6 560m²
7 560m²
8 560m²
9 560m²
10 560m²
11 560m²
12 560m²
13 560m²
14 560m²
15 560m²
16 560m²
95 560m²
17 560m²
18 560m²
19 560m²
20 560m²
21 550m²
22 525m²
23 555m²
24 530m²
25 630m²
26 595m²
27 690m²
28 595m²
29 680m²
30 525m²
31 525m²
32 525m²
33 525m²
34 525m²
35 525m²
36 525m²
37 625m²
38 565m²
39 500m²
40 500m²
41 600m²
42 500m²
43 775m²
44 600m²
45 500m²
46 585m²
47 570m²
48 530m²
49 500m²
50 515m²
51 515m²
52 515m²
53 515m²
54 515m²
55 515m²
56 540m²
57 520m²
58 520m²
59 520m²
60 520m²
61 570m²
62 540m²
63 520m²
64 520m²
65 525m²

92
3295m² net
3560m² total

91
3725m²

94
4335m²
Local Purpose
(Drainage) Reserve
to vest in KDC

96
1485m²
Local Purpose
(Drainage) Reserve
to vest in KDC

97
1.3890ha

Road to vest in
Kaikoura District Council

LYCH
GATE

AS PER
LANDSCAPE
PLAN

TOB

40m RAILWAY
NOISE BUFFER

Local Purpose
(Drainage) Reserve
to vest in KDC

Local Purpose
(Drainage) Reserve
to vest in KDC

Section 27
Block X Mt Fyffe SD

ORIGINAL SIZE A3

0 10 20 30 40 50

KEY
SUBZONES

Density/Coverage

500m²/35%

300m²/35%

BUILD HEIGHT

5.5m

Lots
1-65 8.0m

SETBACKS

Reduce to 1m

Local Purpose
(Drainage) Reserve

STAIG & SMITH LTD
81 Selwyn Place, Nelson
248 Montreal St, Christchurch
Ph: 0800 807 818
www.staigsmith.co.nz
enquiries@staigsmith.co.nz

AMENDMENT DATE

JOB/CLIENT
Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING
Land Use Plan

N

Survey:
Drawn: SA
Checked: JB
Approved:

ISSUE G
DATE 15 Dec 2022

PROJECT NO. 12601-SCH-01
SCALE: A3 A1
Hz 1:1000 -
Vt - -

SHEET 2 OF 3

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Scheme

1. Kaikorua High School
2. St Joseph School
3. Catholic Church
4. Substation
5. Coastal Pacific Railway
6. Wildlife Refuge
7. Kaikoura Bowling Green
8. DOC Kaikoura Base
9. Seaview Subdivision

SITE

T1 Protected Trees along Esplanade

Mt Fyffe Rd
Ludstone Rd
Rorrisons Rd
Grays Lane
Beach Rd (SH1)
Kiwi St
Davidson Tce
Adelphi Tce
West End
Fyffe Ave
Bayview St
Hastings St
Deal St
Hospital
Takahanga Marae
Takahanga Domain
Esplanade
Killarney St
Takahanga Tce
Churchill St (SH1)
Whitby Pl
Torquay St
Yarmouth St
Pukeko Pl
Miromiro Dr
Tauhou Pl
Shearwater Dr

D23 D48 D18 D31 D12 D49 D11 D21 D40 D30 D32 D38 D43 D8 D26

H19 H20 H2 H16 H3 H6 T8 H13 H14 H18 H17 H15

A177 A59

R

ORIGINAL SIZE A3

STAIG & SMITH LTD 81 Selwyn Place, Nelson 248 Montreal St, Christchurch Ph: 0800 807 818 www.staigsmith.co.nz enquiries@staigsmith.co.nz	AMENDMENT / DATE	JOB/CLIENT Vicarage Views 2 Mt Fyffe Road Kaikoura	DRAWING Context Plan	Survey: Drawn: SA Checked: JB Approved:	ISSUE G DATE 15 Dec 2022 PROJECT NO. 12601-SCH-01 SCALE: A3 A1 Hz 1:1000 - Vt - -

SHEET 3 OF 3

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Scheme

APPENDIX D

Geotechnical Report and s106 RMA Assessment.

TETRA TECH COFFEY

Vicarage Views Subdivision

Geotechnical Assessment Report

Vicarage Views Limited

Reference: 773-CHCGE301387

12 May 2022

VICARAGE VIEWS SUBDIVISION

2 Mt Fyffe Road, Kaikoura

Report reference number: 773-CHCGE301387
12 May 2022

PREPARED FOR

Vicarage Views Limited
C/o Hill Lee & Scott
Tourism House Level
1/36 Sir William Pickering Drive, Burnside
Christchurch 8053

PREPARED BY

Tetra Tech Coffey
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Christchurch Central City
8013 New Zealand
p: +64 3 374 9600
f: +64 3 374 9601
NZBN 9429033691923

QUALITY INFORMATION

Revision history

Revision	Description	Date	Author	Reviewer	Approver
Rev 0	GAR	12/05/2022	B Chau	L Charles	L Charles

Distribution

Report Status	No. of copies	Format	Distributed to	Date
Rev 0	1	PDF	Vicarage Views Limited	12/05/2022

CONTENTS

LIST OF TABLES

APPENDICES

APPENDIX A: SITE PLAN

APPENDIX B: INVESTIGATION DATA

1. INTRODUCTION

Vicarage Views Limited has engaged Tetra Tech Coffey (NZ) Limited (Tetra Tech Coffey) to provide a geotechnical assessment for the proposed Vicarage Views Subdivision development to be located at 2 Mt Fyffe Road, Kaikoura (the subject site).

Following correspondence with William Loppe of KPMO Consultancy, we understand the site was previously used as an accommodation compound for the workers as part of the Northern Canterbury Transport Infrastructure Recovery (NCTIR) which consisted of the State Highway 1 (SH1) and Main North Line rebuild. This report is written based on the existing NCTIR data supplied by KPMO and data from the New Zealand Geotechnical Database (NZGD).

The purpose of this report is to provide a geotechnical assessment based on existing geotechnical investigation data to support the resource consent application for the proposed Vicarage Views Subdivision at the subject site for the construction of residential Lots at the site.

Our assessment has included the items required by Section 106 of the Resource Management Act (RMA) and we consider that it is geotechnically suitable for Plan Change and future subdivision. Further investigations and design may need to be carried out at the subdivision consent stage.

This report has been carried out with our signed proposal dated 2 April 2022.

2. SCOPE

The scope of work for the site as developed and carried out by Tetra Tech Coffey, is outlined below:

- Geotechnical desk study and review of available investigation data (NZGD and data supplied by KPMO) on the site and surrounding areas.
- Provide commentary on the geotechnical hazards at the site as per Section 106 of the RMA.
- Geotechnical review, assessment, and reporting.

Tetra Tech Coffey have considered the following in the preparation of this report:

- Existing geotechnical investigation data available from NZGD, Kaikoura District Council data base and Environment Canterbury well database.

3. AVAILABLE INVESTIGATION DATA

Available data have been supplied to us by KPMO and were used as part of our geotechnical assessment for the proposed subdivision. These are as follows:

- Geotechnics, Geotechnical Investigation Mt Fyffe Road Accommodation Facility Report[1].
- NCTIR, Temporary earthwork recovery accommodation facility, Kaikoura Report[2].
- NCTIR, Earthworks As-Built Completion Report[3].

[1] Geotechnics, *Geotechnical investigations Mt Fyffe Accommodation Facility Kaikoura Site Report*. Date: 9 May 2017 Ref: 1002462.0.6000/REP2
[2] NCTIR, *Temporary earthquake recovery accommodation facility, Kaikoura*. Date: April 2017
[3] NCTIR, *Earthworks AS Built Completion Report.* Date: 6 April 2018

4. SITE DETAILS

4.1 SITE DESCRIPTION

The site is located approximately 1.0 kilometre west of Kaikoura township and SH1 (see Figure 1 below). The approximate 6 ha site was previously used for pastoral farming prior to the establishment of the temporary accommodation for the workers as part of the NCTIR project, with approximately 0.7 ha occupied by dwellings and ancillary buildings. In order to provide a suitable foundation for the accommodation, minor earthworks were carried out between April and June 2017 in the approximate building area. Since the completion of reinstating SH1 in 2020 the accommodation has been dismantled and the site was reverted back to its previous state. The site is gently undulating with an overall descending slope to the east while relatively flat in the western portion due to earthworks.

Figure 1: Site Location (Source: Google Earth, 2022)

4.2 FLOOD HAZARD

Current information from the Kaikoura District Council (KDC)[4] indicates the site is not within a mapped flood area.

[4] https://apps.canterburymaps.govt.nz/KaikouraNaturalHazards/

4.3 CONTAMINATED LAND CONSIDERATIONS

Current information from the ECan Listed Land Use Register (LLUR) as part of the desktop study phase of this assessment. The information reviewed does not constitute a full preliminary site investigation (PSI) in accordance with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES). However, the information is considered sufficient to constitute Method 6 (2) of the NES for identification of a Hazardous Activities and Industries List (HAIL) site. The information reviewed did not identify the site as a HAIL site.

5. SITE INVESTIGATION

As part of the NCTIR temporary accommodation development, Geotechnics was engaged to complete a geotechnical site investigation between October and November 2017 and Southern Geophysical Limited[5] conducted a Ground Penetrating Radar (GPR) survey throughout the site in May 2017. A summary of the Geotechnics investigation is summarised in Table 1 and the investigation data are presented in Appendix B.

Table 1: Geotechnics 2 Mt Fyffe Road Investigation Data

Reference	Depth of test (metres below ground level)	Termination criteria	Reference	Depth of test (metres below ground level)	Termination criteria
BH01	7.0	Target depth	TP02/SC33	1.1	Target depth
BH02	6.5	Target depth	TP03/SC34	1.95	Target depth
BH03	6.5	Target depth	TP05/SC36	1.95	Target depth
BH04	5.0	Target depth	TP06/SC37	1.95	Target depth
BH05	5.5	Target depth	TP07/SC38	1.7	Target depth
HA01/SC15	1.9	Refusal	TP08/SC39	2.0	Target depth
HA02/SC07	2.2	Refusal	TP09/SC40	1.9	Target depth
HA03/SC16	2.9	Refusal	TP10/SC41	1.9	Target depth
HA04/SC14	3.85	Refusal	TP11/SC42	1.8	Target depth
HA05/SC18	2.35	Refusal	TP12/SC43	1.8	Target depth
HA06/SC25	2.6	Refusal			
HA07/SC26	2.0	Refusal			
HA08/SC27	1.4	Refusal			
HA09/SC28	2.0	Target Depth			
HA10/SC29	1.3	Refusal			
HA11/SC30	1.0	Refusal			
HA12/SC31	2.0	Target Depth			

[5]Southern Geophysical Ltd, *Geophysical Investigation: Ground Penetrating Radar, 22 Mt Fyffe Road, Kaikoura*. Date: May 2017

6. SITE PERFORMANCE

6.1 GROUND MOTION

The site was not mapped for ground damage following the Kaikoura 14 November 2016 M 7.8 earthquake. From information taken from the New Zealand Strong-Motion Database[6], the KIKS motion station (located adjacent to the Kaikoura marina, located approximate 2.9km from the site) recorded a maximum M_w=7.8 and a peak ground acceleration (PGA) of 0.25g.

For comparison, the Ministry of Business, Innovation, and Employment (MBIE) Module 1 indicates design values of M_w = 6.1 and PGA = 0.14g for serviceability limit state (SLS) and M_w = 6.7 and PGA = 0.56g for ultimate limit state (ULS). This infers that the site has experienced in excess of SLS levels of shaking.

7. GROUND MODEL

7.1 GEOLOGY

Based on on-site testing and with reference to the geological map[7], the area indicates that the site typically comprised of residual soil overlying the Amuri limestone bedrock. The residual soil can be described as "*River gravel, sand with minor silt, and fan deposits (uQa)*"

7.2 GROUNDWATER

The site is not located over any unconfined, semi-confined or coastal confined aquifer and there are no nearby bores as identified on ECan's Well website[8].

Groundwater is estimated be at least 7.0m below ground level in the lower (north-eastern) part of the site and at least 5.0m below ground level in the upper (south-western) part of the site.

7.3 SUBSURFACE PROFILE

Engineered fill of up to 1.0 m thick was encountered within the western portion of the site. These materials typically comprise of dense to very dense sandy gravel generally where the previous accommodation facilities were located. A summary of the ground model for the site is provided below:

[6] https://www.geonet.org.nz/data/supplementary/nzsmdb
[7] Rattenbury, M.S., Townsend, D.B., Johnston, M.R. (complier) 2006. Geology of the Kaikoura area. Institute of Geological & Nuclear Sciences 1: 250 000 geological map 13.1 Sheet = 70p. Lower Hutt, New Zealand: GNS Science.
[8] https://www.ecan.govt.nz/data/well-search/

Table 2: 2 Mt Fyffe Road Soil Profile Summary

Description	Depth to top of layer (mbgl)	Thickness (m)	Characteristics
Silt (topsoil)	0.0	0.2 to 0.5	N/A – to be removed during foundation construction.
Engineered fill (western portion only)	0.2 to 1.0	0.8	Dense to very dense
Silt/clayey silt (residual)	0.2 to 0.5	0.5 to 3.5	Stiff to hard. Not susceptible to liquefaction.
Amuri Formation - Limestone bedrock	1.5 to 3.5	>30.0	Moderately strong.

7.4 SITE SUBSOIL CLASS

In accordance with NZS1170.5, Section 3.1.3, a subsoil classification of “Class B – Rock” can be assumed for the site.

8. GEOTECHNICAL HAZARD ASSESSMENT

8.1 EROSION

The site is generally flat with a gentle rise towards the southwest corner. There are no natural streams or rivers within or adjacent to the site. Provided appropriate stormwater systems are installed as part of the development, there will be few viable sources of erosion at this site and we consider the risk of erosion low.

8.2 FALLING DEBRIS

As there are no slopes or exposed hills or rock faces within the site. However, there are exposed limestone outcrops of less than 1.0 m approximately in height along the railway line. Due to the proximity of the exposed rock and the proposed subdivision being above the face of the outcrop, the probability of falling debris can be considered negligible.

8.3 SUBSIDENCE

8.3.1 Karst Formation

Due to the presence of limestone, as part of the Amuri Formation, karst is generally formed due to the dissolution of soluble rocks such as limestone. This can be characterised by underground drainage systems with possible sinkholes and caves exist. Multichannel analysis of surface waves (MASW) investigation and Institute of Geological and Nuclear Science (GNS) map[9] of Kaikoura have identified multiple areas of subsurface anomalies and subsidence within and surrounding the site. Further investigation may be required to confirm the extent of these subsurface anomalies.

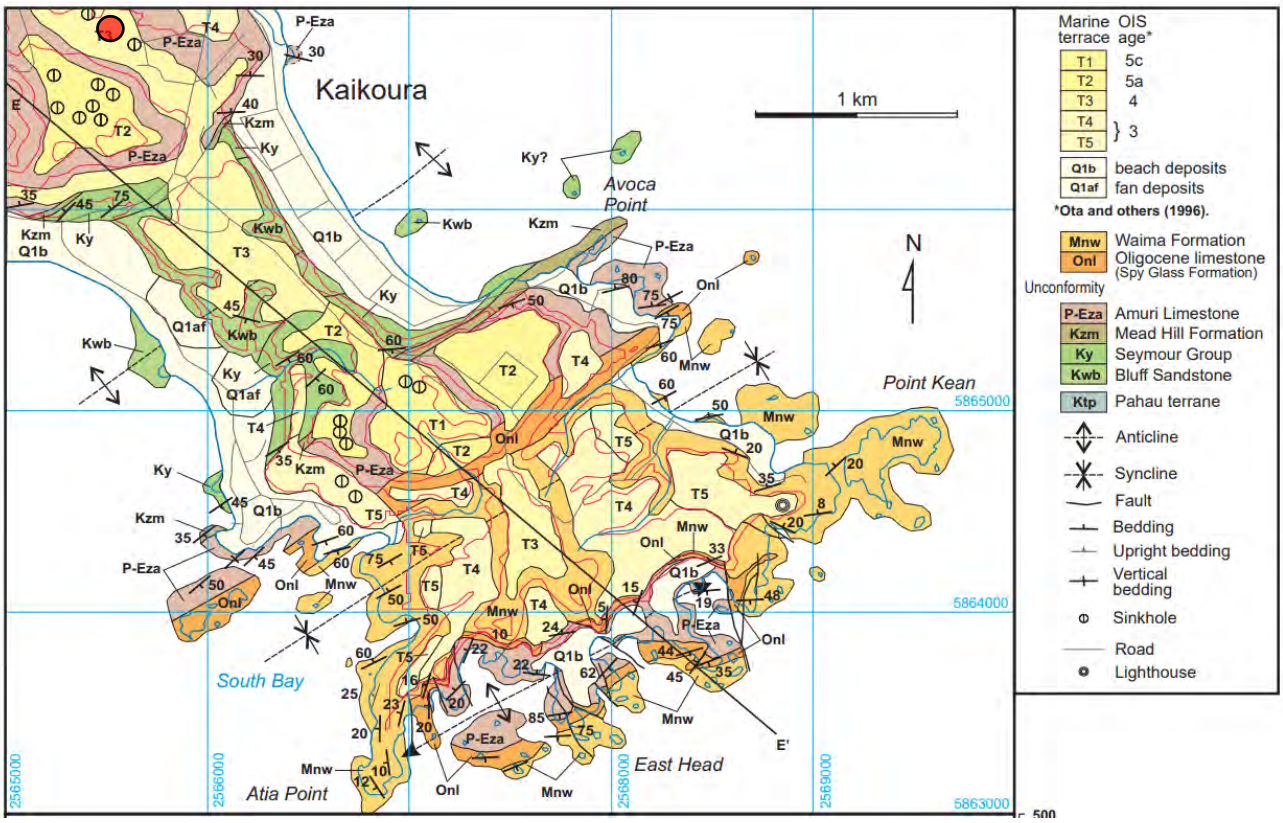


Figure 2: Identified sinkholes near the proposed subdivision site (red).

8.3.2 Liquefaction-Induced Settlement

Saturated, loose, uniform fine-grained alluvial soils are subject to seismic (liquefaction-induced) settlement during a significant earthquake. Liquefaction typically affects saturated, loose granular soils ranging from sandy silts to sands, but seismic shaking can also result in strength losses in fine-grained, cohesive soils. Alluvial soils were not encountered at the site.

Due to the underlying limestone bedrock, groundwater was not encountered at the site which we estimate to be greater than 7.0 m below ground level. The Kaikoura Hazards map indicate that liquefaction damage is unlikely and, therefore, the effects of liquefaction-induced settlement is considered to be low.

[9] Geology of the Kaikoura Area, Rattenbury, M.S., Townsend, D.B., Johnson, M.R. (complier) 2006: Geology of the Kaikoura area. Institute of Geological Sciences 1: 250 000 geological map. Pg 36 Figure 39

8.3.3 Static Settlement

Settlement is a crucial factor that can cause structure serviceability issues. Static load-induced settlement typically occurs in low-lying areas underlain by soft, compressible soils as a result of increased overburden loads. As the site is underlain by stiff to hard silt over bedrock, static settlement risk is considered low for the site provided earthworks are carried out to relevant standards.

8.4 SLIPPAGE

There are no known sources of potential slippage on the site and due to the relatively flat site topography, we consider the risk of slope failure to be very low.

8.5 INUNDATION

The site is not located within mapped flood areas[10] and therefore the risk of inundation is considered to be low.

9. CONCLUSIONS

We consider that the site is suitable for development subject to possible further investigation of potential karst formations within the site. The is considered suitable for NZS3604:2011 type foundations.

Additional geotechnical assessment and design will be required to refine the ground model and address specific geotechnical risks at the subdivision consent stage.

10. LIMITATIONS

This report has been prepared solely for the use of our client, Vicarage Views Limited and Kaikoura District Council in relation to the specific project described herein. No liability is accepted in respect of its use for other purposes or by other persons or entity.

It is recommended that other parties seek professional geotechnical advice to satisfy themselves as to its on-going suitability for their intended use.

As subsurface information has been obtained from discrete investigation locations, which by their nature only provide information about a relatively small volume of subsoils, there may be special conditions pertaining to this site which have not been disclosed by the investigation and which have not been taken into account in the report. If variations in the subsoils occur from those described or assumed to exist, then the matter should be referred to us immediately.

Please also refer to the enclosed *Important Information about Your Tetra Tech Coffey Report*.

[10] Kaikoura District Council Natural Hazards Map

11. CLOSURE

If you have queries or require further clarification regarding aspects of this report, please contact the undersigned.

For and on behalf of Tetra Tech Coffey

Prepared by

Ben Chau
BSc (Geology), PMEG
Engineering Geologist

Reviewed by

Lawrence Charles
BSc, MSc, CE (Calif), GE (Calif), CMEngNZ
Principal Geotechnical Engineer
CMEngNZ No. 1030540

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY REPORT

As a client of Tetra Tech Coffey you should know that site subsurface conditions cause more construction problems than any other factor. These notes have been prepared by Tetra Tech Coffey to help you interpret and understand the limitations of your report.

Your report is based on project specific criteria

Your report has been developed on the basis of your unique project specific requirements as understood by Tetra Tech Coffey and applies only to the site investigated. Project criteria typically include the general nature of the project; its size and configuration; the location of any structures on the site; other site improvements; the presence of underground utilities; and the additional risk imposed by scope-of-service limitations imposed by the client. Your report should not be used if there are any changes to the project without first asking Tetra Tech Coffey to assess how factors that changed subsequent to the date of the report affect the report's recommendations. Tetra Tech Coffey cannot accept responsibility for problems that may occur due to changed factors if they are not consulted.

Subsurface conditions can change

Subsurface conditions are created by natural processes and the activity of man. For example, water levels can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. Consult Tetra Tech Coffey to be advised how time may have impacted on the project.

Interpretation of factual data

Site assessment identifies actual subsurface conditions only at those points where samples are taken and when they are taken. Data derived from literature and external data source review, sampling and subsequent laboratory testing are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, owners should retain the services of Tetra Tech Coffey through the development stage, to identify variances, conduct additional tests if required, and recommend solutions to problems encountered on site.

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Tetra Tech Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered as the project develops. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Tetra Tech Coffey cannot be held responsible for such misinterpretation.

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Tetra Tech Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. Your report should not be applied to any project other than that originally specified at the time the report was issued.

Interpretation by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, retain Tetra Tech Coffey to work with other project design professionals who are affected by the report. Have Tetra Tech Coffey explain the report implications to design professionals affected by them and then review plans and specifications produced to see how they incorporate the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, drawings, etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These logs etc. should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Geoenvironmental concerns are not at issue

Your report is not likely to relate any findings, conclusions, or recommendations about the potential for hazardous materials existing at the site unless specifically required to do so by the client. Specialist equipment, techniques, and personnel are used to perform a geoenvironmental assessment. Contamination can create major health, safety and environmental risks. If you have no information about the potential for your site to be contaminated or create an environmental hazard, you are advised to contact Tetra Tech Coffey for information relating to geoenvironmental issues.

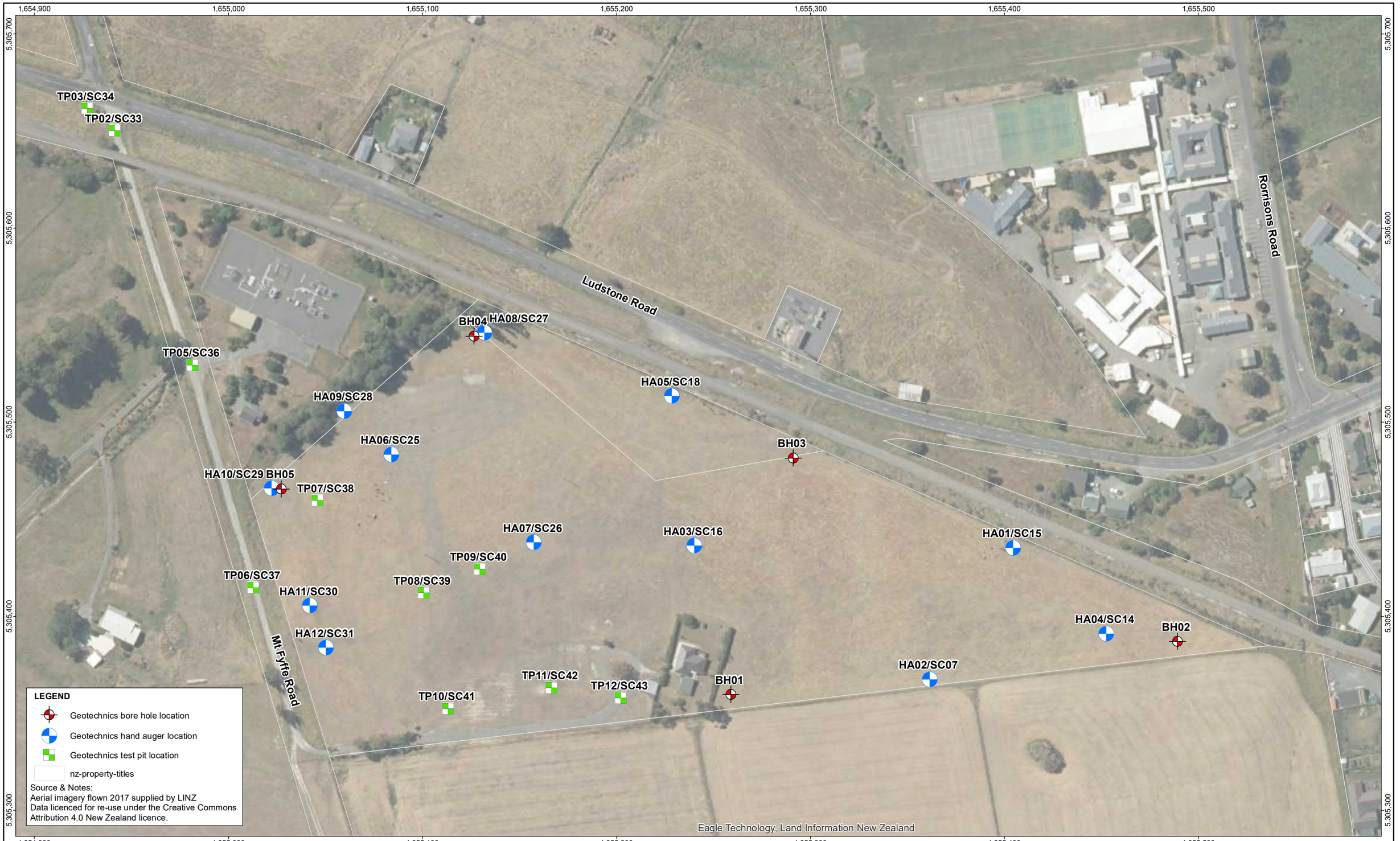
Rely on Tetra Tech Coffey for additional assistance

Tetra Tech Coffey is familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a project, from design to construction. It is common that not all approaches will be necessarily dealt with in your site assessment report due to concepts proposed at that time. As the project progresses through design towards construction, speak with Tetra Tech Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than the design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents. Responsibility clauses do not transfer appropriate liabilities from Tetra Tech Coffey to other parties but are included to identify where Tetra Tech Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Tetra Tech Coffey closely and do not hesitate to ask any questions you may have.

APPENDIX A: SITE PLAN



revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE	RZ	BC	04.05.22

N

0 20 40 60 80

SCALE 1:1,800 (A3) METRES

Projection: NZGD 2000 New Zealand Transverse Mercator

drawn	RZ
approved	BC
date	04.05.2022
scale	AS SHOWN
original size	A3

TETRA TECH COFFEY

client:	VICARAGE VIEWS LIMITED
project:	VICARAGE VIEWS SUBDIVISION, 2 MT FYFF ROAD, KAIKOURA
title:	SITE PLAN
project no:	773-CHCGE301387
figure no:	01
rev:	A

MXD ref: 301387_01_GIS001_1

APPENDIX B: INVESTIGATION DATA

BOREHOLE LOG

GEOTECHNICS

BOREHOLE No.: BH01

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	CO-ORDINATES: 5305358.73 mN 1655255.66 mE (NZTM)	R.L. GROUND:
JOB No.: 1002464.0.6000		R.L. COLLAR:
LOCATION: Refer to location plan	DIRECTION:	DATUM:
	ANGLE FROM HORIZ.: -90°	SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 07/04/2017
FINISH DATE: 07/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	ROCK DEFECTS: Fracture Spacing (mm)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy.						0										
	SILT, light brown. Moist, low plasticity, no dilatancy.			PQTT	100												
	1.0 to 1.05m- wet.			SPT	100	3/5 6/8 9/10 **N=33**	1										
	Becoming Sandy SILT, light brown. Moist, low plasticity, no dilatancy. Sand fine to medium.			HQTT	93		2										Box 1, 0.0-2.9m
	2.1 to 2.3m- no recovery.																
	3.0m- minor gravel; fine, rounded. Sand fine to coarse.			SPT	55	2/3 2/2 2/2 **N=8**	3										
	3.75 to 3.95m- no recovery.																
	Slightly weathered, white LIMESTONE, very strong. Thinly bedded, beds subhorizontal. Fractures very closely spaced.			HQTT	81		4				0						
	4.4 to 4.5m- no recovery.			HQTT	50						0						
	4.6 to 4.7m- no recovery.			HQTT	100						0						
				HQTT	100						0						
				SPT	0	12/50 for 35mm **N>=50** Solid	5				0						
				HQTT	100						0						
				HQTT	100						0						
				HQTT	100						0						Box 2, 2.9-6.3m
				HQTT	100		6				0						
				HQTT	100						0						Box 3, 6.3-7.0m
	End of borehole at 7.0mbgl (target depth). Groundwater not encountered.						7										

COMMENTS:

Hole Depth 7m

Scale 1:40

Rev.: A

BOREHOLE LOG

GEOTECHNICS

BOREHOLE No.: BH02

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road

JOB No.: 1002464.0.6000

LOCATION: Refer to location plan

CO-ORDINATES: (NZTM) 5305386.77 mN, 1655486.73 mE

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND:

R.L. COLLAR:

DATUM:

SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt

LOGGED BY: MDL

CHECKED: KPS

START DATE: 08/04/2017

FINISH DATE: 08/04/2017

CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	ROCK DEFECTS: Fracture Spacing (mm)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		0										
	SILT, light brown. Moist, moderate plasticity, no dilatancy. Sand fine. 0.8m- low plasticity.			SPT	100	2/2 4/6 6/5 **N=21**	1										
	Sandy SILT, brown. Moist, low plasticity, no dilatancy. Sand fine. 3.225 to 3.45m- no recovery.			PQTT SPT	100 48	0/0 2/2 5/8 **N=17**	2 3										Box 1, 0.0-2.7m
	Slightly weathered, white LIMESTONE, very strong. Thinly bedded, beds subhorizontal. Fractures very closely spaced.			HQTT HQTT HQTT HQTT HQTT HQTT HQTT HQTT	100 100 100 100 100 100 100 100		4 5 6				0 0 0 0 0 0 0 0						Box 2, 2.7-6.0m Box 3, 6.0-6.5m
	End of borehole at 6.5mbgl (target depth). Groundwater not encountered.						7										

COMMENTS:

Hole Depth 6.5m

Scale 1:40

Rev.: A

BOREHOLE LOG

BOREHOLE No.: BH03

SHEET: 1 OF 1

GEOTECHNICS

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: 5305480.96 mN (NZTM) 1655286.99 mE
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND:
R.L. COLLAR:
DATUM:
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 09/04/2017
FINISH DATE: 09/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy.			PQTT	100		1										
	SILT, light brown. Moist, low plasticity, no dilatancy.			SPT	100	2/2 2/3 3/4 **N=12**											
	CLAY with trace organics, light brown. Moist, moderate to high plasticity, no dilatancy.			PQTT	100		2										Box 1, 0.0-2.6m
	3.09 to 3.45m- no recovery.			SPT	20	0/0 0/3 10/37 for 50mm **N>=50**	3										
	Slightly weathered, white LIMESTONE, very strong. Beds subhorizontal. Fractures very closely spaced.			HQTT	100						0						
				HQTT	100		4				0						
				HQTT	100						0						
				HQTT	100						0						
				HQTT	100						0						
				HQTT	100		5				0						Box 2, 2.6-5.5m
				HQTT	100						0						
				HQTT	100						0						
				HQTT	100		6				0						Box 3, 5.5-6.5m
	End of borehole at 6.5mbgl (target depth). Groundwater not encountered.						7										

COMMENTS:

Hole Depth 6.5m

Scale 1:40

BOREHOLE LOG

GEOTECHNICS

BOREHOLE No.: BH04

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road

JOB No.: 1002464.0.6000

LOCATION: Refer to location plan

CO-ORDINATES: 5305542.77 mN, 1655123.70 mE (NZTM)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND:

R.L. COLLAR:

DATUM:

SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt

LOGGED BY: MDL

CHECKED: KPS

START DATE: 10/04/2017

FINISH DATE: 10/04/2017

CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, LW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		0										
	SILT, light brown. Moist, moderate plasticity, no dilatancy. 0.7m- light brown mottled orange. 0.85m- minor sand, coarse. 1.0 to 1.15m- saturated. 1.19m- minor gravel, fine, rounded.			PQTT	100		1										
	CLAY, light grey. Moist, moderate to high plasticity, no dilatancy.			SPT	100	1/1 2/1 2/1 **N=6**											
	Slightly weathered, white LIMESTONE, moderately strong. Bedding subhorizontal. Fractures very closely spaced. 2.37 to 2.9m- highly to completely weathered, fractures very closely to closely spaced. 3.65 to 4.15m- highly weathered.			HQTT HQTT HQTT HQTT HQTT	100 50 100 100 100		2 3 4				0 0 0 20 0						Box 1, 0.0-2.9m Box 2, 2.9-5.0m
	End of borehole at 5.0mbgl (target depth). Groundwater not encountered.						5 6 7										

COMMENTS:

Hole Depth 5m

Scale 1:40

BOREHOLE LOG

GEOTECHNICS

BOREHOLE No.: BH05

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road

JOB No.: 1002464.0.6000

LOCATION: Refer to location plan

CO-ORDINATES: (NZTM) 5305463.05 mN, 1655024.15 mE

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND:

R.L. COLLAR:

DATUM:

SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt

LOGGED BY: MDL

CHECKED: KPS

START DATE: 10/04/2017

FINISH DATE: 10/04/2017

CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m) / Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		0										
	SILT, light brown mottled orange. Moist, low to moderate plasticity, no dilatancy. 0.7m- grey mottled orange and black.			PQTT	100												
	1.07m- minor gravel, fine to coarse, rounded.			PQTT	100		1										
	Gravelly clayey SILT, white. Wet, moderate plasticity. Gravel limestone, fine to medium, subangular. 1.725 to 1.95m- no recovery.			SPT	48	N>=50 Solid											
				HQTT	100		2										
	CLAY with minor gravel, light brown. Wet, moderate to high plasticity, no dilatancy. Gravel fine, rounded.			HQTT	100												Box 1, 0.0-3.3m
	Slightly weathered, white LIMESTONE, very strong. Bedding subhorizontal. Fractures very closely spaced.			HQTT	100		3										
				HQTT	100												
				HQTT	100		4										
				HQTT	100												
	4.9 to 5.0m- no recovery.			HQTT	50		5										
	5.3 to 5.5m- no recovery.			HQTT	60												Box 2, 3.3-5.5m
	End of borehole at 5.5mbgl (target depth). Groundwater not encountered.						6										
							7										

COMMENTS:

Hole Depth 5.5m

Scale 1:40

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA01/SC15**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305434.97 mN (NZTM) 1655401.44 mE	DRILL TYPE: HA/SC	HOLE STARTED: 06/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 06/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				1 1 1 3 2 2 2 4 4 6 6 6 6 6 5 5 7 8 9 9 8 8 12 10 10	● 171/32 kPa ● >187 kPa ● UTP ● UTP ● UTP ● UTP			0.5 1.0 1.5		M	VSt		Organic SILT with trace rootlets, dark brown. Moist, no plasticity, no dilatancy. Organics amorphous. SILT, yellowish brown to grey mottled orange. Very stiff, moist, low plasticity, no dilatancy. 0.5m- no plasticity. Sandy SILT, orange. Very stiff, no plasticity, no dilatancy. Sand fine to medium.
								2.0 2.5 3.0 3.5 4.0					End of borehole at 1.9mbgl (refusal). Groundwater not encountered.

COMMENTS:

Hole Depth 1.9m

Scale 1:21

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA02/SC07**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305366.35 mN (NZTM) 1655359.58 mE	DRILL TYPE: HA/SC	HOLE STARTED: 06/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 06/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				1 1 1 1 2 2 1 2 2 1 3 5 5 5 6 6 6 7 6 6 6 7 7 7 6 6 7 7 8 7 9 9 8 9 9 12 12 8 10	● 48/5 kPa ● 0/0 kPa too soft to test ● 91/11 kPa ● 77/8 kPa ● UTP			0.5 1.0 1.5 2.0		S M	F VS St VSt	10 25 50 100 200	Organic SILT with trace rootlets, dark brown. Saturated, no plasticity, no dilatancy. Organics amorphous. SILT, yellowish brown to grey mottled orange. Firm, moist, low plasticity, no dilatancy. 0.8m- very soft. 1.4m- stiff. 1.5m- mottles absent. 2.0m- very stiff. Sandy SILT, yellowish brown. Very stiff, moist, no plasticity, no dilatancy. Sand fine to medium. End of borehole at 2.2mbgl (refusal). Groundwater not encountered.
								2.5 3.0 3.5 4.0					

COMMENTS:

Hole Depth 2.2m

Scale 1:21

HAND AUGER LOG

HOLE Id: **HA03/SC16**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305435.05 mN (NZTM) 1655237.83 mE	DRILL TYPE: HA/SC	HOLE STARTED: 06/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 06/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm) 2 4 6 8 10 12 14 16 18	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	Description and Additional Observations
				1 1 1 1 2 1 2 1 2 3 3 3 6 11 8 8 6 8 9 7 6 6 7 8 10 9 8 9 10 10 10	UTP UTP UTP			0.5 1.0 1.5 2.0 2.5		W M	VSt		Organic SILT with trace rootlets, dark brown. Wet, no plasticity, no dilatancy. Organics amorphous.
													SILT, yellowish brown to grey mottled orange. Very stiff, moist, no plasticity, no dilatancy.
													0.2m- low plasticity.
													1.0m- mottles absent.
													Sandy SILT with minor gravel, yellowish brown. Very stiff, moist. Sand fine to medium. Gravel subangular to subrounded.
								3.0 3.5 4.0					End of borehole at 2.9mbgl (refusal). Groundwater not encountered.

COMMENTS:

Hole Depth 2.9m

Scale 1:21

HAND AUGER LOG

HOLE Id: **HA04/SC14**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305390.39 mN (NZTM) 1655450.71 mE	DRILL TYPE: HA/SC	HOLE STARTED: 06/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 06/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m) / DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				1 1 1 1 1 1 1 1 1 3 3 4 6 6 5 7 7 6 6 7 12 12 12	● 179/20 kPa ● >187 kPa ● UTP ● >187 kPa ● UTP ● UTP		0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0		W M	VSt	10 25 50 100 200	Organic SILT with trace rootlets, dark brown. Wet, no plasticity, no dilatancy. Organics amorphous. SILT, yellowish brown. Very stiff, moist, low plasticity, no dilatancy. 0.7m- yellowish brown mottled grey to whitish grey. No plasticity. 1.7m- mottles absent. 1.8m- minor sand, fine. Sandy SILT, yellowish brown. Very stiff, moist. 2.3m- yellowish brown mottled grey. 2.5m- yellowish orange, mottles absent. 3.8m- minor gravel, subangular. End of borehole at 3.85mbgl (refusal). Groundwater not encountered.

COMMENTS:

Hole Depth 3.85m

Scale 1:21

Rev.: A

HAND AUGER LOG

HOLE Id: **HA05/SC18**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305512.21 mN (NZTM) 1655225.60 mE	DRILL TYPE: HA/SC	HOLE STARTED: 10/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 10/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				2 4 6 8 10 12 14 16 18						W			Organic SILT with trace rootlets, dark brown. Wet, no plasticity, no dilatancy. Organics amorphous.
					● 173/27 kPa					M	VSt		SILT, yellowish brown to grey mottled orange to dark brown. Very stiff, moist, low plasticity, no dilatancy.
					● UTP			0.5					
					● >187 kPa			1.0					
					● >187 kPa			1.5					1.4m- minor sand, medium to coarse.
					● >187 kPa			2.0					1.8m- sand fine to medium.
								2.5					Sandy SILT with minor gravel, yellowish orange. Moist. Sand fine to medium. Gravel subangular.
								3.0					End of borehole at 2.35mbgl (refusal). Groundwater not encountered.
								3.5					
								4.0					

COMMENTS:

Hole Depth 2.35m

Scale 1:21

Rev.: A

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA06/SC25**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305482.14 mN (NZTM) 1655081.08 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				2 4 6 8 10 12 14 16 18						M			Organic SILT with trace rootlets, dark brown. Moist, no plasticity, no dilatancy. Organics amorphous.
					● 123/29 kPa			0.5			VSt		SILT, yellowish brown to grey mottled orange. Very stiff, moist, no plasticity, no dilatancy.
					● 125/21 kPa								0.8m- brownish orange mottled grey.
					● >187 kPa			1.0					
					● >187 kPa			1.5					
					● >187 kPa			2.0					2.0m- minor sand, medium to coarse.
								2.5					2.3m- trace sand, fine to medium.
								3.0					End of borehole at 2.6mbgl (refusal). Groundwater not encountered.
								3.5					
								4.0					

COMMENTS:

Hole Depth 2.6m

Scale 1:21

Rev.: A

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA07/SC26**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305437.15 mN (NZTM) 1655154.80 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				2 4 6 8 10 12 14 16 18				0.0		M		10 25 50 100 200	Organic SILT with trace rootlets, dark brown. Moist, no plasticity, no dilatancy. Organics amorphous.
											VSt		SILT, yellowish brown mottled orange. Very stiff, moist, low plasticity, no dilatancy.
					● 133/37 kPa			0.5					
					● 171/48 kPa								
					● >187 kPa			1.0					1.1m- brownish orange mottled grey.
					● UTP			1.5					1.7m- minor sand, fine.
					● UTP								
								2.0					End of borehole at 2.0mbgl (refusal). Groundwater not encountered.
								2.5					
								3.0					
								3.5					
								4.0					

COMMENTS:

Hole Depth 2m

Scale 1:21

Rev.: A

GEOTECHNICS

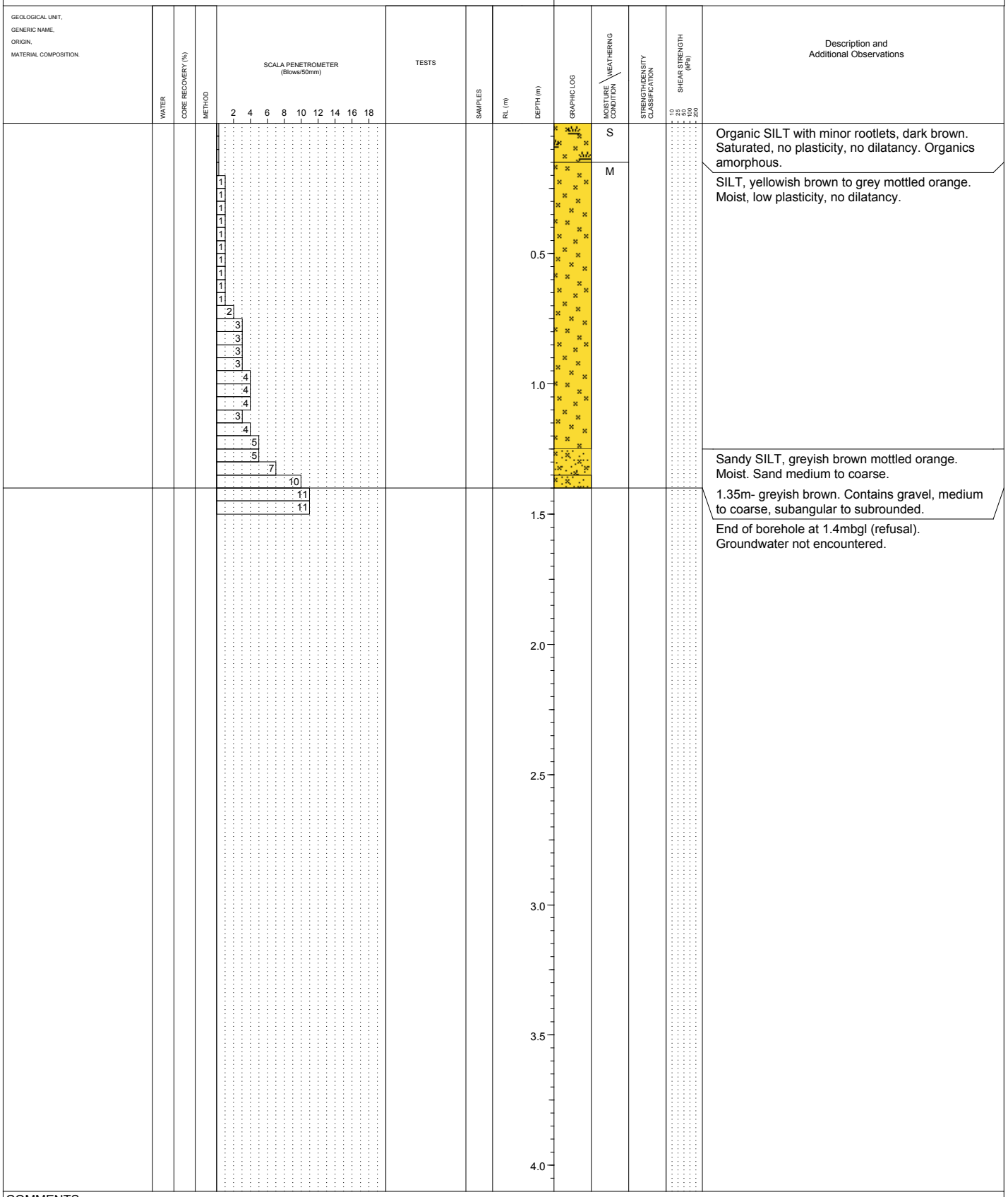
HAND AUGER LOG

HOLE Id: **HA08/SC27**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305544.73 mN (NZTM) 1655128.65 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION



COMMENTS:

Hole Depth 1.4m

Scale 1:21

Rev.: A

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA09/SC28**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305504.55 mN (NZTM) 1655056.65 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm)	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	Description and Additional Observations
				2 4 6 8 10 12 14 16 18				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0		W / M		10 25 50 100 200	Organic SILT with trace rootlets, dark brown. Wet, no plasticity, no dilatancy. Organics amorphous.
													SILT, yellowish brown to grey mottled orange. Moist, low plasticity, no dilatancy.
													End of borehole at 2.0mbgl (target depth). No groundwater encountered.

COMMENTS:

Hole Depth 2m

Scale 1:21

Rev.: A

GEOTECHNICS

HAND AUGER LOG

HOLE Id: **HA10/SC29**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305464.19 mN (NZTM) 1655019.79 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm) 2 4 6 8 10 12 14 16 18	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	Description and Additional Observations
				1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 3 4				0.5		M			Organic SILT with trace rootlets, dark brown. Moist, no plasticity, no dilatancy. Organics amorphous.
								1.0					SILT, yellowish brown to grey mottled orange. Moist, low plasticity, no dilatancy.
				4 5 5 5 5 3 2 3 4 3 2 4 4 4 2 3 2 4 4 4 5 7 8 15				1.5 2.0 2.5 3.0 3.5 4.0					Sandy SILT with minor gravel, yellowish brown mottled orange. Moist. Sand fine to medium. Gravel limestone, fine. End of borehole at 1.3mbgl (refusal). Groundwater not encountered.

COMMENTS:

Hole Depth 1.3m

Scale 1:21

Rev.: A

HAND AUGER LOG

HOLE Id: **HA11/SC30**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305404.74 mN (NZTM) 1655039.16 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm) 2 4 6 8 10 12 14 16 18	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	Description and Additional Observations
				1 1 2 2 1 2 2 2 2 2 2 2 2 2 6 7 7 10 10 10				0.5		W M D			Organic SILT with trace rootlets, dark brown. Wet, no plasticity, no dilatancy. Organics amorphous. SILT, yellowish orange to grey mottled orange. Moist, low plasticity, no dilatancy. 0.9m- mottles absent. Dry.
								1.0					End of borehole at 1.0mbgl (refusal). Groundwater not encountered.
								1.5					
								2.0					
								2.5					
								3.0					
								3.5					
								4.0					

COMMENTS:

Hole Depth 1m

Scale 1:21

Rev.: A

HAND AUGER LOG

HOLE Id: **HA12/SC31**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road	LOCATION: Kaikoura	JOB No.: 1002464.0.6000
CO-ORDINATES: 5305382.47 mN (NZTM) 1655047.38 mE	DRILL TYPE: HA/SC	HOLE STARTED: 11/04/2017
	DRILL METHOD: HA+DCP	HOLE FINISHED: 11/04/2017
R.L.:		DRILLED BY: Geotechnics
DATUM:		LOGGED BY: GAND CHECKED: MDL

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MATERIAL COMPOSITION.	WATER	CORE RECOVERY (%)	METHOD	SCALA PENETROMETER (Blows/50mm) 2 4 6 8 10 12 14 16 18	TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa) 10 25 50 100 200	Description and Additional Observations
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4 5 5 7 7 6 6 4 4 4 8 7 5 5 5 5 6 5 5 5 5				0.5 1.0 1.5 2.0		M			Organic SILT with minor rootlets, dark brown. Moist, no plasticity, no dilatancy. Organics amorphous. SILT, yellowish orange to grey mottled orange. Moist, low plasticity, no dilatancy. 0.4 to 0.8m- yellowish orange mottled orange. 0.8m- minor sand, fine to medium. 1.3 to 1.6m- greyish brown mottled orange. 1.5m- sand medium to coarse.
				9 8 8 8 8 9 9 10 10 11				2.5 3.0 3.5 4.0					End of borehole at 2.0mbgl (target depth). Groundwater not encountered.

COMMENTS:

Hole Depth 2m

Scale 1:21

Rev.: A

EXCAVATION LOG

GEOTECHNICS

EXCAVATION No.: **TP02 / SC33**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: 5305652.92 mN, 1654941.53 mE (NZTM)
R.L.:
DATUM:

EXPOSURE METHOD: TP
EQUIPMENT: 5T Excavator
OPERATOR: Fissenden Brothers
DIMENSIONS: 2m by 0.8m

EXCAV. STARTED: 21/04/2017
EXCAV. FINISHED: 21/04/2017
LOGGED BY: GAND
CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
-1 -2 -3			2 4 6 8 10 12 14 16 18									10 25 50 100 200		

SCALA PENETROMETER (Blows/50mm): 20; 22 >>; 25 >>; 20; 18; 10; 15; 8; 3; 2; 2; 2; 2; 2; 1; 2; 2; 2; 2; 2; 8; 8; 7; 6; 5; 5; 5; 5; 5; 3; 3; 4; 3; 3; 3; 3; 4; 3; 4; 4

0.5
1.0
1.5
2.0
2.5

Sandy fine to medium GRAVEL, white. Very dense, dry. Limestone, angular to subrounded. Sand medium to coarse.

Sandy medium to coarse GRAVEL, brown. Very dense, moist. Sandstone, subrounded. Sand medium to coarse.

SILT, dark brown. Moist, low plasticity, no dilatancy.

End of test pit at 1.1mbgl (target depth). Groundwater not encountered.

MOISTURE CONDITION \ WEATHERING: D; M

STRENGTH/DENSITY CLASSIFICATION: VD

SKETCH / PHOTO:

COMMENTS:

Hole Depth
1.95m

Scale 1:25

Rev.: A

EXCAVATION LOG

GEOTECHNICS

EXCAVATION No.: **TP03 / SC34**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM)	5305656.76 mN 1654932.67 mE	EXPOSURE METHOD:	TP	EXCAV. STARTED:	21/04/2017
		EQUIPMENT:	5T Excavator	EXCAV. FINISHED:	21/04/2017
R.L.:		OPERATOR:	Fissenden Brothers	LOGGED BY:	GAND
DATUM:		DIMENSIONS:	2m by 0.8m	CHECKED BY:	MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
			5, 7, 7, 5, 4, 2, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1						Sandy fine to medium GRAVEL, grey and white. Dense, dry, well graded. Limestone and sandstone, subangular to subrounded. Sand fine to medium.	D / M	D / VL			
							0.5		Medium GRAVEL, white. Dense, dry, poorly graded. Limestone, angular to subangular.	D	MD			
									Sandy fine to coarse GRAVEL with cobbles, grey. Dense, moist, well graded. Sandstone, subrounded to rounded. 0.3m- medium dense.	M				
							1.0		SILT, orange mottled grey. Moist, low plasticity, no dilatancy. 1.3m- some gravel. Limestone, fine to coarse, angular.					
							1.5							
							2.0		End of test pit at 1.95mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth
1.95m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP05 / SC36**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: 5305527.79 mN (NZTM) 1654980.87 mE
R.L.:
DATUM:

EXPOSURE METHOD: TP
EQUIPMENT: 5T Excavator
OPERATOR: Fissenden Brothers
DIMENSIONS: 2m by 0.8m

EXCAV. STARTED: 21/04/2017
EXCAV. FINISHED: 21/04/2017
LOGGED BY: GAND
CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
1 2 3			2 4 6 8 10 12 14 16 18									10 25 50 100 200		

Sandy fine to coarse GRAVEL with minor cobbles, grey. Dense, dry, well graded. Sandstone, subrounded to rounded. Sand fine to medium. — D / D

0.2m- very dense. — VD

0.5 — SILT, orange mottled grey. Moist, low plasticity, no dilatancy. — M

1.0

1.5

2.0 — End of test pit at 1.95mbgl (target depth). Groundwater not encountered.

2.5

SKETCH / PHOTO:

COMMENTS:

Hole Depth 1.95m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP06 / SC37**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305414.86 mN 1655009.36 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EQUIPMENT: 5T Excavator | OPERATOR: Fissenden Brothers | DIMENSIONS: 2m by 0.8m

EXCAV. STARTED: 21/04/2017 | EXCAV. FINISHED: 21/04/2017 | LOGGED BY: GAND | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.5		Sandy fine to coarse GRAVEL with minor cobbles, grey. Dense, dry, well graded. Sandstone, rounded to subrounded. Sand fine to coarse.	D	D			
									Medium to coarse GRAVEL, white. Dense, dry, poorly graded. Limestone, angular to subangular.	M	VD			
							1.0		Fine to coarse GRAVEL with minor sand and cobbles, grey. Very dense, moist, well graded. Sandstone, subrounded to rounded. 0.4m- dense.		D			
							1.5		SILT, orange mottled grey. Moist, low plasticity, no dilatancy.					
							2.0		End of test pit at 1.95mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth 1.95m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP07 / SC38**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305458.89 mN, 1655043.95 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EXCAV. STARTED: 20/04/2017

EQUIPMENT: 5T Excavator | EXCAV. FINISHED: 20/04/2017

OPERATOR: Fissenden Brothers | LOGGED BY: MDL

DIMENSIONS: 2.6m by 0.8m | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.0		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.	M				
							0.5		SILT, grey mottled orange. Moist, low plasticity, no dilatancy.					
							1.0							
							1.5							
							2.0		End of test pit at 1.7mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth 1.7m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP08 / SC39**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305411.94 mN, 1655097.90 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EXCAV. STARTED: 20/04/2017

EQUIPMENT: 5T Excavator | EXCAV. FINISHED: 20/04/2017

OPERATOR: Fissenden Brothers | LOGGED BY: MDL

DIMENSIONS: 3m by 0.8m | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
-1 -2 -3			2 4 6 8 10 12 14 16 18				0.5 1.0 1.5 2.0 2.5		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.	M		10 25 50 100 200		
									SILT, grey mottled orange. Moist, low plasticity, no dilatancy.					
									End of test pit at 2.0mbgl (target depth). Groundwater not encountered.					

SKETCH / PHOTO:

COMMENTS:

Hole Depth
2m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP09 / SC40**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305423.15 mN, 1655126.87 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EQUIPMENT: 5T Excavator | OPERATOR: Fissenden Brothers | DIMENSIONS: 2.7m by 0.8m

EXCAV. STARTED: 20/04/2017 | EXCAV. FINISHED: 20/04/2017 | LOGGED BY: MDL | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.0		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.	M				
							0.5		SILT, grey mottled orange. Moist, low plasticity, no dilatancy.					
							1.0							
							1.5							
							2.0		End of test pit at 1.9mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth 1.9m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP10 / SC41**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305352.56 mN, 1655108.46 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EXCAV. STARTED: 20/04/2017

EQUIPMENT: 5T Excavator | EXCAV. FINISHED: 20/04/2017

OPERATOR: Fissenden Brothers | LOGGED BY: MDL

DIMENSIONS: 2.6m by 0.8m | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.0		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.	M				
							0.5		SILT with some sand, light grey mottled orange. Moist, low plasticity, no plasticity. Sand fine. 0.45m- buried wood in west face of pit (200mm). 0.6m- sand absent.					
							1.0							
							1.5							
							2.0		End of test pit at 1.9mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth 1.9m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP11 / SC42**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305362.25 mN, 1655160.79 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP | EQUIPMENT: 5T Excavator | OPERATOR: Fissenden Brothers | DIMENSIONS: 2.5m by 0.8m

EXCAV. STARTED: 20/04/2017 | EXCAV. FINISHED: 20/04/2017 | LOGGED BY: MDL | CHECKED BY: MDL

EXCAVATION TESTS | ENGINEERING DESCRIPTION | GEOLOGICAL

PENETRATION	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm)	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa)	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.5		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous. 0.0 to 0.22m- southern face of pit exposes sandy SILT with minor gravel, orange-brown.	M				
							1.0		SILT, grey mottled orange. Moist, low plasticity, no dilatancy.					
							1.5							
							2.0		End of test pit at 1.8mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth
1.8m

Scale 1:25

Rev.: A

EXCAVATION LOG

EXCAVATION No.: **TP12 / SC43**

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road | LOCATION: Kaikoura | JOB No.: 1002464.0.6000

CO-ORDINATES: (NZTM) 5305358.42 mN 1655195.99 mE

R.L.:

DATUM:

EXPOSURE METHOD: TP
EQUIPMENT: 5T Excavator
OPERATOR: Fissenden Brothers
DIMENSIONS: 2.2m by 0.8m

EXCAV. STARTED: 20/04/2017
EXCAV. FINISHED: 20/04/2017
LOGGED BY: MDL
CHECKED BY: MDL

EXCAVATION TESTS						ENGINEERING DESCRIPTION					GEOLOGICAL	
PENETRATION (1 2 3)	SUPPORT	WATER	SCALA PENETROMETER (Blows/50mm) 2 4 6 8 10 12 14 16 18	SAMPLES, TESTS	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	SOIL NAME, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, SECONDARY AND MINOR COMPONENTS	MOISTURE CONDITION \ WEATHERING	STRENGTH/DENSITY CLASSIFICATION	ESTIMATED SHEAR STRENGTH (kPa) 10 25 50 100 200	ORIGIN TYPE, MINERAL COMPOSITION, DEFECTS, STRUCTURE	UNIT
							0.0		Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.	M				
							0.5		SILT, grey mottled orange. Moist, low plasticity, no dilatancy. 0.7m- minor organics.					
							1.0							
							1.5							
							2.0		End of test pit at 1.8mbgl (target depth). Groundwater not encountered.					
							2.5							

SKETCH / PHOTO:

COMMENTS:

Hole Depth
1.8m

Scale 1:25

Rev.: A

TETRA TECH COFFEY

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MEMORANDUM

Recipient name	William Loppe	**Recipient company**	KPMO
Copied recipients	Malcolm Smith – Staig and Smith	**Memo date**	18 November 2022
Author	Chris Thompson		
Project reference	773-CHCGE301387		
Memo subject	Vicarage Views Subdivision - Geotechnical RFI Response		

1. INTRODUCTION

KPMO, on behalf of Vicarage Views Ltd, has engaged Tetra Tech Coffey to provide geotechnical engineering services for the proposed Vicarage Views Subdivision at 2 Mt Fyffe Road, Kaikoura. Tetra Tech Coffey has previously prepared a Geotechnical Assessment Report (GAR, dated 12 May 2022) for the project which commented on the hazards identified in Section 106 of the Resource Management Act and concluded that the site was suitable for development subject to additional work to assess the risk of karst formations below the site.

In addition to the karst assessment, additional comment has been requested on liquefaction risk for the project.

Our comments on these items are provided below.

2. KARST ASSESSMENT

To assess the risk of karst formation (sinkholes developed through weathering of limestone) Tetra Tech Coffey recommended that an Electrical Resistivity Tomography (ERT) survey be conducted across the site. This work was carried out by Southern Geophysical Ltd and a copy of their report is attached to this memo. The results of the survey indicate that there is a low risk of unfilled sinkholes (i.e. underground voids) currently underlying the site within the top 10-15 metres, based on the ERT survey, infra-red aerial imagery and lidar data.

Tetra Tech Coffey carried out a walkover assessment of the site and the identified sinkhole to the south. No features were observed on site that would indicate the potential for sinkholes to develop similar to the location to the south. Whilst the risk still exists, it is considered low, which aligns with the results of the ERT survey.

The site is considered suitable for development following this karst risk assessment.

3. LIQUEFACTION RISK

Additional comment on liquefaction risk for the project has been requested. In Section 8.3.2 of our GAR, we consider that the liquefaction of the underlying soils is low. This assessment is consistent with the work carried out by Golder for KDC in 2019 (report ref.: Liquefaction Study for Kaikoura District, ref. 1894330_7407-003-R-Rev2, dated September 2019). This assessment concluded that for this site liquefaction damage is unlikely and that a desktop assessment is required (see Figure 1 below). Our GAR used existing geotechnical data from the site that identified residual soils overlying limestone with groundwater levels at least 5m below surface levels and typically within the limestone.

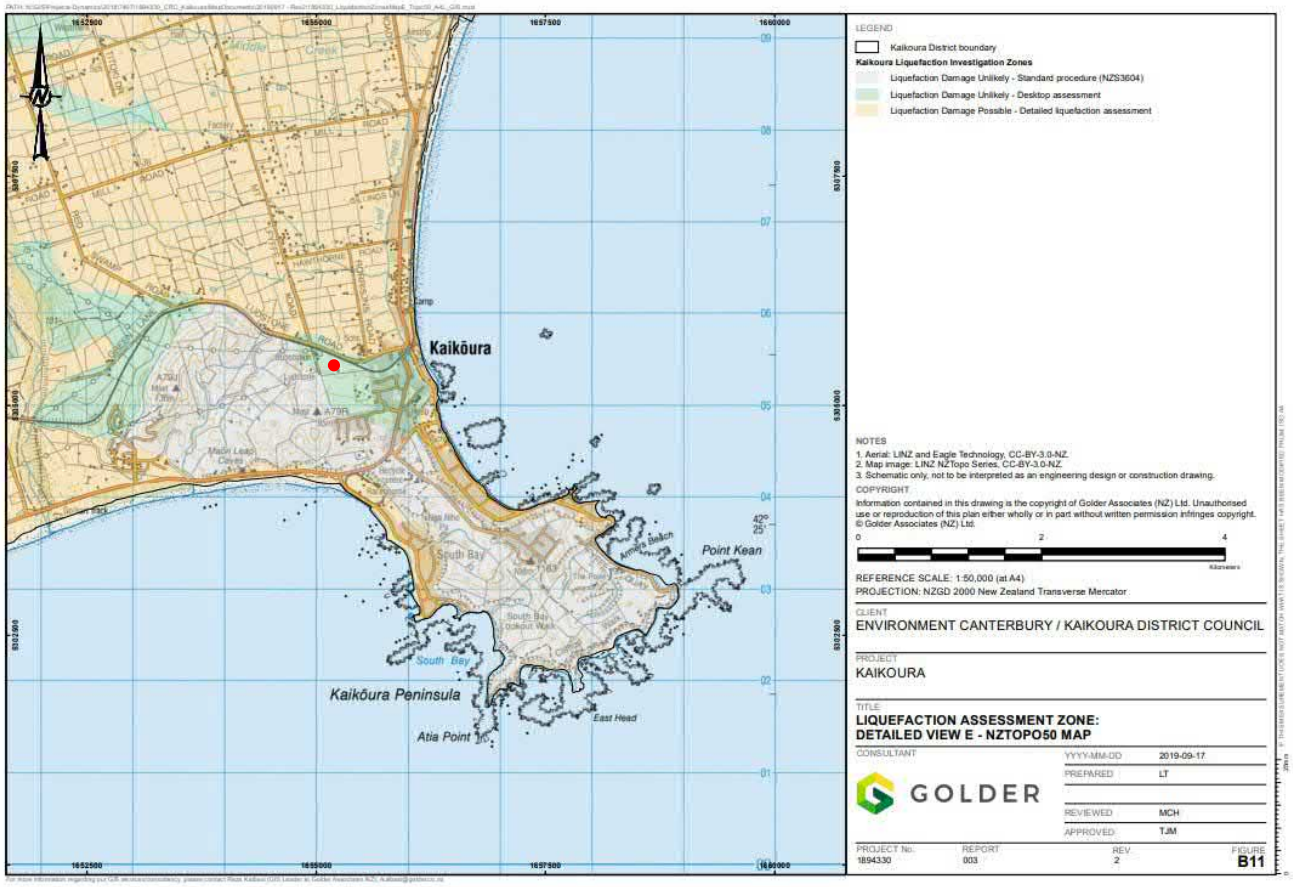


Figure 1: Figure B11 from Golder report, site marked with red dot

4. SUMMARY

- Based on the ERT survey conducted, the presence of 'open' karstic features (voids) below the site is considered low.
- Our assessment of liquefaction risk aligns with that of the Golder assessment for KDC, that this site is unlikely to experience liquefaction triggering as the limestone typically weathers to clayey soils which are less susceptible to liquefaction.
- The site is considered suitable for NZS3604:2011 type foundations.

5. CLOSURE

If you have any queries or require any further clarification on any aspects of this memo, please contact the undersigned.

Prepared by

Chris Thompson
BSc(Tech)
Associate Engineering Geologist

Reviewed by

Andreas Giannakogiorgos
BSc MSc DIC CMEng CPEng IntPE(NZ)
Senior Principal Geotechnical Engineer

Attachment:
- Southern Geophysical Report

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY REPORT

As a client of Tetra Tech Coffey you should know that site subsurface conditions cause more construction problems than any other factor. These notes have been prepared by Tetra Tech Coffey to help you interpret and understand the limitations of your report.

Your report is based on project specific criteria

Your report has been developed on the basis of your unique project specific requirements as understood by Tetra Tech Coffey and applies only to the site investigated. Project criteria typically include the general nature of the project; its size and configuration; the location of any structures on the site; other site improvements; the presence of underground utilities; and the additional risk imposed by scope-of-service limitations imposed by the client. Your report should not be used if there are any changes to the project without first asking Tetra Tech Coffey to assess how factors that changed subsequent to the date of the report affect the report's recommendations. Tetra Tech Coffey cannot accept responsibility for problems that may occur due to changed factors if they are not consulted.

Subsurface conditions can change

Subsurface conditions are created by natural processes and the activity of man. For example, water levels can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. Consult Tetra Tech Coffey to be advised how time may have impacted on the project.

Interpretation of factual data

Site assessment identifies actual subsurface conditions only at those points where samples are taken and when they are taken. Data derived from literature and external data source review, sampling and subsequent laboratory testing are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, owners should retain the services of Tetra Tech Coffey through the development stage, to identify variances, conduct additional tests if required, and recommend solutions to problems encountered on site.

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Tetra Tech Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered as the project develops. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Tetra Tech Coffey cannot be held responsible for such misinterpretation.

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Tetra Tech Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. Your report should not be applied to any project other than that originally specified at the time the report was issued.

Interpretation by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, retain Tetra Tech Coffey to work with other project design professionals who are affected by the report. Have Tetra Tech Coffey explain the report implications to design professionals affected by them and then review plans and specifications produced to see how they incorporate the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, drawings, etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These logs etc. should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Geoenvironmental concerns are not at issue

Your report is not likely to relate any findings, conclusions, or recommendations about the potential for hazardous materials existing at the site unless specifically required to do so by the client. Specialist equipment, techniques, and personnel are used to perform a geoenvironmental assessment. Contamination can create major health, safety and environmental risks. If you have no information about the potential for your site to be contaminated or create an environmental hazard, you are advised to contact Tetra Tech Coffey for information relating to geoenvironmental issues.

Rely on Tetra Tech Coffey for additional assistance

Tetra Tech Coffey is familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a project, from design to construction. It is common that not all approaches will be necessarily dealt with in your site assessment report due to concepts proposed at that time. As the project progresses through design towards construction, speak with Tetra Tech Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than the design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents. Responsibility clauses do not transfer appropriate liabilities from Tetra Tech Coffey to other parties but are included to identify where Tetra Tech Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Tetra Tech Coffey closely and do not hesitate to ask any questions you may have.

November 2022

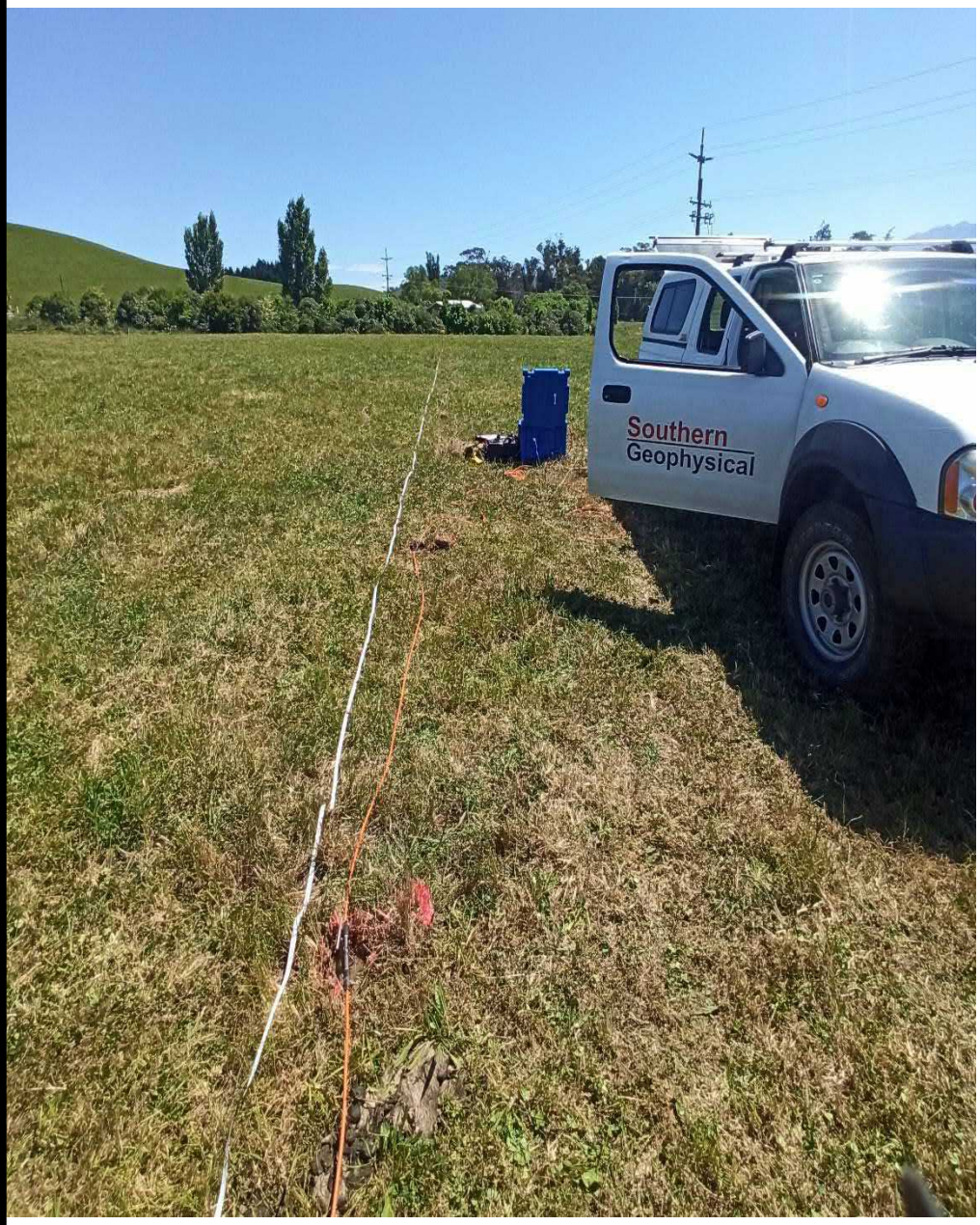
Geophysical Report

Geophysical Investigation:

Electrical Resistivity Tomography (ERT)

2 Mt Fyffe Road, Kaikoura

Report prepared for Vicarage Views Limited



Southern Geophysical

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Tel. 03 384 4302
www.southerngeophysical.com

Table of Contents

Data collected and report prepared for Southern Geophysical Ltd. by:

- R. Mellis (MSc), Geophysicist
- J. Fleming (BSc), Geologist
- B. Heappey (BSc), Geophysical Technician

Capability Statement:

Southern Geophysical Ltd's experienced team provides geophysical contracting and consulting services to clients in the mineral, energy, geotechnical, civil engineering and environmental sectors. We have one of the largest equipment resources for shallow geophysical surveys in the independent private sector in New Zealand.

We are proudly Canterbury owned and operated and have been since our beginnings in 2004. We operate in New Zealand, the Pacific Islands, and Antarctica. The geophysical methods most often employed include:

- Seismic Reflection
  - Identifying lithological boundaries (20 – 600 m)
- Shear Wave Reflection
  - Bedrock profiling and identifying lithological boundaries (< 50 m)
- Seismic Refraction
  - Bedrock profiling
- Ground Penetrating Radar (GPR)
  - High resolution imaging of near surface stratigraphy
  - Detection of placer gold paleo channels
  - Mapping near surface coal and mineral deposits
  - Gravel resource characterisation
- Electrical Resistivity Tomography (ERT)
  - Identification of ore bodies through electrical resistivity
  - Lithological mapping through changes in electrical properties
- Induced Polarisation (IP)
  - Identification of ore bodies through electrical chargeability
- Multi-channel Analysis of Surface Waves (MASW)
  - Shallow bedrock profiling
  - Near surface shear wave velocity profiling and rippability determination
- Frequency and Time Domain EM (FEM or TEM)
  - Lithological mapping
  - Identification or near surface metals

Southern Geophysical Ltd has extensive experience with geophysical investigations. We have worked with numerous mining companies including limestone mining, gold sulphide deposits, placer gold, gravel resource characterisation, coal seam mapping, coal seam gas and hydrocarbon. Our team is confident and capable of utilising the widest range of geophysical systems and is highly skilled in processing complex datasets. We can produce 3D models, incorporating a variety of survey results to aid in visualising the subsurface. We tailor reports to our clients' needs and maintain a high level of interaction with our clients to ensure any questions or concerns are addressed early on.

SGL Job Reference: 2498
Version 1 (Issued November 16, 2022)

Internally reviewed by:
M. Finnemore (PhD), Senior Geophysicist

Executive Summary:

Southern Geophysical Ltd. undertook an Electrical Resistivity Tomography (ERT) survey on the paddock directly north of 2 Mt Fyffe Road, Kaikoura, on the 9th of November 2022. The objective of the survey was to image the subsurface through the means of electrical resistivity, highlighting any potential sinkholes, if present below the survey lines.

A total of six survey lines were captured, five running west to east and a tie line running south to north (Figure 1). The ground surface was extremely dry and hard, therefore a small hole was dug at each electrode location and filled with salt-water to improve contact resistances. The data collected was very high quality, with very little electrical noise present in the datasets. The survey successfully imaged sub-horizontal structures which correlate well with borehole logs obtained from the NZGD database. A more conductive limestone was identified in the resistivity profiles (Figures 2 to 4), which may represent potential sinkholes infilled with clay material. However, lidar and infra-red aerial imagery (Appendix B) show no features indicative of potential sinkholes in those areas; therefore, the more conductive limestone may be due to compositional changes or increased weathering in those areas.

Site description:

The survey area was located in the paddock directly north of 2 Mt Fyffe Road, Kaikoura. The paddock is approximately 1200 square meters and has gently undulating topography, with swampy low points to the north and north-west. The ground was extremely dry, hard silt/clay which was very difficult to dig, or hammer electrodes into. The infra-red aerial imagery does not show any discrete low points with increased vegetation which are often associated with sinkholes (Appendix B). The lidar aerial imagery also shows no significant signs associated with sinkholes throughout the paddock.

Methodology:

Survey design:

Electrical Resistivity Tomography (ERT) is a geophysical survey method which measures the electrical resistivity of the subsurface. The survey typically involves inducing a current in the ground using current electrodes and measuring the voltage response at receiver electrodes. We can calculate a resistance value approximately half-way between the current and receiver electrodes by using the difference in voltage potential between the two receiver electrodes. The larger the separation between current and receiver electrodes the deeper the measurement. There are many different survey configurations, each with their own strengths, therefore suited to different environments or targets of interest. For example, a Dipole-Dipole configuration is more sensitive to sub-vertical features and can be collected rapidly with a

multi-channel system; Whereas, a Wenner Alpha configuration, while slower, is more sensitive to sub-horizontal features and typically produces a higher signal to noise ratio.

We use a ZZ Geo Universal 64 resistivity meter, which utilises all 64 channels during the survey. Two channels are typically utilised as current electrodes with the remaining 62 channels recording the voltage response during the survey. When the survey commences, the current electrodes are automatically selected, a measurement is taken, then a new pair of current electrodes are selected and measured. The survey continues as such until the voltage response from all desired electrode configurations is captured. Repeat and/or reciprocal measurements are captured where error margins need assessment or electrical noise is identified in the dataset, such as grounded electric fences or overhead power lines inducing current in the ground.

For this survey, we captured data along all six survey lines using the Dipole-Dipole configuration to better determine the spatial extents of any sinkholes (if present) identified in the dataset.

Acquisition parameters:

- Resistivity system – ZZ Geo Universal 64 coupled with a Panasonic Toughpad
- Capture software – ZZ Universal Acquisition Software V18.3
- Electrode Spacing – 3 metres (Lines 1, 2, 3, 5 and 6) and 2.5 metres (Line 4)
- Electrodes used – 59 to 115 electrodes (up to 64 active) (70 to 342 m line lengths)
- Configurations – Dipole-Dipole
- Contact resistances – Ranging from 800 to 2600 (Averaging 1500)
- On / Off time – 0.3 / 0.1 seconds
- Injection voltage – 350 V

All data has been digitally archived and is available on request.

Results:

A total of six ERT survey lines were undertaken, ranging from 70 m to 342 m in length. The results show sub-horizontal structures with significant contrast in electrical resistivity measurements. Figures 2 to 4 show a pair of ERT profiles for each survey line. The top profile shows the electrical resistivity contour plots, with the limestone contact added. The bottom profile of each pair shows the geology annotated as a simplified profile. The site can be summarised as below:

Top layer – Low to high resistance values (40 to 500 ohms/m). Correlates well with nearby borehole logs from the NZGD database (Appendix C), stating clay/silt/sand in the upper 2 to

4 metres. Low resistivity values are likely increased moisture content and vice versa for very dry ground.

Middle layer – Medium to high resistance values (100 to 500 ohms/m). Correlates well with nearby borehole logs from the NZGD database (Appendix C), stating very strong limestone with closely spaced fractures. This layer is broken into two types. “Limestone 1” resistivity values range from 200 to 500 ohms/m. “Limestone 2” resistivity values range from 100 to 250 ohms/m. “Limestone 2” may show lower resistance values as the material properties may be different to “Limestone 1”, or there is the potential for these areas to represent infilled sinkhole formations.

Bottom Layer – Low to medium resistance values with localised areas of high resistance. (typically 40 to 200 ohms/m). This layer likely represents the water table and therefore saturated limestone (or other underlying stratigraphy). The localised areas of high resistivity likely represents significant changes in the material properties at those locations, possibly indicative of a change in rock/sediment type.

Conclusions and Recommendations:

The paddock directly north of 2 Mt Fyffe Road was successfully surveyed using a series of ERT lines. The subsurface resistivity profile correlates well with the borehole logs acquired from the NZGD database (Appendix C), which show a clay/silt/sand layer overlying limestone with varied weathering characteristics. The survey also detected a more conductive horizon below 2 m relative to MSL, which likely represents the water table.

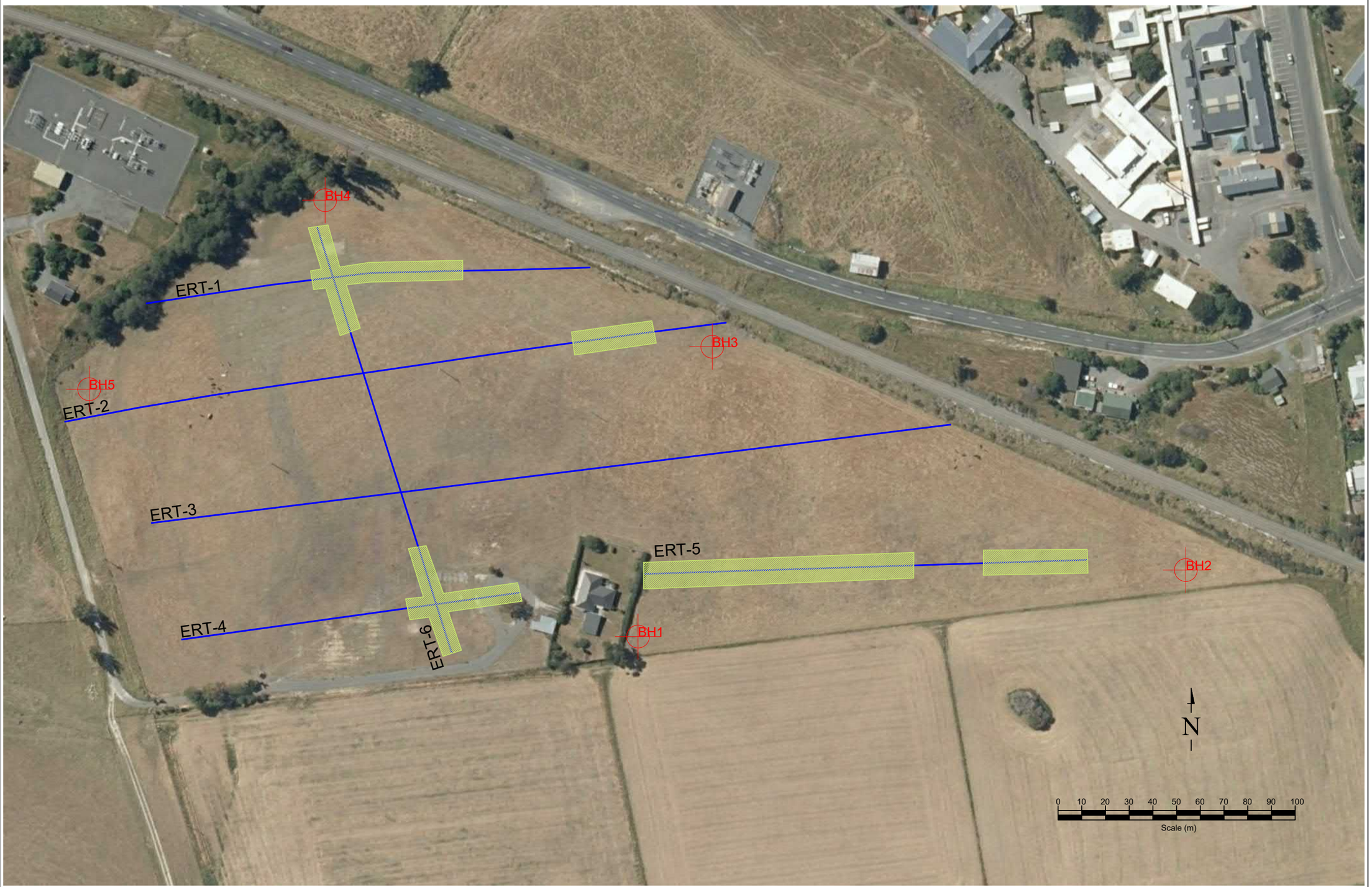
The limestone layer contains areas of lower resistivity (more conductive) and was therefore annotated as two different units, “Limestone 1” and “Limestone 2”. “Limestone 2” are the more conductive areas, which likely represent a change in the material properties in these areas, such as an increase in clay content. However, it is possible that the more conductive limestone may represent potential sinkholes which have been infilled with the more conductive layer above (often higher in saturation too). If additional investigation is required, we would recommend targeted invasive investigations of the “Limestone 2” areas.

Disclaimer:

This document has been provided by Southern Geophysical Ltd subject to the following: Non-invasive geophysical testing has limitations and is not a complete source of testing. Often there is a need to couple non-invasive methods with invasive testing methods, such as drilling, especially in cases where the non-invasive testing indicates anomalies.

This document has been prepared for the particular purpose outlined in the project proposal and no responsibility is accepted for the use of this document, in whole or in part, in other contexts or for any other purpose. Southern Geophysical Ltd did not perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited nature of the enquiry Southern Geophysical Ltd was retained to undertake with respect to the site. Variations in conditions often occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account. Accordingly, additional studies and actions may be required by the client.

We collected our data and based our report on information which was collected at a specific point in time. The passage of time affects the information and assessment provided by Southern Geophysical Ltd. It is understood that the services provided allowed Southern Geophysical Ltd to form no more than an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes for whatever reason. Where data is supplied by the client or other sources, including where previous site investigation data have been used, it has been assumed that the information is correct. No responsibility is accepted by Southern Geophysical Ltd for incomplete or inaccurate data supplied by others. This document is provided for sole use by the client and is confidential to that client and its professional advisers. No responsibility whatsoever for the contents of this document will be accepted to any person other than the client. Any use which a third party makes of this document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. Southern Geophysical Ltd accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this document.



REV. HISTORY			
DRAWN BY	RM	DATE	16.11.2022
CHECKED BY	MF	DATE	16.11.2022

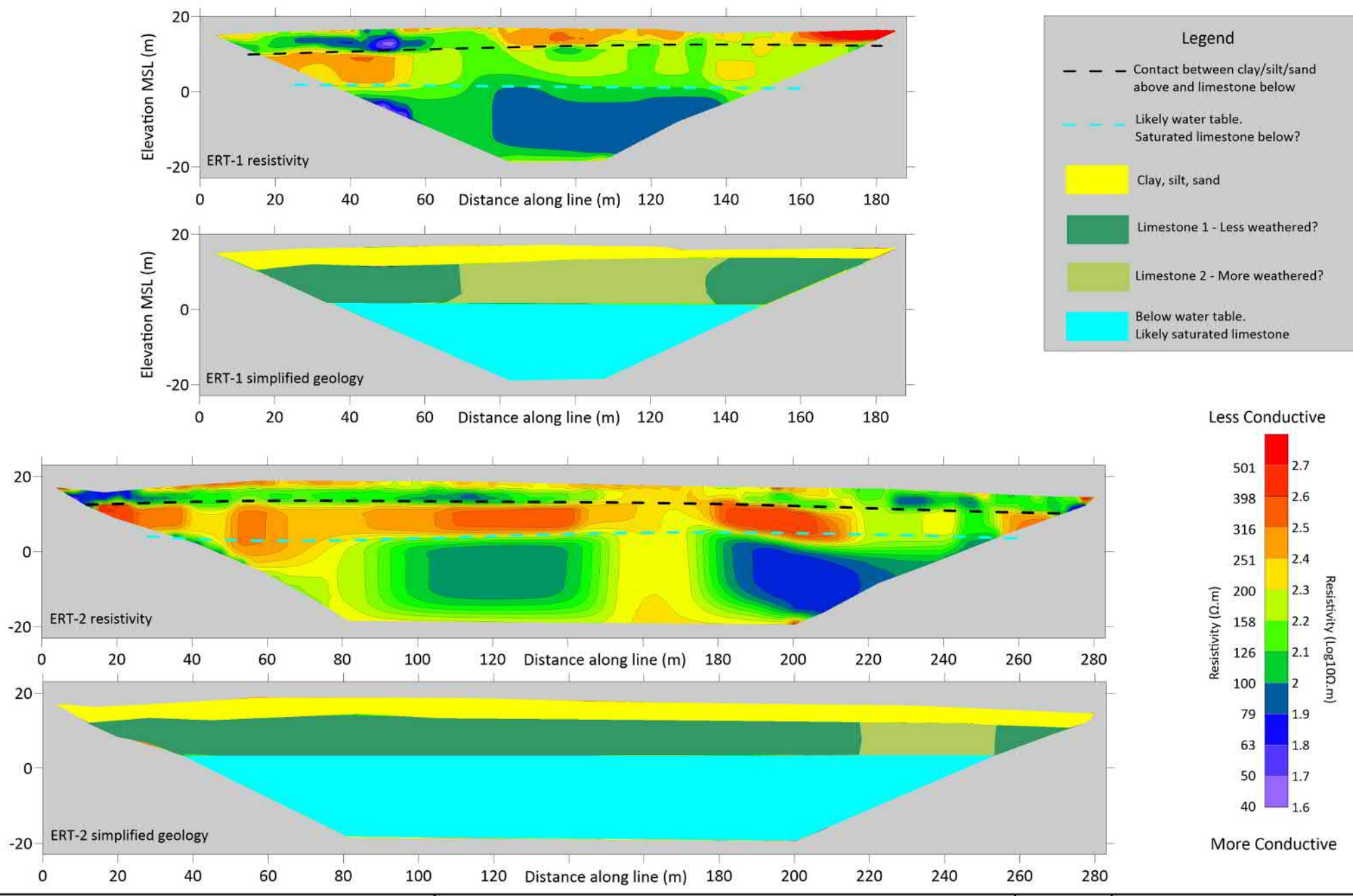
Notes:
ERT survey Lines labeled at start of each line.
Borehole locations are as derived from NZGD database.

Limestone 2 - More weathered?

Site Map
ERT Survey Line Locations
2 Mt Fyffe Road
Kaikoura

FIGURE
1
A3

Southern Geophysical
www.southerngeophysical.com



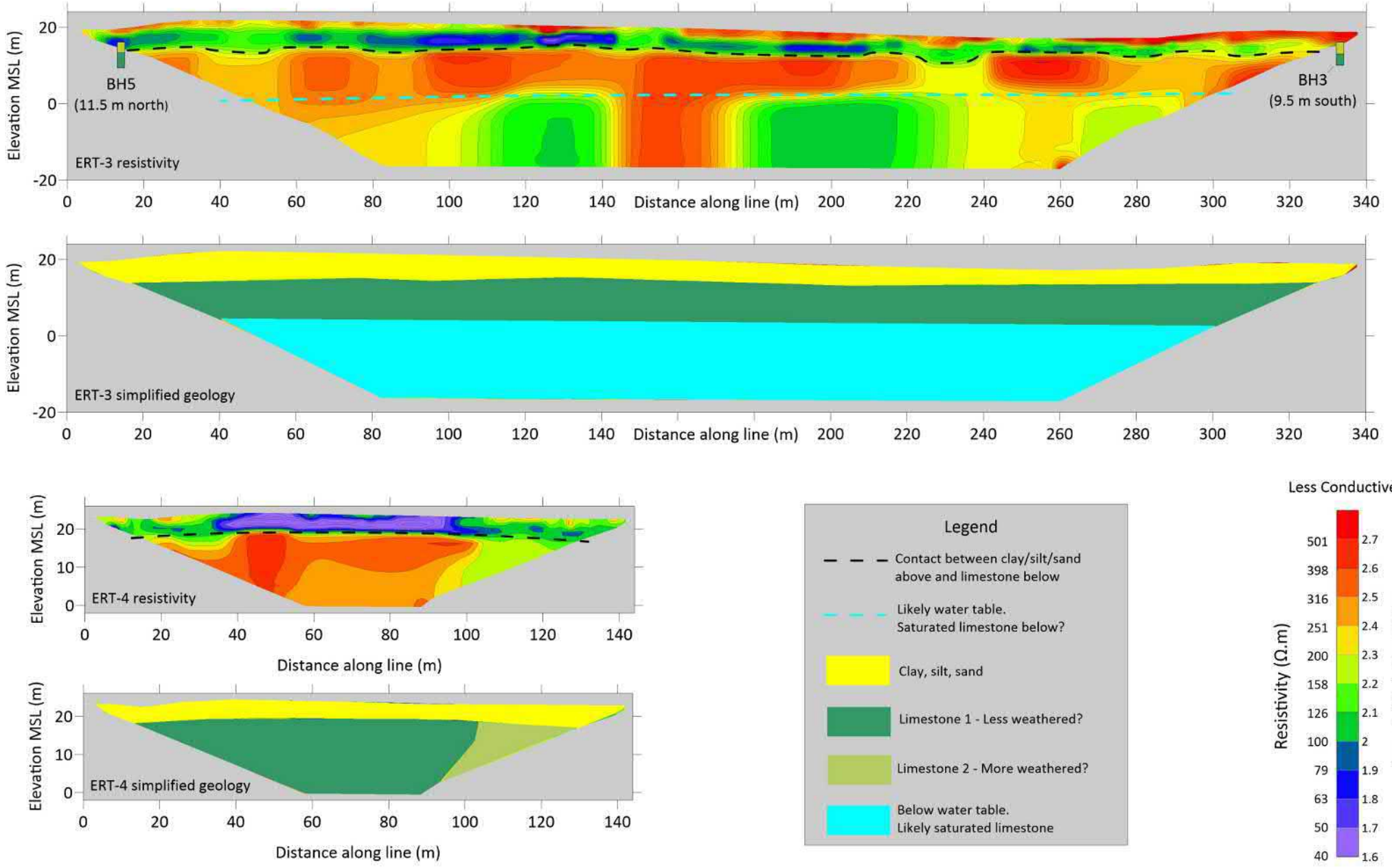
DRAWING - **Figure 2: ERT Profiles ERT-1 and ERT-2**

LOCATION - **2 Mt Fyffe Road, Kaikoura**

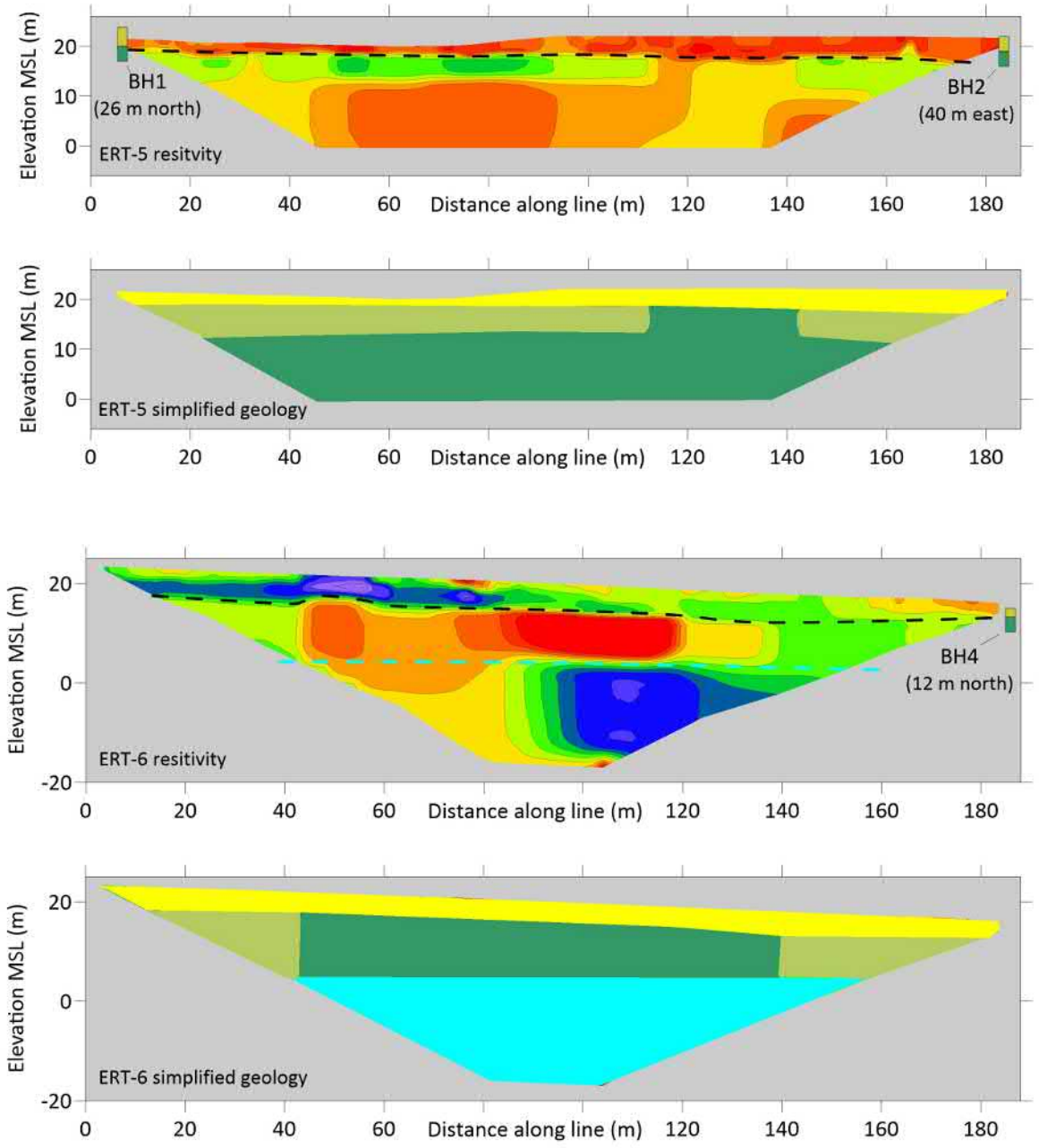
NOTES -

A4

Southern Geophysical
www.southerngeophysical.com

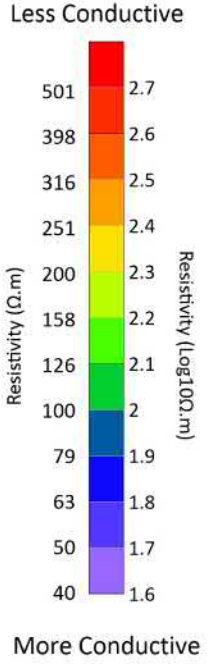


DRAWING - **Figure 3: ERT Profiles ERT-3 and ERT-4**	NOTES - Simplified borehole log: Clay/silt/sand; Limestone		Southern Geophysical www.southerngeophysical.com
LOCATION - **2 Mt Fyffe Road, Kaikoura**		A4	



Legend

- Contact between clay/silt/sand above and limestone below
- Likely water table. Saturated limestone below?
- Clay, silt, sand
- Limestone 1 - Less weathered?
- Limestone 2 - More weathered?
- Below water table. Likely saturated limestone



DRAWING - **Figure 4: ERT Profiles ERT-5 and ERT-6**

LOCATION - **2 Mt Fyffe Road, Kaikoura**

NOTES -

Simplified borehole log — Clay/silt/sand; Limestone

A4

Southern Geophysical
www.southerngeophysical.com

Appendix A: Field Photographs

Figure A1: Survey line laid out, ready for capture

Figure A2: Electrode in small hole with salt water for improved contact resistance

Figure A3: Electrode in small hole with salt water for improved contact resistance

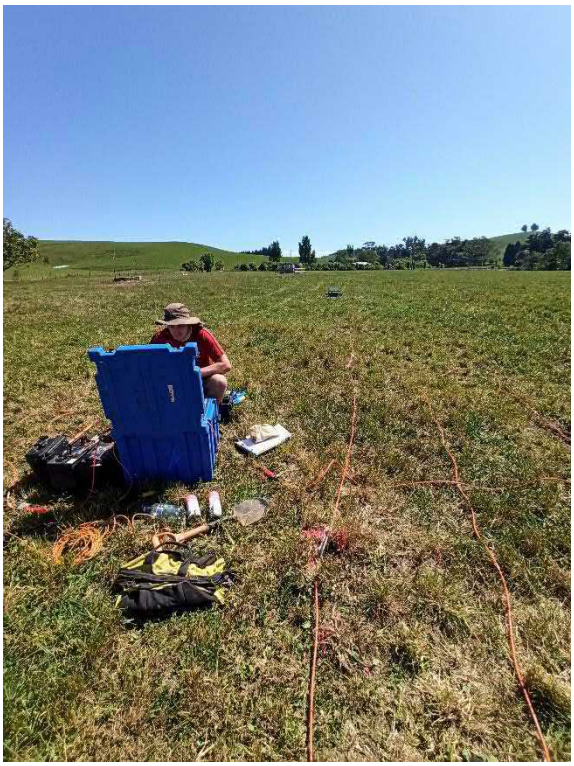


Figure A4: Survey line laid out, capturing data with a mobile setup

Appendix B1: Infra-red Aerial Imagery

canterbury maps

Canterbury Maps

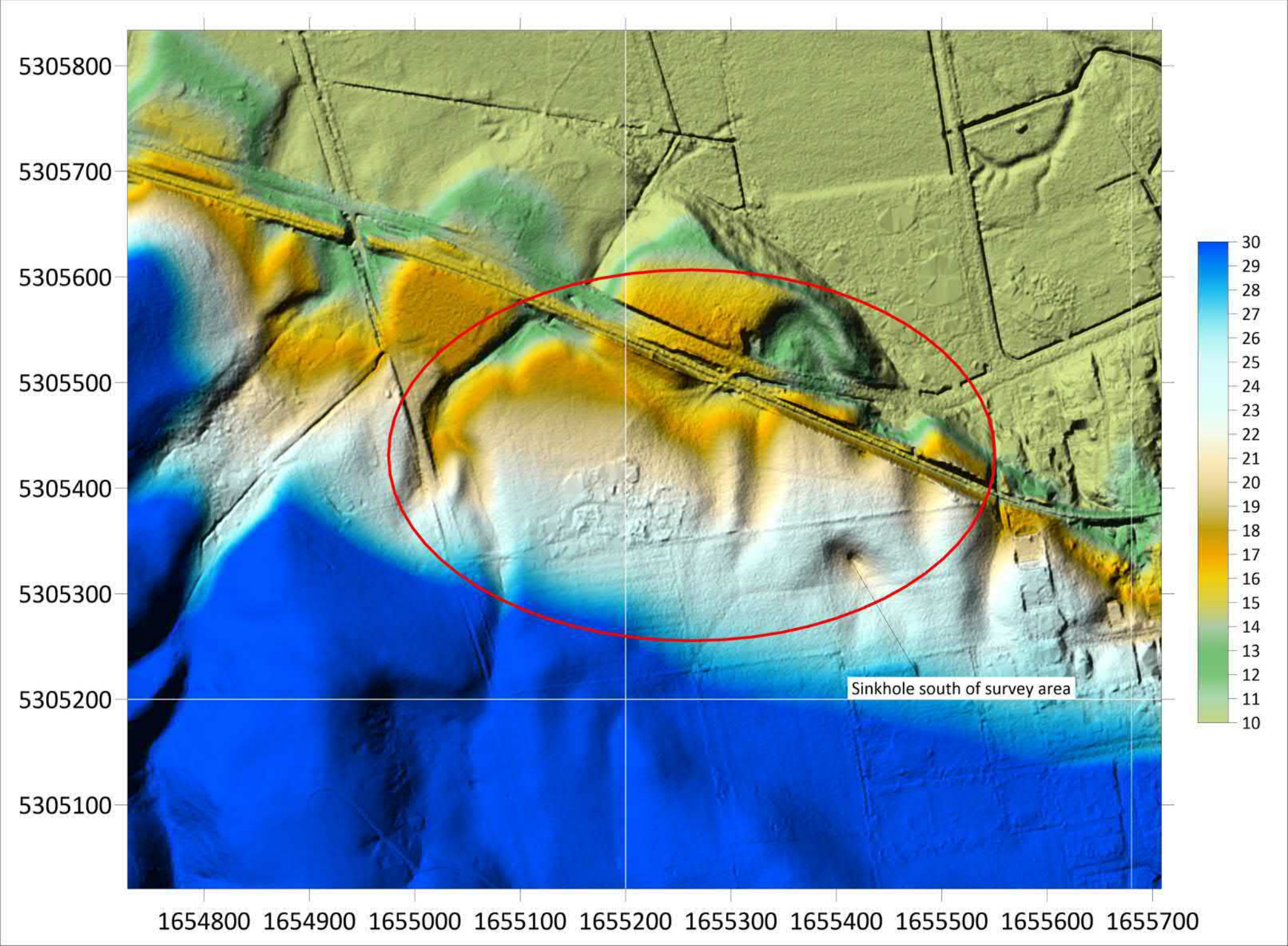
N

0 0.06 0.11 0.17 0.22 Kilometres

Scale: 1:4,000 @A3

Map Created by Canterbury Maps on 15/11/2022 at 3:35 PM

Appendix B2: Lidar Aerial Imagery


5305800
5305700
5305600
5305500
5305400
5305300
5305200
5305100
1654800
1654900
1655000
1655100
1655200
1655300
1655400
1655500
1655600
1655700
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12
11
10
Sinkhole south of survey area

Appendix C: Borehole Logs from NZGD Database

GEOTECHNICS

BOREHOLE LOG

BOREHOLE No.: BH01

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: 5305358.73 mN, 1655255.66 mE (NZTM2000)
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND: 24.00m
R.L. COLLAR:
DATUM: NZVD2016
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 07/04/2017
FINISH DATE: 07/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy.						23	1										
	SILT, light brown. Moist, low plasticity, no dilatancy.			PQTT	100													
	1.0 to 1.05m- wet.			SPT	100	3/5 6/8 9/10 **N=33**	22	2										
	Becoming Sandy SILT, light brown. Moist, low plasticity, no dilatancy. Sand fine to medium. 2.1 to 2.3m- no recovery.			HQTT	93													Box 1, 0.0-2.9m
	3.0m- minor gravel; fine, rounded. Sand fine to coarse.						21	3										
	3.75 to 3.95m- no recovery.			SPT	55	2/3 2/2 2/2 **N=8**												
	Slightly weathered, white LIMESTONE, very strong. Thinly bedded, beds subhorizontal. Fractures very closely spaced. 4.4 to 4.5m- no recovery. 4.6 to 4.7m- no recovery.			HQTT	81		20	4				0						
				HQTT	50							0						
				HQTT	100							0						
				SPT / HQTT	0 / 100	12/50 for 35mm **N>=50** Solid	19	5				0						
				HQTT	100							0						
				HQTT	100		18	6				0						Box 2, 2.9-6.3m
				HQTT	100							0						
				HQTT	100							0						Box 3, 6.3-7.0m
	End of borehole at 7.0mbgl (target depth). Groundwater not encountered.						17	7										

COMMENTS: *Project note*; BHs, TPs, HAs

Hole Depth 7m

Scale 1:40

Rev.: A

NZGD ID: BH_139094

GEOTECHNICS

BOREHOLE LOG

BOREHOLE No.: BH02

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: 5305386.77 mN, 1655486.73 mE (NZTM2000)
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND: 22.00m
R.L. COLLAR:
DATUM: NZVD2016
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 08/04/2017
FINISH DATE: 08/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	ROCK DEFECTS: Fracture Spacing (mm)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		21	1										
	SILT, light brown. Moist, moderate plasticity, no dilatancy. Sand fine. 0.8m- low plasticity.			SPT	100	2/2 4/6 6/5 N=21	20	2										
	Sandy SILT, brown. Moist, low plasticity, no dilatancy. Sand fine. 3.225 to 3.45m- no recovery.			PQTT	100		19	3										Box 1, 0.0-2.7m
	Slightly weathered, white LIMESTONE, very strong. Thinly bedded, beds subhorizontal. Fractures very closely spaced.			SPT	48	0/0 2/2 5/8 N=17	18	4				0						
				HQTT	100							0						
				HQTT	100		17	5				0						
				HQTT	100							0						
				HQTT	100		16	6				0						Box 2, 2.7-6.0m
				HQTT	100							0						Box 3, 6.0-6.5m
	End of borehole at 6.5mbgl (target depth). Groundwater not encountered.						15	7										

COMMENTS: *Project note*; BHs, TPs, HAs

Hole Depth 6.5m

Scale 1:40

Rev.: A

NZGD ID: BH_139050

GEOTECHNICS

BOREHOLE LOG

BOREHOLE No.: BH03

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: 5305480.96 mN, 1655286.99 mE (NZTM2000)
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND: 16.00m
R.L. COLLAR:
DATUM: NZVD2016
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 09/04/2017
FINISH DATE: 09/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	ROCK DEFECTS: Fracture Spacing (mm)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy.			PQTT	100		15	1										
	SILT, light brown. Moist, low plasticity, no dilatancy.			SPT	100	2/2 2/3 3/4 **N=12**												
	CLAY with trace organics, light brown. Moist, moderate to high plasticity, no dilatancy.			PQTT	100		14	2										
	3.09 to 3.45m- no recovery.			SPT	20	0/0 0/3 10/37 for 50mm **N>=50**	13	3										Box 1, 0.0-2.6m
	Slightly weathered, white LIMESTONE, very strong. Beds subhorizontal. Fractures very closely spaced.			HQTT	100							0						
				HQTT	100		12	4				0						
				HQTT	100							0						
				HQTT	100							0						
				HQTT	100		11	5				0						Box 2, 2.6-5.5m
				HQTT	100							0						
				HQTT	100							0						
				HQTT	100		10	6				0						Box 3, 5.5-6.5m
	End of borehole at 6.5mbgl (target depth). Groundwater not encountered.						9	7										

COMMENTS: *Project note*; BHs, TPs, HAs

Hole Depth 6.5m

Scale 1:40

Rev.: A

NZGD ID: BH_139051

GEOTECHNICS

BOREHOLE LOG

BOREHOLE No.: BH04

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: 5305542.77 mN, 1655123.70 mE (NZTM2000)
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND: 15.00m
R.L. COLLAR:
DATUM: NZVD2016
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 10/04/2017
FINISH DATE: 10/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		14	0										
	SILT, light brown. Moist, moderate plasticity, no dilatancy. 0.7m- light brown mottled orange. 0.85m- minor sand, coarse. 1.0 to 1.15m- saturated. 1.19m- minor gravel, fine, rounded.			PQTT	100			1										
	CLAY, light grey. Moist, moderate to high plasticity, no dilatancy.			SPT	100	1/1 2/1 2/1 **N=6**	13	2										
	Slightly weathered, white LIMESTONE, moderately strong. Bedding subhorizontal. Fractures very closely spaced. 2.37 to 2.9m- highly to completely weathered, fractures very closely to closely spaced.			HQTT HQTT	100 50							0 0						Box 1, 0.0-2.9m
	3.65 to 4.15m- highly weathered.			HQTT HQTT	100 100		12 11	3 4				0 20						
	End of borehole at 5.0mbgl (target depth). Groundwater not encountered.			HQTT	100		10	5				0						Box 2, 2.9-5.0m
							9	6										
							8	7										

COMMENTS: *Project note*; BHs, TPs, HAs

Hole Depth 5m

Scale 1:40

Rev.: A

NZGD ID: BH_139052

GEOTECHNICS

BOREHOLE LOG

BOREHOLE No.: BH05

SHEET: 1 OF 1

PROJECT: 22 Mt Fyffe Road
JOB No.: 1002464.0.6000
LOCATION: Refer to location plan

CO-ORDINATES: (NZTM2000) 5305463.05 mN 1655024.15 mE
DIRECTION:
ANGLE FROM HORIZ.: -90°

R.L. GROUND: 16.00m
R.L. COLLAR:
DATUM: NZVD2016
SURVEY: Handheld GPS

DRILLED BY: Rodney/Matt
LOGGED BY: MDL
CHECKED: KPS
START DATE: 10/04/2017
FINISH DATE: 10/04/2017
CONTRACTOR: ProDrill

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	Organic SILT, dark brown. Moist, low plasticity, no dilatancy. Organics amorphous.			PQTT	100		15	1										
	SILT, light brown mottled orange. Moist, low to moderate plasticity, no dilatancy. 0.7m- grey mottled orange and black. 1.07m- minor gravel, fine to coarse, rounded.			PQTT	100													
				PQTT	100													
	Gravelly clayey SILT, white. Wet, moderate plasticity. Gravel limestone, fine to medium, subangular. 1.725 to 1.95m- no recovery.			SPT	48	N>=50 Solid	14	2										
				HQTT	100													
	CLAY with minor gravel, light brown. Wet, moderate to high plasticity, no dilatancy. Gravel fine, rounded.			HQTT	100		13	3										Box 1, 0.0-3.3m
	Slightly weathered, white LIMESTONE, very strong. Bedding subhorizontal. Fractures very closely spaced.			HQTT	100													
				HQTT	100													
				HQTT	100		12	4										
				HQTT	100													
	4.9 to 5.0m- no recovery.			HQTT	50		11	5										
	5.3 to 5.5m- no recovery.			HQTT	60													Box 2, 3.3-5.5m
	End of borehole at 5.5mbgl (target depth). Groundwater not encountered.						10	6										
							9	7										

COMMENTS: *Project note*; BHs, TPs, HAs

Hole Depth 5.5m

Scale 1:40

Rev.: A

NZGD ID: BH_139053

APPENDIX E

Environment Canterbury LLUR Report.

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

Thank you for submitting your property enquiry from our Listed Land Use Register (LLUR). The LLUR holds information about sites that have been used or are currently used for activities which have the potential to cause contamination.

The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

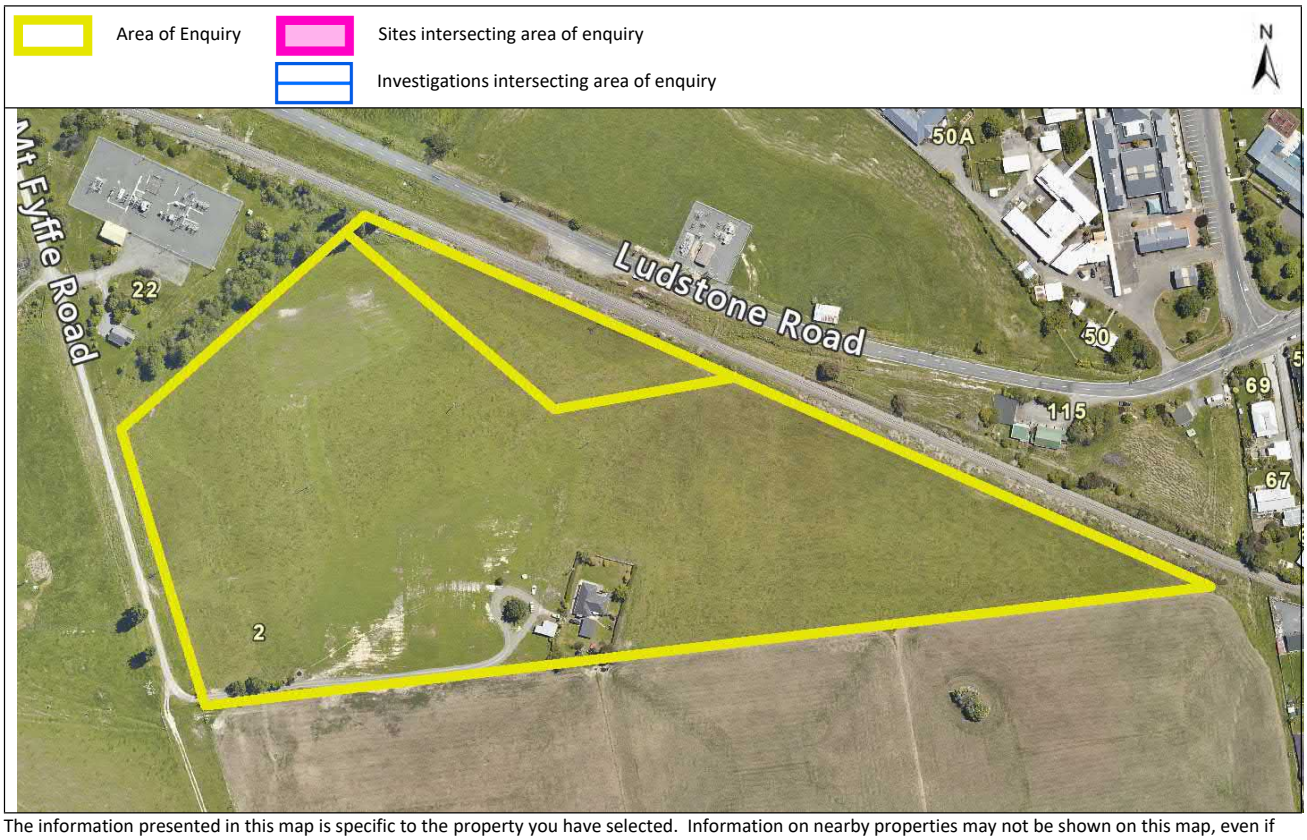
Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ333037

Date generated: 23 November 2022
Land parcels: Part Section 198 Kaikoura Suburban DIST
Part Section 34 Block X Mt Fyffe SD



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987.

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

APPENDIX F

NES-CS: Ground Contamination Memo.

Malcolm Smith Consulting Ltd

12 Mara-kai Place
Pegasus 7612
New Zealand

T +64 21 645 003
E malcolmgsmith@me.com
W www.malcolmsmithconsulting.co.nz

MALCOLM SMITH CONSULTING
ADVISING AND FACILITATING ON LAND DEVELOPMENT AND SUBDIVISION

Memorandum

Project:	Vicarage Views Development: Mt Fyffe Road, Kaikoura		Reference: 219

To:	Copy:	Name:	Organisation:	Location:
✓		District Planner	Kaikoura District Council	
From: Malcolm Smith			Date: 16 December 2022	Total pages: 5

Subject: NES: Managing Contaminants in Soil to Protect Human Health

Environment Canterbury (ECan) Listed Land Use Register

We have searched the ECan Listed Land Use Register and note that the property has a listing as follows

Lot 1 DP 575959 comprised in RT 1058371
(Previously Part Section 198 Kaikoura Suburban DIST comprised in RT MB1C/1433)

No listing

Part Sec 34 Blk X Mount Fyffe SD comprised in RT MB1C/1432

No listing

A copy of the LLUR listing is attached – refer to **Appendix E**.

Historical Aerial Photography

The below are aerial photographs of the property on the years shown.

Retrolens: 1942

Canty Maps: 1960 – 1964

Canty Maps: 1980 – 1984

Cany Maps: 2000 – 2004

Canty Maps: 2015 – 2019

These photographs indicate that the activity on the property has been *pasture farm lands about a residential unit within a curtilage area.* There is evidence of the lands being cropped and harvested for hay. It is also reasonable to presume the lands have been grazed.

There is no photographic indication that the property has accommodated any farm buildings where chemicals have been stored or animal farming practices have occurred that may give rise to ground contamination.

<u>Recent NCTIR Land Use Consent for Temporary Workers Accommodation - 2107</u>

We note that the application document describes the land as follows.

2.3 Soil and topography

The land parcel is not recorded on the ECan Listed Land Use Register therefore is not expected to be contaminated. This is supported by historic aerial photographs which indicate that there have been no activities likely to cause soil contamination within the footprint of the accommodation facility.

This advice has been accepted as sufficient to allow Council to fulfill the NES requirements for that application – involving disturbance of land (earthworks) and *causing the piece of land to stop being production land.*

The Resource Management Regulation 2011

The Resource Management Regulation 2011, relating to the NES for Assessing and Managing Contaminants in Soil to Protect Human Health, specifies the circumstances where Council must consider this issue.

- Under 5(5) the activity of subdividing is a circumstance where the NES may apply.
- Under 5(7) the land does not meet the criteria as detailed in (a), (b) or (c). In other words, it is less likely than not that an activity described in the HAIL is being or has been undertaken on it (the land). This is supported by the ECan LLUR that does not identify any HAIL activities for the property.
- Further, under 5(8) we are subdividing and proposing a change in the use of production land in circumstances where it will stop being production land, albeit that the land is zoned Residential and has been since 2008.

Given the above, under 5(1)(a) the regulations *do apply* by virtue of the land meeting the criteria in 5(8)(c) and (d).

However, under 5(9) and notwithstanding 5(8)(c) and (d) the regulations *do not apply* in circumstances where a detailed site investigation demonstrates that any contaminants in or on the land are at or below background concentrations. The above assessment does not constitute a detailed site investigation.

In summary, the application of the regulations to the subdivision proposal must be considered.

Under 8(4) a subdivision can be considered to be a Permitted Activity where the circumstances of (a) – (d) below prevail.

a) a preliminary site investigation of the land or piece of land must exist:
b) the report on the preliminary site investigation must state that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land:
c) the report must be accompanied by a relevant site plan to which the report is referenced:
d) the consent authority must have the report and the plan.

The above shows that the relevant issue to consider is the implication of a HAIL activity occurring on the property. In this instance the above information suggests that it is less likely than not that an activity described in the HAIL is being or has been undertaken on it (the land). This is supported by the ECan LLUR that does not identify any HAIL activities for the property. It is also supported by the photograph evidence - there is no photographic indication that the property has accommodated any farm buildings where chemicals have been stored or animal farming practices have occurred that may give rise to ground contamination. The extension to this is that it is *highly unlikely that there will be a risk to human health if the activity is done to the piece of land*.

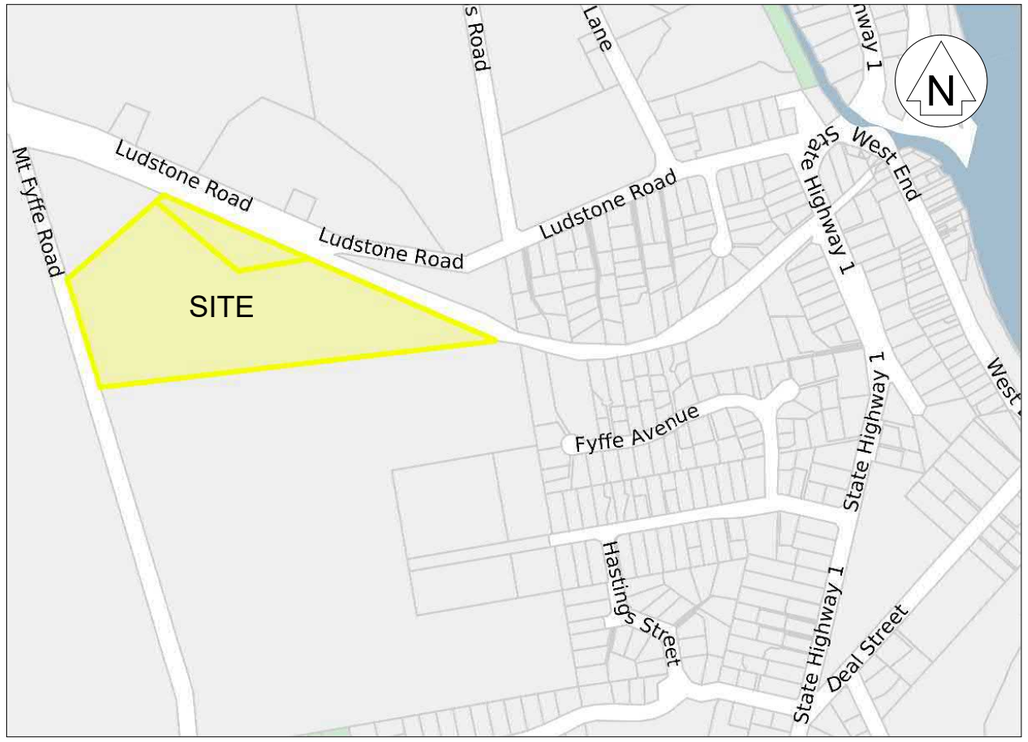
The subdivision activity therefore has a Permitted Activity status in respect of The Resource Management Regulation 2011 – presuming that Council agrees that these provided comments are sufficient to constitute the same as a preliminary site investigation in terms of 8(4)(a) and report/plan in terms of 8(4)(c) and (d). This presumption has been accepted previously in respect of the NCTIR Land Use Consent for Temporary Workers Accommodation that was granted in 2017.

APPENDIX G

Development Concepts:

Proposed Engineering Works and Land Development Concept Design Report

Proposed Engineering Works
Vicarage Views
2 Mt Fyffe Road
Kaikoura



LOCALITY DIAGRAM - NOT TO SCALE

RM No:
TBC

STAIG AND SMITH REF: 12601

INDEX

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ISSUE D - COUNCIL APPROVAL

KDC PLAN NO:

Section 1
SO 5799

Ludstone Road

Coastal Pacific Railway

Mt Fyffe Road

Local Purpose (Drainage) Reserve to vest in KDC

Road to vest in Kaikoura District Council

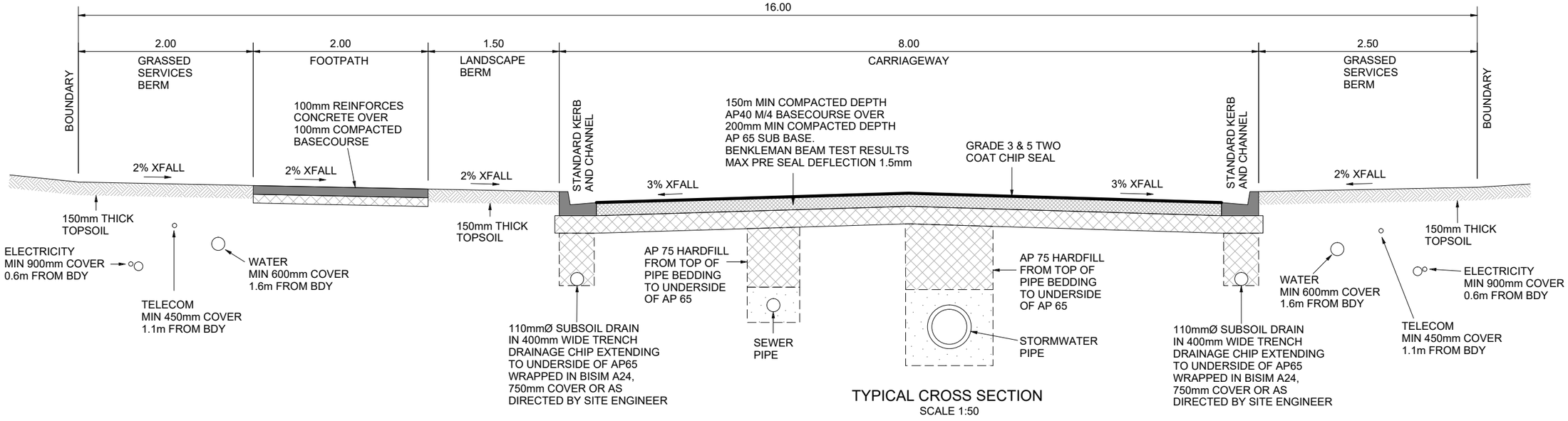
1.3890ha

Local Purpose (Drainage) Reserve to vest in KDC

Local Purpose (Drainage) Reserve to vest in KDC

TOB

Section 27
Block X Mt Fyffe SD



TYPICAL CROSS SECTION
SCALE 1:50

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AMENDMENT | DATE

JOB/CLIENT
Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING
LAYOUT PLAN

Survey: RW
Drawn: RS
Checked:
Approved:

ISSUE D
DATE 01 Dec 2022

PROJECT NO. 12601-RC-1
SCALE: A3 A1
Hz 1:1500 -
Vt - -

SHEET 1 OF 6

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Kaikoura

Ludstone Road

Coastal Pacific Railway

Mt Fyffe Road

SECTION 1
SO 5799

SECTION 27
BLOCK X
MT FYFFE SD

ORIGINAL SIZE A3

0 10 20 30 40 50

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AMENDMENT | DATE

JOB/CLIENT
Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING
EARTHWORKS CONTOUR PLAN

N

Survey: RW
Drawn: RS
Checked:
Approved:

ISSUE D
DATE 01 Dec 2022

PROJECT NO. 12601-RC-1

SCALE: A3 A1
Hz 1:1000 -
Vt - -

SHEET 2 OF 6

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Kaikoura

KEY

FILL

CUT

SECTION 1
SO 5799

Ludstone Road

Coastal Pacific Railway

Mt Fyffe Road

SECTION 27
BLOCK X
MT FYFFE SD

ORIGINAL SIZE A3

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AMENDMENT DATE

JOB/CLIENT
Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING
EARTHWORKS CUT/FILL PLAN

Survey: RW
Drawn: RS
Checked:
Approved:

ISSUE D
DATE 01 Dec 2022

PROJECT NO. 12601-RC-1

SCALE: A3 A1
Hz 1:1000 -
Vt - -

SHEET 3 OF 6

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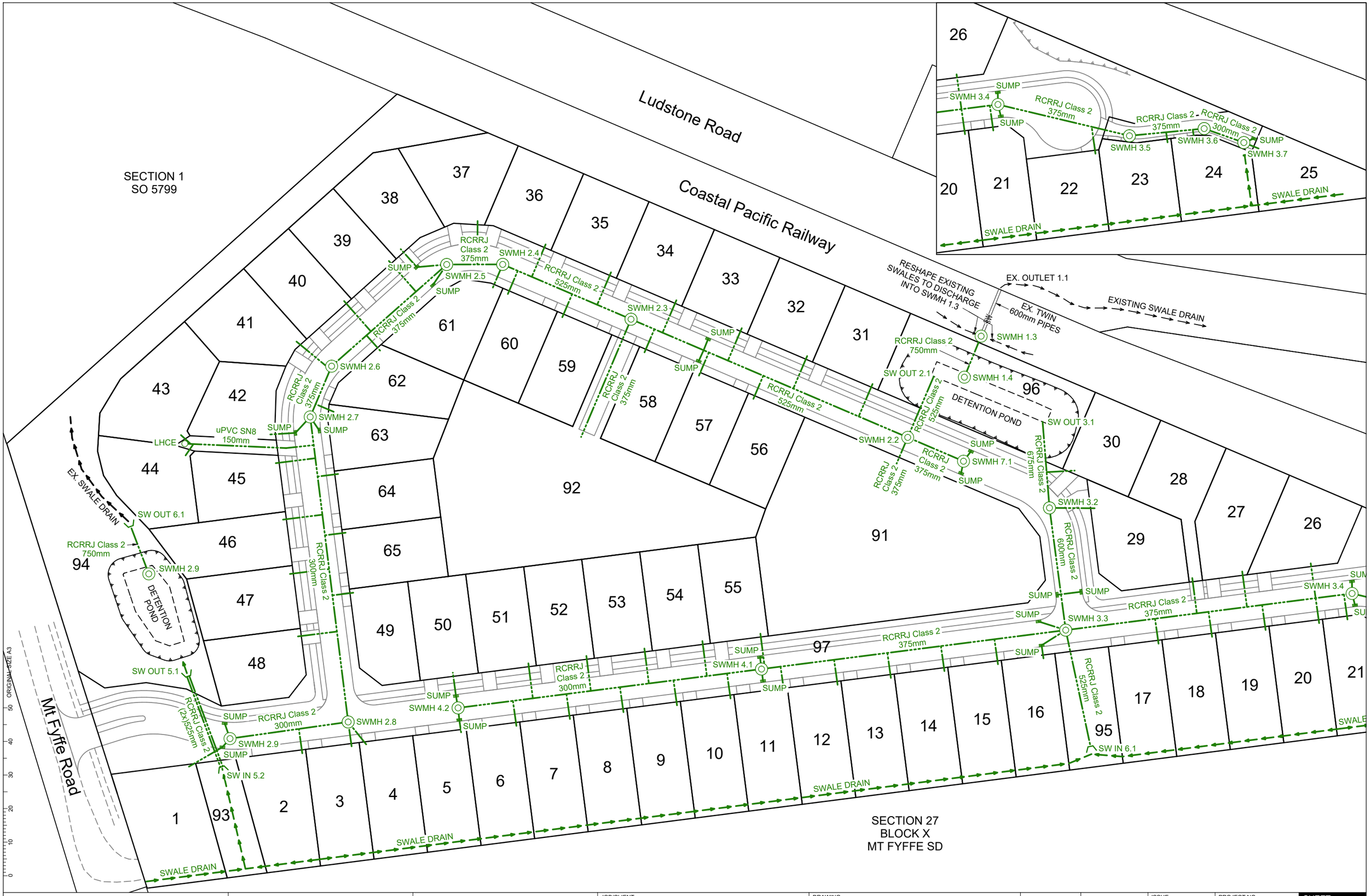

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AMENDMENT | DATE

JOB/CLIENT: Vicarage Views, 2 Mt Fyffe Road, Kaikoura

DRAWING: STORMWATER PLAN

Survey: RW
Drawn: RS
Checked:
Approved:

ISSUE: D
DATE: 01 Dec 2022

PROJECT NO.: 12601-RC-1
SCALE: A3 1:1000 Hz | A1 - Hz | - - Vt

SHEET 4 OF 6

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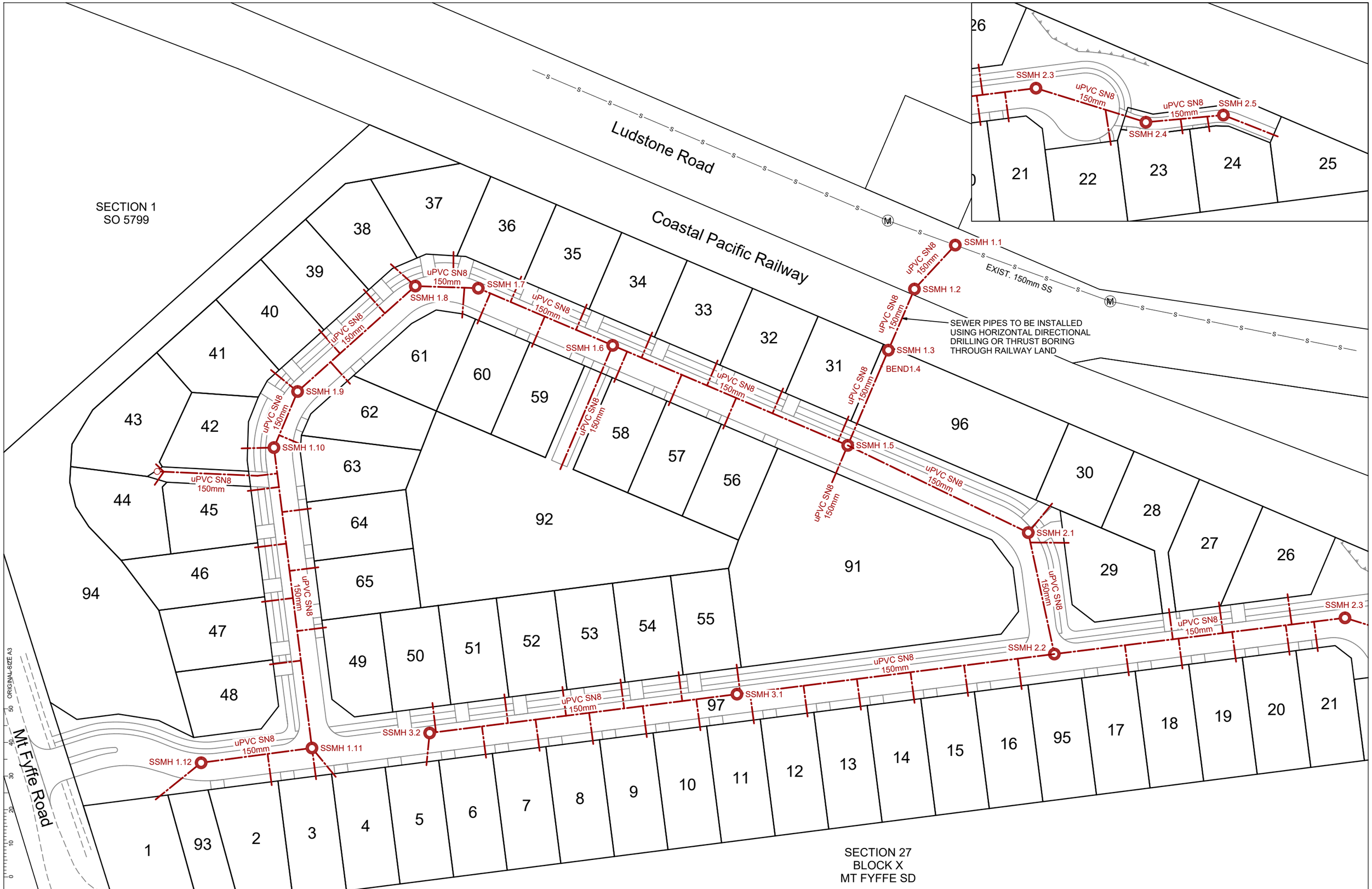

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AMENDMENT | DATE

JOB/CLIENT
Vicarage Views
2 Mt Fyffe Road
Kaikoura

DRAWING
SANITARY SEWER PLAN

Survey: RW
Drawn: RS
Checked:
Approved:

ISSUE D
DATE 01 Dec 2022

PROJECT NO. 12601-RC-1

SCALE: A3 A1
Hz 1:1000 -
Vt - -

SHEET 5 OF 6

Y:\jobs\12600\12601 Garry Robertson - 2 Mt Fyffe Rd, Kaikoura\4. CAD\12D\12601 Vicarage Views Kaikoura

Ludstone Road

Coastal Pacific Railway

Mt Fyffe Road

SECTION 1
SO 5799

SECTION 27
BLOCK X
MT FYFFE SD

Ø150mm UPVC

Ø63mm OD MDPE

FH

50mm VALVE

150mm VALVE

EXIST. Ø280 WATER MAIN

EXIST. Ø200 WATER MAIN

EXIST. Ø150 WATER MAIN

ORIGINAL SIZE A3

0 10 20 30 40 50

STAIG & SMITH LTD 81 Selwyn Place, Nelson 248 Montreal St, Christchurch Ph: 0800 807 818 www.staigsmith.co.nz enquiries@staigsmith.co.nz		AMENDMENT DATE	JOB/CLIENT Vicarage Views 2 Mt Fyffe Road Kaikoura	DRAWING WATER PLAN	N	Survey: RW Drawn: RS Checked: Approved: ISSUE D DATE 01 Dec 2022 PROJECT NO. 12601-RC-1 SCALE: A3 A1 Hz 1:1000 - Vt - -
						SHEET 6 OF 6

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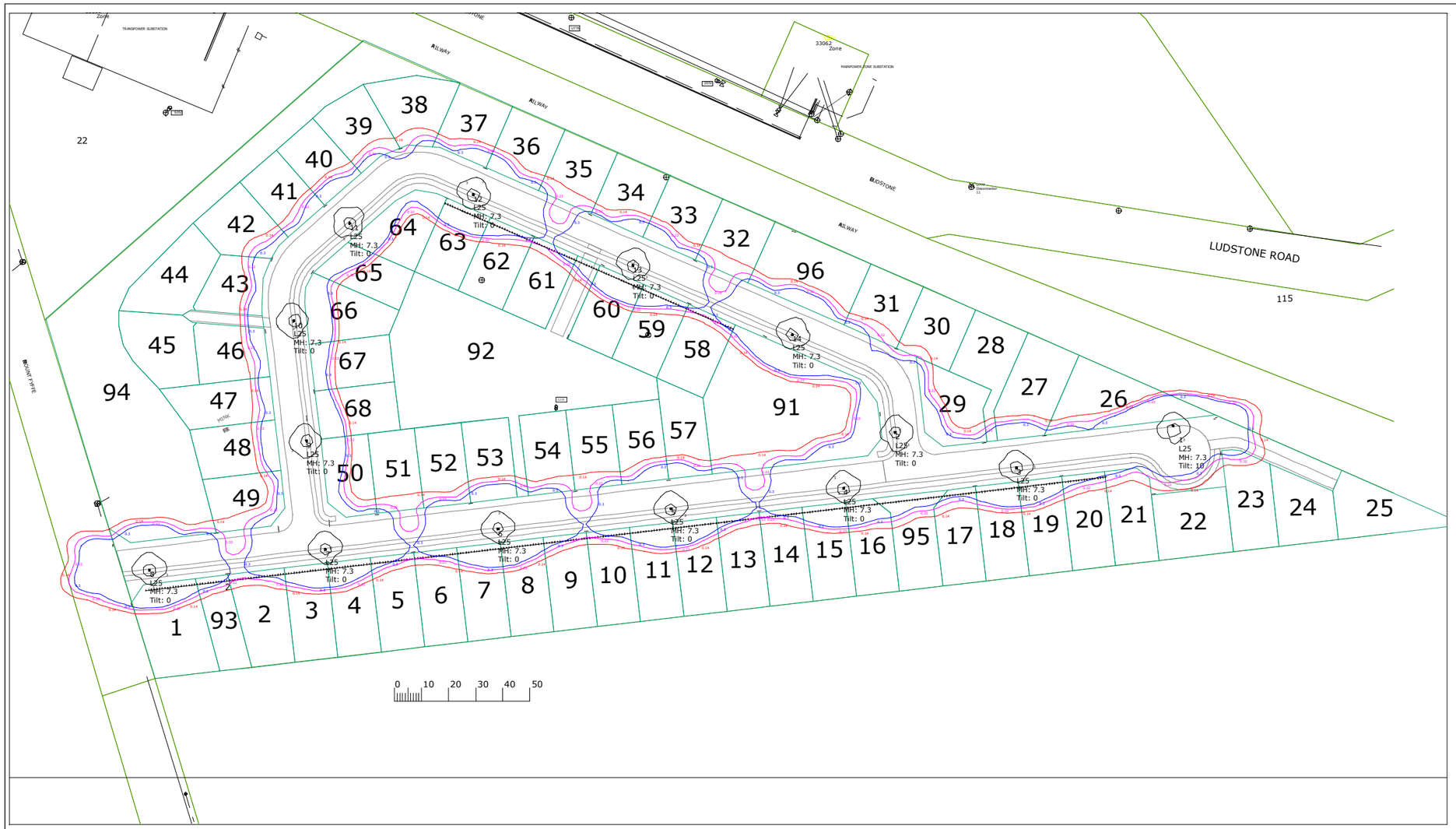

P Category Lighting - AS/NZS 1158.3.1:2020
****

Betacom

I-table Filename: C:\Users\andre\Desktop\Use ful folders\I TABLES FO FOR PERFECT LITE\WH_12010 KARORI LDDV ACRYLIC 7032 25W 24 XP-G3 LED 325mA 3000K WW.cie

Job Name: VICARAGE VIEWS

Luminaire Description: WH-KARORI LDDV 7032 25W 24Xp-G3 WW 3169
Lamp Wattage & Type: LED 25W
Initial Lamp Flux: 2300 lms (3169 x 70%)
Maintenance Factor: 0.8
Upcast Angle: 0 degrees
Arrangement: Single Side
Offset Distance: 5 m
Upward Waste Light Ratio: .6 %
Light Source: LED - Light Emitting Diode
Luminaire Classification: Not specified

Lighting Category: PR5

Illuminance Criteria: Average Illuminance (Eav) >= 0.85 lx
(Maintained values) Minimum Illuminance (Eph) >= 0.14 lx
Illuminance Uniformity (Up) <= 10
Minimum Illuminance (Epv) >= NOT assessed

Calculation Grid: 20 x 11 points - Figure 3.7 of AS/NZS 1158.2

Mounting Height	Maximum Spacing for different Road Reserve Widths
7.3	16.0 / 66.8

Value/s in above table are all in metres.
The table contains maximum spacings which, for the specified luminaire and lamp combination, provide compliance with the User Defined light technical parameters (LTPs) nominated above.

Design Inputs:-

:Lighting design level is PR5 for local roads as per AS/NZS 1158.3.1:2020

:The Road Reserve Width (RRW) is 16m.

:The mounting height is 7.3m, 0 degree tilt.

:The outreach arm is 1m ,total offset is 6.2m from RRW.

:The poles are located kerb side.

:The luminiaire selected is the KARORI 7032 25W LED dimmed to 70%

:The luminiaire output is 3000k.

Luminaire Schedule						
Symbol	Qty	Label	LLF	Tag	Lum. Watts	Total Watts
☒	14	WH_12010 KARORI LDDV ACRYLIC	0.560	L25	25	350

LEGEND ISOLUX VALUES

RED=0.14 LUX ,MAGENTA=0.22 LUX ,BLUE=0.3 LUX ,GREEN=1 LUX ,BLACK=3 LUX

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www.betacom.co.nz

REV	DATE	COMMENTS	DESIGNED
R0	21/03/2022	Original design	A.RUITER
R1	20/06/2022	Layout changed, redesign to meet 3 lux spill.	A.RUITER
R2	06/12/2022	Luminaire changed to KARORI 25W (dimmed to 70%)	A.RUITER
R3			
R4			
R5			

PROJECT
VICARAGE VIEWS
SUBDIVISION PR5

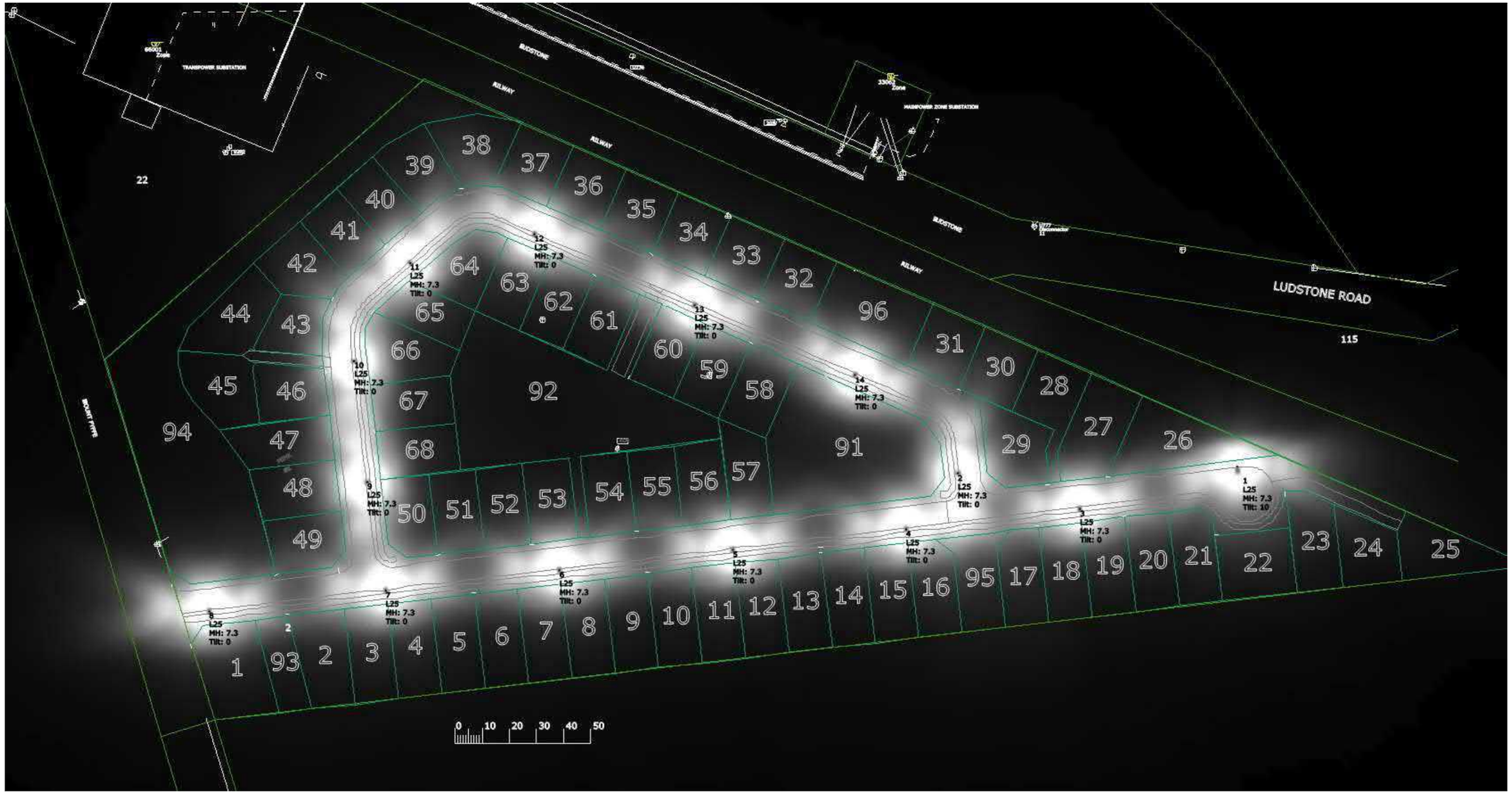
CLIENT
Sam Murphy
KAIKOURA DISTRICT COUNCIL

REVISION R2

SHEET A3

CONTACT
Jeff.Richardson@betacom.co.nz

DOCUMENT NO.
Vicarage Views.AGI



SIMULATED RENDER

Luminaire Schedule						
Symbol	Qty	Label	LLF	Tag	Lum. Watts	Total Watts
	14	WH_12010 KARORI LDDV ACRYLIC	0.560	L25	25	350

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R1	20/06/2022	Layout changed, redesign to meet 3 lux spill.	A.RUITER
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R3			
R4			
R5			

PROJECT
VICARAGE VIEWS
SUBDIVISION PR5

CONTACT
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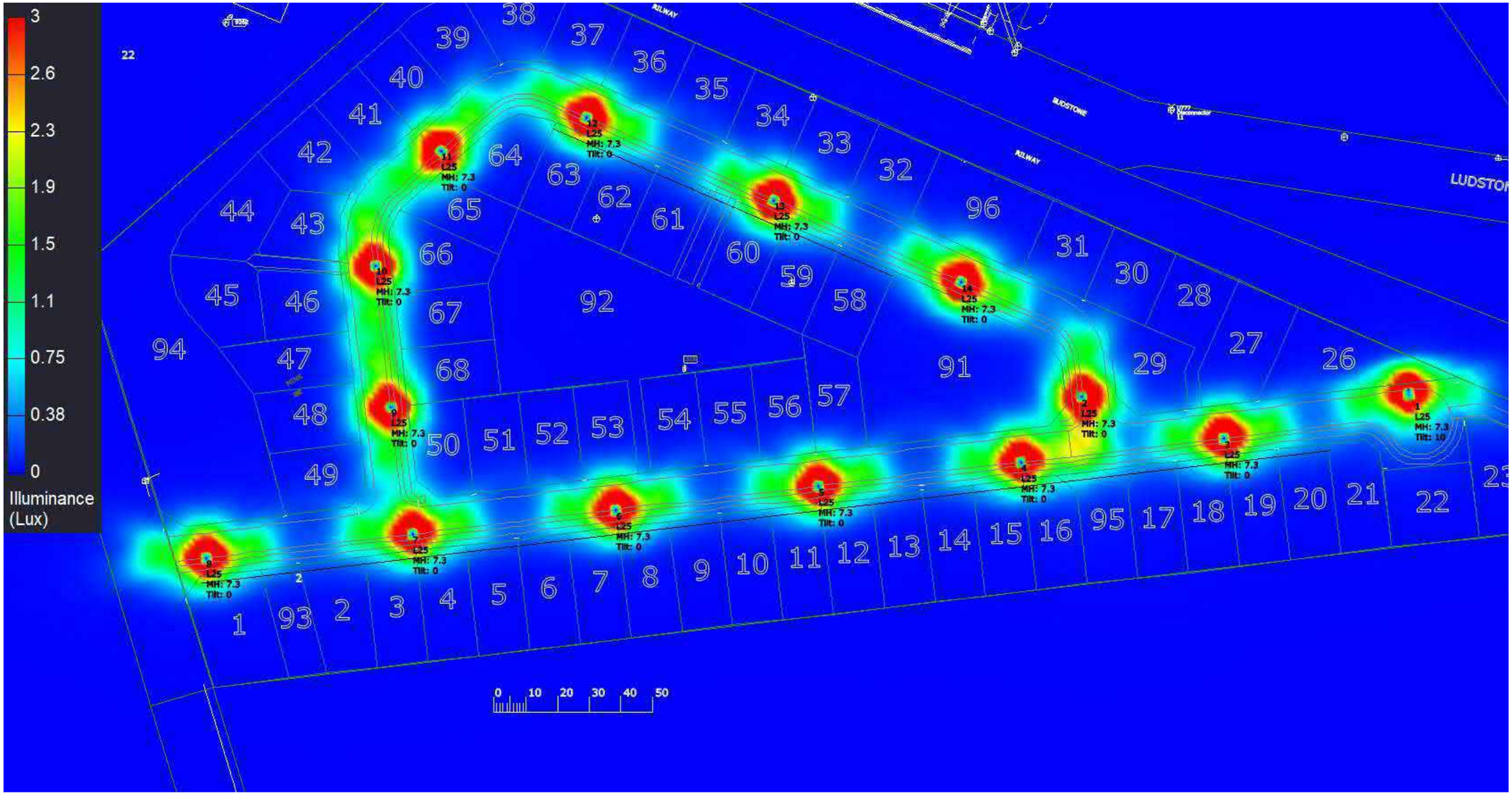
CLIENT
Sam Murphy
KAIKOURA DISTRICT COUNCIL

DOCUMENT NO.
Vicarage Views.AGI

REVISION R2

SHEET A3



ISOLUX PLOT , 3 LUX MAXIMUM.

Luminaire Schedule

Symbol	Qty	Label	LLF	Tag	Lum. Watts	Total Watts
▣	14	WH_12010 KARORI LDDV ACRYLIC	0.560	L25	25	350

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R3			
R4			
R5			

PROJECT
VICARAGE VIEWS
SUBDIVISION PR5

CONTACT
Jeff.Richardson@betacom.co.nz

CLIENT
Sam Murphy
KAIKOURA DISTRICT COUNCIL

DOCUMENT NO.
Vicarage Views.AGI

REVISION R2

SHEET A3

Land Development Concept Design Report

2 Mt Fyffe Rd, Kaikoura
Vicarage Views Limited

Staig & Smith Ref: 12601 – Issue 4

Date: 7 December 2022

Prepared by

Leanne van der Weert
Civil Designer

Reviewed by

Richard Stacey
Senior Civil Designer

Approved by

Alexander Martin
LCS, MSSNZ
RPSurv

Land Development Concept Design Report

Background

Staig & Smith Ltd have been engaged by Vicarage Views Limited to facilitate the Resource Consent Application, Land Development Engineering Design, Supervision, Certification and Land Transfer survey of the proposed 69 Lot Subdivision at 2 Mt Fyffe Rd, Kaikoura.

The following report provides an explanation of the framework of the concept design, and an overview of the key design criteria. This report is to be considered in conjunction with the plans prepared by Staig and Smith Ltd - Proposed Engineering Works (Issue C – Council Approval, 7 September 2022)

Key Design Team

Lead Designer – Richard Stacey
Approval and Certification – Alex Martin

Submitted Plan Set

- Staig & Smith - Proposed Engineering Design Plans. Revision C – 7 September 2022.

Earthworks

- The existing site is gentle rolling pasture, generally falling towards the north with trees and shrubs planted along the western boundaries.
- Most of the earthworks is comprised within the proposed road corridors, the reworking of Lots 31-46 and detention ponds on Lots 94 & 96. Roading corridors are generally in cut with small areas of fill in low areas. Structural filling will be undertaken on Lots 31-46 to raise the sites and produce flat building areas. A combination of cut and fill will be utilised to create the detention ponds on Lot 96 and Lot 94. The rest of the site and sections will remain generally untouched.
- All suitable cut material will be reused on site, with an additional 5000m^3 (approx.) of imported material also being required.
- Where fill material is required as part of completing the subdivision construction, it shall be placed and compacted in accordance with NZS 4431:1989 Code of Practice for Earth Fill for Residential Development. A GeoProfessional shall certify that any fill is in accordance with Appendix A of that standard.
- A GeoProfessional shall also confirm that each residential allotment has an area suitable for the construction of residential buildings in accordance with NZS 4404:2010 Land development and subdivision infrastructure - Schedule 2A.

Infrastructure

- Engineering plans showing the details of all works for the construction of services, road and rights of way shall be submitted to Council's Engineering Manager for approval prior to any works being carried out.
- The Engineering plans shall be in accordance with NZS 4404 or, where this is not complied with, they are to the satisfaction of Council's Engineering Manager.

Stormwater

- **Independent Stormwater Report**
  - An initial (for RC Application) independent stormwater investigation has been undertaken by Peter Christensen of Storm Environmental. This report covers time of concentration, stormwater attenuation and treatment. This specific stormwater report has been appended and included within this document. (See Appendix 1). The conceptual stormwater design has been prepared within the parameters of the Storm Environmental report.
- **General Catchment Drainage:**
  - Most of the upstream catchment and all of the developed site is designed to drain towards the new stormwater detention pond in Lot 96.
  - The new detention pond on Lot 96 is connected to the two existing Ø600 concrete pipes that run under the railway and outfall to an existing swale in Ludstone Road.
  - It is proposed to construct a manhole with scruffy dome lid to intersect the existing swales that drain alongside the railway with the outlet from the detention pond. At detailed design phase, we will ensure that the placement of the manhole and any reshaping of the existing swales alongside the railway will not increase any potential for ponding in a storm event.
  - The remaining upstream catchment is designed to drain along a new swale drain in Lot 93, under the proposed road, via two Ø525 concrete pipes into a second detention pond on Lot 94.
  - The second detention pond will discharge into the existing stormwater open drain in Lot 94 which runs to the northern point of the property and into a Ø900 culvert which runs under the railway and Ludstone Road and discharges into an existing swale.
- **System Design:**
  - The primary stormwater system has been designed as a piped gravity system collecting flows from all proposed allotments and the road carriageway and directing it to the detention pond in Lot 96. A swale drain located on the southern boundary (within Lots 1-25, covered by a proposed easement in gross in favour of KDC) will be created to collect uphill runoff and direct flows into the primary stormwater system.
  - In a major storm event and/or blockage of the primary stormwater system secondary flows have been designed to flow within the road carriageway and discharge into the detention pond in Lot 96, or along the existing channel in Lot 94.
  - Lots 93-96 will be vested as reserves in favour of KDC for the purpose of conveying stormwater.

- **Stormwater Detention**
  - The proposed detention ponds have been designed with batter slopes of 1V:3H, to a maximum depth of 2.0m.

Sanitary Sewer

- The sewer system has been designed as a piped gravity system collecting waste from all proposed allotments in accordance with NZS 4404:2010.
- The subdivision site will collectively discharge via a sewer connection through Lot 96 (reserve to vest), passing under the railway and the Ludstone Road carriageway to the existing KDC infrastructure on the northern side of Ludstone Road.
- During an early site meeting on 18th November 2022 the KDC Engineering officer confirmed that the existing sewerage system within Ludstone Road had capacity to receive all sewage from this development.

Water

- The current existing water infrastructure in the vicinity comprises a water main running along the western edge of Mt Fyffe Rd, with a Ø150 branch in the berm adjoining the south west corner of the subject property, from which a proposed new Ø150mm uPVC main will be extended into the development.
  During the meeting noted above on 18th November 2022, the KDC Engineering officer confirmed that there was adequate capacity within the water network to service the development via the existing 150mm uPVC main.
- The proposed waterlines servicing the development internally are comprised of a primary Ø150mm uPVC main running along the berm of the new road carriageways, and a Ø63mm OD MDPE rider main in the berm opposite the primary main. All allotments will be serviced via a metered connection to either the primary or rider mains.
- 3 Fire hydrants service the site. Two at the new Road intersections and one outside Lot 58.
- The proposed water connections will provide potable water for the residential allotments and provide a firefighting capability that meets the Fire and Emergency New Zealand code of practice (SNZ PAS 4509:2008).

Roading

- The proposed subdivision will be accessed via a new road coming off Mt Fyffe Rd, running the length of the property in an east west direction ending in a Cul-de-Sac. A second road with two connections to the first road forms a loop to the north to service all remaining allotments.
- Both roads have a legal width of 16m, with an 8m wide carriageway in accordance with Design Standard E22 of NZS 4404:2010. Each road has a 2.0m wide concrete footpath, separated from the carriageway by a 1.5m berm on one side.
- In addition to the two road alignments, two Rights of Way also service Lots 23 – 25 and Lots 43 and 44. These are to be formed to the standards of NZS 4404:2010, however the Consent seeks to dispense with turning heads within the Rights of Way.
- The Applicant seeks that formation of vehicle crossings shall be deferred until time of building on each site. A Consent Notice is to be registered on each site advising compliance with Council's vehicle crossing standards.

Landscaping within Reserves

- A Landscape Planting and Management Plan (the LPMP) shall be submitted for the approval of the Council's Engineering Manager covering the proposed landscaping within Road and Drainage Reserves.
- A lychgate is proposed to be constructed over the pedestrian entrance to the subdivision site to provide a sense of place.
- Street furniture is to be located within the road reserve, setback from the footpath and carriageway.

Proposed Construction Constraints:

- Construction shall be undertaken between the hours of 7am to 6pm Monday to Saturday.
- No construction shall occur on Sundays or Public Holidays
- No works shall commence until Council have approved Engineering Plans and a Dust, Erosion and Sediment Control Plan
- A Pre-Construction meeting shall be held on site prior to works commencing

Appendix 1

Stormwater

Vicarage Views Limited
Sent via email

Cc: Staig and Smith Ltd
KPMO

23 September 2022

RE: Stormwater management at 2 Mt Fyffe Road, Kaikoura

Storm Environmental Ltd (**Storm**) has been engaged to provide design advice and undertake review of the stormwater design for Vicarage Views Ltd (the **client**) at 2 Mt Fyffe Road, Kaikoura. The stormwater design is being carried out by Staig and Smith Ltd (the **consultant**). This letter report provides a summary of the recommended design parameters for attenuation of runoff from the development at the site for the purposes of the concept design report to allow for preliminary sizing of the stormwater system.

Summary

Storm has reviewed the available information for the site to help determine what reasonable stormwater design parameters might be. Please note that we have not undertaken any modelling or visited the site, and have relied primarily on information within two existing Resource Consents as the best available information for the catchment. An earlier NCTIR consent application for the site identified the critical duration for Lyell Creek as being 1 hour based on a discussion with Michelle Wild at Environment Canterbury (ECan). We have discussed this with Michelle, and this is a misinterpretation.

We have assessed the site using a range of empirical methods to calculate the time of concentration (Tc). This results in a Tc of 2-3 hours. On this basis, it is suggested that a Tc of 3 hours is used for preliminary planning purposes as the more conservative option, and this can be refined if required.

Using the available information, it is recommended that the design criteria for the site are:

1. Time of concentration of 3 hours
2. Partial attenuation of all events up to and including the 3-hour 10% AEP event (this can be split across the two sub-catchments on site, as long as the net effect is a reduction)
3. Use of the latest version of NIWA's High Intensity Rainfall Design System (HIRDS) for rainfall
4. Treatment of runoff from the first 22.5mm of rainfall (or the flow-based equivalent)
5. Flows greater than this shall be discharged via the existing railway culvert, utilising road storage where necessary

Background information

The basis for the recommendations above is outlined below.

CRC144682 - Kaikoura Township Stormwater Management Area Discharge Consent

2 Mt Fyffe Road falls outside of the area covered by the current consent authorising stormwater discharge for Kaikoura Township. However, the conditions are still relevant as they represent the accepted design methodology for mitigation of stormwater quantity and quality for sites discharging to the Waikoau/Lyell Creek catchment (which 2 Mt Fyffe Road also discharges into).

The key conditions for sizing stormwater infrastructure are reproduced below. These have been adopted in the recommendations above.

10

a. Stormwater discharged from new large site greenfield or brownfield urban developments within the Waikoau/Lyell Creek stormwater catchment shown in Plan CRC144682B, shall direct

stormwater runoff from the following areas to a volume or flow based mitigation facility sized to capture and treat runoff from contributing impervious areas of the site:

i. roading;

ii. hardstand areas; and

iii. roofs if they are from galvanised building materials; and

b. A volume based treatment device shall be sized using a storm depth of at least 22.5 millimetres.

c. A flow based treatment device shall be sized using a storm intensity of at least 6.5 millimetres per hour.

***11** For large site greenfield and brownfield urban development occurring after commencement of this consent, excluding those in the Beach Road stormwater catchment (refer Plan CRC144682B) mitigation facilities shall be constructed to provide partial attenuation of the design storms to ensure no additional adverse hydraulic effect on the stormwater network overland flow paths or ephemeral gullies, or Waikoau/Lyell Creek and its tributaries.*

Advice note:

***partial attenuation** or retention means attenuating (to surface water) or retention (to land) the stormwater generated in excess of what would otherwise have run off under design storm conditions for a site or multiple sites land use that existed at the commencement of the consent. Commonly described as ensuring peak post-development flows do not exceed pre-development flows*

***12** The large site greenfield and brownfields urban development mitigation facilities that primarily discharge:*

b. To surface water within the Waikoau/Lyell Creek stormwater catchment shall provide at least partial attenuation for the critical duration 50%, and 10% AEP storm events;

***13** The design of large site greenfield and brownfield urban development water quality and quantity mitigation facilities shall be in general accordance with a recognised design guideline, using local hydrology obtained from the latest available version of NIWA's High Intensity Rainfall Design System (HIRDS).*

In summary, to match the conditions of CRC144682 requires:

1. Treatment of runoff using a volume-based device sized for a storm depth of 22.5 mm (or equivalent flow-based device)
2. Partial attenuation of runoff for the critical duration 50%, and 10% AEP storm events
3. HIRDS shall be used for sizing

CRC201580 – Stormwater discharge consent for NCTIR temporary accommodation at 2 Mt Fyffe Road

From the engineering report supplied with the application it is stated:

Attenuation (Appendix E)

Attenuation for the developed site will be for the critical duration 10% AEP (Annual Exceedance Probability) or the 10 year event. The critical duration was calculated to be less than 1 hour based on the catchment time of concentration and the eventual outfall of Lyall Creek which also has a time of concentration of less than 1 hour. (Discussions with Michelle Wild – ECan)

The time of concentration stated in the application for Lyell Creek is not considered correct and appears to be based on a misinterpretation (Michelle Wild, pers. comm.).

Review of Kaikōura Fans flood modelling investigation, ECan Report No. R20/15

Key parts of this investigation are copied in Appendix A for background. The site is located in the Ludstone Road subcatchments. This modelling did not look at the smaller tributaries within the subcatchments, but it does

show the magnitude of flows in comparison to the flows from this site, the approximate time to peak (2-3 hours), and shows the design magnitude of the flood defences in Kaikoura.

Yours Sincerely,

Peter Christensen
CMEngNZ IntPE(NZ)
Technical Director
Storm Environmental Ltd

Email: peter.christensen@stormenvironmental.co.nz
Mobile: 022 342 2164

Appendix A: Key information from the Kaikōura Fans flood modelling investigation, ECan Report No. R20/15

2.1.5 Lyell Creek

Lyell Creek has a natural catchment area of ~16 km² but has experienced overflows from the much larger Kowhai River catchment on many occasions. This spring fed creek drains the south eastern part of the Kowhai Fan, exiting through Kaikōura Township to the coast (Figure 2-2). A flood protection wall has been constructed along Lyell Creek where it passes through the township (Figure 2-8), designed to contain a flow of ~160 m³/s. As 500 year ARI flows for Lyell Creek are less than this design flow capacity, the flood protection wall is not expected to be overtopped without a breakout flow from the Kowhai River.

Figure 2-8: Lyell Creek flood protection wall

Table 3-1: Present-day Lyell Creek design flows

Average Recurrence Interval (ARI)	Recommended regional dimensionless growth curves, Q/Q_{MAF} (Pearson & Thompson, 2005, Table 8)	Lyell Creek flow (m^3/s)
Mean annual flow		16.4
50 year	3.20	53
100 year	3.84	63
200 year	4.56	75
500 year	5.61	92

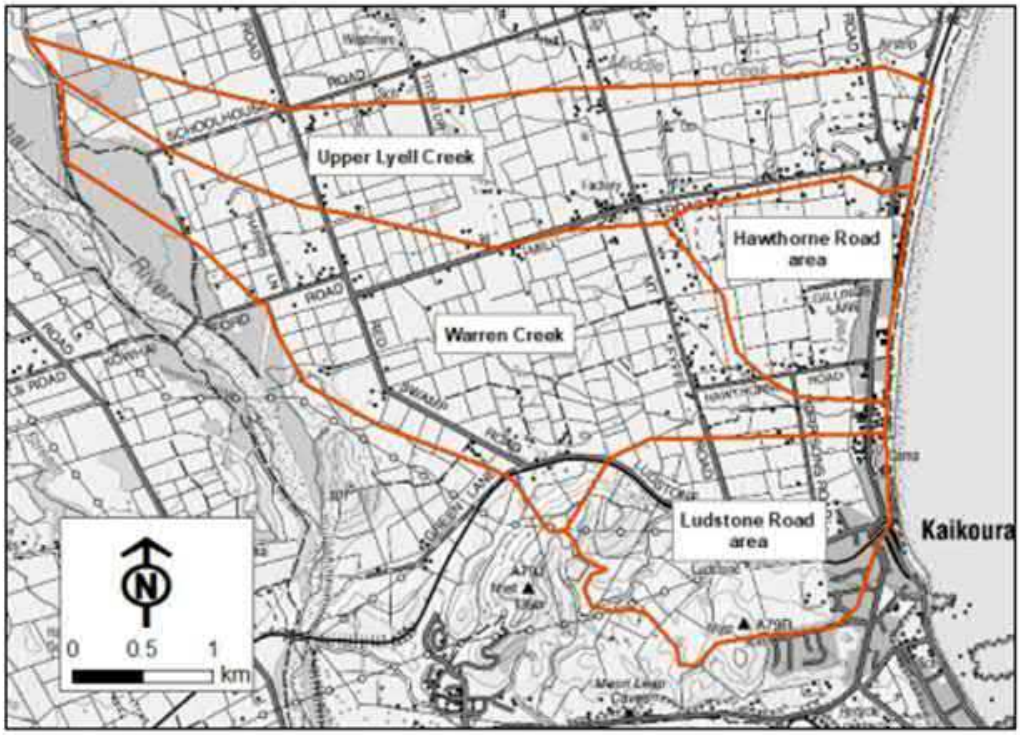


Figure 3-1: Lyell Creek sub-catchment location map

Table 3-2: Present-day Lyell Creek sub-catchment design flows

Event Probability (ARI)	Peak Flow m^3/s			
	Upper Lyell Creek	Hawthorne Road area	Warren Creek	Ludstone Road area
Catchment area, A (km^2)	*5.2*	*1.9*	*6.4*	*2.9*
Proportion of flow (%)	*32*	*11*	*39*	*18*
50 year	17	6	21	9
100 year	20	7	25	11
200 year	24	9	29	13
500 year	29	11	36	16

Table 3-11: Kaikōura Fans design flows (with climate change to 2120)

Watercourse	50 year ARI (m^3/s)	500 year ARI (m^3/s)
Lyell Creek		
Upper Lyell Creek	21	36
Hawthorne Road	8	14
Warren Creek	26	45
Ludstone Road area	11	20
(Total)	(66)	(115)

3.5.4 Timing of peak flows

The time at which the water course flows, and Kowhai River breakout flow, peak will be dependent on many variables including:

- Spatial distribution of rainfall
- Temporal distribution of rainfall (e.g. whether it is a high-intensity short duration storm, a less intense but longer duration storm, or a storm event made up of several high-intensity 'bursts' of rainfall).
- The unpredictable nature of any stopbank breach that allows flow to pass out of the water courses onto the adjacent alluvial fan.
- Antecedent conditions (i.e. how wet the ground already is at the start of the storm event).

A brief examination of the flow data for Lyell and Middle Creeks, and the water level record for the Kowhai River, shows that for the shorter single peak events, the water courses tend to peak around the same time. For the longer duration storm events, consisting of several rainfall bursts, Lyell Creek and Middle Creek respond more rapidly, although the spatial distribution of the rainfall means they do not necessarily both produce peak flows that are proportional to each other (e.g. if there are two peaks during an event, they will not necessarily both have a higher peak for the first versus second peak). Meanwhile, the Kowhai River may respond more slowly as a longer duration, single peaked hydrograph.

Initial modelling showed that for a 500 year ARI flow down the Kowhai River, the flood peak takes approximately 1 hour to travel from upstream of Goldmine Creek to the SH1 road bridge. Kowhai River breakout flows at Kowhai/Middle Ford take approximately 1 hour to reach land around Lyell Creek at Beach Road, with peak levels upstream of the SH1 road bridge occurring 4 to 5 hours after the initial breakout occurs. It also takes approximately 1 hour for the local Lyell Creek flow peak to travel from Mill Road to the SH1 bridge.

To ensure the model does not overestimate peak flows, and water levels, it has been assumed that the peak flows into Lyell Creek (and all other Mt Fyffe and Ewelme stream water courses) occurs around:

- 3 hours before the peak breakout flow from the Kowhai River at Kowhai Ford/Middle Ford.
- 2 hours before the peak breakout flow from the Kowhai River at The Bluff and Fernleigh Dip.

As breakouts are unpredictable, the breakout flow magnitude, timing of the peak, and location of all possible breakouts cannot be included in this investigation.

APPENDIX H

Development Concepts:

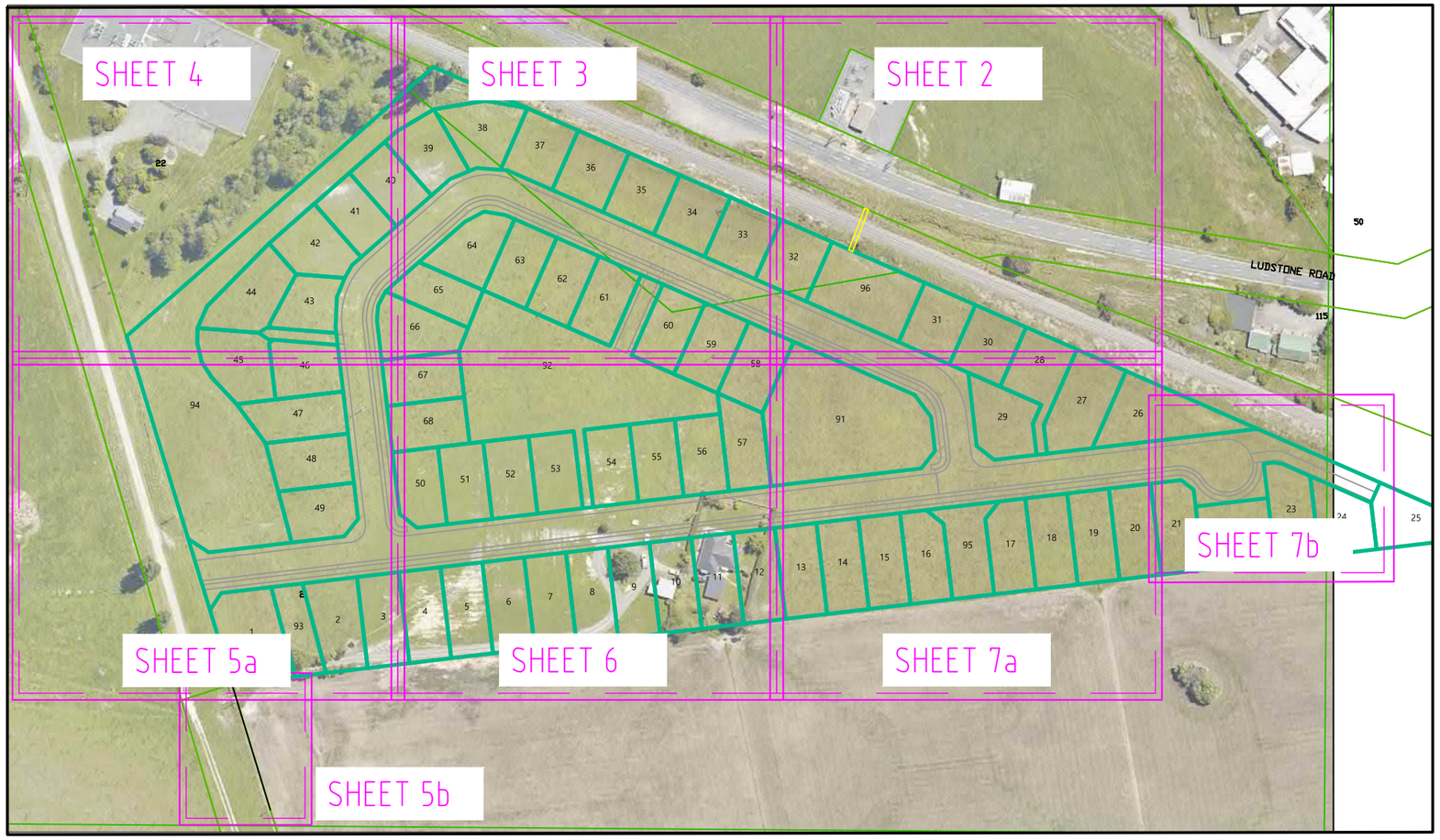
Power Supply.

Location Map

Estimated Cable Length Requirements						
Cable Type	Cable Lgth	Trench Lgth	Lay Lgth	Duct Lgth	Thrust Lgth	Drill Lgth
3c 185 Al 33kV	520m	30m			24m	
3c 185 Al 22kV	630m	140m			24m	
3c 300 AlNS LV	1960m	provided				
1ph-35 CuNS LV	170m	provided				
1ph-16 CuNS LV	20m	10m				
1ph-16 CuNS SL	300m	provided				

NOTE : 500mm pipe drill length under rail corridor and Ludstone Road - approx 35m
See Subdivision Construction Notes for total PVC duct lengths.

Plan Sheet Layouts



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CAPEX REF: NT021088			OPEX REF:		
CUSTOMER: William Loppe			PH: 027 571 7399		
LOCATION: 2 Mt Fyffe Road, Kaikoura					
DESCRIPTION: Subdivision					
NEW CONNECTIONS SUPPLIED: 87 x 1ph 63A			SITE: XXXX		
VOLTAGE OPERATING: LV, 11kV & 33kV			INSULATED: 11kV, 22kV & 66kV		
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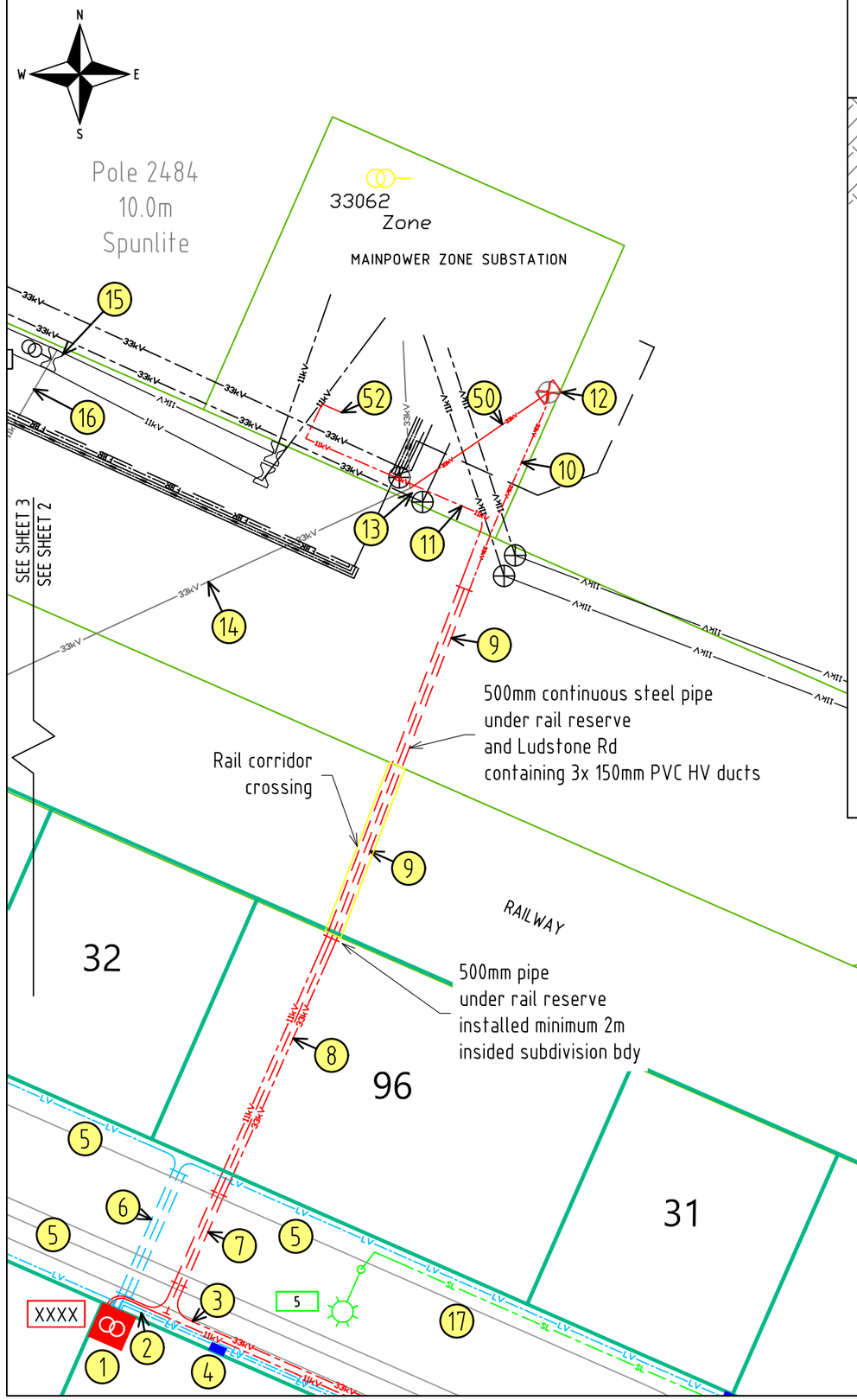
DRAWING NUMBER: NP002535_01					

mainpower

Plan



11kV & 33kV TRENCH DETAIL
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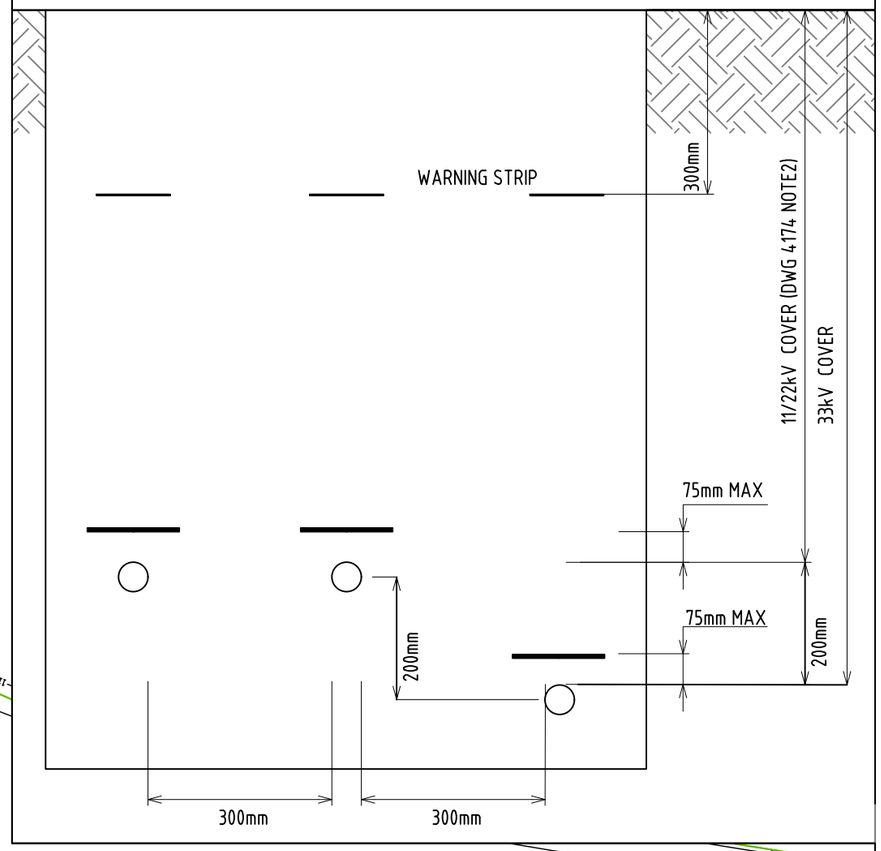
DETAILED SPECIFICATIONS



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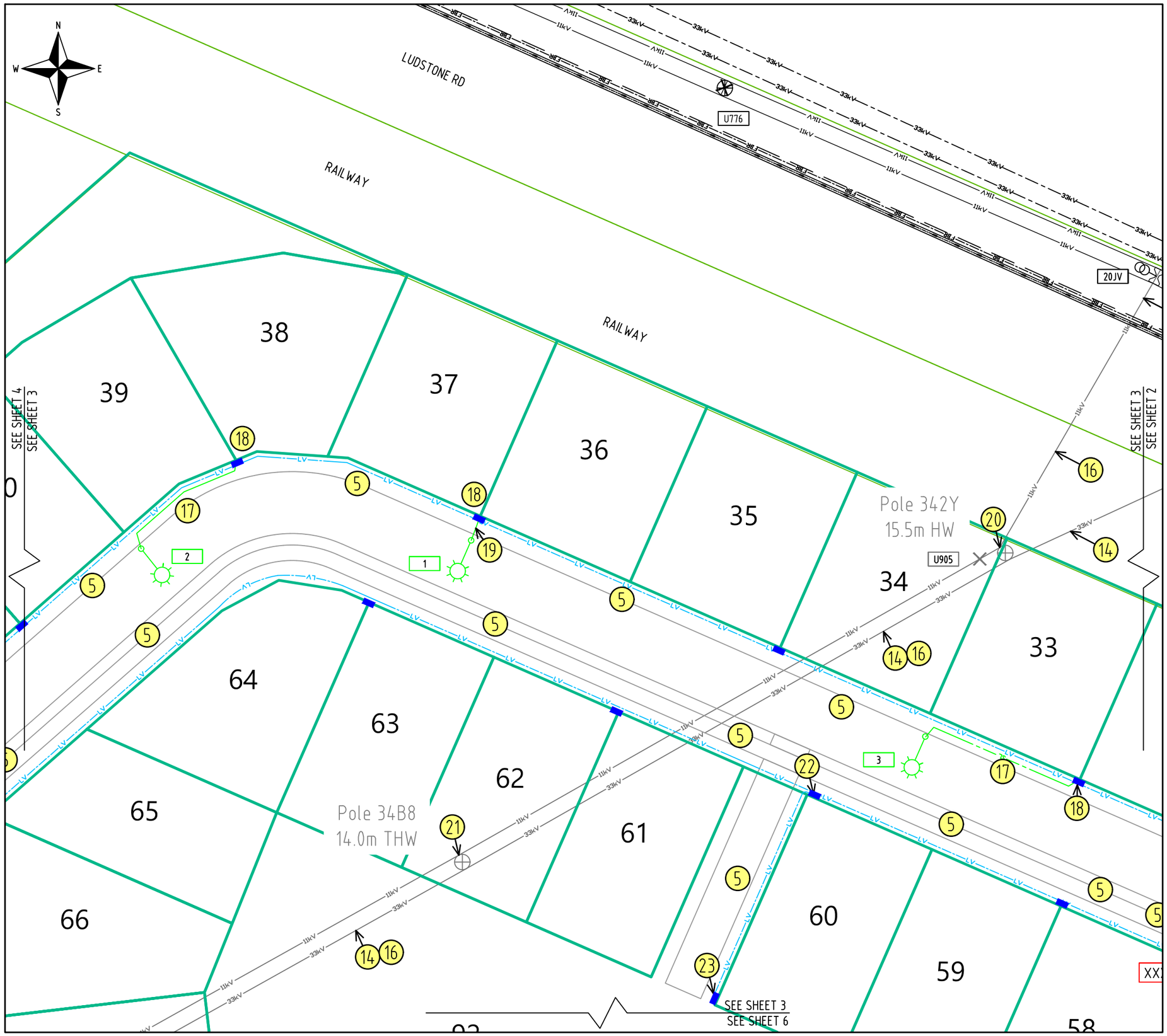

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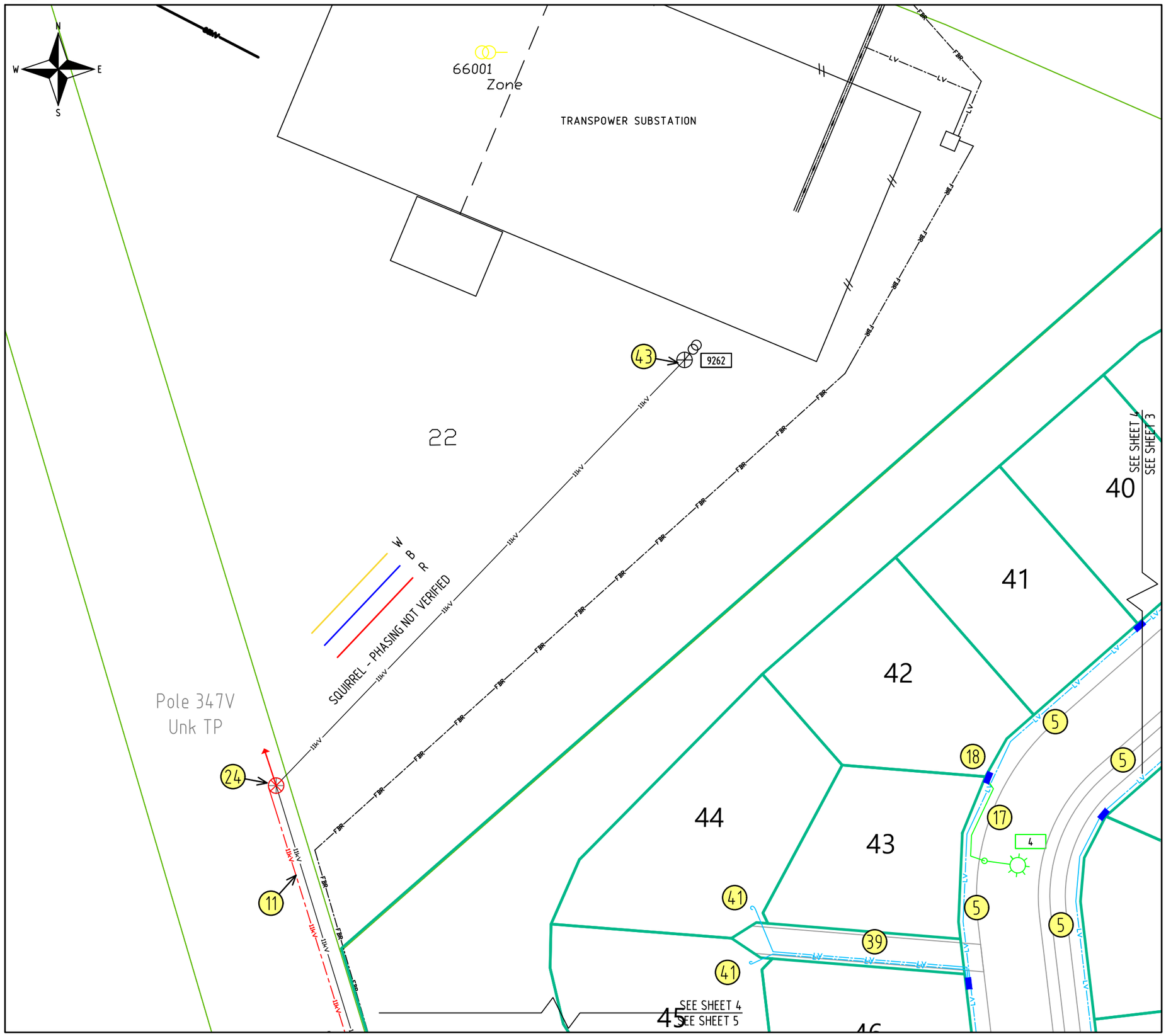

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Plan

SEE SHEET 4
SEE SHEET 5

45 46 94 47 48 49 1 93 2 3

Pole 34B7
12.0m CONC

Pole 342Z
12.1m HW

SQUIRREL - PHASING NOT VERIFIED

MINK

FERRET

MINK PHASING NOT VERIFIED

UNK LV (1ϕ + N)

MOUNT FYFFE RD

LB 1

SEE SHEET 5 VIEWPORT A
SEE SHEET 5 VIEWPORT B

SEE SHEET 5
SEE SHEET 6

VIEWPORT B

VIEWPORT A

LV, 11kV & 33kV COMBINED TRENCH DETAIL
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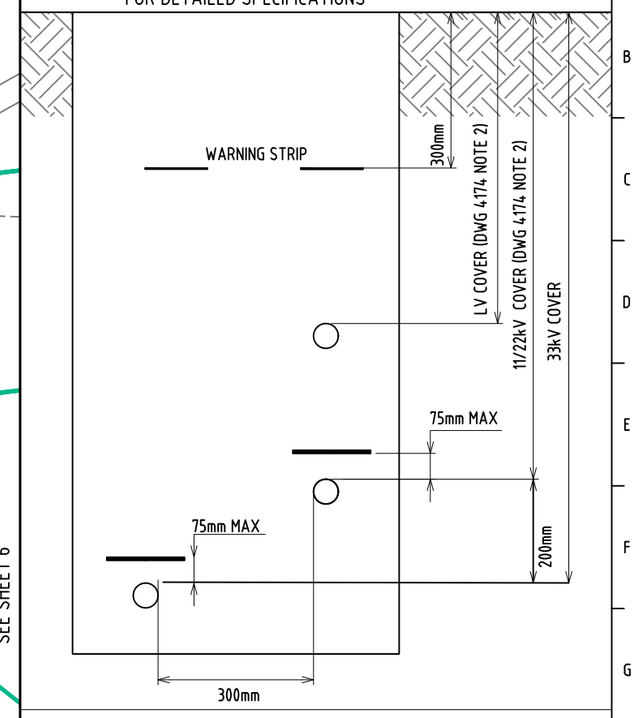

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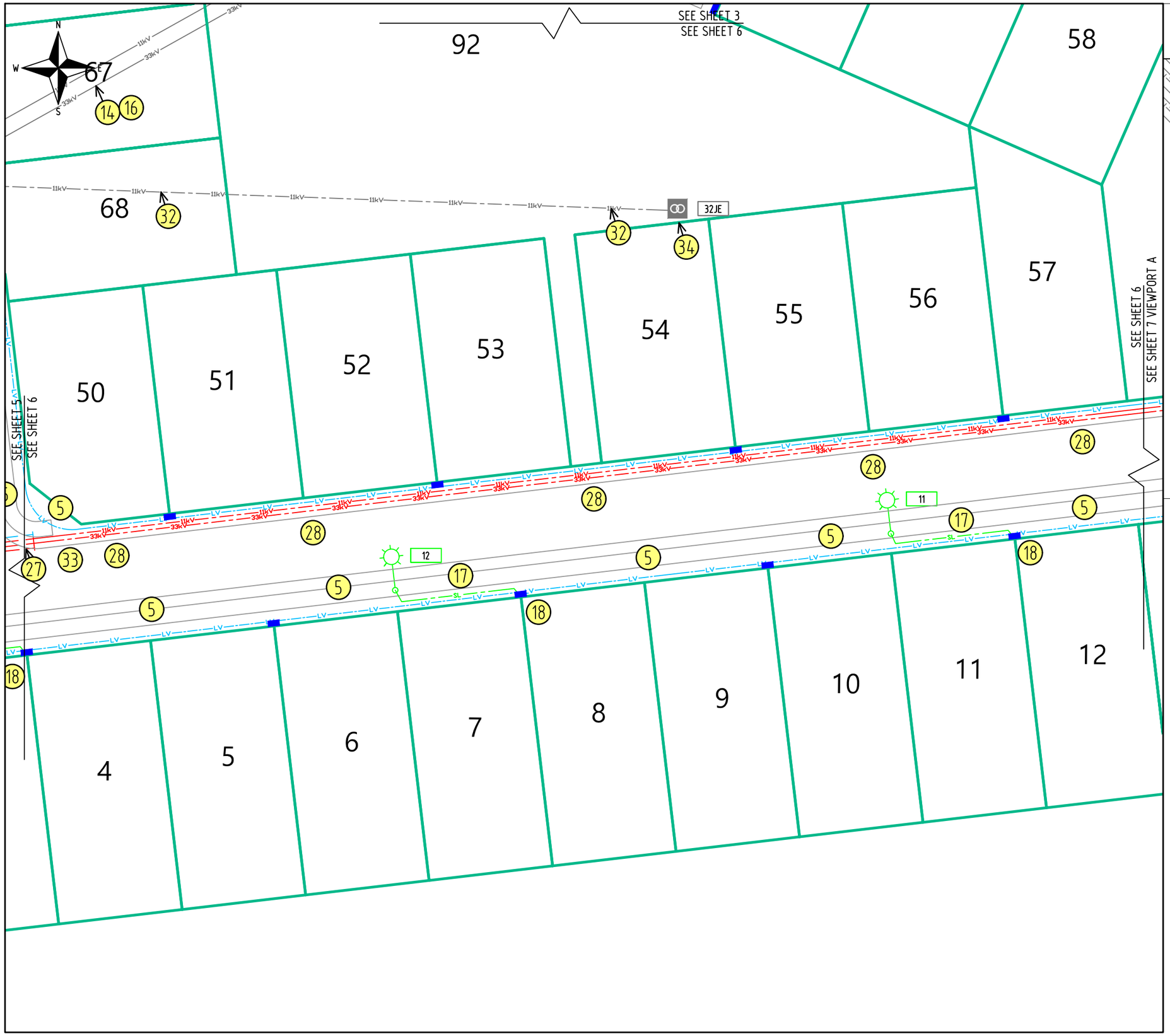

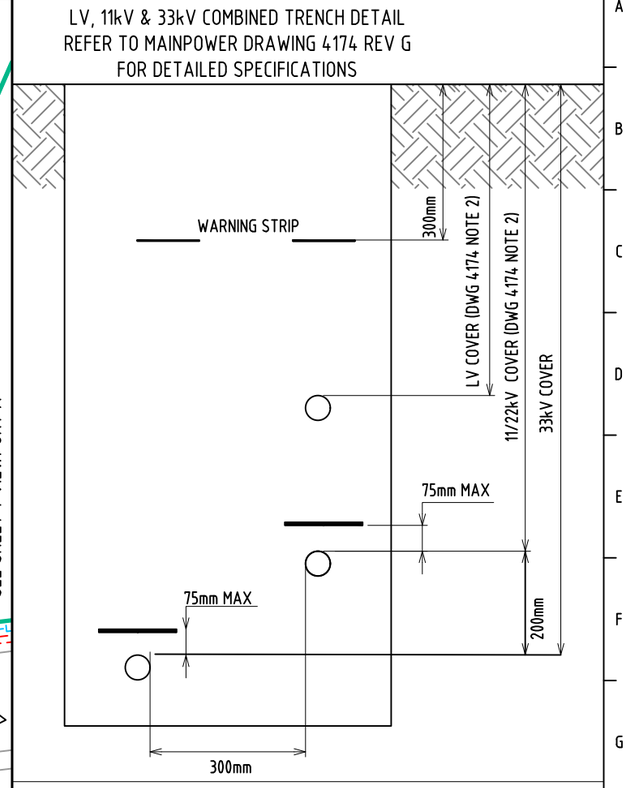

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Plan

SEE SHEET 2
SEE SHEET 7 VIEWPORT A

SEE SHEET 6
SEE SHEET 7 VIEWPORT A

SEE SHEET 7 VIEWPORT A
SEE SHEET 7 VIEWPORT B

SEE SHEET 7 VIEWPORT A
SEE SHEET 7 VIEWPORT B

LB 2

VIEWPORT A

VIEWPORT B

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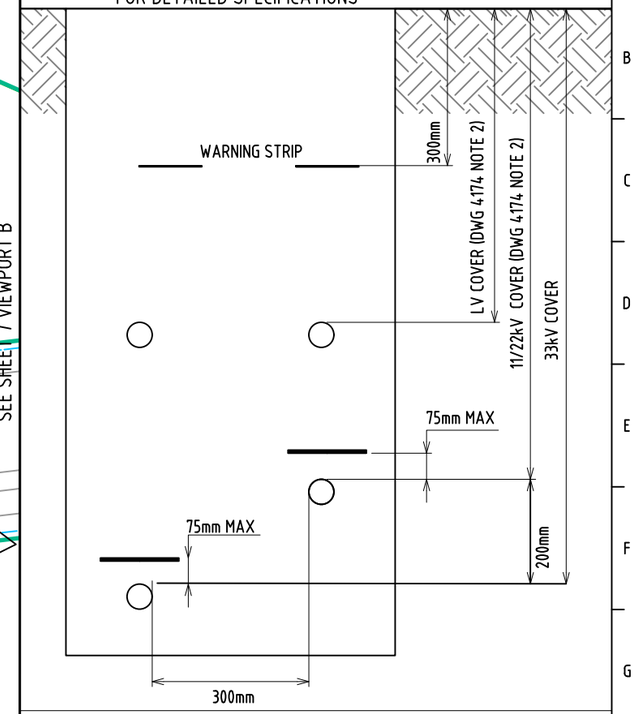

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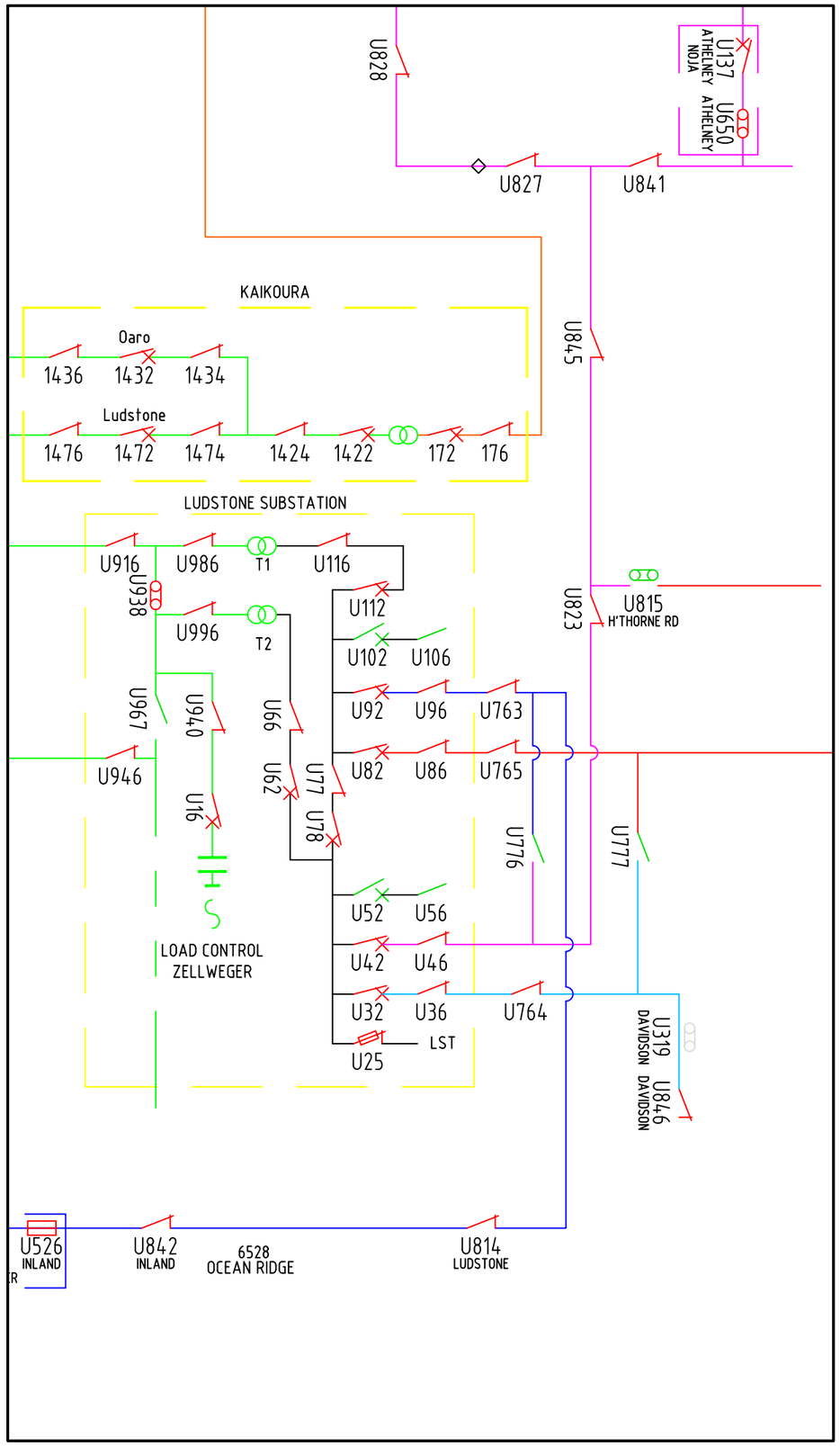
HV Schematic Before



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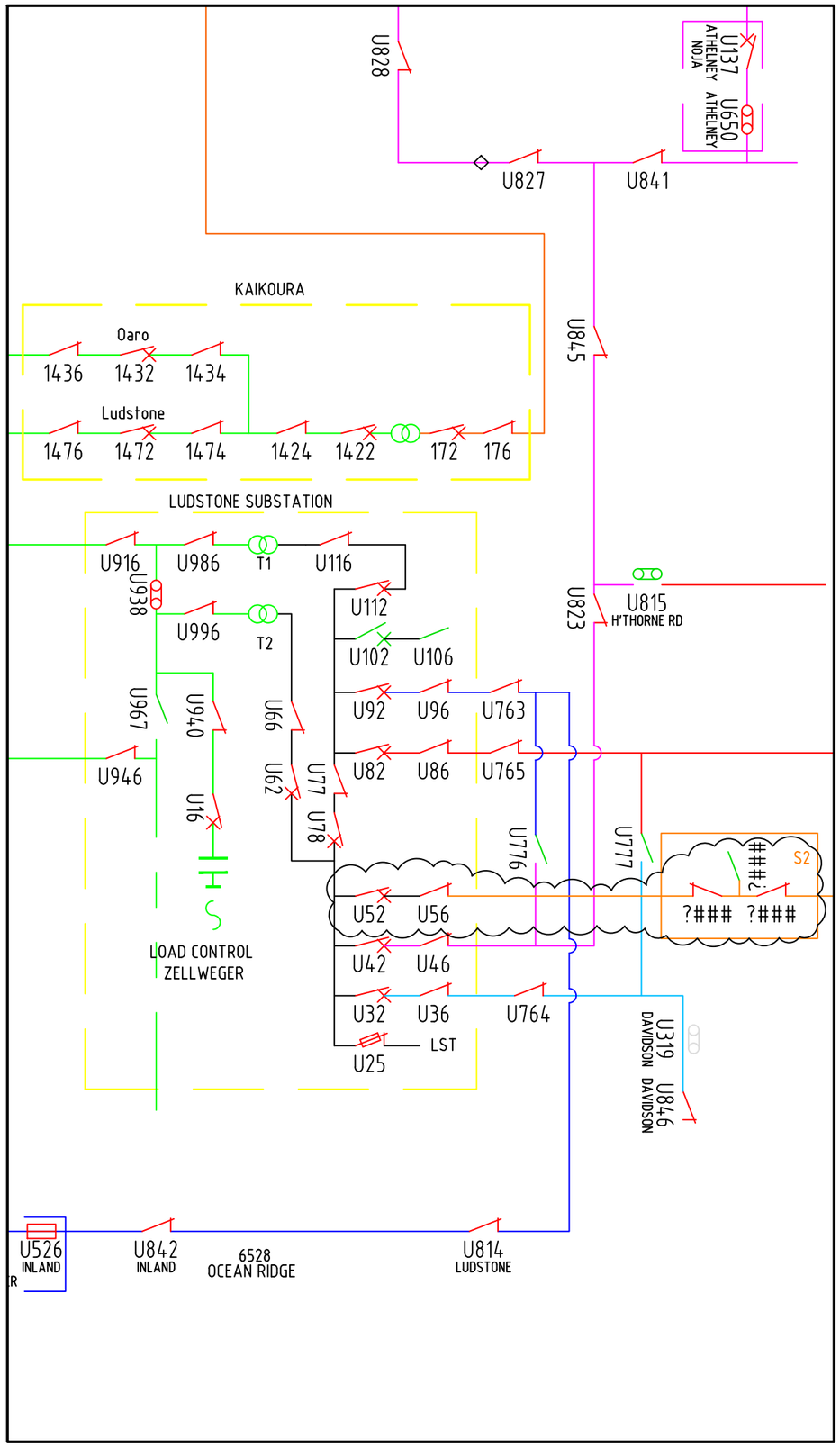

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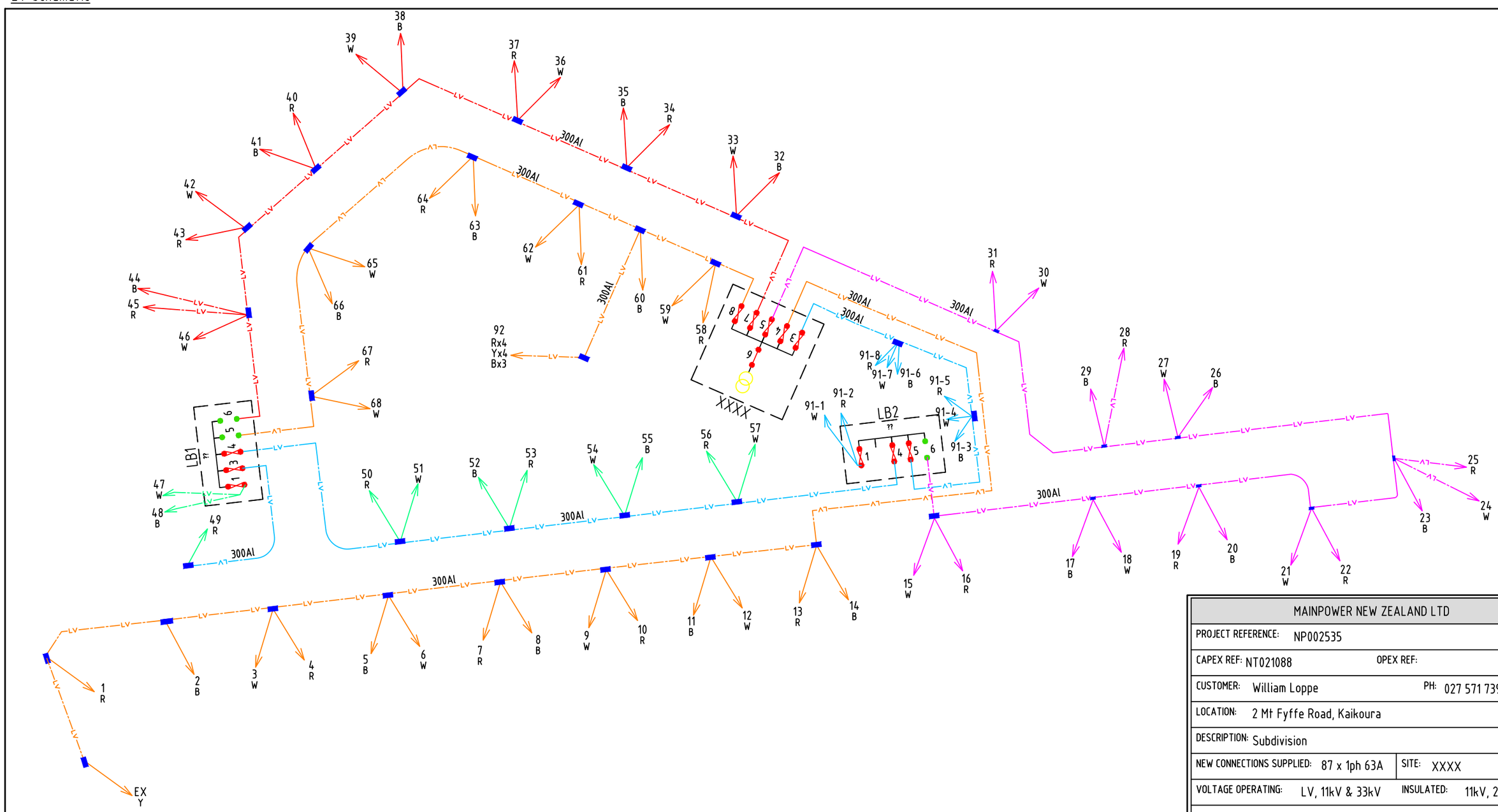
LV Schematic



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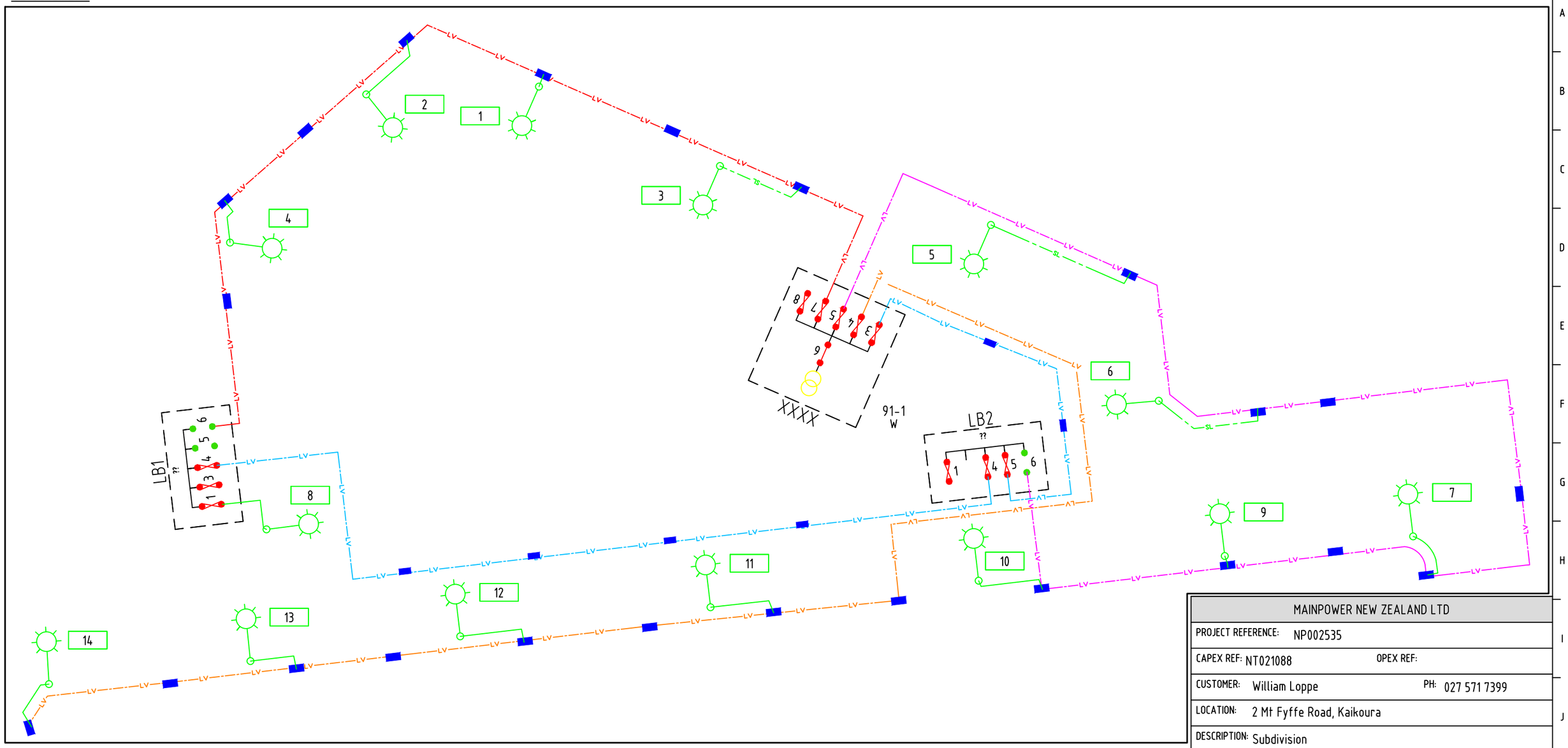
SL Schematic



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Preliminary Easement Plan

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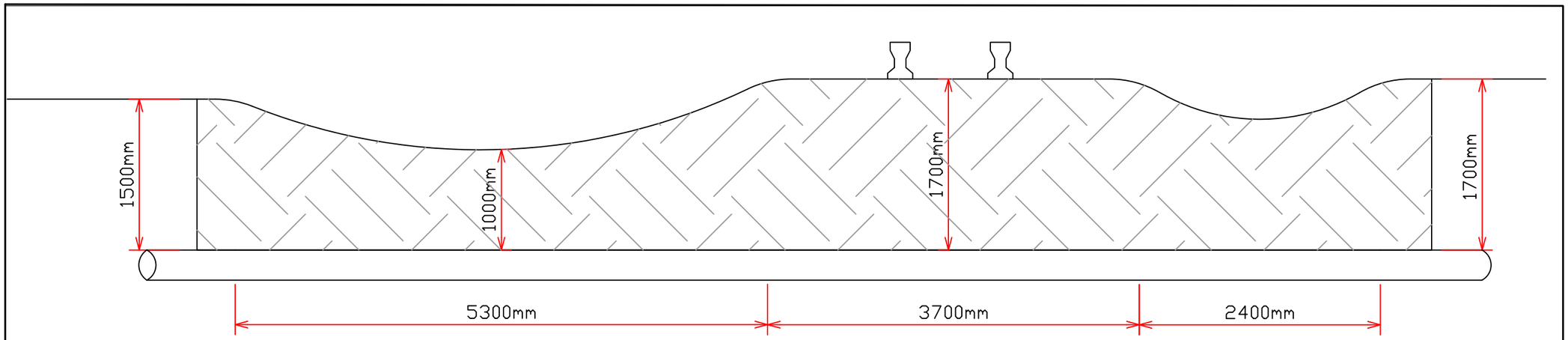
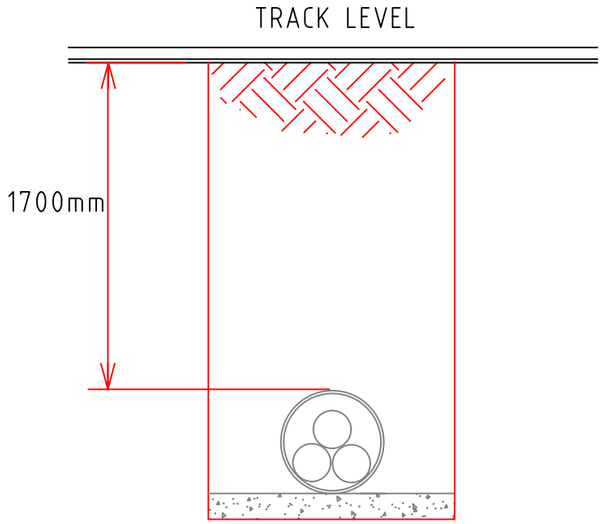
Kiwirail



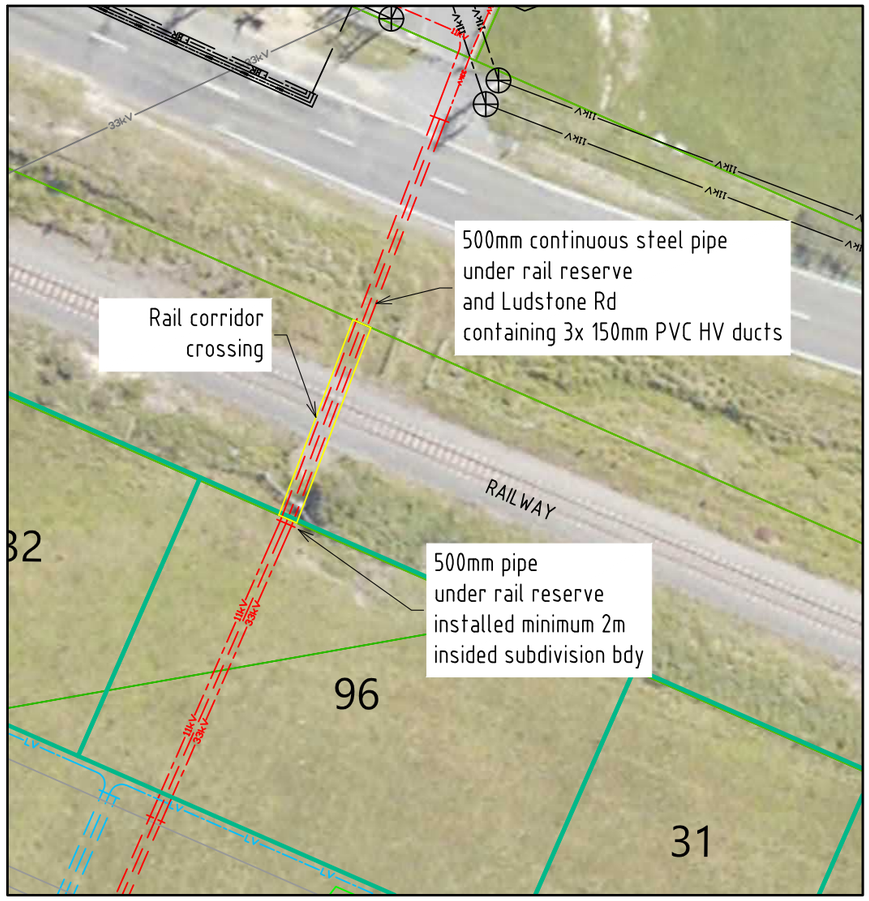
CROSS SECTION OF CABLE DUCT ROUTE ACROSS RAILWAY RESERVE

NOT TO SCALE



TYPICAL DUCT X-SECTION

3x 150mm PVC DUCTS INSIDE
500mm GALV STEEL PIPE
INTERNAL DUCTS TO CONTINUE
UNTIL OUTSIDE OF RAIL CORRIDOR



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SIGNED
DATE 20/07/2022

MAINPOWER NEW ZEALAND LTD					
PROJECT REFERENCE: NP002535					
CAPEX REF: NT021088			OPEX REF:		
CUSTOMER: William Loppe			PH: 027 571 7399		
LOCATION: 2 Mt Fyffe Road, Kaikoura					
DESCRIPTION: Subdivision					
NEW CONNECTIONS SUPPLIED: 87 x 1ph 63A			SITE: XXXX		
VOLTAGE OPERATING: LV, 11kV & 33kV			INSULATED: 11kV, 22kV & 66kV		
CERTIFIED DESIGN FOR INSTALLATION/PART INSTALLATION, STANDARDS COMPLIED WITH:					
PART 1 AS/NZS 3000 ☐ PART 2 AS/NZS 3000 ☒ OTHER ☒ Works					
REV	BY	DATE	DESCRIPTION	CHECKED	APPROVED
PREPARED: F Maule			SIGN:	DATE: 01/07/2022	
REVIEWED: K Large			SIGN:	DATE: 13/07/2022	
APPROVED:			SIGN:	DATE:	
SHEET: 12 OF 12		SCALE: NTS	A3	mainpower	
DRAWING NUMBER: NP002535_01					

APPENDIX I

Development Concepts:

Communications.

From: Arna Intra Arna.Intra@chorus.co.nz
Sent: Thursday, 9 June 2022 9:07 am
To: William Loppe (KPMO) <william.loppe@kpmo.co.nz>
Subject: **proposed fibre route** 10279951 2 Mt Fyffe Road, Kaikoura 7371

Good morning William

I believe you are querying the path of the fibre feeder for you development.

Attached is the **proposed** route from the Chorus planner, which will only be confirmed by the designer once this job gets to contract stage. Chorus does not do design only contracts at present.

Regards

Arna Intra
Network Scoper

T +6499795914
M
E **Arna.Intra@chorus.co.nz**

PO Box 6640
Auckland 1010
www.chorus.co.nz

APPENDIX J

Development Concepts:

Landscaping.

DRAFT

FOR CLIENT REVIEW*

DRAWING INDEX - CONCEPT PLANS

REV C

vicarage views development

fyffe road, kaikoura

form garden architecture

15 July 2022

DRAFT

FOR CLIENT REVIEW*

FORM garden architecture

0 50 100 M

SCHEDULE OF QUANTITIES

SOFT LANDSCAPING

PLANTED AREA	=	1,645 m2
STREET TREES	=	28

HARD LANDSCAPING

UNIT PAVING FIRTH 'HOLLAND 80'	=	1,030 m2
PAVING DETAIL FIRTH 'HOLLAND 80 SET'	=	300 m2
POST & RAIL FENCE BOUNDARLINE 3 RAIL	=	170 m
1 m HIGH STONE WALL	=	42 m

1.2 m HIGH STONE COLUMN

550 mm	=	9
800 mm	=	23
LYCH GATE / STRUCTURE	=	2
MAINTAINED LAWN	=	4,400 m2
BENCH SEATS	=	9

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:750@A1
date	15 July 2022
drawing	**MASTERPLAN**
issue	for review

www.form.net.nz craig@form.net.nz (021) 164 6075

SHEET 1 REV C

DRAFT

FOR CLIENT REVIEW*

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:750@A1
date	15 July 2022
drawing	**RESERVE**
issue	for review

www.form.net.nz craig@form.net.nz (021) 164 6075

SHEET 6 REV C

FORM garden architecture

DRAFT

FOR CLIENT REVIEW*

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

EXISTING PLANTING - EXTENT OF REMOVAL & RE PLANTING TBC

ASPHALT FOOTPATH

1000 mm HIGH STONE CLAD WALL

POTENTIAL SIGNAGE ELEMENT

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

SPECIMEN TREES - TBC ON PLANTING PLAN

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1000 mm HIGH STONE CLAD WALL

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1000 mm HIGH STONE CLAD WALL

MAINTAINED LAWN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

PAVING DETAIL ie FIRTH 'HOLLAND 80' IN A HERRINGBONE PATTERN

1000 mm HIGH STONE CLAD WALL

LYCH GATE STRUCTURE WITH APPROPRIATE TIMBER DETAILING & MATERIALITY

PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS

'BUILT IN' HARDWOOD TIMBER BENCH SEAT

1200 mm HIGH STONE CLAD WALL

1000 mm HIGH STONE CLAD WALL

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

PAVING DETAIL ie FIRTH 'HOLLAND 80' IN A HERRINGBONE PATTERN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

600 x 600 mm STONE CLAD COLUMN SUPPORT TO OVER HEAD STRUCTURE

400 mm WIDE PERIMETER PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

ASPHALT ROAD - BY OTHERS

PLANTED GARDEN - TBC ON PLANTING PLANS

APPROX LOCATION OF HEADWALL TO OVERLAND FLOW PATH / FORMED DRAINAGE CHANNEL

BATTER SLOPE DOWN TO PROPOSED OVERLAND FLOW PATH - REFER ENGINEERS DRAWINGS

MAINTAINED LAWN TO BATTERED SLOPE - TBC BY ENGINEER

N

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

0 5 10 M

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:100@A1
date	15 July 2022
drawing	**FRONT ENTRANCE**
issue	for review

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SHEET 2 REV C

FORM garden architecture

DRAFT

FOR CLIENT REVIEW*

ASPHALT FOOTPATH - BY OTHERS

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

1000 mm HIGH STONE CLAD WALL

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

HARDWOOD TIMBER 'BUILT IN' BENCH SEAT

PAVING DETAIL ie FIRTH 'HOLLAND 80' IN A HERRINGBONE PATTERN

ASPHALT FOOTPATH

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

PLANTED GARDEN - TBC ON PLANTING PLANS

MAINTAINED LAWN

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

TIMBER POST & RAIL FENCE ie BOUNDARYLINE '3 RAIL' POST & RAIL FENCE

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

1000 mm HIGH STONE CLAD WALL

1200 mm HIGH 600 x 600 mm STONE CLAD COLUMN

HARDWOOD TIMBER 'BUILT IN' BENCH SEAT

PLANTED GARDEN - TBC ON PLANTING PLANS

PAVING DETAIL ie FIRTH 'HOLLAND 80' IN A HERRINGBONE PATTERN

MAINTAINED LAWN

2000 mm WIDE PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

400 mm WIDE PERIMETER PAVING DETAIL ie FIRTH 'HOLLAND SETS' BLACK SANDS or SIMILAR

N

0 5 10 M

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

vicarage views development

fyffe road, kaikoura

FORM garden architecture

drawn	Kay/Wilson
scale	1:100@A1
date	15 July 2022
drawing	**INTERSECTION 1**
issue	for review

www.form.net.nz craig@form.net.nz (021) 164 6075

SHEET 3 REV C

DRAFT

FOR CLIENT REVIEW*

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

0 5 10 M

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:100@A1
date	15 July 2022
drawing	**INTERSECTION 2**
issue	for review

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SHEET 4 REV C

FORM garden architecture

DRAFT

FOR CLIENT REVIEW*

2000 mm HIGH STONE CLAD COLUMN

BOUNDARYLINE '3 x POST & RAIL FENCE' or SIMILAR

2000 mm HIGH STONE CLAD COLUMN

1800 mm HIGH STONE CLAD WALL

2000 mm HIGH STONE CLAD COLUMN

2000 mm WIDE FIRTH 'HOLLAND SETS' BLACK or SIMILAR

MAINTAINED LAWN

ASPHALT - BY OTHERS

ALL FENCING TBC

ASPHALT ROAD - BY OTHERS

PAVING FEATURE ie FIRTH 'HOLLAND 80' IN HERRINGBONE PATTERN 'NATRUAL' COLOUR

400 mm WIDE FIRTH 'HOLLAND SETS' BLACK or SIMILAR

2000 mm HIGH STONE CLAD COLUMN

PLANTED GARDEN - TBC ON PLANTING PLANS

BOUNDARYLINE '3 x POST & RAIL FENCE' or SIMILAR

2000 mm HIGH STONE CLAD COLUMN

1800 mm HIGH STONE CLAD WALL

2000 mm HIGH STONE CLAD COLUMN

MAINTAINED LAWN

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

0 5 10 M

N

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:50@A1
date	15 July 2022
drawing	**ROW**
issue	for review

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SHEET 5 REV C

FORM garden architecture

DRAFT
FOR CLIENT REVIEW*

LEGEND

- ASPHALT
- SELECTED UNIT PAVER ie FIRTH 'HOLLAND 80' NATURAL
- SELECTED CONCRETE SETS ie FIRTH 'HOLLAND SET' BLACK SANDS or SIMILAR
- MAINTAINED LAWN
- SPECIMEN TREE
- EXISTING PLANTING
- PLANTED GARDEN
- STONE WALL
- STONE COLUMN
- POST & RAIL FENCE

N

FORM garden architecture

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:100@A1
date	15 July 2022
drawing	**INTERSECTION 2**
issue	for review

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SHEET 7 REV C

DRAFT

FOR CLIENT REVIEW*

vicarage views development

fyffe road, kaikoura

drawn	Kay/Wilson
scale	1:50@A1
date	15 July 2022
drawing	**3D IMAGERY**
issue	for review

www.form.net.nz craig@form.net.nz (021) 164 6075

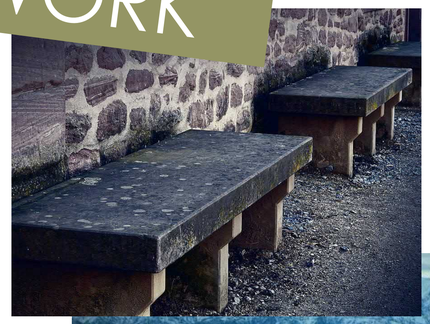
SHEET 8 REV C

FORM garden architecture

N

PLANTING

STONEWORK



FENCING

PAVING

FORM garden architecture

vicarage views development
fyffe road, kaikoura

drawn	Kay/Wilson
scale	nts
date	15 July 2022
drawing	**IMAGE BOARD**
issue	for review

www.form.net.nz craig@form.net.nz (021) 164 6075

SHEET
9
REV C

APPENDIX K

Compliance Schedules: District Plan Rules and Standards.

	COMPLY WITH KDP PERMITTED	VOLUNTEERED CONDITION	BREACH KDP RC REQUIRED
Subdivision			
Lot Size 13.12.a	Lots 91 and 92 over 1,000m^2		Subzone A: minimum 500m^2 as per Scheme Plan
Rights of Way 13.1.2.8.1 13.12.8.a	RoW A and B have legal width of 4.5m	Consent notice: At the time of Building Consent on the lots served by Rights of Way, the purchaser shall demonstrate turning room so vehicles exit in a forwards direction.	
Road width 13.1.2.7.a	16m Legal width 8m formed width	Upgrade Mt Fyffe Road to 8m width	
Reserves 13.12.b	Reserves as per Scheme Plan		
Roading			
Legal Width 13.1.2.7.a 13.1.2.7.b	16m complies with NZS 4404 E22		2m wide footpath
Intersection 12.8.5.a	Eastern intersection of crescent complies	Posted speed limit of 40 km/h	Western intersection of crescent from Mt Fyffe Rd is ~58m as per Engineering Plans
Sight lines at intersections 12.8.5.b	Eastern intersection of crescent complies	Posted speed limit of 40 km/h	Western intersection of crescent from Mt Fyffe has sight line of ~58m to Mt Fyffe Rd
Formation 13.1.2.7.b 13.1.2.7.c	8m wide sealed carriageway includes parking	Berms to include landscaping as per Landscape Plans	One 2m wide footpath as per Engineering Plans
Cul-de-sac 13.1.2.7.d	Cul-de-sac designed with 10m radius		
Street Lighting 10.5.1.c	Shall be on poles within Road Reserve		
Road Names 13.1.2.7.e		St James Drive / Avenue and Porritt Crescent	
Structures on Roads Bylaw	*No rule in KDP*		*Installation of Pedestrian lychgate as entrance feature into Vicarage Views and bench seating in berms as per Landscape Plans*

	COMPLY WITH KDP PERMITTED	VOLUNTEERED CONDITION	BREACH KDP RC REQUIRED
Services			
Building setback from Power Lines 10.5.1.a.i 10.5.1.m 10.6.1.i 18.7.15	11kV, 33kV and local lines to be buried through subdivision	3m wide easements provided through Reserves.	Seek consent to build within 20m of designated powerline route as shown on Map 45.
Transformers 10.5.1.b.i. 10.6.1.ii	Transformers will be ground based and within Road Reserve		
Electricity and communication connection 13.1.2.4	Ducting shall be provided to the net of each allotment		
3 Waters 10.5.1.f 13.1.2.3 18.7.13	Connections shall be provided to the net of each allotment		
Access			
Rights of Way 13.12.8.a	Form Subzone A Rights of Way servicing 3 lots: Legal minimum width 4m and formed width 3.5m	Consent notice that in Subzone A each Right of Way user shall provide details of on site turning at BC stage so no reversing onto street.	Subzone A Rights of Way have no turning head. Each allotment to provide on site turning so no reversing onto street
Vehicle crossings 12.8.1.a 12.8.1.b 13.1.2.6	Form Rights of Way and Rear allotment vehicle crossings	Consent notice that each allotment shall form and seal vehicle crossing to the boundary to Council standards, a minimum width of 3m	
Land Use			
Build Coverage 18.7.4			35% net area
Building Height 18.7.6	Subzone A 8m	Subzone B 5.5m	
Landscaping 18.7.7	N/A for residential activities		
Outdoor Living Space 18.7.8	Subzone A 70m^2 and 5m diameter		Subzone B for MURC: Min 10m^2 with 2m min diameter for 1 bed unit. Min 20m^2 with 3m min diameter for 2 bed unit. Min 30m^2 with 4m min diameter for 3+ bed unit. Up to 5m^2 of Outdoor Living Space may be roofed and one side may be enclosed to provide sheltered area.

	COMPLY WITH KDP PERMITTED	VOLUNTEERED CONDITION	BREACH KDP RC REQUIRED
Land Use Continued			
Residential Density 18.7.9		Maximum total residential units over whole site 85	Subzone A 1 unit per 500m^2 or Title Enable MURC within Subzone B: 1 unit / 300m^2 to a maximum of 10 units on Proposed Lots 91 and 92
Recession Planes 18.7.10	As per KDP		Where buildings are joined at boundaries, recession planes are not applicable Subzone B for MURC: Recession planes for adjacent properties only, not required within the MURC
Internal boundary setbacks 18.7.11			Subzone A: Where buildings are joined at boundaries, internal setbacks are not applicable. Subzone A: 1m off reserves/rights of way and accesses *Effects Lots 1, 2, 16, 17, 27, 29, 30, 31, 42, 45, 47, 48, 58, 59* Subzone B: 1m setback from adjoining properties
Front boundary setbacks 18.7.12	4.5m	Consent notices that garages with a door parallel to the road shall be setback 5m from the boundary to enable parking in front of the garage	
Setback KDC powerline 18.7.15		Reroute and bury 11kVa and 33kVa lines through reserves.	20m setback from Designation
Waste management 18.7.16		In Subzone B for MURC: All waste which is stored outside shall be screened from public view and adjacent residential properties.	
Access 12.8.1.a 12.8.1.b 13.1.2.6 13.12.8.a 13.12.8.e	Each allotment shall form and seal vehicle crossing to the boundary to Council standards, a minimum width of 3m.		Subzone B for MURC: Rights of way shall be formed in accordance with KDP except a Right of Way may serve up to 10 residential units with legal width 9m and formed with of 5.5m.

	COMPLY WITH KDP PERMITTED	VOLUNTEERED CONDITION	BREACH KDP RC REQUIRED
Land Use Continued			
Parking Spaces 12.8.1.a.i	Subzone A 2 car parks per residential unit	Subzone B for MURC: 1 guest park per 5 units	Subzone B 1 car park per residential unit
Parking finish 12.8.1.g	Subzone A All weather surface	Subzone B for MURC: Sealed surface	
Manoeuvring 12.8.1.e		Subzone B for MURC: Manoeuvring room provided so no reversing onto street	Rights of Way A and B, no turning head. Each allotment to provide on site turning so no reversing onto street
Acoustic mitigation alongside rail corridor	*No rule*	Consent Notice volunteered for KiwiRail re vibration, internal noise levels and No Complaints	
Garages	*No rule*	Consent Notice that garage doors, if parallel to the legal road, are to be setback 5m from the front boundary.	
Fences	*No rule*	Consent Notice on Lots 1-25, requiring retention of farm fence along southern boundary whilst the neighbour parcel is still be used for farming practices	
Engineering		Engineering Plans shall be submitted to Council for certification prior to works commencing. As built plans shall be approved prior to s223.	
Earthworks		A DESCP shall be certified by GeoProfessional prior to commencing works. A copy provided to Council. All earthworks involving filling will be carried out in accordance with the standards in NZS4431:2022	

APPENDIX L

Volunteered Subdivision Performance Standards.

General

1 The subdivision is undertaken in accordance with the application.
2 Lot 97 shall vest as Legal Road.
3 Lots 93-96 shall vest as Utility Reserves.
4 Easements as required for any services which crosses other land.
5 A 2m wide water drainage easement In Gross shall be registered on the southern boundary of Lots 1-25 in favour of Council.
6 A 3m wide easement shall be registered on Lot 96 In Gross in favour of Mainpower for conveying electricity.
7 A “No Compliant” Covenant be registered on the titles of those lots within the 100m Railway line.

Roads

8 Mt Fyffe shall be upgraded to a 8m width, except under the overbridge, and a Flag Light shall be installed at the intersection with Ludstone Road.
9 Lot 97 shall be formed to in general accordance with NZS4404 with a 8m wide carriageway with 2m wide footpath as shown on the Engineering Plans in Appendix C of the application.
10 Landscaping and street furniture shall be installed as per the Landscape Concept Plans in Appendix J of the application.
11 Mt Fyffe Road and the internal roads shall have a posted speed limit of 40 km/h.

Rights of Way

12 Rights of Way A and B shall have a minimum legal width of 4m and be formed 3.5m wide in general accordance with NZS4404 to the net of each allotment served with an exception that there is no turning area within the formation.

Vehicle Crossings

13 Vehicle Crossings shall be formed and sealed to the boundary of Lots 28 and 92.

Electricity and Communications

14 The 11kVa and 33kVa electricity lines shall be undergrounded through the subject property.
15 Provision shall be made for Electricity and Communications to the boundary/net of each allotment. A letter confirming provision has been made shall be provided from the Service Provider.

Engineering Plans

16 Engineering plans shall be provided to Council prior to commencing works.
Advice note: A copy of the Engineering plans shall be provided to KiwiRail
17 As Built Plans shall be provided to Council upon completion of the works.

Construction

18 Construction activities shall occur between 7.00am to 6pm during weekdays and 7.30am to 5pm on Saturdays.

19 Construction activities shall comply with noise standards as per NZS 6803:1999 Acoustics – Construction noise.

20 Prior to construction commencing, a Construction Management Plan shall be certified by Council. Works shall be undertaken in accordance with the certified Plan.

21 Prior to construction commencing, a Dust, Erosion and Sediment Control Plan shall be certified by Council. Works shall be undertaken in accordance with the certified Plan.

22 All earthworks shall be undertaken in accordance with Accidental Discovery Protocols.

23 All earthworks involving filling will be carried out in accordance with the standards in NZS4431:2022. A GeoProfessional will certify that any fill is in accordance with Appendix A of that standard.

24 A GeoProfessional shall confirm that each residential allotment has an area suitable for the construction of residential buildings in accordance with NZS 4404:2010 Land development and subdivision infrastructure - Schedule 2A

Consent Notices:

25 Those properties within the 40m Railway Noise Buffer, as shown on the Land Use Plan attached as Sheet 2 in Appendix C of the application with the following requirements:

- New buildings or alterations to existing buildings containing noise sensitive activities, must be designed, constructed and maintained to achieve train-traffic vibration levels complying with class C of Norwegian Standard NS 8176.E:2005 “Vibration and Shock – Measurement of vibration in buildings from land based transport and guidance to evaluation of its effects on human beings”.
- Indoor design noise level as a result of noise from Rail traffic must not exceed the following levels:
  (i) Bedrooms: 35dB$_{LAeq(1h)}$
  (ii) Other habitable spaces: 40dB$_{LAeq(1h)}$
  (iii) If windows must be closed to achieve the design noise levels in above, the building must be ventilated to meet clause G4 of the Building Code (Schedule 1)

26 All earthworks are to be undertaken in accordance with an Accidental Discovery Protocol, which requires consultation with Te-Runanga-o-Kaikoura upon any discovery of a cultural site.

27 Lots 1 – 25 are to ensure that there is a farm fence of at least a five-strand post and wire type in good working order along the southern boundary for the period that Section 27 Block X Mt Fyffe Survey District is a farm.

28 At the time of Building Consent on the lots served by Rights of Way, the proprietor shall demonstrate turning room so vehicles exit in a forwards direction.

29 If garages are to have doors which are parallel to the legal road, the garage doors are to be setback 5m from the front boundary to enable parking in front of the garage.

30 At the time of actioning the Building Consent, the proprietor shall form and seal vehicle crossing to the boundary to Council standards, a minimum width of 3m.

APPENDIX M

Volunteered Land Use Performance Standards.

Land Use – Lots 1-65

1 One residential unit on Proposed Lots 1-65
2 A maximum Building Height of 8m above ground level.
3 A maximum site coverage of 35%.
4 Lots 1, 2, 16, 17, 39, 31, 47 and 48 have a 1m building setback from Reserves.
5 Lots 27, 29, 42, 45, 58 and 59 have a 1m building setback from neighbouring accessways.
6 Setbacks and Recession Planes do not apply where there is a common wall between buildings on adjoining lots.
7 Where the garage door is to open parallel with the road boundary, the garage door is to be setback a minimum of 5m from the front boundary

Land Use – Lots 91-92

1 A density of 1 residential unit / 300m^2 or up to 10 residential units on both Proposed Lots 91 and 92
2 A maximum Building Height of 5.5m above ground level.
3 A maximum site coverage of 35%.
4 1m building setback from neighbouring boundaries (Lots 50-65).
5 Recession Planes only relate to the perimeter of the property boundary and not within the site.
6 Outdoor Living Spaces shall comply with the following requirements:
- Min area 10m^2 with 2m min diameter for a 1 bedroom unit.
- Min area 20m^2 with 3m min diameter for a 2 bedroom unit.
- Min area 30m^2 with 4m min diameter for a 3 + bedroom unit.
- Up to 5m^2 of Outdoor Living Space may be roofed and one side may be enclosed to provide a sheltered area.

7 One car park is required per residential unit.
8 Where the garage door is to open parallel with the road boundary, the garage door is to be setback a minimum of 5m from the front boundary.
9 A dedicated visitors park is to be provided for every 5 residential units.
10 All parking areas are to be sealed.
11 On Lot 92, the access may serve up to 10 residential units, and the driveway shall be formed and sealed to a 5.5m width.
12 Turning room is to be provided on site so all vehicles exit the site in a forwards direction.
13 All waste which is stored outside shall be screened from public view and adjacent residential properties.

APPENDIX N

Received Written Approvals.

KAIKOURA DISTRICT COUNCIL

Written Approval for the Following Activity That is Subject to a Resource Consent Application (as per sections 94A, 95C,127,136(4)(b) and 234(4) of Resource Management Act 1991)

Note to applicants: *Written approval should be obtained* ***by all owners/occupants*** *over the age of 18 years unless one person has authority to sign for either owners or occupants. Proof of that authority should be included with form.*

Part 1– For the applicant to complete

Applicant's name	Vicarage Views Limited
Address of proposal	2 Mt Fyffe Road, Kaikoura
Legal Description	Pt Sec 34 Block X Mt Fyffe SD, Pt Sec 198 Kaikoura Suburban DIST

Brief Description of Proposal:

Please refer to the attached documentation.

Plan references (including title, author and date): *includes assessment of affects, site plans and reports.* ***Please have all parties sign all site plans and include with this form.***

Please refer to the attached documentation.

Part 2– For the person giving written approval to complete

Full name (in print) Mark Henry Appleman

Full name (in print) Mainpower

Full name (in print) General Manager Network

I/We own/occupy (delete one) the following property:

Section 2 SO 5799

Contact Phone 027 2000552

Email address mark.appleman@mainpower.co.nz

IF YOU ARE THE OWNER PLEASE CHECK ONE:

☐ **I live on site or the site is unoccupied.**

☐ **The site is occupied by tenants or others on a long term basis (more than three months with no immediate plans to vacate the premises).**

Please provide name of all occupants over 18 years of age:

Part 3: Information -Please read before signing below.

1NFORMATION

Conditional written approvals cannot be accepted.

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If this form is not signed, the application may be notified with an opportunity for submissions.

Part 4: Declaration and Signatures

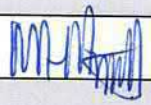
DECLARATION – Please read before signing below.

I/we have read the full application for resource consent, the Assessment of Environmental Effects, and any site plans as describe on page 1. I/we have initialed the site plans. The site plans need to be included with this form.

In signing this written approval, I/we understand that the consent authority must decide that I/we am no longer an affected person, and the consent authority must not have regard to any adverse effects on me/us.

I/we understand that I/we may withdraw my written approval by giving written notice to the consent authority before the hearing, if there is one, or, if there is not, before the application is determined.

I do not have authority to sign on behalf of a trust/company/owners/occupiers (delete as required) *.

Signature		**Date**	17/06/2022
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		

***If signing on behalf of a trust or company or an individual, please provide additional written evidence that you have signing authority.**

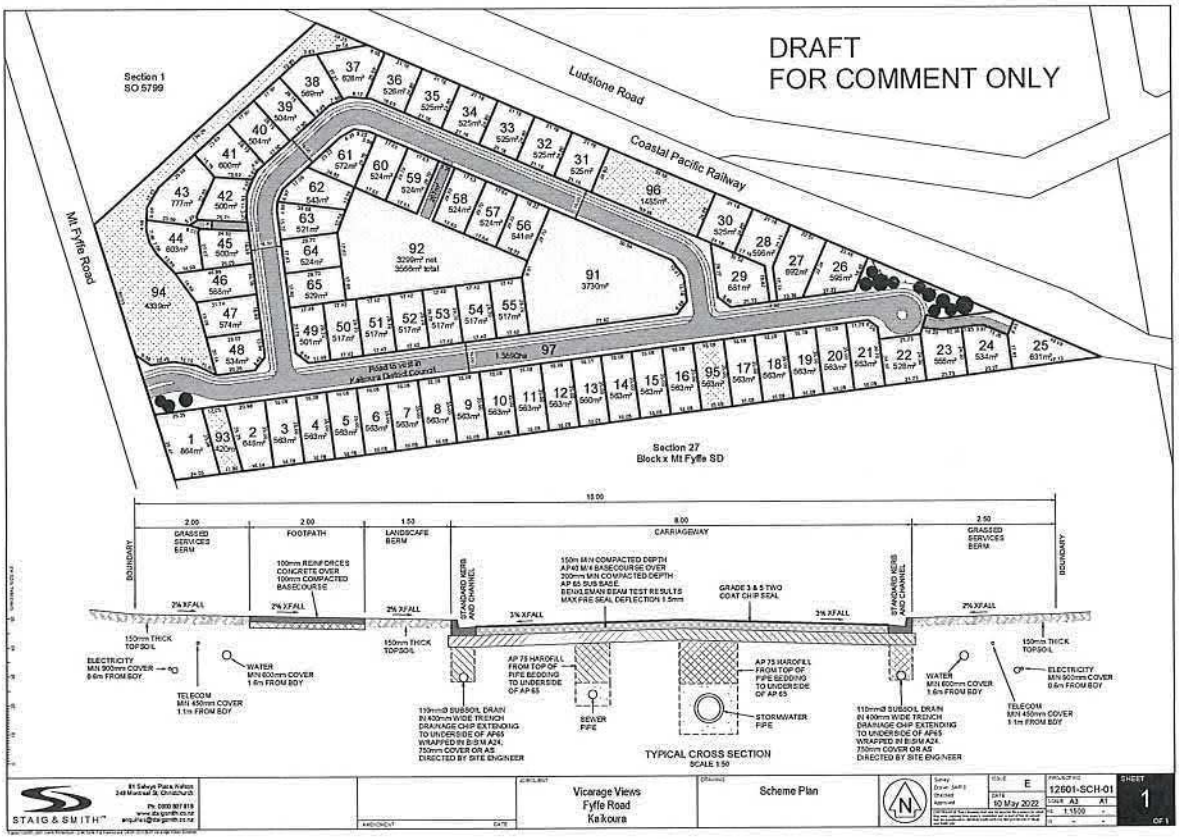
***If you are signing of behalf of all the other owners or occupiers, please provide proof that you have signing authority.**

AFFECTED PERSONS APPROVAL

Project:	Vicarage View Residential Development, Kaikoura	Reference:	219

We have generated a description of the activities within the proposed allotments, and these comprise residential units of varying forms and sizes that reflect the size and shape of the allotments.

In terms of the layout of the development, the below Staig & Smith plan referenced 12601-SCH-01-E dated 10 May 2022 provides an illustration of the Conceptual Scheme Layout. The plan shows 67 allotments that will accommodate future residential land uses. There will also be additional lots that will vest with Council for Road and Infrastructure Reserves purposes.



The development will comprise 2 distinct Subzones as follows.

Subzone A:

- Lots 1 – 65 inclusive.
- One residential unit within each allotment.
- Single level for Lots 26 – 55 inclusive.
- Up to 2 level for Lots 1 – 25 inclusive.

Subzone B:

- Lots 91 and 92.
- Multiple residential units (cluster) within each allotment.
- Single level.

The total number of residential units within the entire development will be limited to 85. This will be provided as follows.

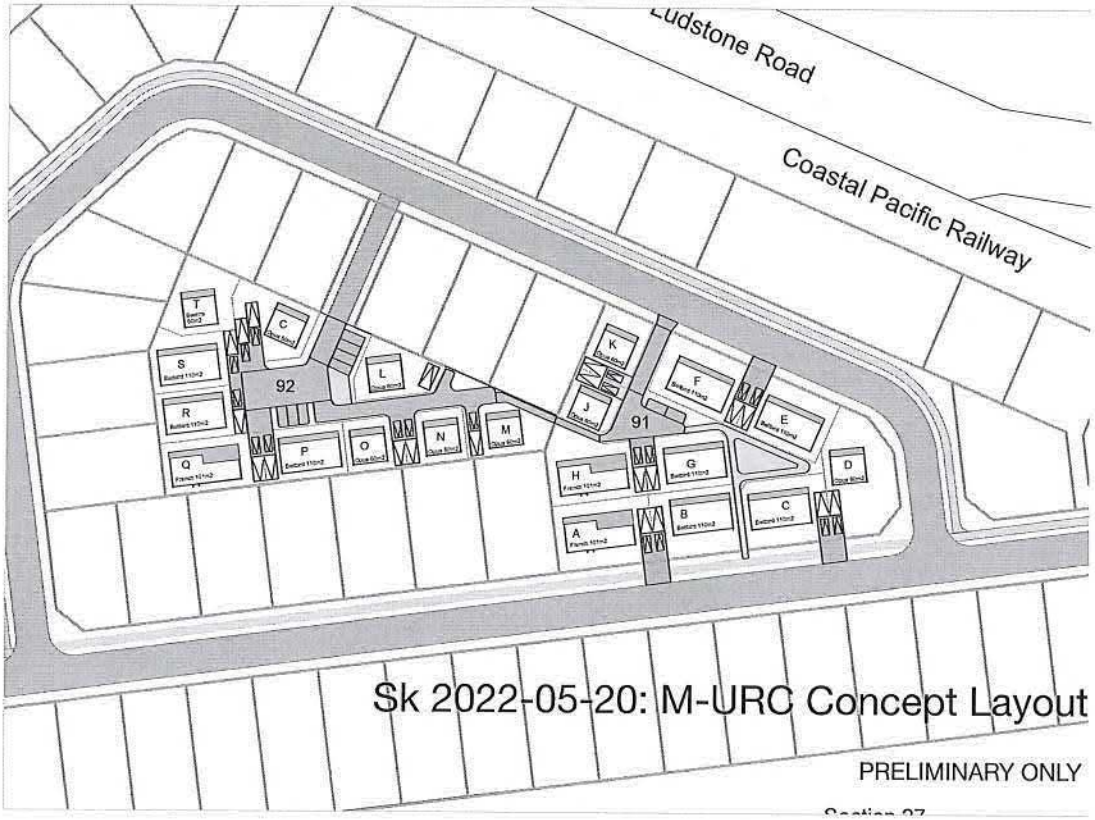
Subzone A:

- 65 residential units

Subzone B:

- Lot 91 10 residential units as a complex
- Lot 92 10 residential units as a complex

For Subzone B, Lots 91 and 92 will each accommodate 10 residential units as a complex. As in indication only, the below Sketch dated 20 May 2022 provides an illustration of a possible layout for each complex. We stress that the sketch is indicative only and the final layouts will be confirmed once the detailed design work is completed.



The final form of the residential units within the entire development will be primarily controlled via a suite of specific Performance Standards. These are referenced to the present District Plan Performance Standards albeit with modifications as necessary to enable the land use outcomes envisaged for the development.

The present District Plan Performance Standards are detailed in section 18.7 of the Kaikoura District Plan, and the modifications to the same Standards can be summarised as follows.

	Subzone A: Lots 1 – 65 incl.	
18.7.4	Building Coverage	maximum 30%
18.7.6	Height of Buildings for Lots 26 - 65 incl	maximum of 5.5m
18.7.11	Internal Boundary Separation	1m minimum separation unless the exceptions under rule 18.8 apply

	Subzone B: Lots 91 and 92	
18.7.4	Building Coverage	maximum 35% calculated over the net site area of the entire complex
18.7.6	Height of Buildings	maximum of 5.5m
18.7.8	Outdoor Living Space for each Unit	30m^2 minimum area and 4m minimum dimension
18.7.11	Internal Boundary Separation	1m minimum separation unless the exceptions under rule 18.8 apply

Note that the Performance Standards are subject to refinement as the application is finalised and processed by Kaikoura District Council.

The proposal will involve a degree of earthworks. More so shaping of the existing land to provide for efficient infrastructures to service the vacant lots. Further shaping will also occur to enable sensible vertical roadway geometry with level cross-sections. The earthworks may also extend to provide elevated vacant lots that will enhance views and vistas to the north.

Standard roadway and urban servicing within the development will be provided, and these will meet Council's standards and requirements. These infrastructures will ultimately vest with Council.

The roadways and reserve areas will incorporate a degree of landscaping including road carriageway enhancements, areas of vegetation and small structures along the broad theme of an architecture akin to the former use of the property as a Vicar's residence.

Street lighting will also be provided to meet the current Council requirements.

The present MainPower overhead transmission lines that extend through the property will be removed.

KAIKOURA DISTRICT COUNCIL

Written Approval for the Following Activity That is Subject to a Resource Consent Application (as per sections 94A, 95C,127,136(4)(b) and 234(4) of Resource Management Act 1991)

Note to applicants: Written approval should be obtained ***by all owners/occupants*** *over the age of 18 years unless one person has authority to sign for either owners or occupants. Proof of that authority should be included with form.*

Part 1– For the applicant to complete

Applicant's name	Vicarage Views Limited
Address of proposal	2 Mt Fyffe Road, Kaikoura
Legal Description	Pt Sec 34 Block X Mt Fyffe SD, Pt Sec 198 Kaikoura Suburban DIST

Brief Description of Proposal:

Please refer to the attached documentation.

Plan references (including title, author and date): *includes assessment of affects, site plans and reports.* ***Please have all parties sign all site plans and include with this form.***

Please refer to the attached documentation.

Part 2– For the person giving written approval to complete

Full name (in print) MATTHEW EDWARD JACOBSEN

Full name (in print) GENNA KAYE WELLS

Full name (in print)

I/We own/occupy (delete one) the following property:

136 LUDSTONE RD, KAIKOURA

Contact Phone 02151550

Email address genzwells@gmail.com

IF YOU ARE THE OWNER PLEASE CHECK ONE:

☑ **I live on site or the site is unoccupied.**

☐ **The site is occupied by tenants or others on a long term basis (more than three months with no immediate plans to vacate the premises).**

Please provide name of all occupants over 18 years of age:

Part 3: Information -Please read before signing below.

1NFORMATION

Conditional written approvals cannot be accepted.

Council must disregard trade competition and the effects of trade competition.

There is no obligation to sign this form, and no reasons need to be given. You should only sign below if you fully understand the proposal. If you require the Resource Consent Process to be explained to you, please contact Council planning staff who can provide you with information.

If this form is not signed, the application may be notified with an opportunity for submissions.

Part 4: Declaration and Signatures

DECLARATION – Please read before signing below.

I/we have read the full application for resource consent, the Assessment of Environmental Effects, and any site plans as describe on page 1. I/we have initialed the site plans. The site plans need to be included with this form.

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I/we understand that I/we may withdraw my written approval by giving written notice to the consent authority before the hearing, if there is one, or, if there is not, before the application is determined.

I do not have authority to sign on behalf of a trust/company/owners/occupiers (delete as required) *.

Signature	Gerard K. Wells	**Date**	09/06/22
	Owner/occupier (delete one)		
Signature		**Date**	09/06/22
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		

***If signing on behalf of a trust or company or an individual, please provide additional written evidence that you have signing authority.**

***If you are signing of behalf of all the other owners or occupiers, please provide proof that you have signing authority.**

AFFECTED PERSONS APPROVAL

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We have generated a description of the activities within the proposed allotments, and these comprise residential units of varying forms and sizes that reflect the size and shape of the allotments.

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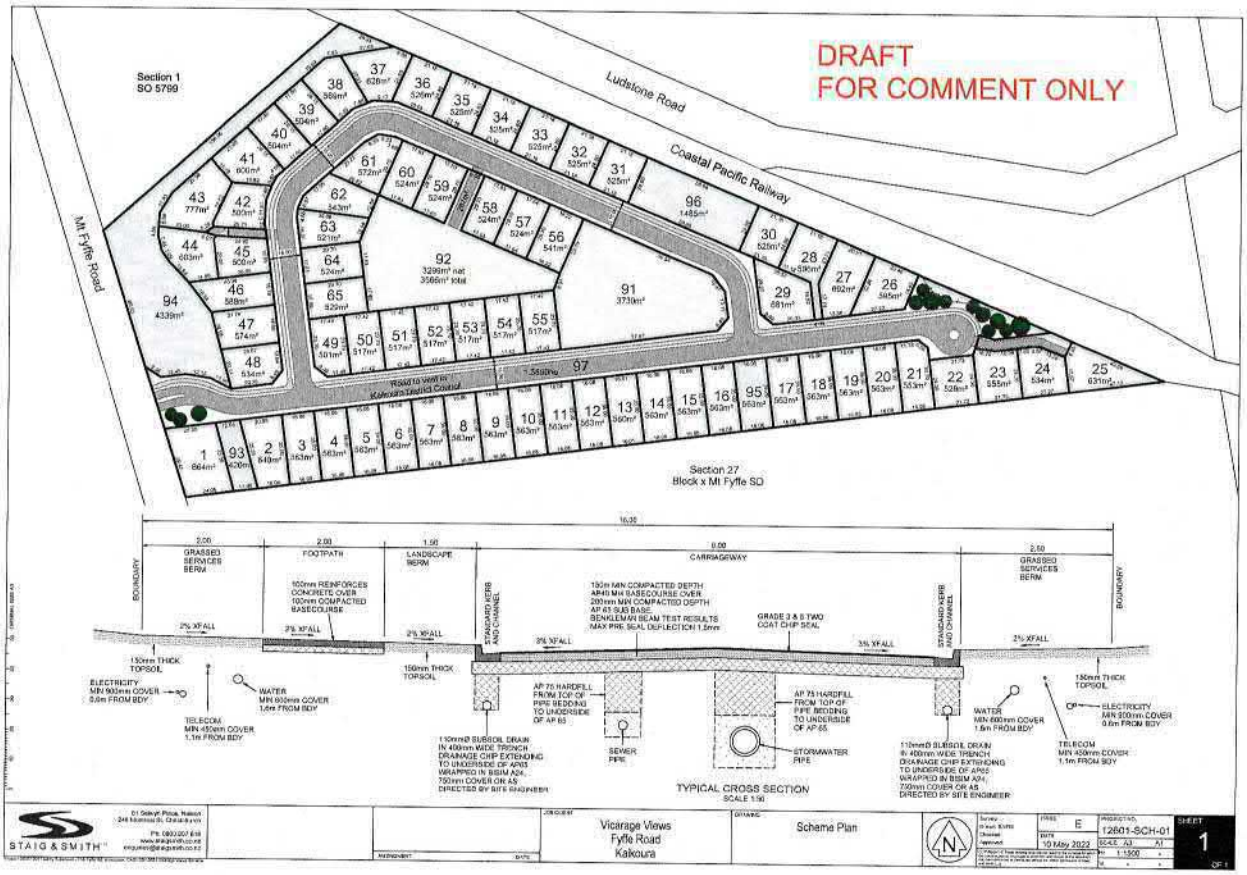


The development will comprise 2 distinct Subzones as follows.

Subzone A:

- Lots 1 – 65 inclusive.
- One residential unit within each allotment.

Subzone B:

- Lots 91 and 92.
- Multiple residential units (cluster) within each allotment.

The total number of residential units within the entire development will be limited to 85. This will be provided as follows.

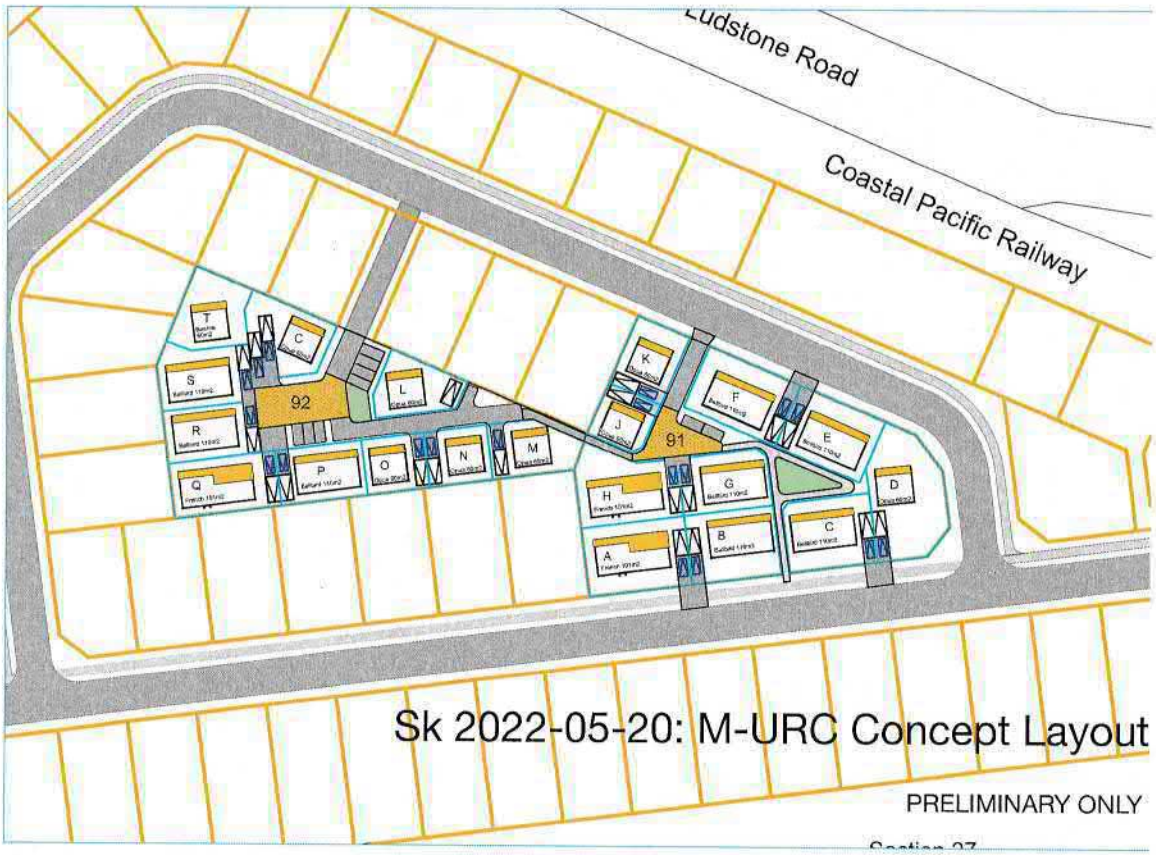
Subzone A:

- 65 residential units

Subzone B:

- Lot 91 10 residential units as a complex
- Lot 92 10 residential units as a complex

For Subzone B, Lots 91 and 92 will each accommodate 10 residential units as a complex. As in indication only, the below Sketch dated 20 May 2022 provides an illustration of a possible layout for each complex. We stress that the sketch is indicative only and the final layouts will be confirmed once the detailed design work is completed.



The final form of the residential units within the entire development will be primarily controlled via a suite of specific Performance Standards. These are referenced to the present District Plan Performance Standards albeit with modifications as necessary to enable the land use outcomes envisaged for the development.

The present District Plan Performance Standards are detailed in section 18.7 of the Kaikoura District Plan, and the modifications to the same Standards can be summarised as follows.

	Subzone A: Lots 1 – 65 incl.	
18.7.4	Building Coverage	maximum 30%
18.7.6	Height of Buildings for Lots 26 - 65 incl	maximum of 5.5m
18.7.11	Internal Boundary Separation	1m minimum separation unless the exceptions under rule 18.8 apply

	Subzone B: Lots 91 and 92	
18.7.4	Building Coverage	maximum 35% calculated over the net site area of the entire complex
18.7.6	Height of Buildings	maximum of 5.5m
18.7.8	Outdoor Living Space for each Unit	30m^2 minimum area and 4m minimum dimension
18.7.11	Internal Boundary Separation	1m minimum separation unless the exceptions under rule 18.8 apply

Note that the Performance Standards are subject to refinement as the application is finalised and processed by Kaikoura District Council.

The proposal will involve a degree of earthworks. More so shaping of the existing land to provide for efficient infrastructures to service the vacant lots. Further shaping will also occur to enable sensible vertical roadway geometry with level cross-sections. The earthworks may also extend to provide elevated vacant lots that will enhance views and vistas to the north.

Standard roadway and urban servicing within the development will be provided, and these will meet Council's standards and requirements. These infrastructures will ultimately vest with Council.

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Street lighting will also be provided to meet the current Council requirements.

The present MainPower overhead transmission lines that extend through the property will be removed.

KAIKOURA DISTRICT COUNCIL

Written Approval for the Following Activity That is Subject to a Resource Consent Application (as per sections 94A, 95C,127,136(4)(b) and 234(4) of Resource Management Act 1991)

*Note to applicants: Written approval should be obtained **by all owners/occupants** over the age of 18 years unless one person has authority to sign for either owners or occupants. Proof of that authority should be included with form.*

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Applicant's name	Vicarage Views Limited
Address of proposal	2 Mt Fyffe Road, Kaikoura
Legal Description	Pt Sec 34 Block X Mt Fyffe SD, Pt Sec 198 Kaikoura Suburban DIST

Brief Description of Proposal:

Please refer to the attached documentation.

Plan references (including title, author and date): *includes assessment of affects, site plans and reports. **Please have all parties sign all site plans and include with this form.***

Please refer to the attached documentation.

Part 2– For the person giving written approval to complete

Full name (in print) Cynthia Margaret Boyd 16/7/2022

Full name (in print)

Full name (in print)

I/We own/occupy (delete one) the following property:

le ML Boyd

Contact Phone 03 3195742

Email address

IF YOU ARE THE OWNER PLEASE CHECK ONE:

☑ ~~I live on site or~~ the site is unoccupied. le ML Boyd

☐ The site is occupied by tenants or others on a long term basis (more than three months with no immediate plans to vacate the premises).

Please provide name of all occupants over 18 years of age:

le ML Boyd

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I/we understand that I/we may withdraw my written approval by giving written notice to the consent authority before the hearing, if there is one, or, if there is not, before the application is determined.

I do not have authority to sign on behalf of a trust/company/owners/occupiers (delete as required) *.

Signature	Leslie Boyd	**Date**	16/7/2022
	Owner/occupier (delete one)		
Signature		**Date**	16 July 22
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		
Signature		**Date**	
	Owner/occupier (delete one)		

***If signing on behalf of a trust or company or an individual, please provide additional written evidence that you have signing authority.**

***If you are signing of behalf of all the other owners or occupiers, please provide proof that you have signing authority.**

MALCOLM
SMITH
CONSULTING

ADVISING AND FACILITATING
ON LAND DEVELOPMENT AND SUBDIVISION

The total number of residential units within the entire development will be limited to 85. This will be provided as follows.

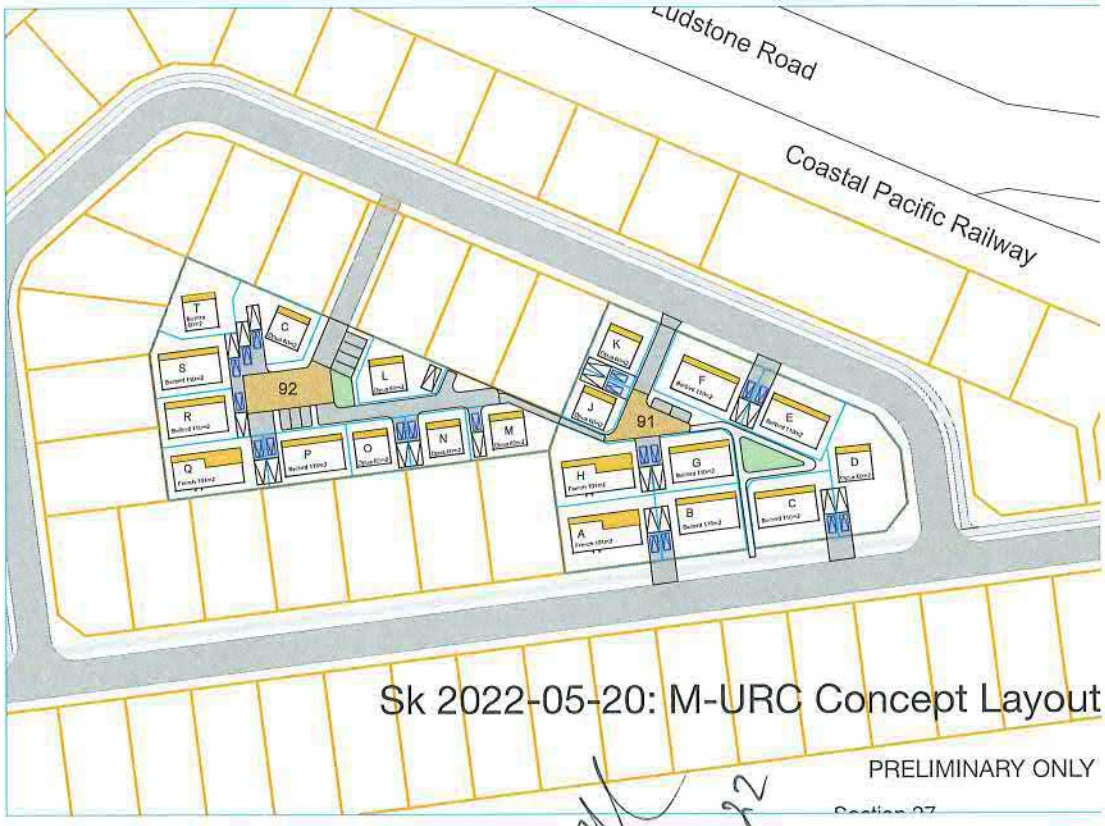
Subzone A:

- 65 residential units

Subzone B:

- Lot 91 — 10 residential units as a complex
- Lot 92 — 10 residential units as a complex

For Subzone B, Lots 91 and 92 will each accommodate 10 residential units as a complex. As in indication only, the below Sketch dated 20 May 2022 provides an illustration of a possible layout for each complex. We stress that the sketch is indicative only and the final layouts will be confirmed once the detailed design work is completed.



16 July 22

Leslie Boyd 16/7/2022

The final form of the residential units within the entire development will be primarily controlled via a suite of Performance Standards. These are referenced to the present District Plan Performance Standards albeit with modifications as necessary to enable the land use outcomes envisaged for the development.

The present District Plan Performance Standards are detailed in the Kaikoura District Plan, and the modifications to the same Standards can be summarised as follows.

Subzone A: Lots 1 – 65 incl.

12.8.1	Parking Spaces	minimum 1 vehicle park per residential activity
18.7.4	Building Coverage	maximum 30%
18.7.6	Height of Buildings for Lots 24 - 65 incl	maximum of 5.5m
18.7.9	Density	minimum 500m^2 net area
18.7.11	Internal Boundary Separation	subject to the exceptions in District Plan 18.8.1. a – c and e, buildings shall be setback 2m from any internal boundary unless: i. the internal boundary adjoins a reserve, access strip, or Right of Way (regardless of whether the allotment has a right of access) then the setback is 1m. ii. on the southern boundary of Lots 1 to 23 incl. the setback is 5m. iii. on the southern boundary of Lots 24 and 25 the setback is 3m.

Subzone B: Lots 91 and 92

12.8.1	Parking Spaces	minimum 1 vehicle park per residential activity
18.7.4	Building Coverage	maximum 35% calculated over the net site area of the entire complex
18.7.6	Height of Buildings	maximum of 5.5m
18.7.8	Outdoor Living Space for each Residential Unit	10m^2 min area with 2m min diameter for 1 bed unit. 20m^2 min area with 3m min diameter for 2 bed unit. 30m^2 min area with 4m min diameter for 3+ bed unit. include roofed outdoor structures
18.7.9	Density	maximum of 1 residential unit per 300m^2 of overall net area
18.7.11	Internal Boundary Separation	1m minimum separation unless the exceptions under rule 18.8.1 apply
new	Waste Storage Screening	all waste stored outside shall be screened from public view and adjacent residential activities

Lochl Boyd 16/7/2022 16 July 22

Note that the Performance Standards are subject to refinement as the application is finalised and processed by Kaikoura District Council.

The proposal will involve a degree of earthworks. More so shaping of the existing land to provide for efficient infrastructures to service the vacant lots. Further shaping will also occur to enable sensible vertical roadway geometry with level cross-sections. The earthworks may also extend to provide elevated vacant lots that will enhance views and vistas to the north.

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The present MainPower overhead transmission lines that extend through the property will be removed.

16 July 22

Le Mc Boyd 16/7/2022

Garry Robertson

027 2289410

From: Arna Intra Arna.Intra@chorus.co.nz
Sent: Thursday, 9 June 2022 9:07 am
To: William Loppe (KPMO) <william.loppe@kpmo.co.nz>
Subject: **proposed fibre route** 10279951 2 Mt Fyffe Road, Kaikoura 7371

Good morning William

I believe you are querying the path of the fibre feeder for you development.

Attached is the **proposed** route from the Chorus planner, which will only be confirmed by the designer once this job gets to contract stage. Chorus does not do design only contracts at present.

Regards

Arna Intra
Network Scoper

T +6499795914
M
E **Arna.Intra@chorus.co.nz**

PO Box 6640
Auckland 1010
www.chorus.co.nz

CHORUS

Proud to be RAINBOW TICK certified

From: Sheena McGuire <Sheena.McGuire@kiwirail.co.nz>
Sent: Tuesday, 1 November 2022 2:36 pm
To: Jane - Staig and Smith Ltd <jane@staigsmith.co.nz>
Subject: RE: 12601: Affected Parties Consultation for Vicarage Views subdivision development, Kaikoura

Kia ora Jane,
Thank you for the response below.

Based on the details provided I am prepared to accept the following amended consent notices:

1. *A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of Lot [insert here] to require noise attenuation as follows:*

   Buildings within 40m of the Railway:
   a) New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 100 metres from the railway must be designed, constructed and maintained to achieve train-traffic vibration levels complying with class C of NS 8176E:2005.

   b) New buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 100 metres from the railway must be designed, constructed and maintained to ensure that the following internal design levels are not exceeded:
   i. 35 dB LAeq(1 hour) inside bedrooms
   ii. 40 dB LAeq(1 hour) inside other habitable rooms

   Buildings within 100m of the Railway:
2. *A consent notice pursuant to Section 221 of the Resource Management Act 1991 be entered on the Computer Freehold Register of Lot [insert here] being a subdivision of [insert here] to advise future owners/occupiers that the said lots are located adjacent to a designated railway corridor, the owners/occupiers of Lot [insert here] must accept the effects of the railway use permitted by the designation of the adjacent corridor without complaint.*

Can you please confirm if your client is accepting of the above amended consent notices?
Is there any update on the Deed of Grant?

Ngā mihi,

Sheena McGuire | RMA Advisor
MOB: +64 27 227 7780
Wellington Railway Station, Bunny Street, Wellington 6011 **|** PO Box 593, Wellington 6140, New Zealand

KiwiRail

www.kiwirail.co.nz

APPENDIX O

Traffic Impact Assessment.

2 Mt Fyffe Road, Kaikōura

Residential Development

Traffic Impact Assessment

Prepared for Vicarage Views Limited

November 2022

URBAN CONNECTION
local and connected

Contents

Introduction

1.1. Background

This report has been prepared in response to a request from Vicarage Views Limited to carry out a Traffic Impact Assessment (TIA) in relation to industrial development at 2 Mt Fyffe Road, Kaikōura, namely the Vicarage Views Residential Subdivision.

The proposed development site is zoned 'Residential B' under the Kaikōura District Plan. The site is proposed to be subdivided into 67 residential lots. Two of the lots, ranging in size from 3,566 to 3,730 m^2, are proposed to accommodate 20 elderly people's housing. The other 65 lots are to accommodate residential dwellings, with areas ranging from 500 to 864 m^2.

One new public road is to be formed and connected to the site. A new road intersection with Mt Fyffe Road is to be created. Currently, the site is accessed via an existing access off Mt Fyffe Road, which provides for one existing residential dwelling.

Based on the scale of the proposed development and the immediate surrounding environment, the primary transport considerations are as follows:

- the level of traffic that is likely to be generated by the proposed residential development;
- the likely effect traffic generation will have on the surrounding transport network;
- the ability of the site and its surroundings to meet the access demands created by development;
- address any road safety issues created by the proposed development in the vicinity of the site;

These and other matters are addressed in the body of the report.

2. Existing Transport Infrastructure

2.1. Site Location

The site is located at 2 Mt Fyffe Road in the 'Residential B' zone of Kaikōura. As such, it requires compliance with Kaikōura 's District Plan and adopted standards and guidelines of the Road Controlling Authority (RCA).

The site is located in the western region of Kaikōura Town. Access to the site is provided from Mt Fyffe Road at the intersection with Ludstone Road. Currently, this is the only vehicle access provided to and from the site, which is located approximately 250 m from the intersection. A railway overbridge runs parallel to Ludstone Road in the vicinity of the intersection, crossing over Mt Fyffe Road.

The site location map is shown in Figure 1.

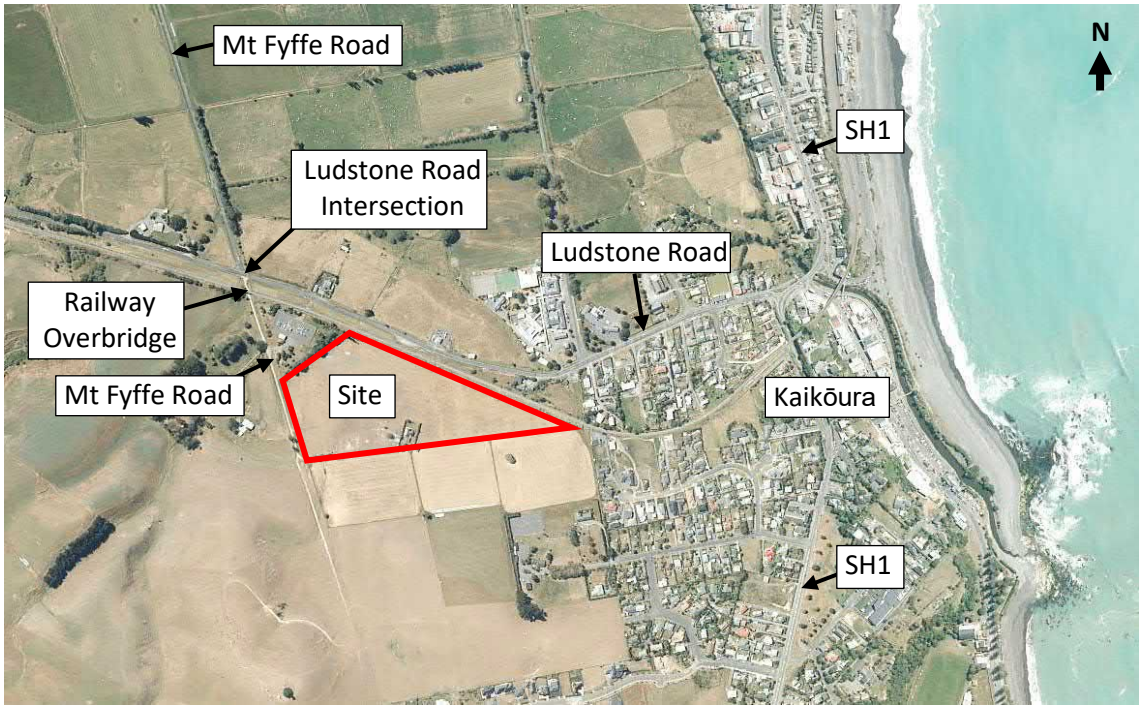

Figure 1: Site Location

2.2. Existing Road Layout

2.2.1. Mt Fyffe Road

Mt Fyffe Road is approximately 350 m long south of the intersection with Ludstone Road. It is approximately 6 m wide and sealed at the site frontage, with no centreline or edgeline markings in the vicinity of the site.

The cross-section is narrowed to 4.6 m wide in the vicinity of the Railway Overbridge that runs parallel to Ludstone Road, with a 50 m long single-lane flow established from 40 m south of the Overbridge to immediately north of it. Centreline markings are provided throughout this section. The cross-section underneath the Overbridge is 7.8 m wide, with 2.3 m wide lanes and 1.6 m wide berms. No footpaths are provided.

Single-lane/give-way signs (RG 19) are provided south of the Overbridge, and Single lane priority signs (RG20) are provided north of it, establishing, therefore, the priority for southbound traffic (departing the intersection with Ludstone Road). The vertical clearance underneath the bridge is 4 m.

The posted speed limit is 30 km/h immediately south of the Overbridge and 60 km/h north of this point.

The road is unformed south of the existing accessway to the site. It is noted that a paper road is shown in the Kaikōura District Council maps south of the site. Therefore, an extension to the south and connection to SH1 could potentially occur in a future opportunity.

The cross-sections of the road are shown in Figures 2 to 4.

Figure 2: Mt Fyffe Road in the site frontage

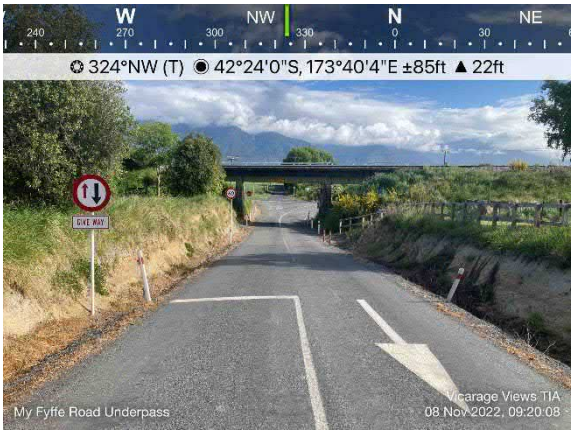

Figure 3: Mt Fyffe Road south of the railway overbridge

Figure 4: Mt Fyffe Road north of the railway overbridge

2.2.2. Ludstone Road

Ludstone Road provides the east-west connection to Kaikōura and SH1 (east of the site). It is approximately 7 m wide in the vicinity of the intersection with Mt Fyffe Road, with 3.5 m wide lanes. The posted speed limit is 60 km/h through the intersection, increasing to 80 km/h approximately 50 m west of it.

Ludstone Road and Mt Fyffe Road form a crossroads intersection. The priority flow is east-west, through Ludstone Road. The intersection is stop-controlled at its southern side and give-way controlled at the north side. No right-turn facilities are provided. A short section of shoulder widening is constructed on the south side of the road to assist left-turn movements onto Mt Fyffe Road (south). No splitter islands are provided at the intersection. The intersection is unlit.

Existing views of Ludstone Road are shown in Figures 5 to 7.

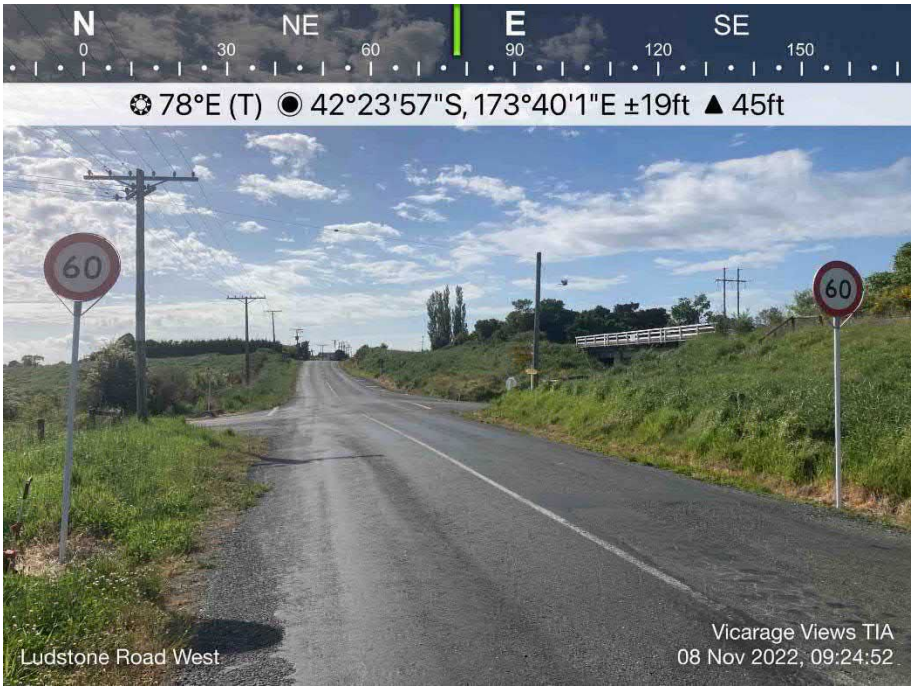

Figure 5: Ludstone Road in the vicinity of the intersection with Mt Fyffe Road

Figure 6: Ludstone Road/Mt Fyffe Road intersection (south)

Figure 7: Ludstone Road/Mt Fyffe Road intersection (north)

2.3. Existing Accessway

One existing access currently provides for the site, located approximately 350 m south of the Ludstone Road intersection. It serves one existing residential dwelling. The access is approximately 6.5 m wide and sealed. A speed hump is provided at the connection with Mt Fyffe Road. Refer to Figure 8.

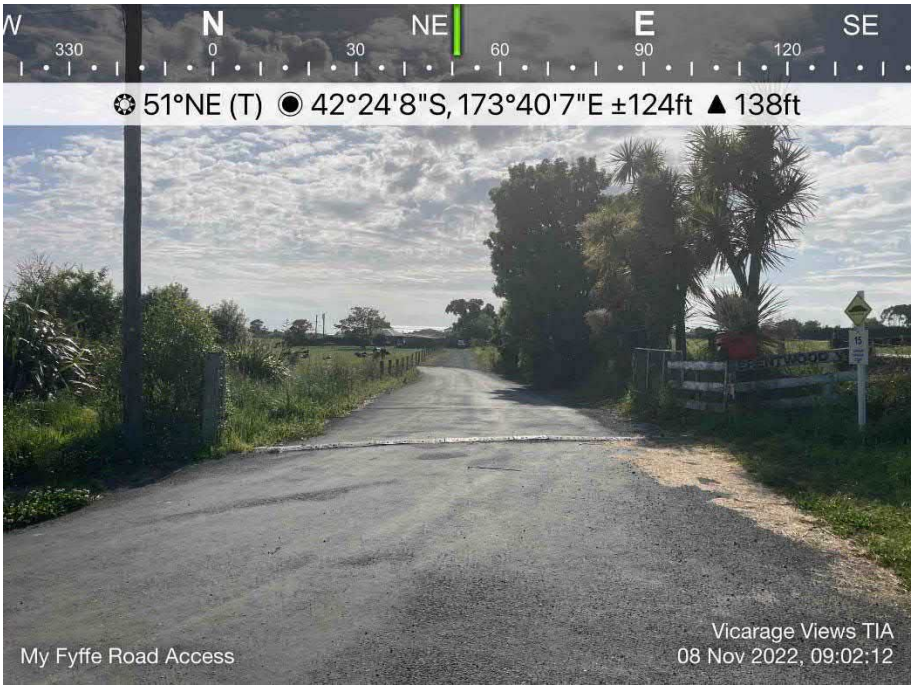

Figure 8: Existing access

2.4. Walking, Cycling and Public Transport

An informal shared path is currently provided in the vicinity of the site. This shared path was formed as part of the North Canterbury Transport Infrastructure Recovery (NCTIR) Alliance (i.e. Kaikōura Earthquake Rebuild). However, this shared path does not currently provide adequate signage, surfacing and maintenance (including vegetation control).

No public bus services travel along Ludstone Road or Mt Fyffe Road in the vicinity of the site. This is in context with the suburban area where the site is located.

A shared user path (SUP) is currently being progressed in the vicinity of the site, including:

- 2.5 m wide SUP on the south side of Ludstone Road;
- 2.5 m wide SUP on the east side of Mt Fyffe Road (connecting to the site);
- Proposed crossing and SUP west of the Ludstone Road/Mt Fyffe Road intersection;
- Construction is expected to start in 2023.

3. Travel Patterns

3.1. Peak Hour Traffic Volumes

A peak period traffic count survey has been undertaken to observe traffic volumes, flow conditions and split of trips at the Ludstone Road/Mt Fyffe Road intersection. The survey was carried out in the network AM peak hour, undertaken from 7:45 to 9:00 AM, on Tuesday, 8 November 2022. The AM peak flows at the intersection during this period have been confirmed to be from 8:00 to 9:00 AM. The existing flows in the AM peak hour are further detailed in Table 1 and Figure 9.

Table 1: AM Peak Hour Traffic Volumes

Road Name	Peak Hour Traffic Volume (vph)		
	In	Out	Total
Mt Fyffe Road (south of the intersection)	0	1	**1**
Mt Fyffe Road (north of the intersection)	13	21	**34**
Ludstone Road (east of the intersection)	42	26	**68**
Ludstone Road (west of the intersection)	16	23	**39**

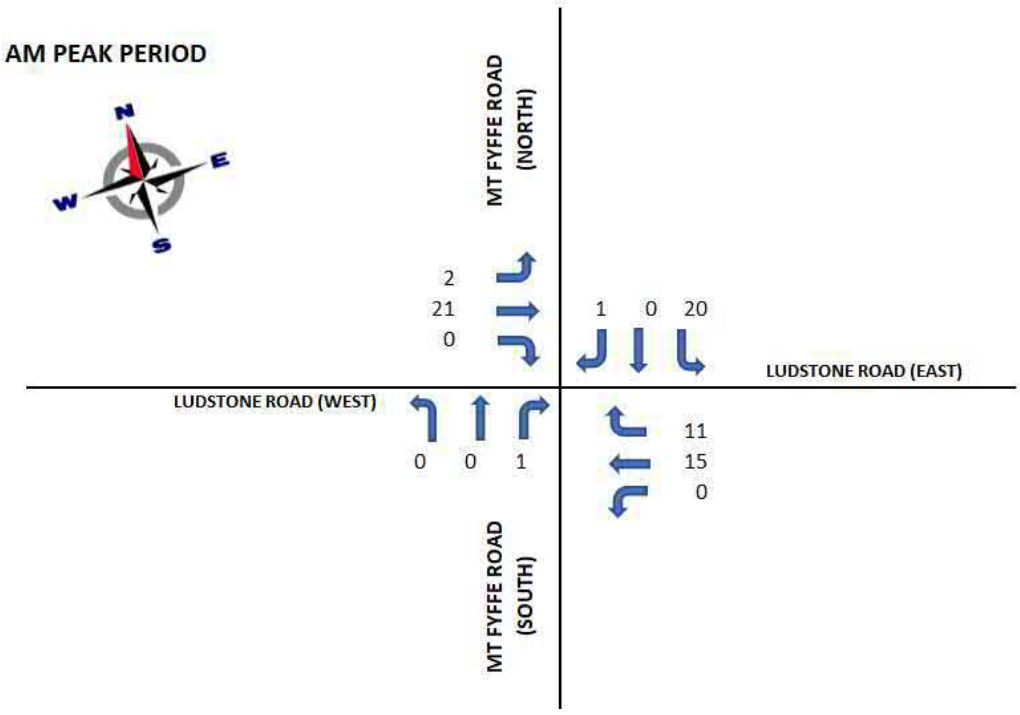

Figure 9: AM Peak Hour traffic count

3.2. Daily Traffic Volumes

The estimated Annual Average Daily Traffic (AADT) on Mt Fyffe Road and Ludstone Road has been obtained from the Kaikōura District Council. The majority of the traffic data obtained is out of date. Therefore, updated daily volumes have been estimated based on peak hour volumes being 8 to 10% of the AADT, as recommended by Austroads Guide to Traffic Management Part 6, 2020, Figure 3.25 notes for urban situations. The daily traffic data is provided in Table 2.

Table 2: Daily Traffic Volumes

Road Name	Two-way daily flows (vpd)	% of HCVs	Traffic Count Year	Daily flows based on peak-hour flows (vpd)
Mt Fyffe Road (south of Ludstone Road)	**20**	10%	2014	10 – 13
Mt Fyffe Road (north of Ludstone Road)	250	10%	2014	**340 – 425**
Ludstone Road (east of Mt Fyffe Road)	**1,142**	6%	2019	680 – 850
Ludstone Road (west of Mt Fyffe Road)	**630**	10%	2014	390 – 488

The higher daily volumes between the traffic data obtained from the Kaikōura District Council and the peak-hour-based flows obtained in the traffic survey have been used in this report on a conservative basis.

3.3. Existing Site Traffic

Presently, one residential dwelling is located within the site. This residential dwelling is expected to generate 10 vehicles per day (vpd) and 1 vehicle per hour (vph) in the adjacent roading network.

4. Crash History

A review of the current safety performance has been undertaken to determine the nature of crash types and severity along Mt Fyffe Road and the vicinity of the Ludstone Road intersection. Crash information has been extracted from Waka Kotahi's Crash Analysis System (CAS) database for the last ten-year period (2012 to 2021), in addition to the current year (2022). The extent of the assessment is shown in Figure 10.

Figure 10: Extent of safety assessment

One single minor-injury crash was recorded in the ten-year period. This was a side-impact type crash involving a vehicle driving south on Mt Fyffe Road (north of the intersection) that drove straight through it, crashing with a westbound vehicle on Ludstone Road. Driver distraction was recorded as a crash factor.

The crash history indicates no safety issues along Mt Fyffe Road and at the intersection with Ludstone Road, given the low crash frequency (one crash in 10 years) and severity.

5. The Proposal

The site is proposed to be developed to accommodate 67 residential lots. Two of the lots are to range from 3,566 to 3,730 m^2 – these lots are designed to accommodate 20 elderly people's housing. The other 65 lots are to accommodate single residential dwellings, with areas ranging in size from 500 to 864 m^2.

The site is to be accessed from a new public road and new road intersection onto Mt Fyffe Road. Most of the lots are to have direct access to the new public road. Some lots are to have shared private right-of-ways connecting to the new public road. This is further discussed in Section 8.

The existing access is to be permanently closed out, and the existing residential dwelling removed.

This assessment considers the traffic to be generated by the development in full by the development. The concept plan is shown in Figure 11.

Figure 11: Site plan

6. Traffic Generation and Distribution

6.1. Traffic Generation Assessment

The 67 proposed lots on the site are expected to generate approximately 905 vpd and 88 vph in the peak hour. This is based on trip generation rates for residential dwellings and senior adult housing. Single residential dwellings are typically expected to generate 9.4 to 10.9 vpd and 0.8 to 1.2 vph in the peak hour. Senior adult housing units are generally predicted to generate 2.6 to 5.6 vpd and 0.3 to 0.49 vph in the peak hour. Conservatively, the higher trip generation rates have been used in this report for a more robust assessment of effects.

Trip rates derived for the development and the expected site's trip generation are detailed below in Table 3.

Table 3: Site's trip generation

Dev. Type	Lots / Units	Daily Rate (vpd/unit)	Peak Hour Rate (vph/unit)	Total Daily Trips (vpd)	Peak Hour Trips (vph)
Residential dwelling (suburban)	65	10.9[1]	1.2[1]	850	78
Senior Adult Housing	20	0.49[2]	5.6[2]	55	10
Total				**905**	**88**

[1] NZTA Trips and Parking related to land use November 2011
[2] ITE Trip Generation Manual 10th Edition September 2017

6.1. Traffic Distribution

Due to the fact that Mt Fyffe Road is currently a no-exit road, the traffic to be generated by the site is expected to travel 100% to and from the north, towards the Ludstone Road intersection. At this intersection, the directional split of 90:5:5 to the east:west:north is predicted – this is similar to the split obtained in the traffic survey during the AM peak period. The in:out split is expected to be 15:85 in the AM peak period and the reverse in the PM peak, typical for residential areas. This is expected to generate mostly right-turn movements out of Mt Fyffe Road (south) in the AM peak period and left-turn movements onto Mt Fyffe Road in the PM peak period.

The traffic flows obtained during the AM peak hour have been updated to represent a future condition (10-year flows, i.e. 2032). A standard growth rate of 3% per annum has been applied, given that no historical data for the site vicinity was available.

Furthermore, the traffic flows obtained in the AM peak period have been assumed to be the reverse in the PM peak period. The distribution of trips to be generated by the proposed development in the peak periods is illustrated in the traffic diagrams (shown in Figures 12 and 13).

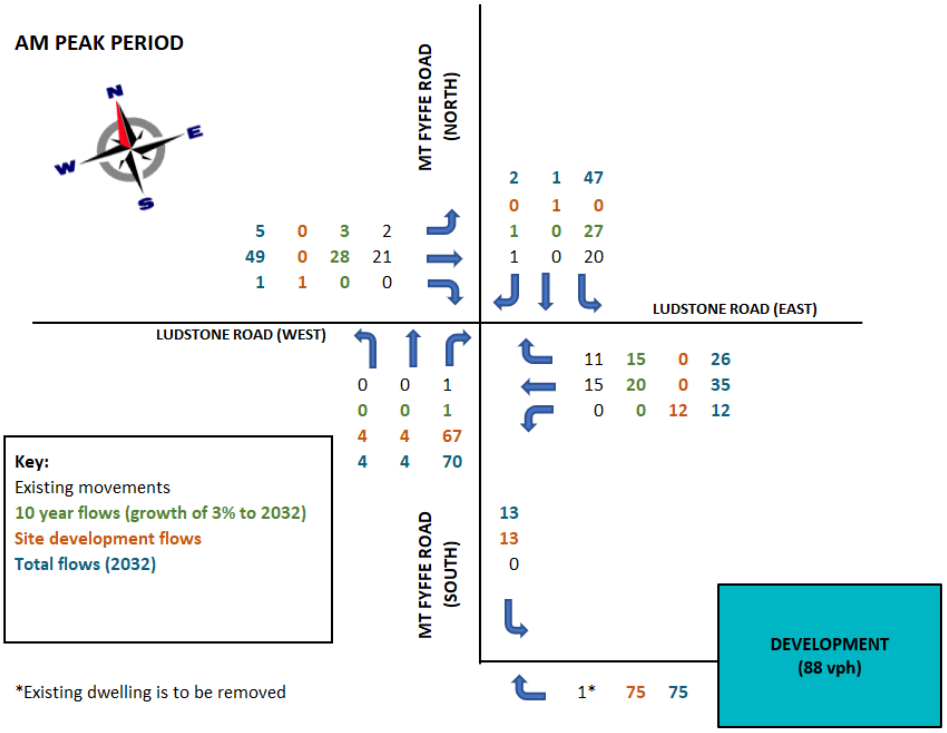

Figure 12: AM peak hour traffic flows

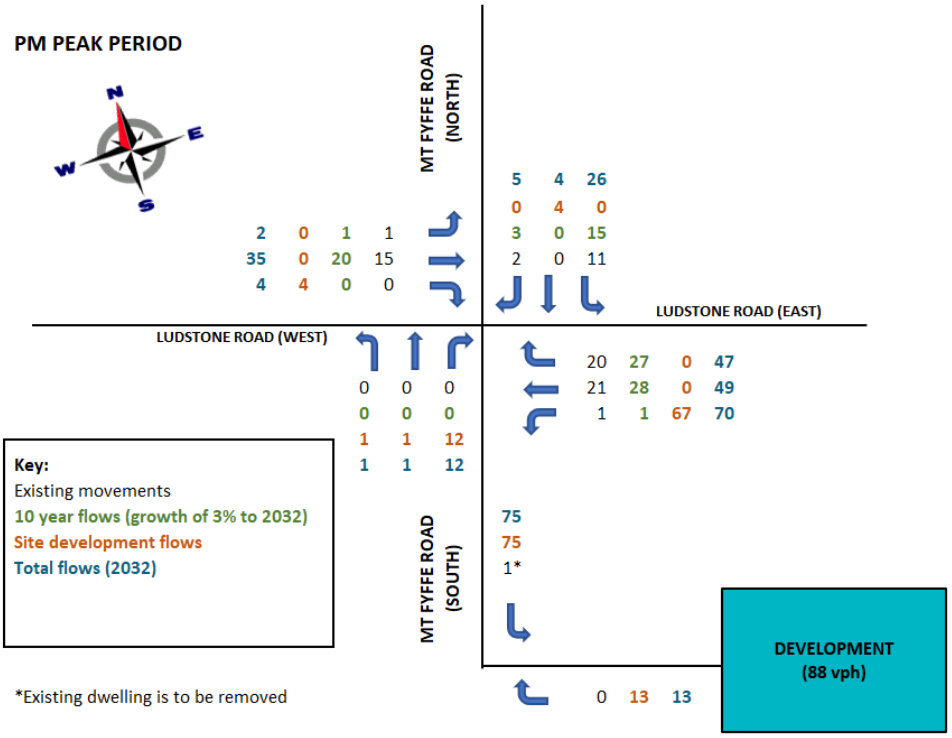

Figure 13: PM peak hour traffic flows

7. Traffic Effects

7.1. Intersection Performance

The impact of the expected traffic generated by the developed site applied to the volumes of the existing roading network (including 10-year assessment) has been assessed to determine the Practical Absorption Capacity of intersections in the vicinity of the site. This has the purpose of assessing the ability of the intersections to absorb the traffic generated by the proposed development in peak hours. The results are shown in Table 4.

Table 4: Practical Absorption during Peak Hours

Summary	Scenario	Peak period	Total volume (vph)	Practical Absorption Capacity of Minor Approach (vph)	Remaining Available Capacity (vph)	Degree of saturation
Ludstone Road/ Mt Fyffe Road intersection	Existing	AM	33	772	739	0.23
	10-year (w/ development)		155	1,191	1,036	0.30
	Existing	PM	33	537	504	0.25
	10-year (w/ development)		100	723	623	0.31

* Based on critical acceptance gaps and follow-up headways from Austroads GRD Part 4A, Table 3.5

It is assessed that the required capacity is significantly less than the practical absorption capacity of the intersection in the vicinity of the site, indicating that the surrounding network can absorb the traffic to be generated by the developed site.

Degrees of saturation at the Ludstone Road/Mt Fyffe Road intersection range from 0.23 in the existing situation to 0.31 in the PM peak for the developed situation. This indicates that the intersection would operate at a maximum of 31% of the available capacity in the future condition, suggesting that vehicles would be very unlikely to experience poor levels of service. Delays and queueing would likely be minimal.

Therefore, it is concluded that the traffic flows are expected to be appropriately accommodated in the adjacent roading network with no significant adverse impacts.

8. Layout and Design

8.1. Internal Road Design

The proposed road reserves comply with or exceed the requirements of the Kaikōura District Plan (Transport and Subdivision sections). The following road configuration is proposed for the developed site:

- Public road to serve all 67 lots, consisting of:
  - 16 m wide road reserve;
  - 8 m wide sealed carriageway;
  - 2 m wide footpath on one side of the road;
  - 1.5 to 2.5 m wide grassed berms;
- Private right-of-ways to serve 3 to 4 lots, consisting of:
  - 4.5 to 6 m wide road reserve;
  - 3.5 to 4.5 m wide sealed carriageway;
- Private right-of-way to serve the elderly people's housing lot (Lot 92), consisting of:
  - 9 m wide road reserve;
  - 5 m wide sealed carriageway;
  - 2 m wide grasses berms;
- Private right-of-way to serve rear lot 28 (single residential dwelling), consisting of:
  - 4 m wide road reserve and sealed carriageway;

The proposed road reserves comply with or exceed the requirements of the Kaikōura District Plan (Transport and Subdivision sections).

Each of the lots is to have one vehicle crossing, which is to be sealed and between 3 and 6 m wide to comply with the requirements of the District Plan for residential land use. It is recommended that the vehicle crossings for corner lots be constructed from the road expected to generate the lowest traffic flows.

A turning head (cul-de-sac) is proposed to be provided at the end of the new public road, which allows turnaround opportunities for service vehicles. A minimum turning head radius of 9.5 m for residential areas is recommended to be adopted.

The existing posted speed limit of 30 km/h on Mt Fyffe Road is recommended to be extended through the new public road. Although, it is recognised that a posted speed limit of 40 km/h would also be suitable for this residential area.

8.2. Mt Fyffe Road

The site is expected to generate approximately 905 vpd additional on Mt Fyffe Road; therefore, approximately 925 vpd in total would be expected to be generated on this road considering the existing traffic volumes.

This road is currently approximately 6 m wide, narrowing down to 4.6 m wide underneath the Railway Overbridge. In its existing form, Mt Fyffe Road does not comply with the requirements of the District Plan for roads up to 1,000 vpd. Therefore, it is recommended that the carriageway be widened to 8 m wide to accommodate the additional traffic flows.

An assessment of the single-lane section has been undertaken to identify the probability of opposing vehicles meeting simultaneously throughout the section. This aims to establish the probability of potential issues in the vicinity (for instance, queueing back onto Ludstone Road).

Peak hour volumes of 75 vph departures and 13 vph arrivals are predicted to occur in the AM peak period – this equates to one vehicle every 48 seconds and 277 seconds for departures and arrivals, respectively. A probability of 25% of a vehicle departing this one-way section, considering 12 seconds of exposure time through the section (50 m at 15 km/h), is calculated. The probability of arrivals is 4.3%, based on the same exposure time. Therefore, the probability of two vehicles meeting at the same time is 1.1%. No adverse effects are therefore expected due to increased traffic volumes through the single-lane section.

A shared path is currently provided on Mt Fyffe Road and Ludstone Road. However, this informal shared path does not provide adequate surfacing, signage and maintenance. It was formed as part of the NCTIR (Kaikōura Earthquake Rebuild) but has been virtually inoperative since then, with overgrown vegetation encroaching over the path.

A disconnect could be expected to be generated with the site development since footpaths are proposed to be provided throughout the site. Site residents could be expected to walk on the live lane, as the berm is generally relatively steep and has overgrown vegetation, which is considered to cause safety risks for these vulnerable road users, especially the elderly.

However, a shared user path (SUP) is currently being designed in the site vicinity. The SUP is expected to be constructed on the east side of Mt Fyffe Road and connected to another SUP section on the southern side of Ludstone Road. This SUP is expected to safely provide for walking and cycling trips to and from the site. The construction is expected to start in 2023.

8.3. Railway Overbridge

The existing Railway Overbridge has a 4 m height clearance, having a width of approximately 7.8 m between pillars.

The typical maximum height above ground for heavy vehicles is 4.3 m. It is assessed, therefore, that some larger vehicles could not be able to access the site for not being able to pass under the Overbridge.

However, typically, heavy vehicles travelling to and from the site would be likely to have the appropriate access as long as they are limited to 4 m in height. This includes rubbish trucks, emergency vehicles and moving trucks.

8.4. Intersection design

8.4.1. Ludstone Road/Mt Fyffe Road intersection

Austroads GTTM 2017 Part 6:2020 Figure 3.25 (provided in Figure 14) indicates that no left-turn treatment or right-turn bay is warranted at this intersection. This assessment used traffic flows from Figure 13. Left-turn and right-turn in volumes are expected to be greatest in the PM peak.

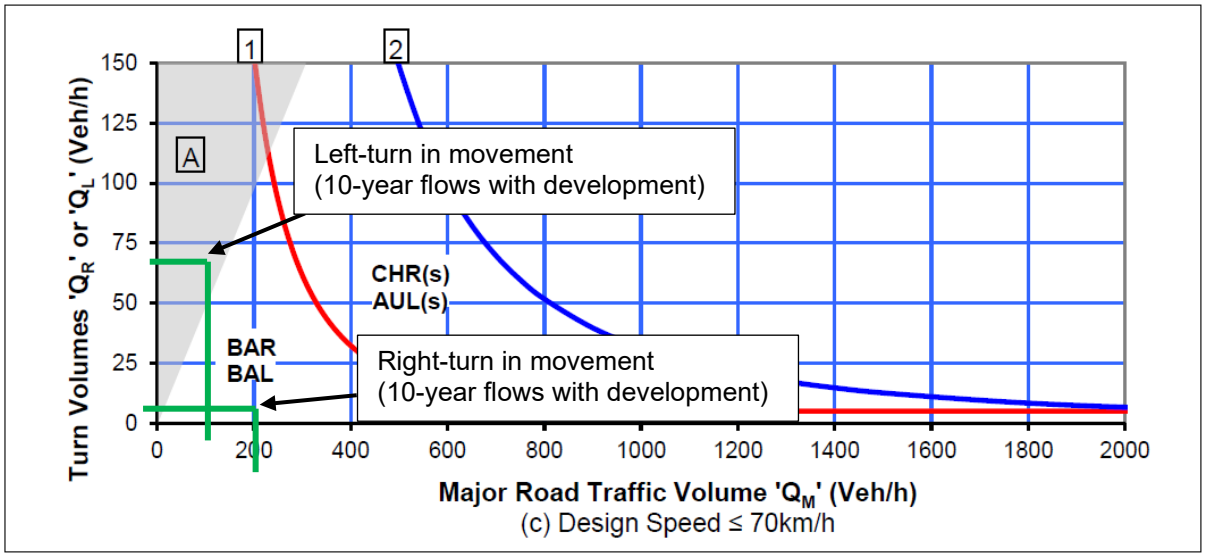

Figure 14: Turning warrants at the Ludstone Road/Mt Fyffe Road intersection (Figure 3.25(c) Austroads GTM Part 6)

8.5. Parking Requirements

Table 12.8.1 of the Kaikōura District Plan determines minimum parking requirements for different activities. Two parking spaces per residential dwelling are required to be provided. This is expected to be easily achieved within each of the residential lots.

The District Plan also requires one parking space per Elderly persons housing unit. Therefore, lots 91 and 92 are required to allocate a total of 20 parking spaces. Similarly, this provision is expected to be achieved in these lots, complying with the requirements of the District Plan.

8.6. Visibility Assessment

Table 12.8.5(2) of the Kaikōura District Plan requires minimum sight distances of 85 m and 115m for posted speeds of 50 km/h and 60 km/h, respectively. The visibility assessment at the intersection to/from the site is presented below.

8.6.1. Ludstone Road/Mt Fyffe Road intersection

Table 5: Visibility from the Ludstone Road/Mt Fyffe Road intersection

Required Sight Distance	Achieved visibility			
	West	Comply/Not Comply	East	Comply/Not Comply
115 m	120 m	✓	100 m	✗

Figure 15: Sight distance from the Ludstone Road/Mt Fyffe Road (south) intersection to the west

Figure 16: Sight distance from the Ludstone Road/Mt Fyffe Road (south) intersection to the east

Figure 17: Sight distance from the Ludstone Road/Mt Fyffe Road (north) intersection to the west

Figure 18: Sight distance from the Ludstone Road/Mt Fyffe Road intersection(north) to the east

It is noted that the visibility to the east at the intersection, from either the south side or north, is restricted to approximately 100 m due to the vertical alignment. No improvements are considered easy to be achieved, as extensive road works would be expected to be required. However, the intersection would have compliant visibility for a 50 km/h posted speed limit.

Therefore, it is recommended that the Kaikōura District Council considers reducing the posted speed limit on Ludstone Road in the vicinity of the intersection with Mt Fyffe Road to 50 km/h.

It is noted that reduced speed environments are a primary safe system treatment expected to reduce both the likelihood for and severity of crashes.

The intersection is currently give-way controlled on its northern side. This control is considered incorrect due to the fact that appropriate visibility is not achieved from a point 9 m from the limit line. It is recommended that Mt Fyffe Road be updated to stop control on the north side of the intersection.

The intersection is also currently unlit. Flag lighting is recommended to be provided at the intersection, given the increased traffic flows on Mt Fyffe Road. This is expected to increase overall safety during dark periods.

Furthermore, vegetation is overgrown on both the south and north approaches. It is recommended that vegetation is trimmed/removed (and permanently maintained) in the vicinity of the intersection to improve visibility.

8.6.2. New Road intersection with Mt Fyffe Road

Table 6: Visibility from the new road intersection onto Mt Fyffe Road

Required Sight Distance	Achieved visibility			
	South	Comply/Not Comply	North	Comply/Not Comply
85 m	> 150 m	✓	> 150 m	✓

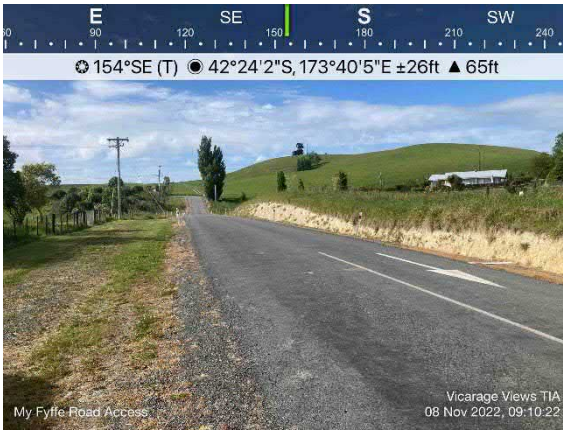

Figure 19: Typical visibility on Mt Fyffe Road to the south

Figure 20: Typical visibility on Mt Fyffe Road to the north

8.7. Intersection Separation Distance

The Kaikōura District Plan requires a minimum separation distance between intersections from 125 m to 160 m on 50 km/h and 60 km/h posted speed limit zones, respectively (Table 12.8.5(1)).

The new proposed intersection off Mt Fyffe Road is located approximately 300 m south of the Ludstone Road intersection and, therefore, exceeds this requirement.

The new road intersection within the site is located approximately 80 m east of the Mt Fyffe Road/New Road intersection (as shown in Figure 21). This represents a shortfall from the requirements of the District Plan. However, no adverse effects are expected to occur as a result of the shortfall for the following:

- A posted speed limit of 40 km/h (or below) is recommended to be adopted within the site. This is expected to reduce the separation distance requirement and the shortfall;
- Separation distances are typically required in order to provide enough observation time for the provision of safe turning movements at potential conflict points (i.e., intersections). The proposed distance between intersections in relation to the posted speed limit is assessed to be adequate for safe movements to be undertaken at the intersection. Stopping sight distances of 40 m and 55 m are required for design speeds of 40 km/h and 50 km/h, respectively (Austroads GRD Part 3) – this establishes a reduced risk for any conflicts to occur at the intersection;
- A horizontal curve is proposed in the approach/departure of the new intersection off Mt Fyffe Road. This is expected to reduce vehicles' operating speeds further, controlling their speeds. This is expected to create more safe gap opportunities for turning movements at the new intersection within the site.

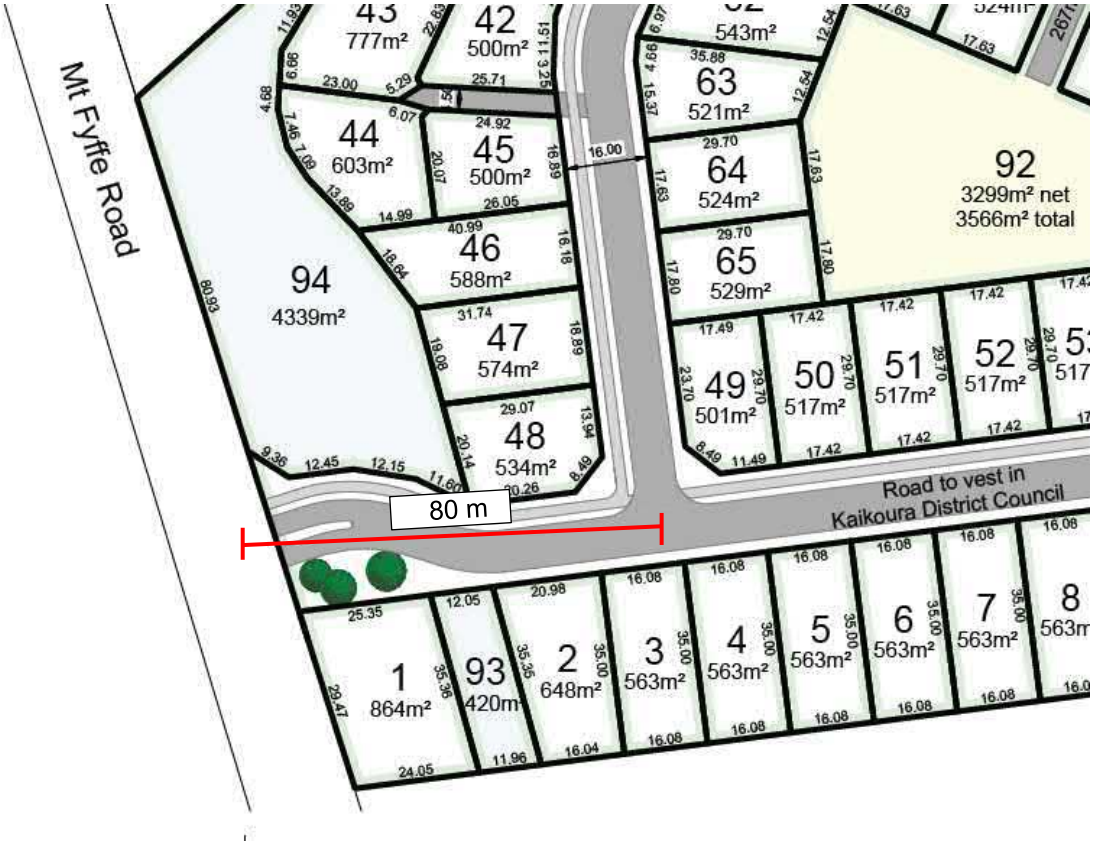

Figure 21: Separation distance within the site

9. Conclusion

On the basis of the assessment detailed above, it is concluded that the proposed residential development can be appropriately accommodated within the local traffic and transportation environment.

The traffic generation of the proposed 67 residential lots is expected to be approximately 905 vpd and 88 vph in the peak hour. While the peak hour traffic flows at the site are likely to coincide with the surrounding network peak, the development's traffic flows are expected to be absorbed in adjacent intersections and the existing roading network, as indicated in practical absorption calculations. Furthermore, the crash history has demonstrated no underlying safety issues on Mt Fyffe Road and Ludstone Road in the vicinity of the site.

The internal roading layout, including the proposed new public road, complies with or exceeds the requirements of the Kaikōura District Plan.

An evaluation has been undertaken to focus on safety performance outcomes of the adjacent intersection. With the additional flows to be generated by the development, no right- or left-turn facilities are warranted at the Ludstone Road/Mt Fyffe Road intersection. This is primarily driven by the relatively low traffic volumes at the intersection and to and from the site.

A visibility shortfall to the east has been identified at the Ludstone Road/Mt Fyffe Road intersection. This is assessed to not provide adequate levels of safety for movements to be undertaken at the intersection with the current posted speed limit of 60 km/h. Therefore, it is recommended that the Kaikōura District Council considers reducing the speed limit in the vicinity of the intersection to 50 km/h. The available sight distance to the east would then meet the visibility requirements.

A separation distance shortfall has been identified between the new road intersection off Mt Fyffe Road and the new intersection within the site. However, no adverse effects are expected to be generated due to that. The turning movements are expected to be safely undertaken at the intersection, with appropriate observation time due to the relatively low speed environment throughout the site.

Mt Fyffe Road is currently predominately 6 m wide to the south of Ludstone Road, except for the single-lane section through the Railway Overbridge. This road is recommended to be widened to 8 m wide to accommodate the additional traffic flows and alignment with the Kaikōura District Plan.

A future shared path is intended to connect to the site along Mt Fyffe Road and Ludstone Road. This is expected to safely provide for walking and cycling trips to and from the site, enabling connectivity to nearby shops and schools without motorised vehicles. This would be expected to reduce vehicle trips to and from the site; however, this assessment has been undertaken conservatively, with trips allocated in full to test the road network's robustness.

Therefore, it is concluded that the traffic associated with the proposed development is able to be accommodated on the adjacent road network and that there are no traffic planning reasons to preclude the approval of the proposed development provided that the recommendations given in this report are followed.

10. Recommendations

Based on the findings of this report and the associated conclusions, it is recommended that the following be provided at the site:

- Kaikōura District Council gives consideration to reducing the posted speed limit on Ludstone Road, in the vicinity of the Mt Fyffe Road intersection, to 50 km/h;
- Mt Fyffe Road is widened to 8 m wide between the site and the single-lane section (i.e. through the Railway Overbridge);
- Mt Fyffe Road is updated to stop control on the north side of the intersection with Ludstone Road;
- Flag lighting is provided at the Ludstone Road/Mt Fyffe Road intersection;
- Vegetation is trimmed/removed and permanently maintained at the Ludstone Road/Mt Fyffe Road intersection;
- Vehicle crossings are to be sealed and between 3 and 6 m wide;
- Vehicle crossings for corner lots are to be provided from the lower volume road;
- A minimum turning head radius of 9.5 m is to be constructed at the end of the road;
- The speed limit throughout the site is to be limited to 40 km/h at a maximum;

11. Disclaimer

This report has been prepared by Urban Connection Limited for Vicarage Views Limited and may only be used and relied on by Vicarage Views Limited for the purpose agreed between Urban Connection Limited and Vicarage Views Limited as set out in this report. By default, this means that Vicarage Views Limited can use and rely on this report for the purposes of supporting the consent application.

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The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Urban Connection Limited has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

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Rev	Date of Issue	Author	Reviewer	
			Name	Signature
0 – DRAFT for client review	21 November 2022	Matheus Boaretto	Jonno Fletcher	
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