

## Land Information Memorandum

### Application

C P Griffioen	No.	LM2501283
Griffioen Real Estate	Application date	7 July 2025
851 Two Chain Road RD 5	Issue date	16 July 2025
Rangiora 7475		

### Property

Valuation No.	2161105720
Location	5 Catchpole Place, Woodend
Legal description	Lot 20 DP 500690
Owner	James David Foote & Ruqiah Hannah Foote
Area (hectares)	0.0625

### Rates

Rating Valuation	
Land	\$385,000
Capital Value	\$740,000
Improvements	\$355,000
Date of Last Revaluation	1 July 2022
Current Rates Year 1st July 2025 to 30th June 2026	
Annual Rates	\$4,810.79
Current Instalment	\$1,202.69
Current Year – Outstanding Rates	\$4,427.69
Arrears for Previous Years	\$0.00
Next Instalment Due	20/08/2025
Note: Rates are charged in four equal instalments for the period commencing 1 July and ending 30 June each year.	

This Land Information Memorandum (LIM) has been prepared for the purposes of Section 44A of the Local Government Official Information and Meetings Act 1987. It contains all the information described in section 44A(2) that is held by the Waimakariri District Council in relation to the land, as at the date above. It is based on a search of the Council's records only and there may be other information relating to the land which is not held by the Council. The records may not show illegal or unauthorised structures or other work on the land.

The Council has not undertaken an inspection of the land or any building(s) on it for the purpose of preparing this LIM. The applicant is solely responsible for ensuring that the land is suitable for a particular purpose. Please consult the Council if you have any questions.

The inclusion or omission of information in or from this LIM does not limit or affect the Council's functions, powers or duties in relation to the land under any statute, regulation, bylaw, policy, or other enactment.

The Council will, upon request, provide additional information about the land. There will generally be an additional fee payable, based on the amount of time required to locate, collate and provide the requested information.

### Planning/Resource Management

#### District Plan(s)

The Council has undertaken a review of the Operative District Plan and through this process it has developed a New District Plan (**'Partially Operative District Plan - Decisions Version'**).

This plan provides new and clear objectives, policies and rules on how people use, subdivide and develop land, and what kind of activities can be undertaken. The plan also controls any adverse effects an activity could have on the neighbourhood and protects the uniqueness of our district by looking after our heritage, cultural values, outstanding landscapes and coastal environment. It also incorporates any changes in legislation, national and regional policy statements, environmental standards and other regulations.

The period for lodging appeals against decisions on the new District Plan is currently open.

Closing date for receiving appeals is 22<sup>nd</sup> August 2025. This means until the appeals period is closed, there are two set of District Plan provision(s) to consider and apply:

1. The Operative District Plan (2005) except the rules relating to Variation 1 Medium Density Residential Standards) and effluent spreading, and
2. The Proposed District Plan (Partially Operative District Plan - Decisions Version)

For more information on how both District Plan(s) apply, please refer to the Waimakariri District Council's Website link: <https://www.waimakariri.govt.nz/council/district-development/district-plan>.

Please note that if you lodge a building consent application, the Council will assess your project against the District Plan rules that apply at the time. If your proposed activity doesn't need a building consent, please contact the Council's Duty Planner by email [duty.planner@wmk.govt.nz](mailto:duty.planner@wmk.govt.nz) to find out if any new rules apply to your proposal or site.

Link to find out the zoning and rules in the Partially Operative District Plan - Decisions Version: <https://waimakariri.isoplan.co.nz/draft/>

Link to find out the zoning and rules in the District Plan (Operative 2005): <https://waimakariri.isoplan.co.nz/eplan/>

**Land Information Memorandum****3**

23/08/12 RESOURCE CONSENT 115283 : 22 LOT RESIDENTIAL SUBDIVISION OF PT LOT 1 DP 33116, copy attached. A certificate of conditions was issued 29/9/16, copy attached.

15/09/16 RESOURCE CONSENT 165238 : VARIATION TO RESOURCE CONSENT 165283, copy attached.

Woodend Eastern Bypass – plans attached. Waka Kotahi (NZ Transport Agency) may be contacted for further information.

**Land Use on Contiguous Properties**

Land to the east (43 Petries Road) may be subject to further development in the future.

**Building**

15/11/17 BUILDING CONSENT BC171675 : ERECT A DWELLING WITH ATTACHED GARAGE (code compliance certificate was issued 01/05/18, copy attached)

It is recommended that Council records are viewed and compared with the actual structure(s) and activities on site to identify any illegal or unauthorised building works or activities.

Site plan, floor plan and elevations are attached.

**Sewer and Water**

Sewer Available - EASTERN DISTRICTS SEWER – plan attached

Water Available - WATER – WOODEND – plan attached

Water quality information for each public water supply scheme can be found by following the link below and click on “Water Quality Testing Results”:

<https://www.waimakariri.govt.nz/services/water-services/water-supply>

*Where Council services are located within a property boundary, they may not be built over and appropriate separation distance by any future development must be maintained. If a buildover is considered unavoidable, Council's Three Waters team must be contacted to discuss the design prior to any resource or building consent being lodged for the site.*

Copy of as built drainage plan attached. No other information located

**Land and Building Classifications**

Heritage Site Reference: No Information Located.

Refer to copy of map from District Plan for other classifications in the immediate vicinity.

### Compliance with The Building (Pools) Amendment Act 2016

There is no swimming pool or spa pool registered on this property. If there is a swimming pool please go on-line and register it at <https://waimakariri.govt.nz/building-services/swimming-pool-registration>. A Council representative will then contact you to arrange an inspection of the pool and any associated barriers (fencing). If there is a spa pool please check first at <https://www.waimakariri.govt.nz/building-services/i-want-to-build-a.../swimming-and-spa-pools> to determine if it needs to be registered.

Swimming pools must be fenced as required by The Building (Pools) Amendment Act 2016. Owners are advised that an inspection of the swimming pool fencing is mandatory every 3 years to ensure its ongoing compliance with The Building (Pools) Amendment Act 2016.

### Vehicle Crossing Requirements

The installation of vehicle crossings is the responsibility of the owner of the property to be accessed; vehicle crossings may not be constructed or Council roading assets (e.g., footpaths, kerb ramps, street trees) impacted without an approved Vehicle Crossing Permit. For further information refer to the Council's Vehicle Crossing Information Pack in the following link: [https://www.waimakariri.govt.nz/data/assets/pdf\\_file/0012/141330/230707102468-QD-RDG-Information-002-Vehicle-Crossing-Information-Pack4.pdf](https://www.waimakariri.govt.nz/data/assets/pdf_file/0012/141330/230707102468-QD-RDG-Information-002-Vehicle-Crossing-Information-Pack4.pdf)

### Special Land Features

Wind Zone	High
Earthquake Zone	2
Snow Load Zone	4
Other	No Information located

### Licences/Environmental Health

No Information located

### Network Utility Operators

Contact Mainpower for power availability.  
Contact Chorus for phone availability.

### Other Information

Fill Plans held by the Council show the site has been subject to filling, see attached information from Site Solutions Ltd. An engineer's report on ground conditions may be required prior to development, depending on the nature and location of this fill in relation to any building work.



A Geotechnical Report from Aurecon is available if required, copy of Executive Summary pages attached.

A Geotechnical Report from Kirk Roberts is available if required, copy of Summary pages attached. Peer Review attached.

A copy of a Preliminary Site Investigation Report is available if required, copy of Executive Summary pages are attached.

Technical Classification Geotechnical Report from Aurecon is attached.

This property is in an area categorised as “Damaging Liquefaction Likely.” We advise you to refer to Environment Canterbury for more information at <https://www.ecan.govt.nz/your-region/your-environment/natural-hazards/earthquakes/liquefaction/>

Environment Canterbury may hold information on natural and physical resources that may be relevant to a property. Information on obtaining a Land Information Report can be found at <https://www.ecan.govt.nz/do-it-online/property-information/land-information-requests/what-is-included-in-a-lir/>

The Listed Land Use Register (LLUR) is a database that Environment Canterbury uses to manage information about land that is or has been associated with the use, storage or disposal of hazardous substances. Further information on the LLUR can be found at <https://www.ecan.govt.nz/your-region/your-environment/hazardous-land-use/listed-land-use-register/>

Environment Canterbury has had a report undertaken on the general distribution and characteristics of active faults and folds in the Waimakariri District. We advise you to refer to Environment Canterbury for more information.

The Council has completed a hazard assessment for the District. This includes flood hazard, location of fault lines, areas susceptible to liquefaction, coastal flood depth and tsunami inundation. **People are encouraged to view this information before making a property decision.** Maps and information on natural hazards for the district are available at: [Waimakariri District Natural Hazards Interactive Viewer \(arcgis.com\)](https://www.waimakariri.govt.nz/services/emergencies-and-recovery/in-case-of-an-emergency)

For information regarding Tsunami refer to the Waimakariri District Council’s website on the following link: <https://www.waimakariri.govt.nz/services/emergencies-and-recovery/in-case-of-an-emergency>

## Notes

1. Final inspections on buildings were not mandatory prior to 1 January 1993. Should an evaluation of the building be required an independent qualified person should be consulted.
2. Every care has been taken to ensure that the information supplied by the Council on this form is accurate. The Council relies on information available to it, and will not be held responsible for incomplete or inaccurate information provided, or for any errors or omissions made in good faith.

3. Property boundaries shown on the attached copies of computer generated plans are based on the Digital Cadastral DataBase (DCDB). Topographical information shown (for example, buildings etc.) is captured by photogrammetric methods. The accuracy of the two methods of data capture is different and the relationship of buildings to boundaries cannot be relied on.
4. Any enquiry not accompanied by a fee will be invoiced separately. (All prices are GST inclusive.)
5. If a property is cross-leased any building alterations undertaken may affect the lease documents. If this is the case, appropriate resource consents pursuant to the Resource Management Act 1991, and amended Certificates of Title, should be obtained to reflect the correct situation.
6. It is in your interests to locate the boundary pegs by discovery or redefinition before purchasing the property.
7. Property purchasers should ensure particularly with newly constructed dwellings that the vehicle crossing from the road onto the property is fully formed, in accordance with the Councils' specifications. A check can be made with the Customer Services, if any damage is noted, or if the crossing is not completed.
8. Any subdivision or other further development on this property which requires a new connection or an increased level of usage of Council provided services may be subject to the Council's development contributions policy, ie additional charges may be payable. Council services may include water supply, sewerage, stormwater drainage, reserves, roading and community infrastructure.
9. Use of open fires or older-style burners (older than 15 years within the Clean Air Zones) is not allowed. All older style wood burners that do not meet a 1 gram emission standard and are not on the Environment Canterbury authorised list that are 15 years or older can be replaced with a low emission wood burner provided that a building consent is issued by Waimakariri District Council before 31 October 2017. For information regarding domestic fires and wood burners refer to Environment Canterbury's website [www.ecan.govt.nz](http://www.ecan.govt.nz) or telephone 0800 324 636.
10. The applicant is advised that this Land Information Memorandum (LIM) covers information held by the Waimakariri District Council. Any relevant information from Environment Canterbury held on Council files has been included. It is in your interest to also request a Land Information Request (LIR) from Environment Canterbury. Further information can be found at [www.ecan.govt.nz/services/online-services/property-information](http://www.ecan.govt.nz/services/online-services/property-information).
11. Territorial Authorities have a wide discretion as to the sort of information that is included in the LIM. Section 44A (3) provides that a Territorial Authority may provide in the LIM such other information concerning the land as the authority considers, as its discretion, to be relevant.
12. This Land Information Memorandum does not contain all information held in a property file. Property files may be requested by telephoning the Council's Contact Team on 0800 965 468 or by visiting a Council Service Centre.



Name: \_\_\_\_\_

Date: 16 July 2025

Signed on Behalf of Council

DEBBIE WALLS – PROPERTY INFORMATION – LIMS OFFICER

RC115283/120823055753

21611-057-00

**WAIMAKARIRI DISTRICT COUNCIL****IN THE MATTER** of the Resource Management Act 1991**AND****IN THE MATTER** of an application lodged by **Woodend East Ltd** for a resource consent under Section 88 of the aforementioned Act.**APPLICATION**

The applicants sought a resource consent to subdivide Pt Lot 1 DP 33116 into 22 residential lots, with a road to vest in the Council. Access to all lots will be either from the proposed new road, or to Petries Road. The lots will be serviced by connection into the Woodend reticulated services. Stormwater management will need to be provided for on-site, with final discharge to the existing drain along the northern side of Petries Road.

**DECISION**

The District Plan Manager, on the 23<sup>rd</sup> August 2012, approved:

**THAT** pursuant to Section 104C of the Resource Management Act 1991, consent be granted to subdivide Pt Lot 1 DP 33116 into 22 residential lots and Lot 23 (as road to vest) at 29 Petries Road, Woodend as a Restricted Discretionary Activity subject to the following conditions which are imposed under Section 108 of the Act:

1. Except as required to comply with the following conditions, the activity shall be carried out in accordance with the attached approved application plan.

2. **Standards**

All stages of design and construction shall be in accordance with the following standards (and their latest amendments) where applicable:

Council Standards

- Waimakariri District Council Engineering Code of Practice.

Other Standards

- Relevant Transit New Zealand standards



- Relevant Austroads Guides & standards
- NZS 4404 - Urban Land Subdivision
- NZS 4431 - Earthfill for Residential Development

### 3. Easements

All services, including open drains and access ways, serving more than one lot or traversing lots other than those being served and not situated within a public road or proposed public road, shall be protected by easements. All such easements shall be granted and reserved.

### 4. Lot to Vest

- 4.1 Lot 23, as shown on the subdivision proposal plan C.17796, shall vest in Council as Road.

### 5. Development Contributions

Pursuant to section 198 of the Local Government Act 2002, the consent holder shall pay \$853,823.25 including GST at 15.0%; this amount is based on the following contributions:

Description	Area	Units/ Lots	Factor (excluding GST) Per Unit/Lot \$	Amount (excluding GST) Total \$	Amount (inclusive GST) Total \$
Reserves	Business & Residential Zone	21	7,564.00	158,844.00	182,670.60
Water	Woodend	21	4,312.00	90,552.00	104,134.80
Water - ODA	East Woodend	21	0.00	0.00	0.00
Sewer	Eastern Districts - Outfall	21	2,497.00	52,437.00	60,302.55
Sewer	Tuahiwi/Woodend	21	235.00	4,935.00	5,675.25
Sewer - ODA	East Woodend	21	4,425.00	92,925.00	106,863.75
Drainage	Coastal Urban	21	15.00	315.00	362.25
Drainage - ODA	East Woodend	21	8,957.00	188,097.00	216,311.55
Roading	District	21	930.00	19,530.00	22,459.50
Roading ODA	East Woodend	21	6,057.00	127,197.00	146,276.55
Community Infrastructure	District - Pool	21	230.00	4,830.00	5,554.50
Community Infrastructure	District - Library Extension	21	133.00	2,793.00	3,211.95
<b>Total</b>				<b>742,455.00</b>	<b>853,823.25</b>

### 6. Power and Telephone

- 6.1 The appropriate network utility operators, at the subdividers expense, shall provide underground electrical and telephone reticulation to the boundaries of all new dwelling lots including the main body of Lots 1-22 inclusive.

- 6.2 The Subdivider shall provide written evidence from the relevant authorities that the service connection have been installed into Lots 1-22 inclusive.

7. **Design of Reticulated Services**

- 7.1 All water, sewer and stormwater systems within the subdivision shall be separately serviced and piped.

8. **Plans and Specifications**

- 8.1 The Subdivider shall submit plans and specifications of all works to the Council for approval. Approval of complying documents shall be given in writing and work should not commence until this has been received from the Council.

- 8.2 The Subdivider shall forward with the engineering plans and specifications copies of any other consents granted in respect of this subdivision.

- 8.3 Any subsequent amendments to the plans and specifications shall be submitted to Council for approval.

9. **Supervision and Setting Out**

- 9.1 A practising Chartered Professional Engineer, or Registered Professional Surveyor, who shall be engaged prior to commencement of any works, shall supervise all engineering works and setting out.

- 9.2 The supervising Engineer/Surveyor shall supply a certificate to the Council, stating that all works have been designed in accordance with the appropriate standards and sound engineering practice.

- 9.3 The Engineer/Surveyor shall submit a programme of inspection intended to meet the requirements of this clause at the time of submitting the engineering plans and specifications.

- 9.4 The supervising Engineer/Surveyor shall supply to Council a certificate stating that all works and services associated with the subdivision have been installed in accordance with the approved plans and specifications and that the "As Built" plans are a true and accurate record of all works and services as constructed. This certificate shall be supplied at the time of requesting the Section 224c Certificate.

- 9.5 The supervising Engineer/Surveyor shall forward to the Council copies of Site Inspection notes for all site supervision visits. These shall be forwarded within five working days of the date of that site visit.



## 10. **Earthworks**

- 10.1 All lots shall be reshaped to slope to the roadside kerb and channel or swale or to the head of the right of way serving each lot, or to an approved outfall.
- 10.2 All earthworks shall be in accordance with NZS 4431, 1989 Earthfill for Residential Development. Where land filling is to be undertaken the areas affected, together with dimensions relative to the created property boundaries, shall be shown on the "As Built" plans to be supplied to the Council.
- 10.3 Any areas of fill or earthworks not certified in accordance with NZS 4431 shall, together with sufficient dimensions to locate the feature from property boundaries, be registered on the land transfer title plans and shown on the "As Built" plans.
- 10.4 Where excavated cut material is greater than 200mm in thickness, the Subdivider shall undercut and replace with 100mm minimum of compacted topsoil.
- 10.5 The Subdivider shall take measures to control silt-contaminated stormwater at all times during earthworks, roading development and installation of underground services. Details of the proposed control works shall be submitted to the Council as part of the engineering plans and specifications, for Council approval.
- 10.6 The Subdivider shall grass each lot at the completion of earthworks, and shall maintain the areas so that any areas of dead grass are replaced immediately, in order to avoid nuisance effects created by dust.
- 10.7 During all earthworks the Subdivider shall employ dust containment measures, such as watering, to avoid the nuisance effects created by dust.
- 10.8 All existing natural stormwater channels shall be retained or replaced with an approved drainage system.
- 10.9 The Subdivider shall submit to Council for approval prior to works commencing on site, a comprehensive Construction Management Plan detailing proposed methods to mitigate the effects of noise, dust, sediment runoff and transportation of debris onto the surrounding roading network.
- 10.10 Earthworks, reshaping or fill shall match adjacent ground levels at the boundaries and shall not alter natural ground level by more than 300mm where it is carried out within 2 metres of the boundary with an established residential property.
- 10.11 Earthworks, reshaping or fill shall not alter natural ground level by more than 600mm where it is carried out between 2 metres and 20 metres of the boundary with an established residential property.



- 10.12 No earthworks, shaping or fill shall block, impede or reshape any drain, overland flow path or channel and shall not create ponding of stormwater on any adjacent land in separate ownership.

#### 11. **Road Opening/Trenching**

- 11.1 All works involving trenching shall meet the requirements of the Council's Standard conditions for Trenching. No excavation shall commence within a public road reserve without the prior receipt of a Trenching Permit from the Waimakariri District Council.
- 11.2 In the event of any works or trenching being required across the frontage of adjacent properties the Subdivider shall inform the affected occupiers of those properties, 48 hours prior to the commencement of any work.

#### 12. **Water Supply**

- 12.1 The Subdivider shall construct and install a piped reticulation system by connecting to the existing 150 mm diameter main in Petries Road.
- 12.2 The Subdivider shall design and reticulate the subdivision generally in accordance with the Councils standards.
- 12.3 The water system shall be designed to incorporate resilience to earthquake events. Where PVC or other socket jointed pipes are used in TC2 equivalent land, then the water reticulation shall meet the following requirements unless specifically authorised otherwise, in writing, by the 3 Waters Manager of the Council:
- Maximum depth to pipe invert of 1.5 m
  - The water reticulation shall be designed and constructed to withstand an Ultimate Limit State (ULS) earthquake event with a Peak Ground Acceleration of 0.35g with no more than 100mm vertical deviation and 200mm of horizontal deviation in any 50 metre length of main;
  - The water reticulation shall be resilient, and shall incorporate specific resilient design components, including ground improvement where necessary, and the use of non-liquefiable backfill such as compacted AP65 or similar.
  - An engineering and geotechnical report shall be prepared and signed by a Chartered Professional Engineer, which shall specify the method of design and construction for the water reticulation system to withstand ULS earthquakes; and
  - The use of PVC mains or other socket jointed water pipe is not permitted in land that does not meet the criteria for TC1 or TC2.

- 12.4 The Subdivider shall install sufficient sizing to service the subdivision by a combination of 150 mm diameter and 100mm diameter trunk mains and 63 mm diameter submains.
- 12.5 Each lot shall be individually serviced with the appropriate pipe work, to the Council's standard connection, point of supply, and any future provision requirements should be in accordance with the approved plans and specifications and any outline development plan requirements.
- 12.6 The reticulation shall meet the fire-fighting requirements for a Residential Zone in accordance with SNZ PAS 4509:2003 New Zealand Fire Service Fire Fighting Water Supplies Code of Practice.
- 12.7 The Subdivider shall install the water reticulation to meet the following minimum standards for Lots 1-22 inclusive.
- (a) The installation of an appropriate number of medium pattern screw down fire hydrants on all new water mains in the roads in accordance with the requirements of the Engineering Code of Practice.
  - (b) A system of 50-millimetre (63 O.D) PN 12.5 P.E sub mains.
  - (c) Separate 15mm diameter laterals from the 50mm submain to a toby box.
  - (d) Toby boxes and valves at the road frontage.
  - (e) Individual 15mm laterals from the toby box to a point a minimum of 1mtre inside the boundary of the lots or if access is via a right of way to a minimum of 1metre within the main body of the rear lots.
- 12.8 As the network utility provider, the Council, at the subdividers expense, shall carry out all connections to the existing public water supply.
- 12.9 Pressure Testing and sterilization shall be done for all reticulation.
- 12.10 The Subdivider shall provide engineering plans, which shall be submitted to the Council for approval, for all works. No physical works shall commence until the Council has approved the engineering plans.

### 13. **Sewerage**

- 13.1 The Subdivider shall install a reticulated sewer system to service Lots 1 - 22 inclusive in accordance with the approved plans and specifications that shall include a separate lateral for each lot.
- 13.2 The reticulated sewer system shall connect to the Sewer Pump Station in Petries Road.



13.3 The Subdivider shall install a reticulated sewer system that incorporates the following minimum requirements:

- a) Install a 150 mm diameter gravity main along the subdivision frontage at his cost extending to the intersection with the proposed road to the north shown on the East Woodend Outline Development Plan No 153 (Length approximately 220 metres).
- b) Install a 225 mm diameter gravity sewer from the intersection with the proposed road in (a) to the Petries Road sewer pump station and a 300 mm diameter inlet from Petries Road to the sewer pump station. Council will contribute to the marginal cost difference between a 150 mm diameter and a 225mm diameter sewer main for a distance of 260 metres at \$80.00/metre which equates to a total contribution of \$20,800.00 + GST, plus the cost of the 300 mm diameter inlet at a cost of \$6,820.00 + GST.

13.4 The sewer system shall be designed to incorporate resilience to earthquake events. Where gravity sewer systems are to be constructed in TC2 equivalent land, then the gravity sewer must meet the following requirements unless specifically authorised otherwise, in writing, by the 3 Waters Manager of the Council:

- Maximum depth to pipe invert of 3.5m.
- Minimum grade of 1:250.
- The sewer shall be designed and constructed to withstand an Ultimate Limit State (ULS) earthquake event with a Peak Ground Acceleration of 0.35g with no more than 100mm vertical deviation and 200mm of horizontal deviation in any 50 metre length of main.
- The design shall be resilient, and shall incorporate specific resilient design components, including ground improvement where necessary, geotextile wrapping of all pipe joints, elongated pipe joints at junctions and manholes, and the use of non-liquefiable backfill such as compacted AP65 or similar. Other specific resilient design and construction techniques shall be considered where necessary, such as geotextile wrapping of the trench bedding and backfill.
- An engineering and geotechnical report shall be prepared and signed by a Chartered Professional Engineer, which will specify the method of design and constructing for the sewer reticulation system to withstand ULS earthquakes; and
- The use of gravity sewers is not permitted in land that does not meet the criteria for TC1 or TC2.



#### 14. **Stormwater**

- 14.1 The consent holder shall provide temporary on site detention on Lots 21 and 22 for the critical volume generated in a 2 hour storm. This is based on the first flush volume filling first to 174m<sup>3</sup> and additional storm volume discharging at a restricted flow of 40l/s. Additional volume on top of this is 128m<sup>3</sup> which gives a basin volume of 302m<sup>3</sup>. The discharge shall be piped to the existing open drain on the northern side of Petries Road.
- 14.2 The Subdivider shall install all drainage reticulation to service each individual lot within the subdivision, in accordance with the approved plans and specifications. The development shall include provision of piping and secondary flow paths that accord with the requirements of the Engineering Code of Practice (Refer to Clause 6.2.1.6).
- 14.3 The Subdivider shall at his/her cost construct a stormwater pond on Lots 21 and 22 as a temporary stormwater management area which shall be maintained by the consent holder until such time that the wider stormwater management system for Woodend becomes operational.

#### 15. **Roading and Footpaths**

- 15.1 The Subdivider shall construct all roading and footpaths to service the subdivision in accordance with the approved plans and specifications and generally the requirements set out in the Waimakariri District Council Engineering Code of Practice (Refer Standard Drawings 600-272 issue d, 600-275 issue d).
- 15.2 The new road shall have a 14 metre legal width, with a 6.0 metre carriageway comprising 2 x 3.0m lanes with parking bays as shown on the approved application plan, kerb and channel along both berms and 1.5 m wide concrete footpath along one berm.
- 15.3 The Cul de Sac shall be capable of allowing for refuse and recycling vehicles and the minimum turning head dimension shall be 20.0 metres diameter.
- 15.4 Pavement design shall be in terms of N.Z Transport Agency's and Ausroads standards. The minimum metal depth in the roadway shall be 250mm. The subgrade shall be tested prior to the laying of any metal courses to ensure the ground has adequate bearing values.
- 15.5 The Subdivider shall be required to carry out Benkelman Beam tests, or other approved in situ formation bearing tests, following completion of the base course layer and prior to sealing. The tests shall meet the Council's minimum standards.
- 15.6 The Subdivider shall be required to carry out Clegg Hammer bearing tests of



all footpath and kerb formations following completion of the base course layer and prior to concreting/surfacing. A measured minimum Clegg Impact Value of 35 shall be obtained to assure adequate compaction and pavement strength prior to sealing/pouring concrete.

- 15.7 Sealing shall comprise a two wet coat seal system (grade 6 chip over grade 4 chip) over the entire carriageway surface, except for the cul-de-sac head, which shall be surfaced with minimum 30 mm AC10 over a single hot bitumen Grade 5 chip seal coat.
- 15.8 The footpath shall extend around the circumference of the turning area of cul-de-sac head.
- 15.9 Kerb pedestrian cut downs shall be provided at all intersections and at other locations such as entrances to reserves.
- 15.10 The Subdivider shall install all road markings and traffic control signs.
- 15.11 The Subdivider shall upgrade and seal Petries Road along the frontage from the end of the existing formation to the eastern side of the property, incorporating 2 x 3.0 m lanes, kerb and channel and 1.5 metre wide concrete footpath along the frontage.

#### 16. **Traffic Management**

The Subdivider shall submit for approval a Traffic Management Plan detailing traffic control works (including sketch layout and control signs). This plan may be submitted at the time of engineering plan approval and shall be submitted prior to work commencing on or in road reserves. Traffic Management shall be to Level 1, as described in the TNZ & LTSA Code of Practice for Temporary Traffic Management.

#### 17. **Lighting**

- 17.1 The Subdivider shall provide details of street lighting proposals prepared in consultation with the power supply authority, to the Council for approval at the time of submission of the engineering plans and specifications.
- 17.2 The street lighting to be installed shall accord to the requirements set out in the Engineering Code of Practice, Section 11.
- 17.3 The Council shall require evidence that the appropriate electricity utility service provider accepts the lights and associated fittings to their approval for connection to the network.
- 17.4 A Chartered Professional Engineer shall design the bases for the light poles

considering the location and ground conditions. An installation plan shall be prepared and approved by Council before installation proceeds. The lights shall be installed in accordance with the installation plan and design.

#### 18. **Access**

- 18.1 The access to Lots 9, 12, 16, 17 and 18 shall be formed and sealed to accord with Councils Standard Drawing 600-211A issue E.

#### 19. **Landscaping**

- 19.1 The Subdivider shall grass all lawn areas in the reserves and berms. All planted areas shall be mulched and trees, shrubs and fixtures installed in accordance with the Engineering Code of Practice Section 10.
- 19.2 A landscaping proposal including the installation and maintenance regime shall be submitted to the Council for approval prior to any works on site.
- 19.3 The proposal shall include:
- Overall plans showing streetscapes and other reserves including grassing and tree locations.
- 19.4 The Subdivider shall provide confirmation with the proposal on the design, layout and materials and fittings used, to be approved by Council before commencement of works on site.

#### 20. **Conditions Auditing**

The Council will audit compliance with the conditions of consent by both site inspections and checking of associated documentation to the extent necessary to ensure the work is completed in accordance with the approved plans and specifications and to the Council's standards. The Council will undertake inspections and checking on an at cost basis. The Subdivider, or their authorised agent, shall notify Council at least one working day prior to commencing various stages of the works. This is to enable audit inspections required by the consent to be performed. Should the developer wish the Council to accept requests for inspections from any contractors engaged, Council must receive written authorisation.

The minimum level of inspection shall be as follows:

##### **Roading, Footpaths**

- Following shaping of roading and footpath sub-grade prior to placement of subbase material
- Following metalling up, prior to pouring of kerb and any channel



- Following compaction of base course prior to sealing. The carriageway shall be tested with a Benkelman Beam .The results shall be submitted to Council for approval
- Footpath base course shall be tested with Cleghammer and with the test results showing compliance shall be submitted to Council.

### **Trenching**

- Prior to backfilling of services.
- During compaction of the trench backfilling.

### **Sewer**

- During installation of pipework
- Testing of sewer mains and laterals

### **Water**

- During installation of water mains
- Testing of mains and laterals
- Sterilisation of water mains.

### **Stormwater**

- On piping works, drains, basins and related works
- On excavation
- During installation of piping
- Prior to connection to the existing drain
- On completion.

### **Access**

- On completion of excavation to sub-grade
- Following compaction of base course prior to final surfacing

### **Street Trees/Landscaping**

- Before set out.
- During planting of trees.

- On completion of planting in road reserves.

### **Whole Works**

- Prior to issue of a certificate under Section 224(c) of the Resource Management Act
- One week prior to end of maintenance period (where applicable)
- On completion of maintenance period (where applicable)

Where repeat inspections are required because of faulty workmanship or work not being ready contrary to the receipt of a notification, such inspections will be carried out at cost for staff time and vehicle running costs for kilometres travelled.

## **21. Maintenance**

21.1 The Subdivider shall be responsible for the maintenance of all subdivision and associated works (excluding reserves, street trees and landscaping) for a period of twelve months following the date of issue of the Council's 'Condition Certificate'. A bond equal to 5% of the cost of construction works shall be lodged with Council for the same period

21.2 The Subdivider shall be responsible for the maintenance of all subdivision and maintenance works associated with the Reserves, Street trees and Landscaping for two years and two planting seasons (whichever is the lesser ) following the date of issue of the Council's Condition Certificate. A bond equal to 5% of the cost of construction works shall be lodged with the Council for the same period.

21.3 Maintenance shall include:

- Appropriate and regular mowing of grass and watering of all plants and trees together with the replacement of any dead specimens.
- Repair of any damage or defects in any of the works or services associated with the development of the subdivision as consented to.
- Full operation and provision of a maintenance program.

## **22. As Built Plans**

22.1 "As Built" plans setting out in detail the location of all services shall be provided to the Council immediately following completion of the works and are to be available at the time of the Condition Certificate inspection. Two sets of plans are to be provided at a scale of 1:500 and 1: 200 In addition to the plans a practising registered civil engineer or registered surveyor shall provide a



separate certificate stating that the As-built plans are a true and accurate record of all services. Furthermore, where plans have been prepared using computer aided draughting techniques a copy of the file may be made available to the Council in either of the following format - Microstation (.DGN), Autocad (.DWG), or (.DXF).

22.2 The Subdivider shall provide daily site sealing records and beam test results from the sealing contractor as part of the As-Built record. To enable accurate RAMM records to be established for the new road construction.

22.3 Copies of all test results, Producer Statements, certifications, inspections, DVD of CCTVs shall be provided to the Councils satisfaction.

23. **Street Name**

23.1 The Subdivider shall submit a name for the new road sign to the Council for approval, and then install the street name sign and pole at the intersection of the new road and Petries Road.

24. **Works Conditions**

That a certificate under Section 224(c) of the Resource Management Act 1991 will not be issued until conditions 1 to 23 above have been met to the satisfaction of the Waimakariri District Council, at the expense of the Subdivider.

## **ADVICE NOTES**

- (a) All amounts shown above are GST inclusive.
- (b) A separate agreement shall be entered into between Woodend East Limited and the Council for the apportionment of costs associated with providing services to the development. This agreement is to be entered into prior to the issue of the Section 224c certificate.
- (c) The requirements and conditions listed are a statement of the Council's minimum standards. Where the Subdivider proposes alternative higher standards or more aesthetically acceptable alternatives then these shall be submitted to the Council for approval.
- (d) The Subdivider is advised that vehicle access to any lot must comply with the requirements of the Waimakariri District Vehicle Crossings Bylaw 1997. Wherein no vehicle may be taken onto any property in the Waimakariri District other than by way of a properly formed vehicle crossing. The owner or occupier of any lot who may require vehicular access across any footpath, berm and water channel adjoining that lot is required to apply in writing to the Council to construct a vehicle crossing at the owner's or occupier's cost. No

owner or occupier of any lot can build, or allow to be built, any dwelling, other significant building or any part of such a building on any property unless the building site on that property is provided with adequate site access in terms of the above mentioned by law.


- (e) The approval of the Engineering Plans will be issued after receipt of a satisfactory Consent from Environment Canterbury.
- (f) Electrical and telephone reticulation requires that the network structures be available. In some cases, this could mean that ducting only is provided to the lot from the service box.
- (g) "As Builts" will be checked prior to the issue of the 224c Conditions Certificate. These will be returned as inaccurate on the first error found. Rechecking will incur an additional fee. No 224c Conditions Certificate will be issued until the "As Builts" are confirmed as correct by Council.
- (h) Kirk Roberts carried out a geotechnical investigation of the site. Council engaged Geotech Consulting to peer review that assessment. Geotech Consulting concluded that:  
  
'We agree with the conclusions of the geotechnical report that there is some liquefaction potential at the site and a TC2 technical land classification is appropriate. The extent of the investigation reported does, in our opinion, comply with the intent of the CERA/DBH requirements'.
- (i) The Subdivider will need to obtain resource consent from Ecan to construct the stormwater pond and for the on-going discharge from the stormwater pond.

### **REASONS FOR THE DECISION**

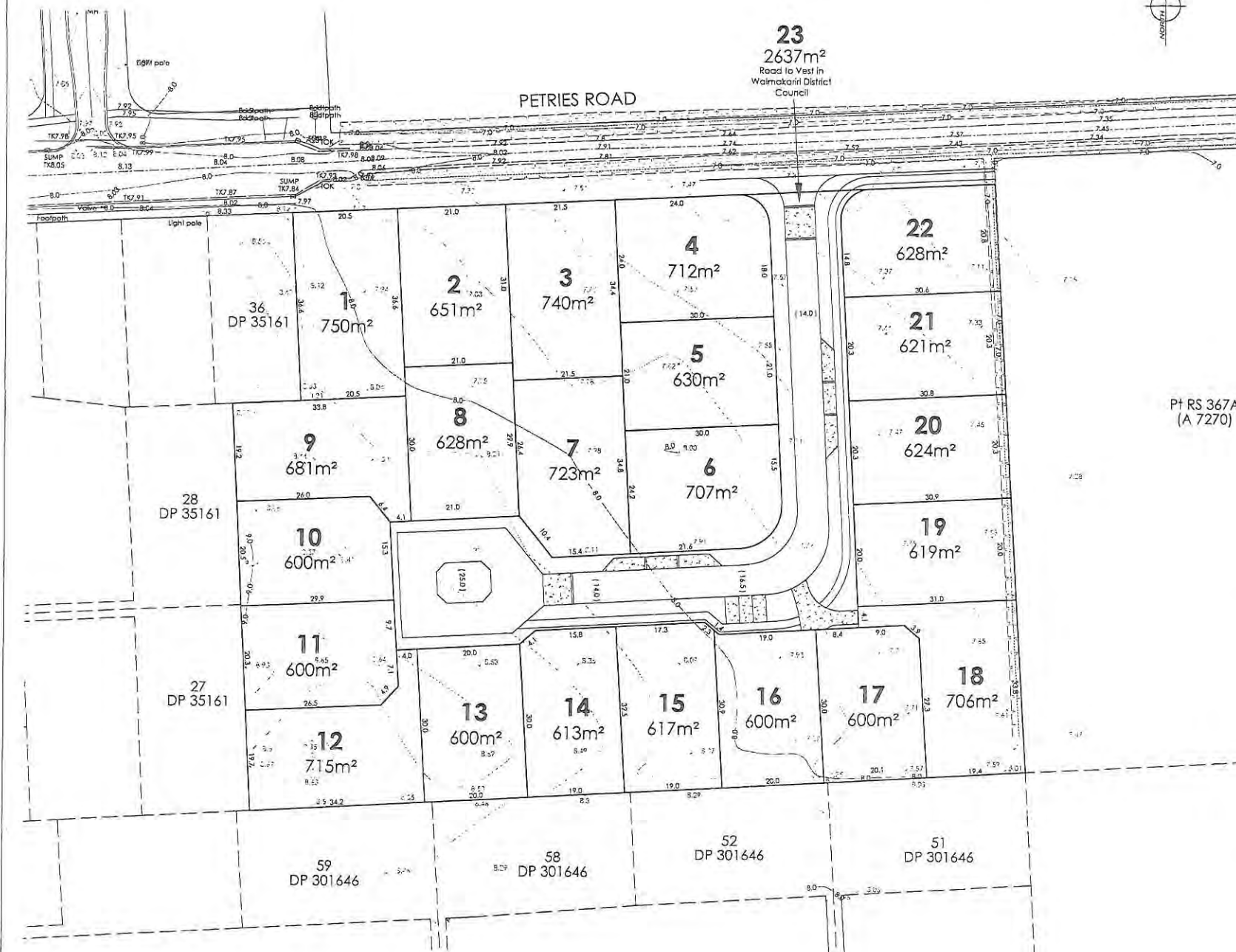
Pursuant to Section 113 of the Act the Council was satisfied that:

- No person is deemed to be adversely affected by the proposal. .
- The environmental effects will be no more than minor.
  - Residential amenity and character will be maintained.
  - Reticulated sewer and water will be provided.
  - Appropriate roading and access can be provided.
- The proposal is in accordance with the District Plan.

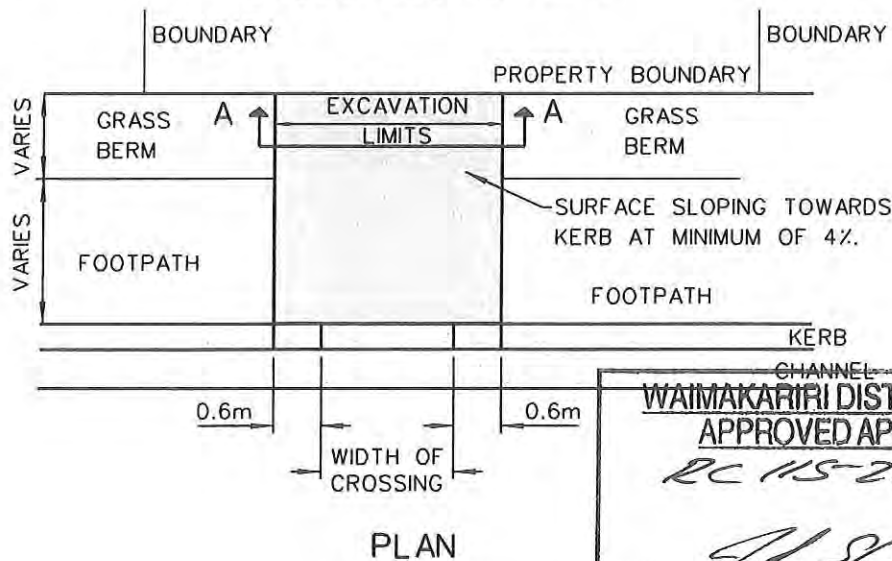
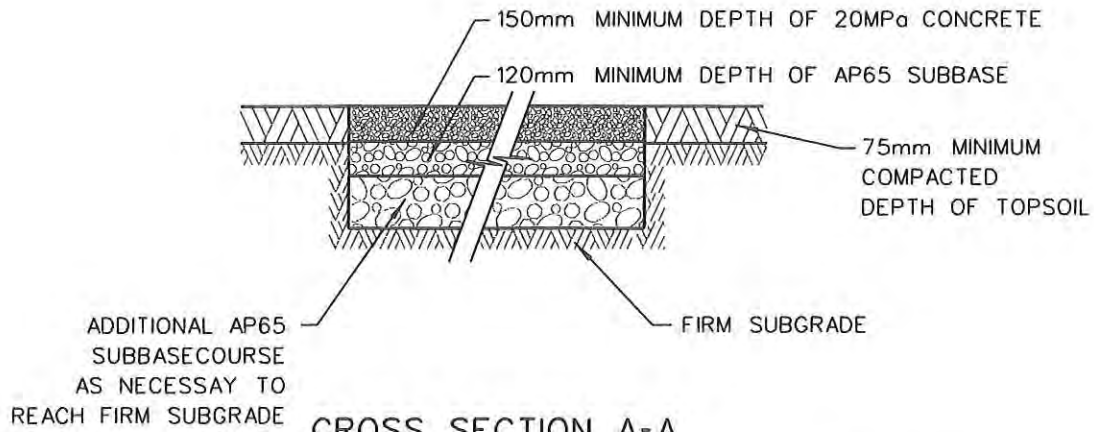
DATED at Rangiora this 23<sup>rd</sup> day of August 2012

  
\_\_\_\_\_  
SIGNED by Garry Blay  
**PLANNING OFFICER**





AMENDMENTS:		
AMENDMENT	DATE	DESCRIPTION
1) Areas and dimensions are approximate and subject to final survey and disposal of plans. 2) Service easements to be created as required. 3) This plan has been prepared for subdivision concept purposes only. No liability is accepted if the plan is used for any other purpose. 4) Roading & planting detail is indicative only. 5) Levels in terms of Mean Sea Level, Lyttelton Datum 1937.		
Origin of Levels: To Petries Road, Woodend.		
<b>WAIMAKARIRI DISTRICT COUNCIL</b> <b>APPROVED APPLICATION</b> <i>PC 115283</i> <i>23/08/12</i> <b>AUTHORISED OFFICER</b>		
Total Area: 1.7002ha (1.7002ha C.T.) Comprised in: C.F.R. C915F/286		
<b>DAVIE LOVELL SMITH</b> PLANNING SURVEYING ENGINEERING		
79 Cambridge Terrace P.O. Box 678 Christchurch 8142, New Zealand Telephone: 03 379 0783 Fax: 03 379 0594 Email: dls@dlsm.co.nz		
<b>Woodend East Limited</b> <b>Petries Road - Woodend</b>		
<b>Proposed Subdivision of</b> <b>Pt Lot 1 DP 33116</b>		
<b>Proposed Subdivision</b>		
SCALE: 1:750@A3 DATE: November 2011		
DAD FILE: J:\1779A\1779A SURCON.dwg		REVISION:
DRAWING NO: <b>C.17796</b>	SHEET NO:	<b>R0</b>



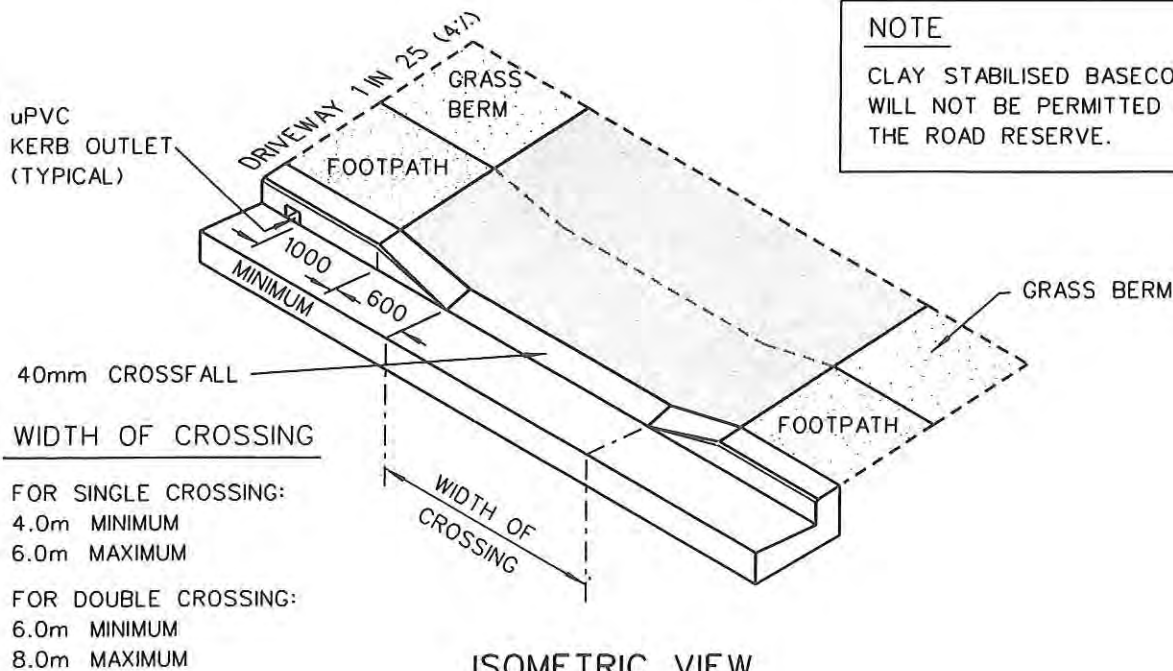
**WAIMAKARIRI DISTRICT COUNCIL**  
**APPROVED APPLICATION**

*RC 115-283*  
 23/08/12

*[Signature]*  
**AUTHORISED OFFICER**

**NOTE**

CLAY STABILISED BASECOURSE  
 WILL NOT BE PERMITTED WITHIN  
 THE ROAD RESERVE.



FOR SINGLE CROSSING:

4.0m MINIMUM  
 6.0m MAXIMUM

FOR DOUBLE CROSSING:

6.0m MINIMUM  
 8.0m MAXIMUM



**WAIMAKARIRI**  
 DISTRICT COUNCIL  
 technical services

NOT TO SCALE

SHEET TITLE

Typical Residential  
 Concrete  
 Vehicle Crossing  
 (Flat Channel)

PROJECT TITLE

Standard Drawings

SHEET

**211A**

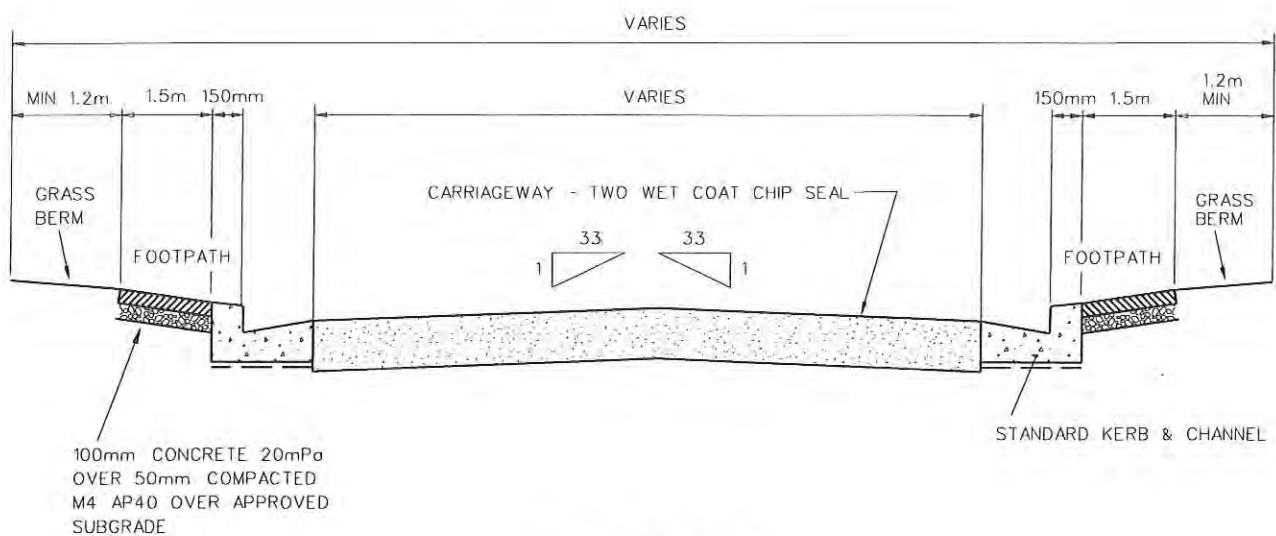
ISSUE  
 E

PLAN No.  
 600



## NOTES

- 1 Surfacing : Two wet coat hot bitumen and chip or 50mm AP 20 running course.
- 2 Basecourse : Minimum of 100mm TNZ M/4 AP40.
- 3 Subcourse : Minimum of 150mm TNZ M/5 AP65.
- 4 Refer DISTRICT PLAN Section 30 - Utilities & Traffic Management Table 30.1 for road dimensions
- 5 Footpath to have 1.5m useable width Location either against kerb or 300 from boundary, meandered paths are acceptable.
- 6 Only one footpath unless otherwise approved or required.



CROSS SECTION

**WAIMAKARIRI DISTRICT COUNCIL**  
**APPROVED APPLICATION**

RC/15283

23/08/12

*[Signature]*  
**AUTHORISED OFFICER**

NOT TO SCALE

SHEET TITLE

**TYPICAL ROAD  
& CUL-DE-SAC  
CROSS-SECTION**

PROJECT TITLE

**STANDARD  
DRAWINGS**

SHEET

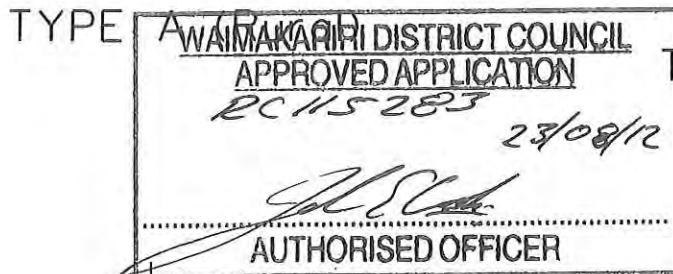
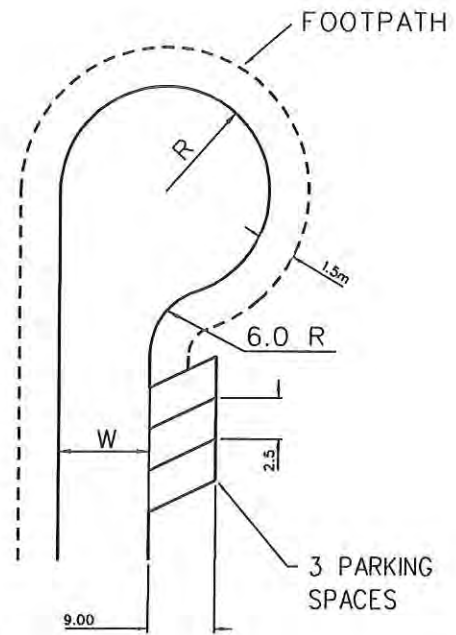
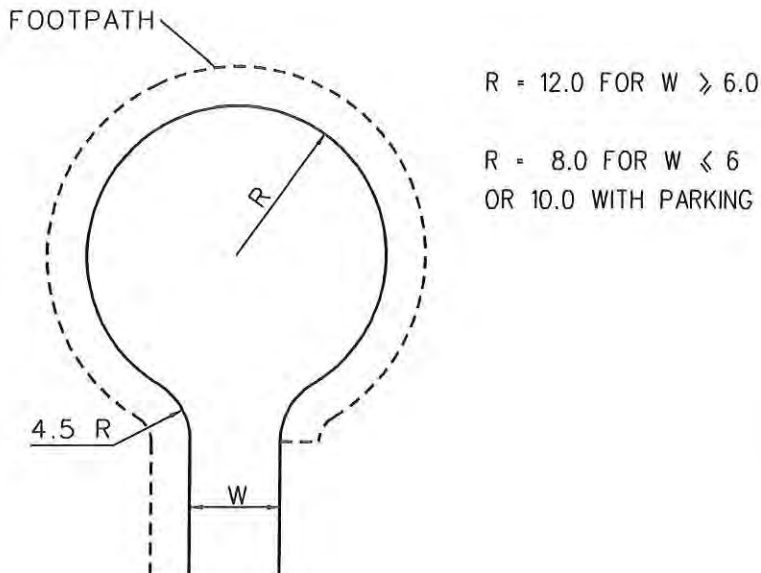
**272**

ISSUE  
D

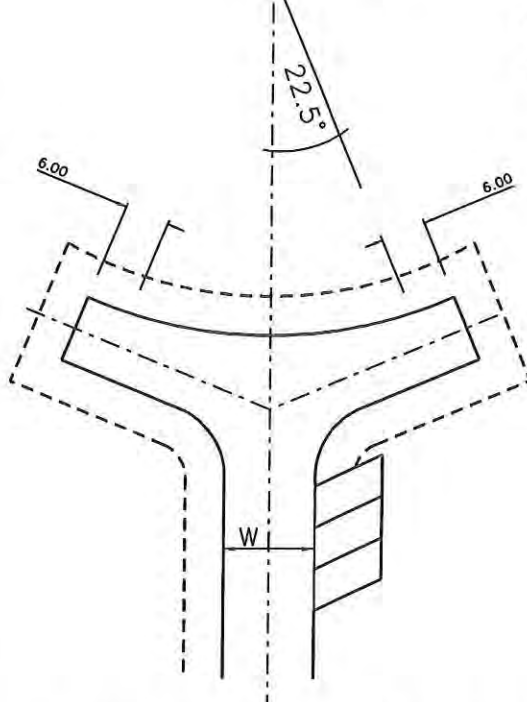
PLAN No.  
600



**WAIMAKARIRI**  
DISTRICT COUNCIL  
technical services



TYPE B (Residential)



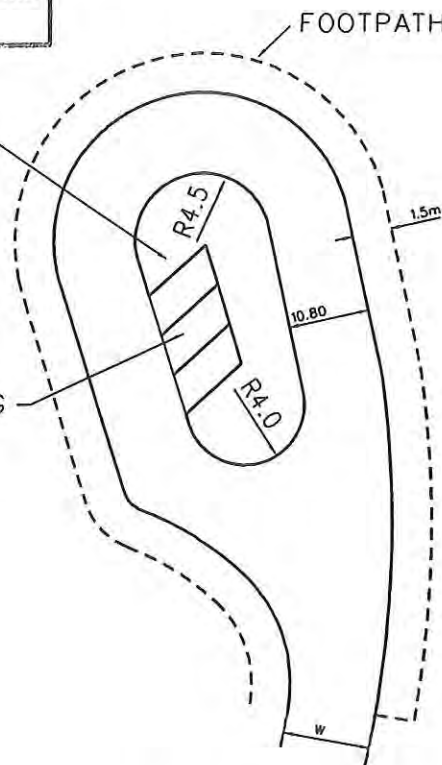
TYPE A (Residential)

 $W < 6.0$ 

MAXIMUM LENGTH OF CUL-DE-SAC 100m  
FOR RESIDENTIAL AND BUSINESS ZONES  
WITH THIS CONFIGURATION TURNING HEAD

MID ISLAND  
AREA = 80m<sup>2</sup>

3 PARKING  
SPACES



TYPE D (Residential)

 $W \leq 7.0$ 

NO 'PRIVATE WAYS' OFF THIS  
CONFIGURATION TURNING HEAD



WAIMAKARIRI  
DISTRICT COUNCIL  
technical services

NOT TO SCALE

SHEET TITLE

CUL-DE-SAC  
TURNING AREAS

PROJECT TITLE

STANDARD  
DRAWINGS

SHEET

275

ISSUE  
C

PLAN No.  
600



# TA Approvals

<b>Territorial Authority</b>	Waimakariri District Council TA Certification Division	<b>TA Reference</b>	115283
<b>Survey Number</b>	LT 500690	<b>Survey Purpose</b>	LT Subdivision
<b>Surveyor Reference</b>	GW-W Stg I	<b>Land District</b>	Canterbury
<b>Surveyor</b>	Paul Kevin Durkin		
<b>Surveyor Firm</b>	43below		
<b>Dataset Description</b>	Lots 1 to 22 and Lot 500 Being Subdivision of Part Lot 1 DP 33116		

## TA Certificates

The approval of the Council under Section 223 of the Resource Management Act 1991 is subject to the granting or reserving of the easement(s) set out in the Memorandum of Easements attached as a supporting document to plan LT 500690 ☒

I hereby certify that plan LT 500690 was approved by the Waimakariri District Council TA Certification Division pursuant to section 223 of the Resource Management Act 1991 on the 11th day of August 2016. ☒

## Signature

Signed by Yvonne Sally Fear, Authorised Officer, on 11/08/2016 01:51 PM

## Receipt Information

**Transaction Receipt Number** 10071145  
**Signing Certificate (Distinguished Name)** Fear, Yvonne Sally  
**Signing Certificate (Serial Number)** 1292528606  
**Signature Date** 11/08/2016

\*\*\* End of Report \*\*\*



# Title Plan - LT 500690

**Survey Number** LT 500690  
**Surveyor Reference** GW-W Stg I  
**Surveyor** Paul Kevin Durkin  
**Survey Firm** 43below  
**Surveyor Declaration**

## Survey Details

**Dataset Description** Lots 1 to 22 and Lot 500 Being Subdivision of Part Lot 1 DP 33116  
**Status** Initiated  
**Land District** Canterbury **Survey Class** Class A  
**Submitted Date** **Survey Approval Date**  
**Deposit Date**

## Territorial Authorities

Waimakariri District

## Comprised In

CT CB15F/286

## Created Parcels

Parcels	Parcel Intent	Area	CT Reference
Lot 1 Deposited Plan 500690	Fee Simple Title	0.0751 Ha	745443
Lot 2 Deposited Plan 500690	Fee Simple Title	0.0652 Ha	745444
Lot 3 Deposited Plan 500690	Fee Simple Title	0.0740 Ha	745445
Lot 4 Deposited Plan 500690	Fee Simple Title	0.0712 Ha	745446
Lot 5 Deposited Plan 500690	Fee Simple Title	0.0630 Ha	745447
Lot 6 Deposited Plan 500690	Fee Simple Title	0.0707 Ha	745448
Lot 7 Deposited Plan 500690	Fee Simple Title	0.0725 Ha	745449
Lot 8 Deposited Plan 500690	Fee Simple Title	0.0629 Ha	745450
Lot 9 Deposited Plan 500690	Fee Simple Title	0.0681 Ha	745451
Lot 10 Deposited Plan 500690	Fee Simple Title	0.0600 Ha	745452
Lot 11 Deposited Plan 500690	Fee Simple Title	0.0600 Ha	745453
Lot 12 Deposited Plan 500690	Fee Simple Title	0.0715 Ha	745454
Lot 13 Deposited Plan 500690	Fee Simple Title	0.0600 Ha	745455
Lot 14 Deposited Plan 500690	Fee Simple Title	0.0614 Ha	745456
Lot 15 Deposited Plan 500690	Fee Simple Title	0.0617 Ha	745457
Lot 16 Deposited Plan 500690	Fee Simple Title	0.0600 Ha	745458
Lot 17 Deposited Plan 500690	Fee Simple Title	0.0600 Ha	745459
Lot 18 Deposited Plan 500690	Fee Simple Title	0.0707 Ha	745460
Lot 19 Deposited Plan 500690	Fee Simple Title	0.0620 Ha	745461
Lot 20 Deposited Plan 500690	Fee Simple Title	0.0625 Ha	745462
Lot 21 Deposited Plan 500690	Fee Simple Title	0.0622 Ha	745463
Lot 22 Deposited Plan 500690	Fee Simple Title	0.0628 Ha	745464
Lot 500 Deposited Plan 500690	Vesting on Deposit for Road	0.2634 Ha	



# Title Plan - LT 500690

Created Parcels			
Parcels	Parcel Intent	Area	CT Reference
Area A Deposited Plan 500690	Easement		
Total Area		1.7009 Ha	

## Schedule / Memorandum



Territorial Authority

**Waimakariri District  
Council**

TA Reference: RC115284

Plan Number

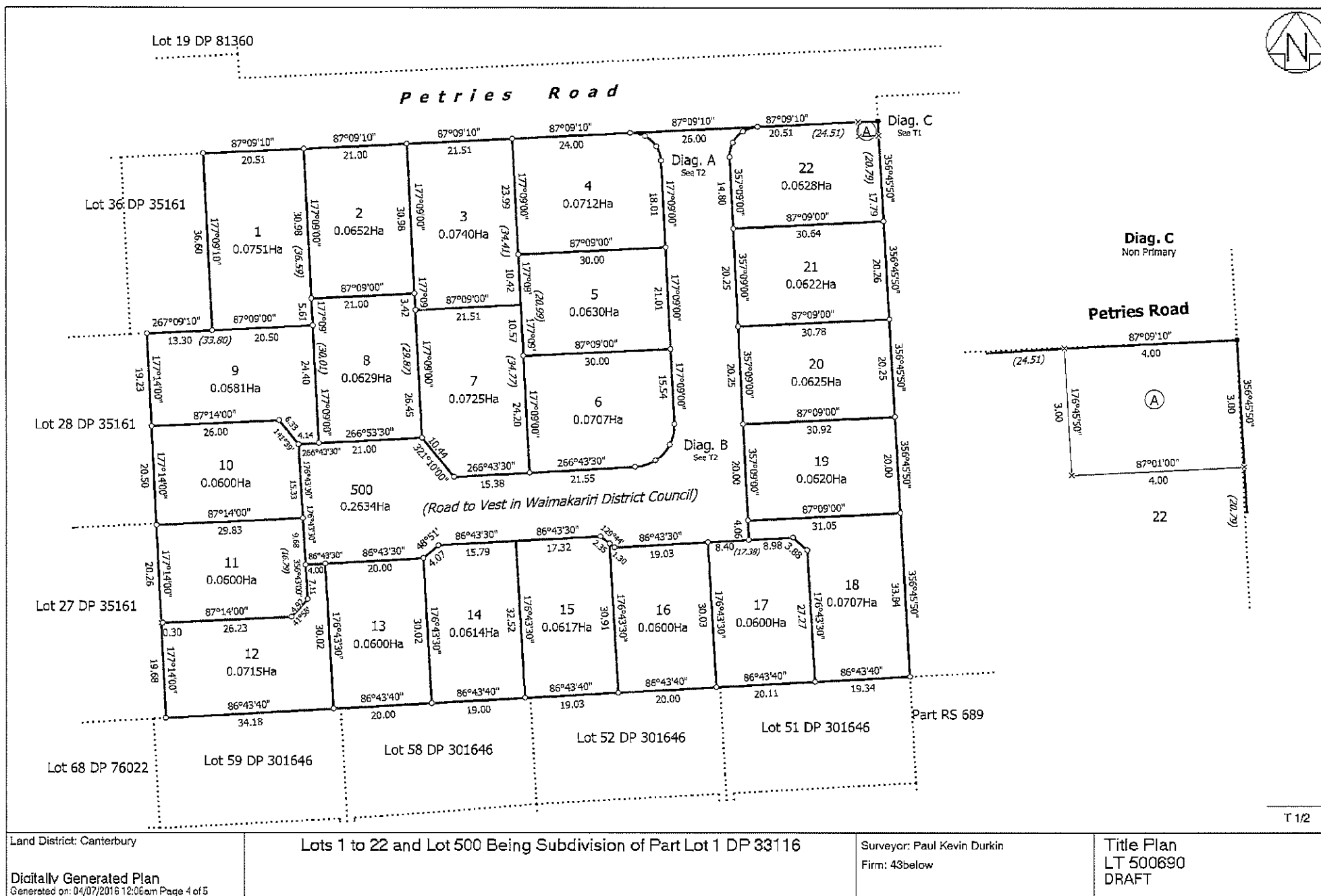
**DP 5 0 0 6 9 0**
**MEMORANDUM OF EASEMENTS IN GROSS**

PURPOSE	SERVIENT TENEMENT		GRANTEE
	Shown	Lot No.	
Right to Convey Electricity in Gross	A	Lot 22	MainPower New Zealand Ltd

Easements DP 500690

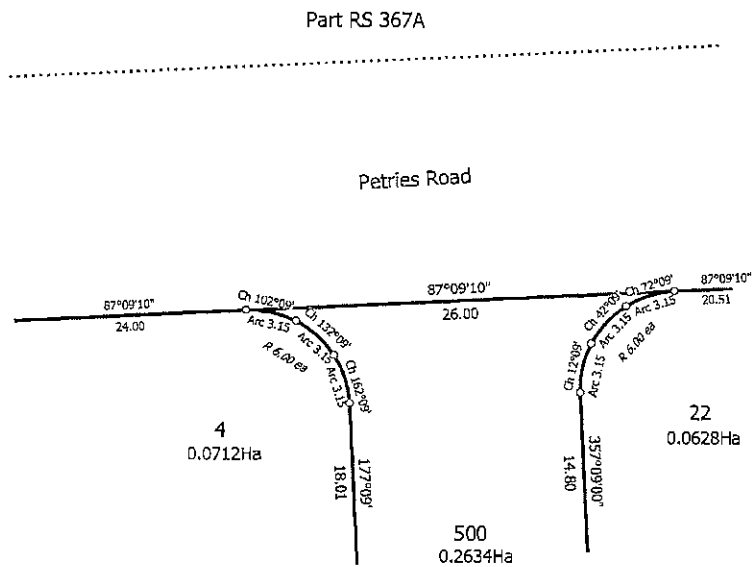
Page 1 of 1



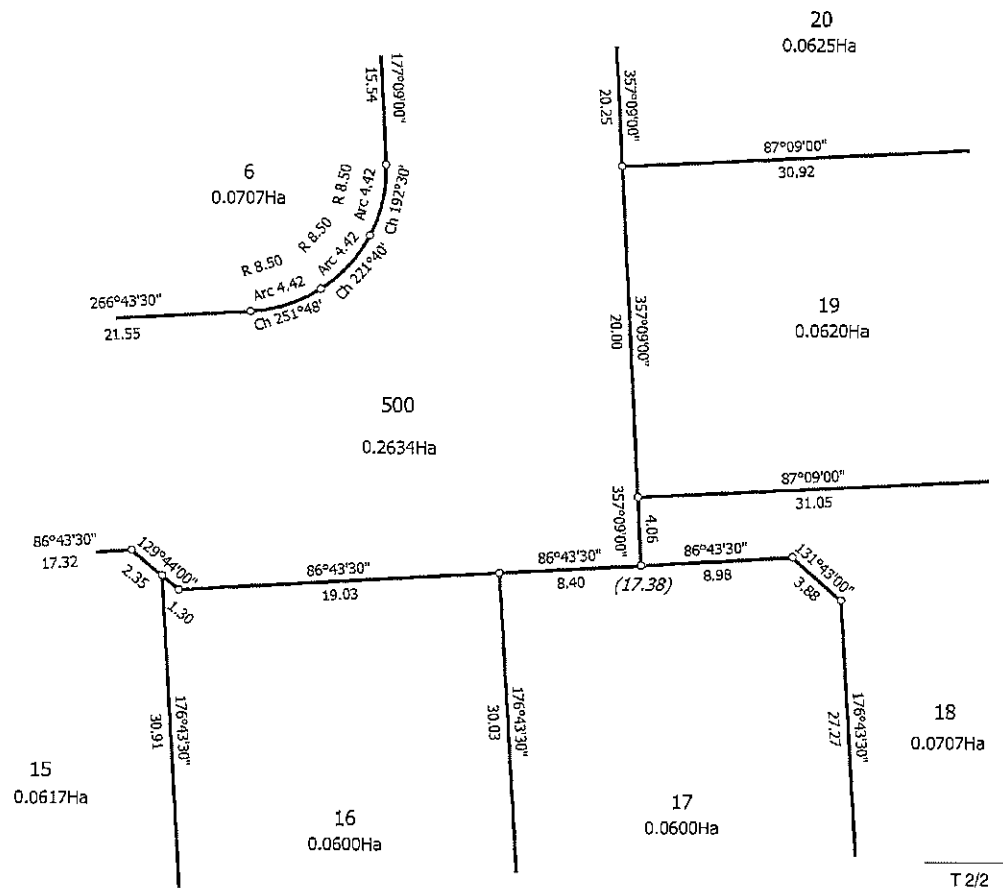




Diag. A



Diag. B



T 2/2

Land District: Canterbury

Lots 1 to 22 and Lot 500 Being Subdivision of Part Lot 1 DP 33116

Surveyor: Paul Kevin Durkin  
Firm: 43below

Title Plan  
LT 500690  
DRAFT

Digitally Generated Plan  
Generated on: 04/07/2016 12:06am Page 5 of 5



# TA Approvals

<b>Territorial Authority</b>	Waimakariri District Council TA Certification Division	<b>TA Reference</b>	115283
<b>Survey Number</b>	LT 500690	<b>Survey Purpose</b>	LT Subdivision
<b>Surveyor Reference</b>	GW-2Rds Stg I	<b>Land District</b>	Canterbury
<b>Surveyor</b>	Paul Kevin Durkin		
<b>Surveyor Firm</b>	43below		
<b>Dataset Description</b>	Lots 1 to 22 and Lot 500 Being Subdivision of Part Lot 1 DP 33116		

## TA Certificates

Pursuant to Section 224(c) Resource Management Act 1991 I hereby certify that some of the conditions of the subdivision consent have been complied with to the satisfaction of the Waimakariri District Council TA Certification Division and that ☒ a bond has been entered into in respect of those conditions that have not been complied with. Dated this 29th day of September 2016.

## Signature

Signed by Yvonne Sally Fear, Authorised Officer, on 29/09/2016 09:32 AM

## Receipt Information

<b>Transaction Receipt Number</b>	10199547
<b>Signing Certificate (Distinguished Name)</b>	Fear, Yvonne Sally
<b>Signing Certificate (Serial Number)</b>	1292528606
<b>Signature Date</b>	29/09/2016

\*\*\* End of Report \*\*\*

RC165238/160922097969

2161105700

**WAIMAKARIRI DISTRICT COUNCIL****IN THE MATTER** of the Resource Management Act 1991**AND****IN THE MATTER** of an application lodged by **GW Woodend Limited** for a resource consent under Section 88 of the aforementioned Act.**APPLICATION**

The applicants sought a resource consent for a variation to Condition 14.3 of RC115283 which requires the applicant to construct a temporary stormwater management area on Lots 21 and 22 which is to be maintained until such time that the wider stormwater management system for Woodend becomes operational.

The application is to amend condition 14.3 to allow for stormwater to discharge to an existing grass swale within the Petries Road reserve, in order to allow for the development of Lots 21 and 22.

**DECISION**

The Plan Implementation Manager, on the 15<sup>th</sup> September 2016, approved:

**THAT** pursuant to section 127 of the Resource Management Act 1991, consent be granted to vary conditions 14.1 and 14.3, and add new Condition 14.4 to subdivision consent RC115283, being consent to subdivide Lot 1 DP 33116 into 22 residential lots and Lot 23 (as road to vest) at 29 Petries Road, Woodend as follows:

**Amend Condition 14.1 to read as follows:**

- 14.1 In the event that the wider stormwater management system for Woodend is not operation prior to the issue of a 224c certificate, the consent holder shall, at their cost, construct a temporary stormwater system in the Petries Road reserve to provide temporary detention for the critical volume generated in a 2 hour storm. This is based on the first flush volume filling first to 174m<sup>3</sup>, an additional storm volume discharging at a restricted flow of 40l/s and an additional volume of 128m<sup>3</sup> which gives a detention volume of 302m<sup>3</sup>. The discharge shall be piped to the existing open drain on the southern side of Petries Road.

**Retain Condition 14.2****Amend condition 14.3 to read as follows:**

- 14.3 Within 3 months of the Woodend stormwater management system becoming operational the consent holder shall disconnect the temporary stormwater management area in Petries Road and connect to the Woodend stormwater management system. For the purpose of this condition an operational



connection is considered to be the establishment of a stormwater management area on 79 Petries Road as shown on District Plan Map 153.

**Add new Condition 14.4 to read as follows:**

- 14.4 Prior to the issue of the 224c certificate the consent holder shall provide, to the satisfaction of Council, a schedule of quantities to complete the works required by Condition 14.3 and shall lodge with the Council a bond equivalent to 150% of the value of the works.

**All other consent conditions and advice notes remain.**

**REASONS FOR DECISION**

Pursuant to Section 113 of the Act the Council was satisfied that:

- Petries Road already contains stormwater infrastructure, and as a result, the land use established in the vested road will not alter. I consider that the proposal is not contrary to the objectives and policies of the District Plan.
- No person is deemed to be affected by the proposal.
- The proposed works will allow for the disposal of stormwater away from adjoining privately owned properties

DATED at Rangiora this 22<sup>nd</sup> Day of September 2016



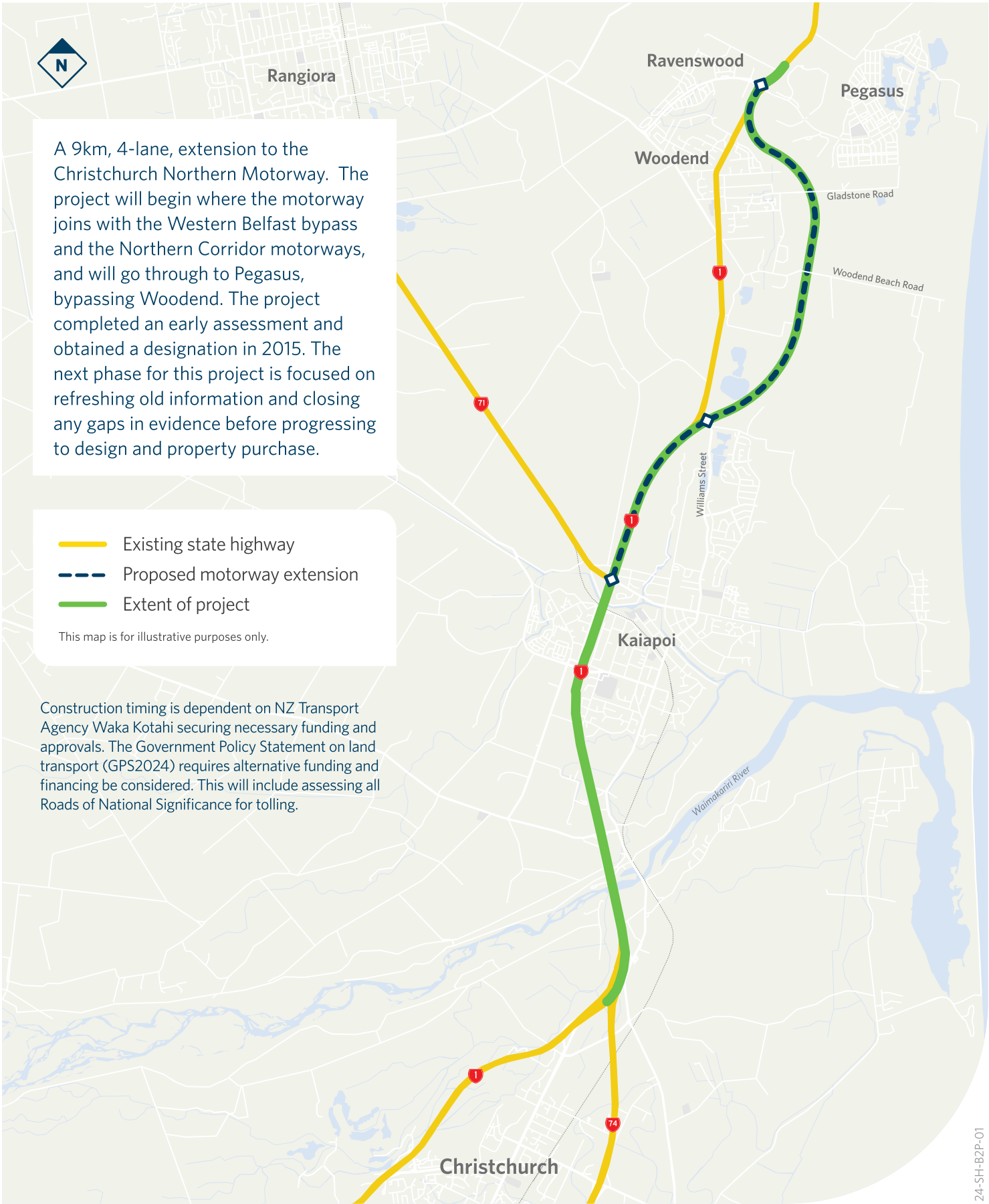
SIGNED by Matthew Bacon  
**RESOURCE MANAGEMENT PLANNER**





Note: NZ Topographic data is created at a 1:50,000 scale and when viewed at smaller scales such as 1:2,000 the inaccuracies of position are seen. This is normal and is to do with the fact the data was created as a general dataset to be used at 1:50,000.





# Form 7

## Code Compliance Certificate **BC171675**

### Section 95, Building Act 2004

#### The building

Street address of building: 5 Catchpole Place WOODEND

Legal description of land where building is located: LOT 20 DP 500690 0.062500 Ha

Valuation number: 2161105720

Building name:

Location of building within site/block number:

Level/unit number: 1

Current, lawfully established, use: Housing - Detached dwellings

Year first constructed: 2018

#### The owner

Name of owner: James Foote & Ruqiah H Foote

Contact person: James Foote

Mailing address: 23 Grahams Road Christchurch 8041

Phone number: Landline: Mobile:0221377007

Email address:

First point of contact for communications with the council/building consent authority: GJ Gardner Homes

#### Building work

Building consent number: BC171675

Consent description: DWELLING WITH ATTACHED GARAGE 5 CATCHPOLE PLACE WOODEND LOT 20 DP 500690

Issued by: Waimakariri District Council

#### Code compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent



Sarah Smith  
Building Consent Administrator

On behalf of Waimakariri District Council  
Date: 01 May 2018



LEGAL DESCRIPTION

Lot: 20  
DP: 500690  
Site area: 625m²

HARD SURFACE DRAINAGE

Convey surface water from sealed driveway areas to approved outfall / away from any building & neighbours boundaries. Falls from paths should be directed away from any buildings & neighbours boundaries. Driveway @ 1:100 fall min.

PLANNING

Living zone: Waimak Residential 2  
Site coverage area (Only): 181.29m²  
Site coverage: 29.01%

ZONES

Earthquake: Zone 2  
Wind: High  
Corrosion: Zone C  
Altitude above sea: 10m

NOTES

- All dimensions taken to foundation edge unless otherwise stated
- Existing tree inside the property

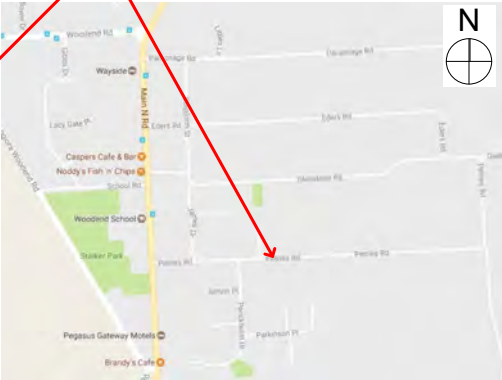
SEDIMENT CONTROL

- All adjacent groundcover to be retained in building phase
- Sediment fence (filter fabric) preventing run off from excavation & gravel washdown where required.
1. To boundaries and street frontage
  2. Containing surplus soils & gravel
- Downpipes to be connected as soon as roof fitted & drains laid. Temporary arrangements are to be made when exterior claddings are not fitted
- Construction supervisor to oversee sediment control
- Stockpiles of clay material to be covered with impervious material

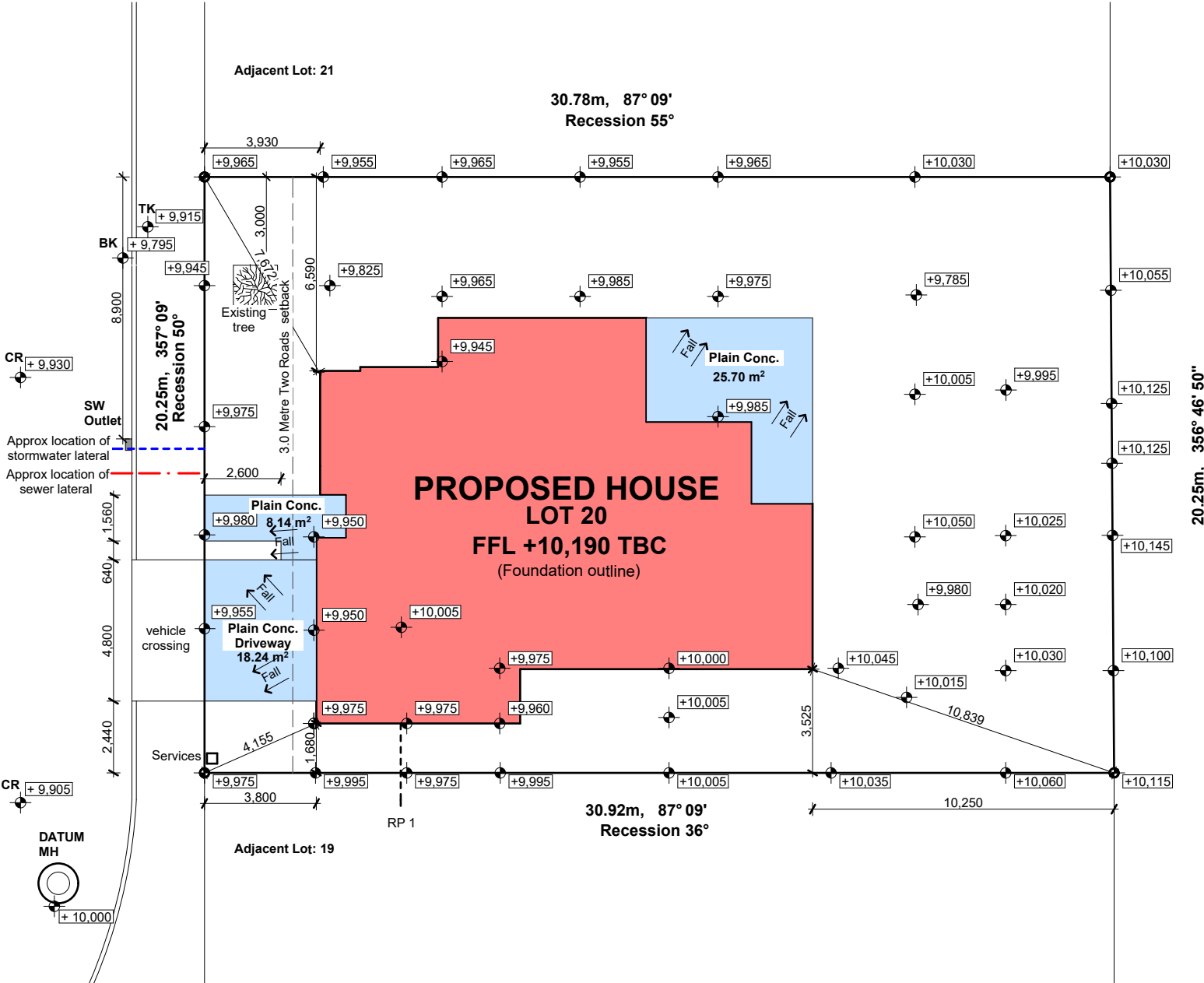
WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
171675 10/11/2017 nicolah



1 Location Plan NTS



CATCHPOLE PLACE



2 Site Plan 1:200

G.J. Gardner. HOMES

Copyright - This drawing remains the property of G.J. Gardner Homes and is provided for the use described above and may not be used or reproduced in whole or in part without written permission

AG and LM McCarthy Ltd  
Canterbury North Franchisee for  
G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
www.gjgardner.co.nz

James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

Site Plan

Job No: 6500470  
Sheet Size: A3  
Scale: 1:200  
Drawn: JJU  
Cad File: Foote V20.pln  
Printed: 21/09/2017

KEY

- ☒ Gully trap
- TV 80mm Ø terminal vent
- IP Inspection point
- DP Down pipe
- ORG Overflow relief gully
- AAV Air admittance valve

Laterals

Drainlayer to confirm existing foul drain & stormwater lateral position & depth on site before any work commences, to ensure correct falls can be achieved. Pipes to be 100mm min Ø

Min. Drains clearance to floor slab

All drains under floor slab to have 50mm min. clearances to underside of floor slab. Drains to be laid straight with even gradient along length of drain

Acceptable solution

NZBC G13 AS1 Sanitary plumbing  
NZBC G13 AS2 Drainage

Kitchen gully

Connection to gully by strap boss on gully riser above water trap

Vanity/ Laundry stiffners

For plumbing systems ducting through wall at vanity/ laundry reinforced by lumberlok stiffner (stud/plate)

Underground drainage

- Foul water drain 100mm Ø min. 1:120 fall
- Stormwater drain 90mm/100mm Ø min. 1:120 fall

In-slab waste pipes

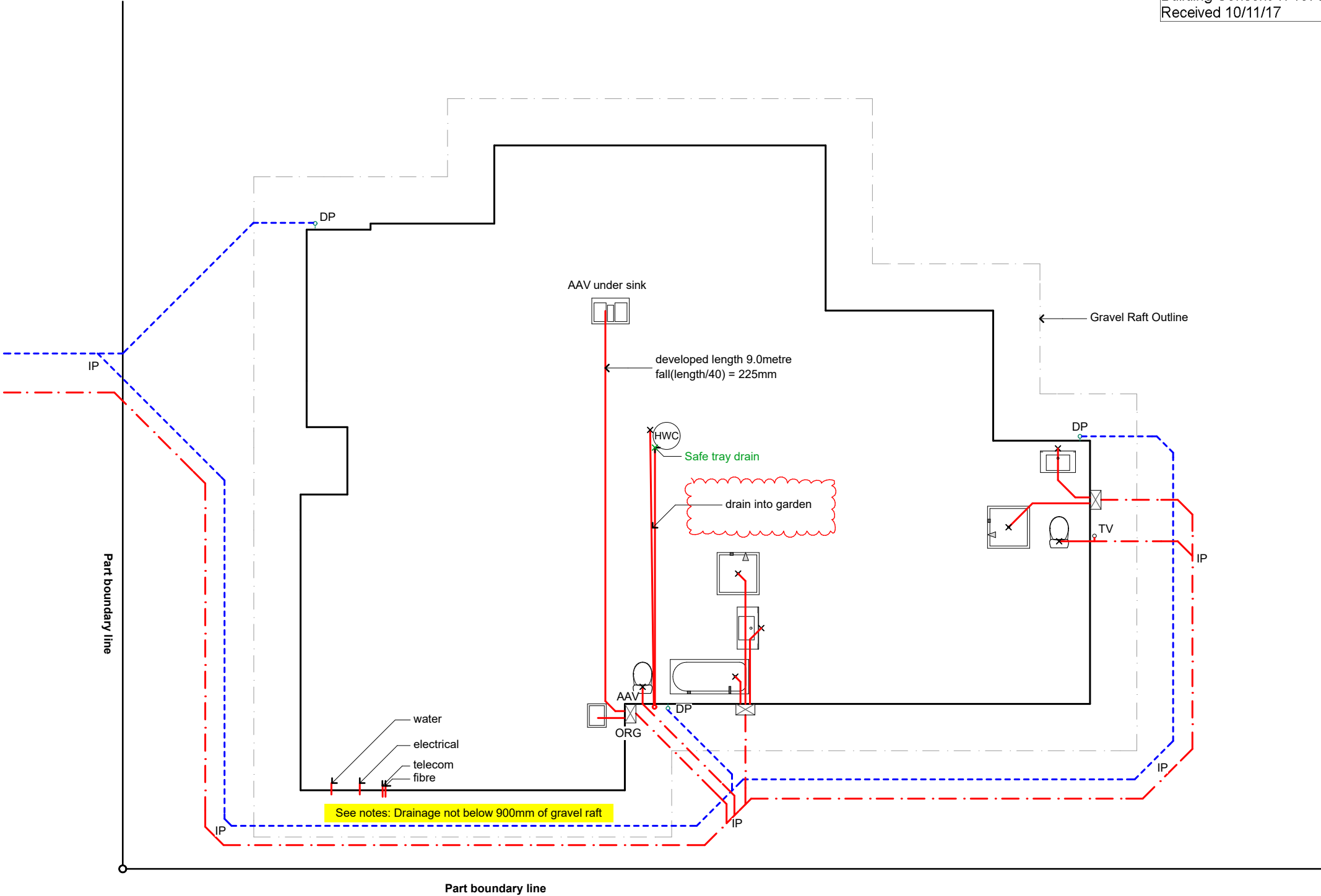
- Vanity, bath, shower 40mm Ø min. 1:40 fall
- Laundry 40mm Ø min. 1:30 fall
- Kitchen & dishwasher wastes 50mm Ø min. 1:40 fall
- WC waste 100mm Ø min. 1:60 fall
- HWC drain 22mm Ø min. copper
- HWC Safe Tray 40mm Ø min. uPVC

Mini soak pit

Approx. 100mm diameter imbeded 500mm into ground with gravel filled and covered top to prevent vermin access. Size and depth determined by drainlayer on site.

NOTES

Drainage pipe can penetrate through gravel raft, but not geogrid which is 900 below the top of gravel raft.



WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
171675 10/11/2017 nicolah

G.J. Gardner.

HOMES

Copyright - This drawing remains the property of G.J. Gardner Homes and is provided for the use described above and may not be used or reproduced in whole or in part without written permission

AG and LM McCarthy Ltd  
Canterbury North Franchisee for  
G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgeware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
www.gjgardner.co.nz

James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

Plumbing & Drainage Plan
















Job No: 6500470  
Sheet Size: A3  
Scale: 1:100  
Drawn: JJu  
Cad File: Foote V20.pln  
Printed: 3/11/2017





Roof:	217.11 m <sup>2</sup>
Over cladding:	179.47 m <sup>2</sup>
Over foundation:	179.40 m <sup>2</sup>
Over framing:	172.67 m <sup>2</sup>
Inside framing:	167.10 m <sup>2</sup>

## KEY

- |   |  |
|---|--|
|  | Meter box                                    |
|  | Switchboard                                  |
|  | Data box<br>(Only if Required)               |
|  | Hose tap                                     |
|  | Smoke detector<br>(With test & hush buttons) |
|  | Extract fan (Vent to soffit)                 |
|  | Exterior framing                             |
|  | Interior framing                             |
|  | Thermal break<br>(Insulated to NZBCH1)       |
|  | Sound insulation                             |
|  | Axon   |
|  | Brick  |
|  | Vinyl planking                               |
|  | Downpipe                                     |
|  | Shower Rose                                  |

## FRAMING

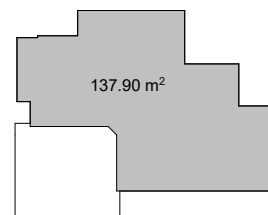
- 90 x 45mm Studs @ 600 centres
- 2 rows of dwangs @ 800 centres
- Lintels as per truss plan
- Double studs under all concentrated point loads
- Refer to truss plan for specific location
- Tieup straps placed horizontally between dwangs @ 300 crs.

## ENTRY

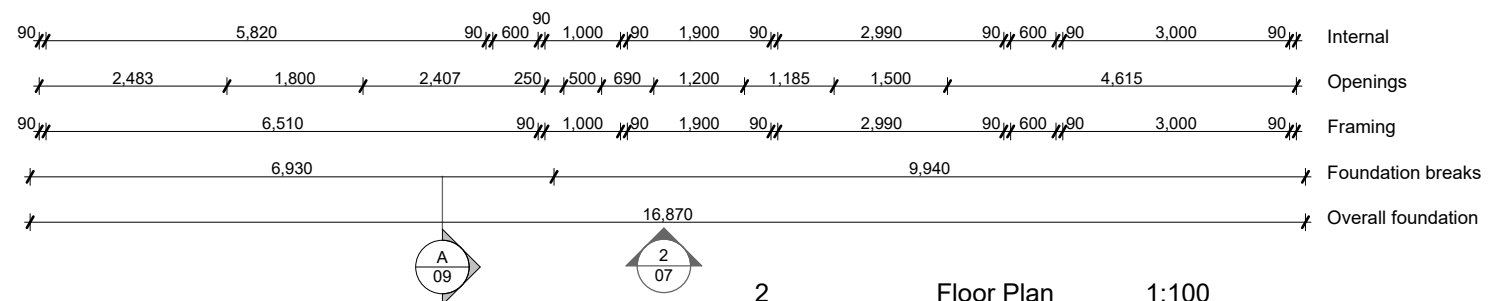
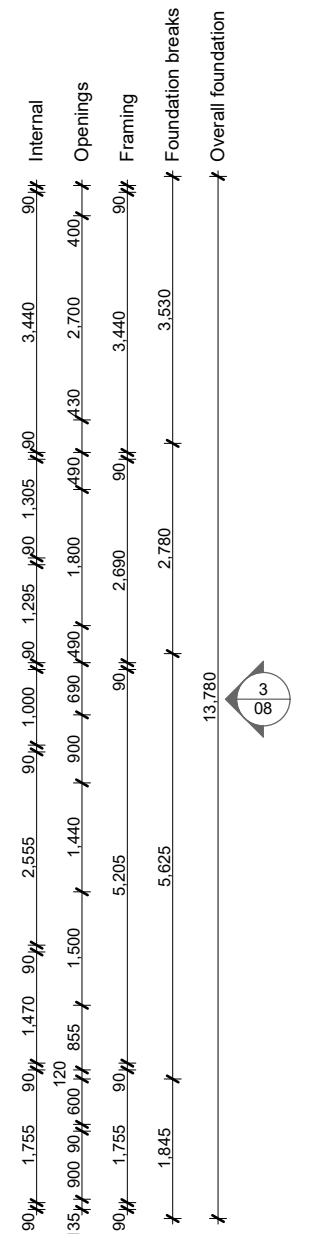
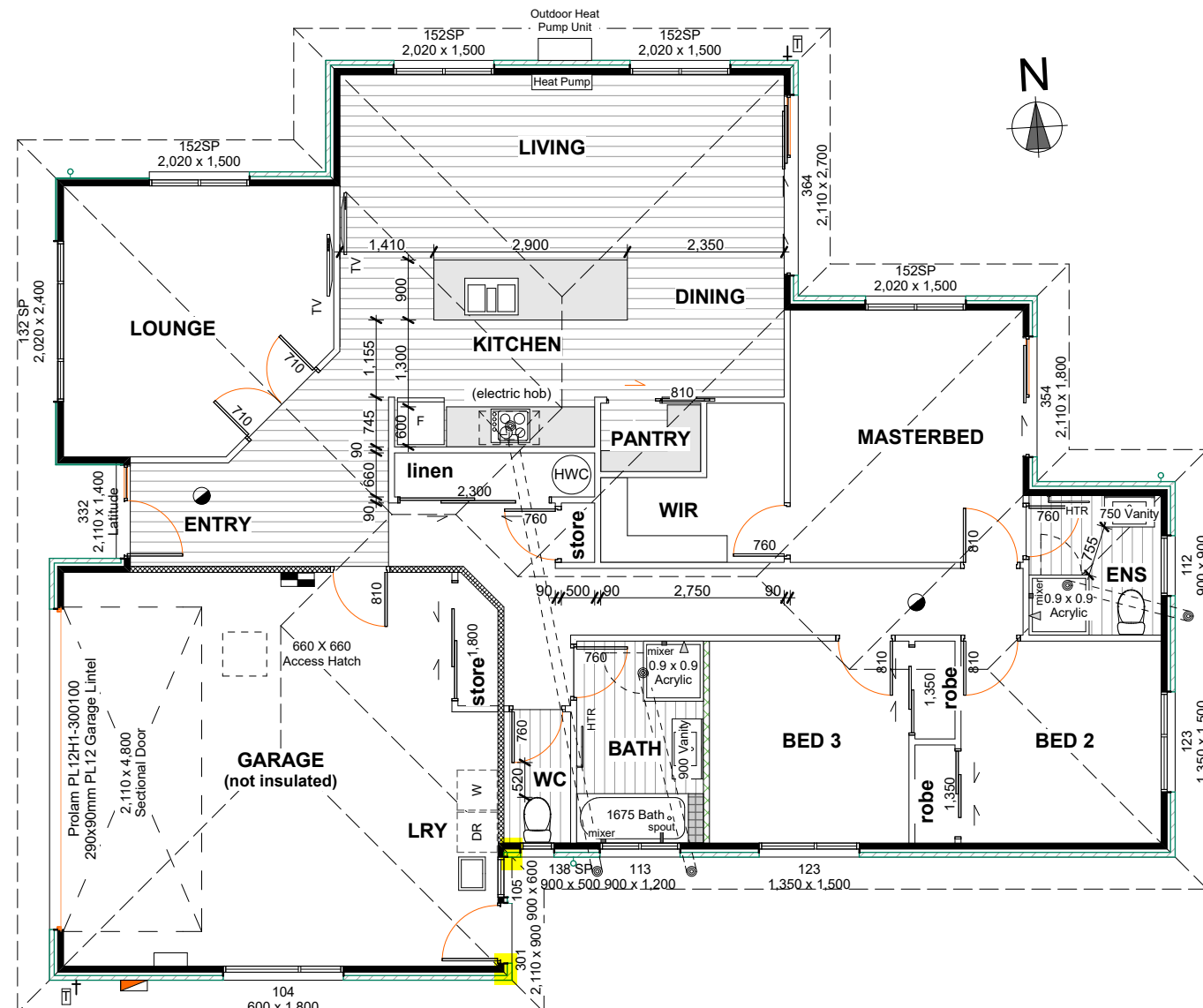
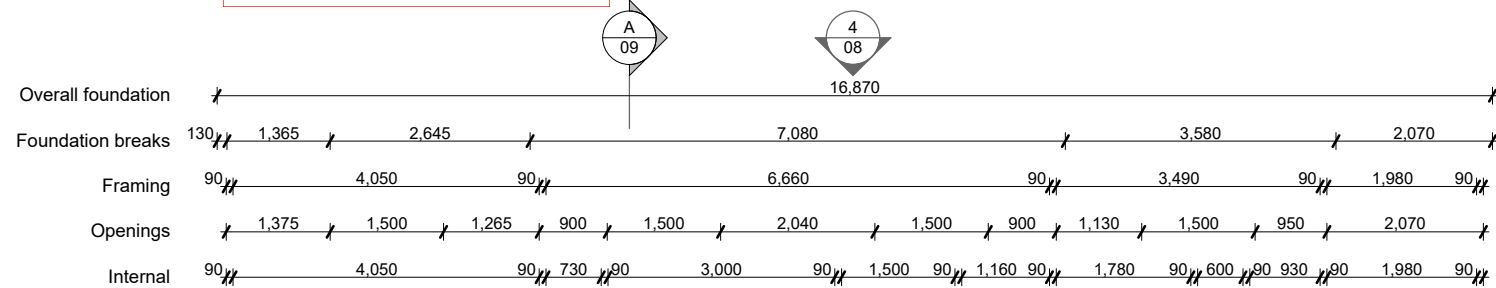
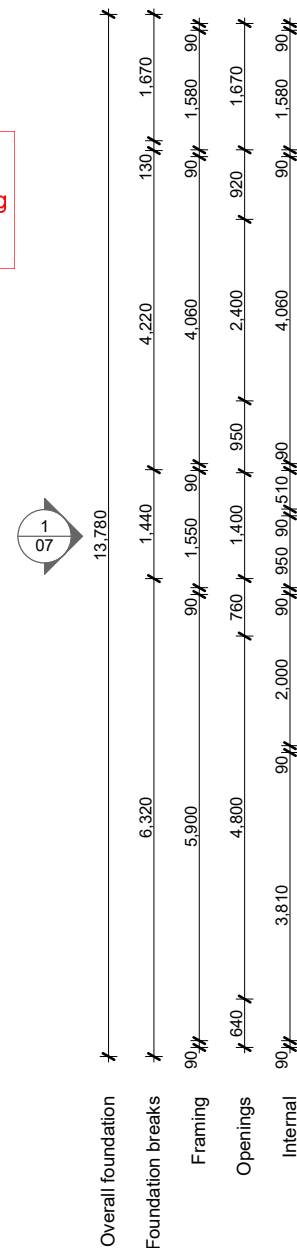
Minimum slip resistance to paths, steps & landings to be in accordance with NZBC D1/AS1 - Table 2. Unless otherwise stated H5 timber step(s) to all access points (owner's care), min 150mm below FFL, maximum 190mm high step.

## NOTES

Axon panel framing overhang 10mm from the foundation. (See detail 4 on Sheet 10)



WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
171675 10/11/2017 nicolah



1 H1 Area 1:500

**G.J. Gardner. HOMES**

Copyright - This drawing remains the property of G.J. Gardner Homes and is provided for the use described above and may not be used or reproduced in whole or in part without written permission

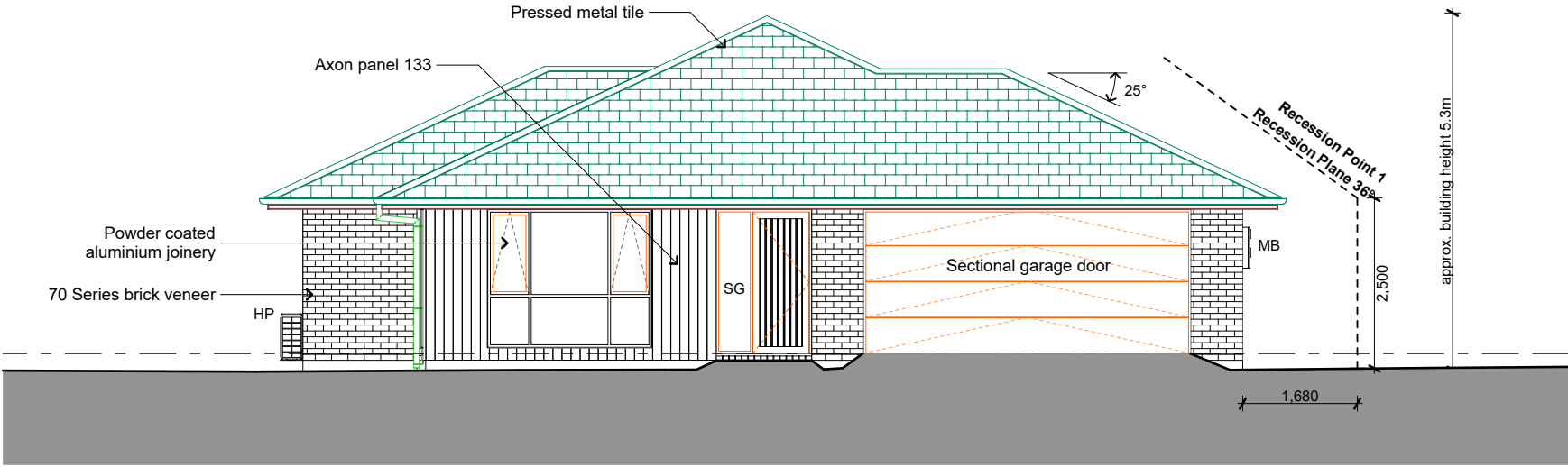
AG and LM McCarthy Ltd  
Canterbury North Franchisee for  
G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgeware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
[www.gjgardner.co.nz](http://www.gjgardner.co.nz)

James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

### Ground Floor Plan

Job No: 6500470  
Sheet Size: A3  
Scale: 1:100, 1:500  
Drawn: JJu  
Cad File: Foote V20.pln  
Printed: 21/09/2017

BUILDING ENVELOPE RISK MATRIX		
Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Low risk	0
Envelope complexity	Medium risk	1
Deck design	Low risk	0
Total Risk Score:		2

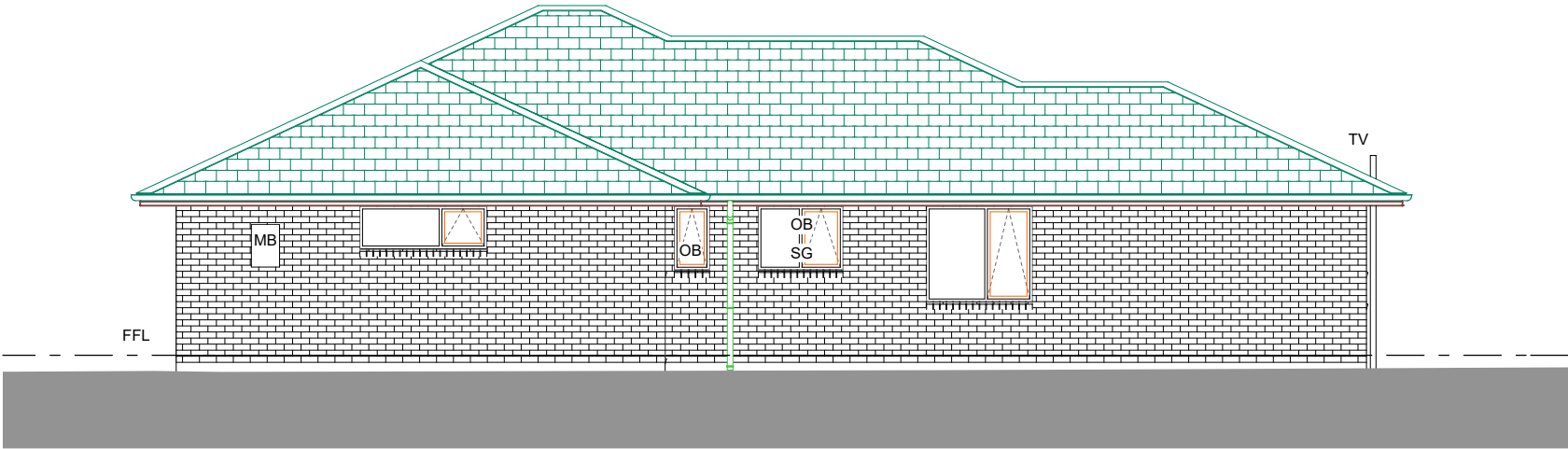


KEY

- FFL Finished floor level
- MB Meter box
- OB Obscure glass
- SG Safety glass
- HP Heat pump - on metal brackets
- TV Terminal vent

BUILDING ENVELOPE RISK MATRIX		
Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		1

WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
171675 10/11/2017 nicolah



G.J. Gardner. HOMES

Copyright - This drawing remains the property of G.J. Gardner Homes and is provided for the use described above and may not be used or reproduced in whole or in part without written permission

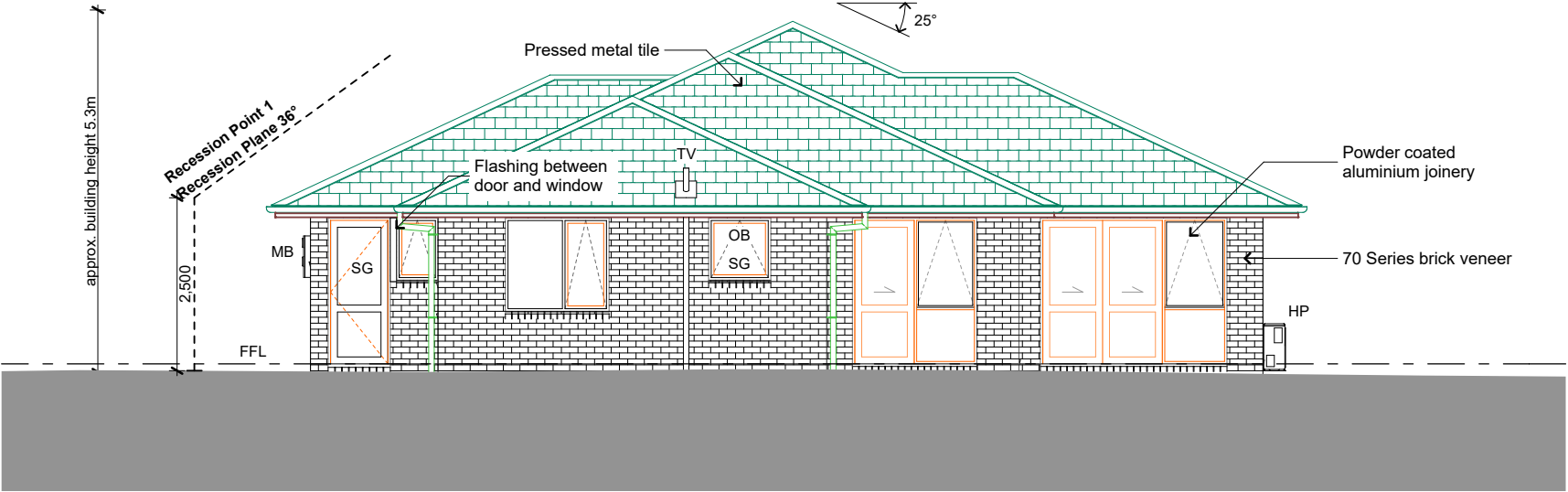
AG and LM McCarthy Ltd  
Canterbury North Franchisee for  
G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
www.gjgardner.co.nz

James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

Elevations

Job No: 6500470  
Sheet Size: A3  
Scale: 1:100  
Drawn: JJU  
Cad File: Foote V20.pln  
Printed: 21/09/2017

BUILDING ENVELOPE RISK MATRIX		
Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		1



KEY

- FFL Finished floor level
- MB Meter box
- OB Obscure glass
- SG Safety glass
- HP Heat pump - on metal brackets
- TV Terminal vent

BUILDING ENVELOPE RISK MATRIX		
Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		1



WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
171675 10/11/2017 nicolah

G.J. Gardner. HOMES

Copyright - This drawing remains the  
property of G.J. Gardner Homes and is  
provided for the use described above  
and may not be used or reproduced in  
whole or in part without written permission

AG and LM McCarthy Ltd  
Canterbury North Franchisee for  
G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgeware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
www.gjgardner.co.nz

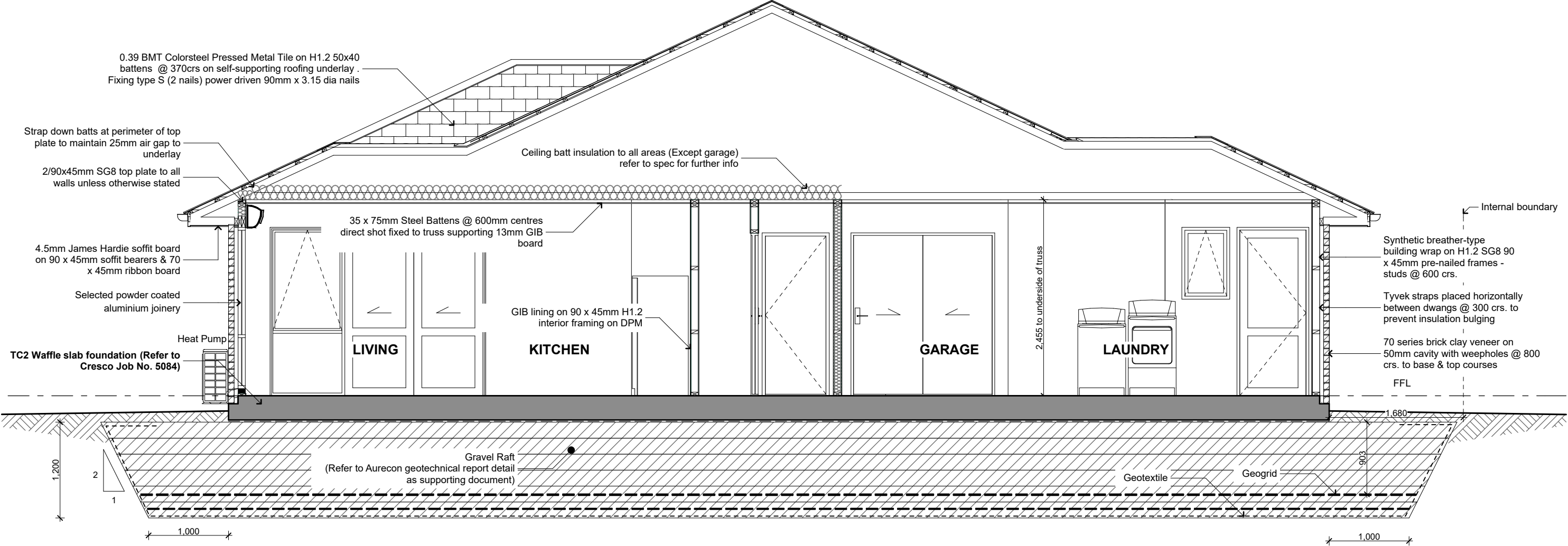
James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

Elevations

Job No: 6500470  
Sheet Size: A3  
Scale: 1:100  
Drawn: JJU  
Cad File: Foote V20.pln  
Printed: 21/09/2017



Refer to technical spec for full details of materials, insulation, linings etc



WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3  
171675 10/11/2017 nicolah

	Specific schedule of timber treatment			
	Element	Species	Treatment	Element
1	Exterior wall framing (Refer to NZS 3604 for clarification)	Radiata pine	H 1.2	<div>All timber used to be treated as required by NZS 3602. This table is intended as a summary of these requirements only.</div> <div>Treatment levels shown are the minimum level required. Higher treatment levels may be used if appropriate</div> <div><b>Timber type</b> All wall framing = SG 8 Lintels = SG 8 Trusses = SG 8</div>
2	Interior wall framing	Radiata pine or douglas fir	H 1.2	
3	Wall cavity battens	Radiata pine	H 3.1	
4	External door & window reveals	Radiata pine dressing grade	H 3.1	
5	Exposed beams	Radiata pine	H 3.2	
6	Purlins/battens	Radiata pine	H 1.2	
7	Roof framing	Radiata pine or douglas fir	H 1.2	
8	Exposed roof framing	Radiata pine or douglas fir	H 3.2	
9	Posts	Laminated	H 5	

G.J. Gardner.

HOMES

Copyright - This drawing remains the property of G.J. Gardner Homes and is provided for the use described above and may not be used or reproduced in whole or in part without written permission

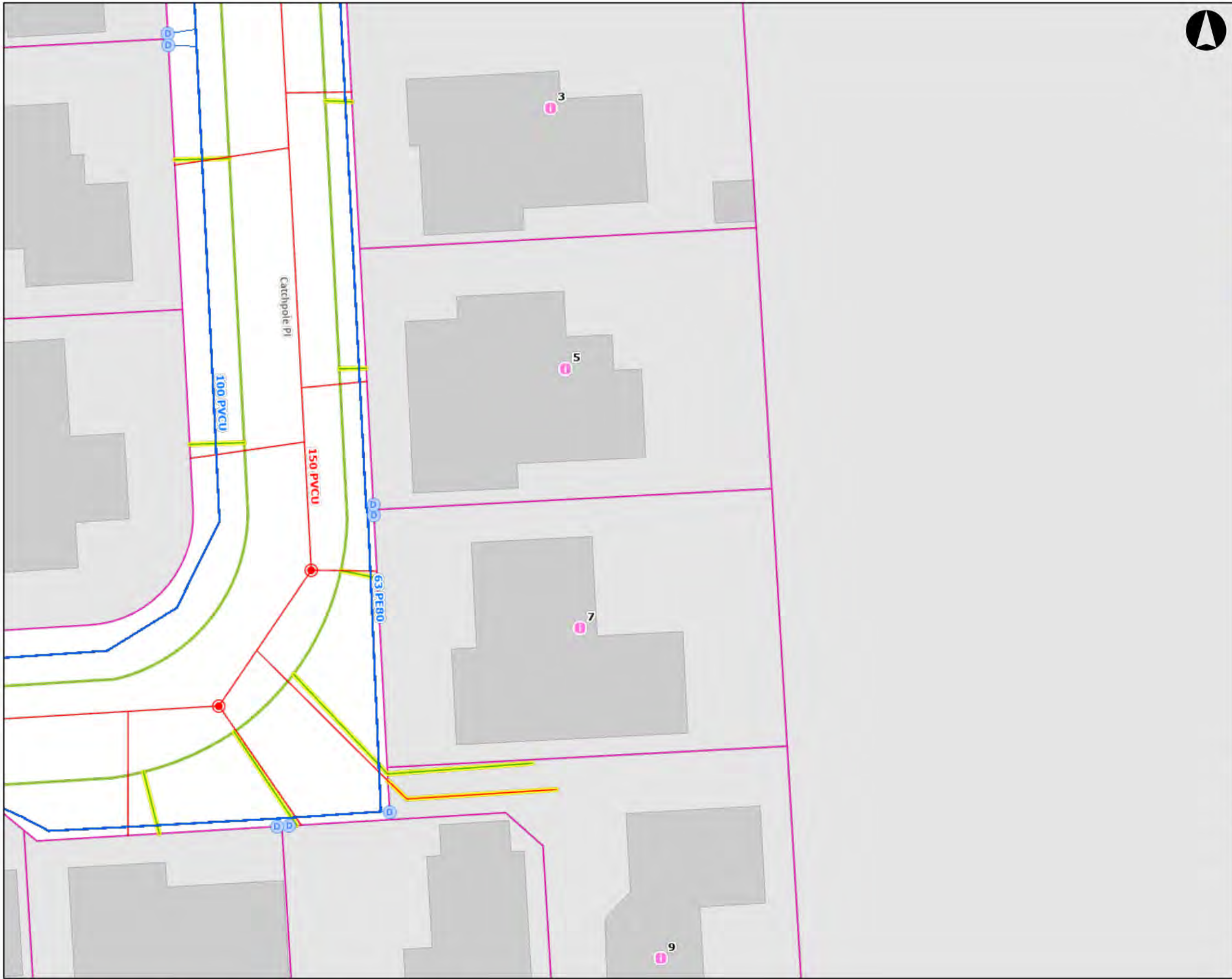
AG and LM McCarthy Ltd  
Canterbury North Franchisee for G.J.Gardner Homes  
293 Cranford St, St Albans  
PO Box 21382, Edgeware 8143  
Christchurch  
P 03 323 9154  
F 03 323 9164  
www.gjgardner.co.nz

James & Kiah Foote  
5 Catchpole Place, Two Roads  
Waimakariri

Section A

Job No: 6500470  
Sheet Size: A3  
Scale: 1:50  
Drawn: JJU  
Cad File: Foote V20.pln  
Printed: 21/09/2017

09



**Legend**

LM2501283 - 16/07/2025 Page 44

Water Service Connections  
On Demand Water Connection

Water Service Lines  
Water Network Mains & Facility Pipes

**Wastewater Chambers - Detailed**

Manhole Chamber

Wastewater Service Lines

**Wastewater Network Mains, Facility Pipes & Culverts**

**Pipe Type**

Pressure, Gravity, Not Yet Defined

Wastewater PRIVATE Ownership Pipes

Stormwater Service Lines

Stormwater - PRIVATE Ownership Pipes

**Unverified Assets - Lines**

Drainage Unverified Asset

Properties < 1 ha

**Property Boundaries with Attributes**

Current Property

Deposited Land Parcels

Road Names

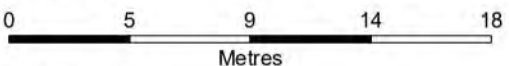
debbie.walls@wmk.govt.nz

Waimakariri District Council

Date: 16/07/2025

Scale 1:282

Original page size: A3



**Disclaimer:**

Land and property boundary information is sourced from and derived using Land Information New Zealand (LINZ) Land Parcels licensed for re-use by LINZ under the Creative Commons Attribution 4.0 International licence. The Waimakariri District Council does not give and expressly disclaims any warranty as to the accuracy or completeness of this information or its fitness for any purpose. Information on this map may not be used for legal disputes and should be independently verified before taking any action reliant upon it.

**Credits:**

Waimakariri District Council, Land Information New Zealand,  
Waimakariri District Council, Waimakariri District Council





WAIMAKARIRI  
DISTRICT COUNCIL

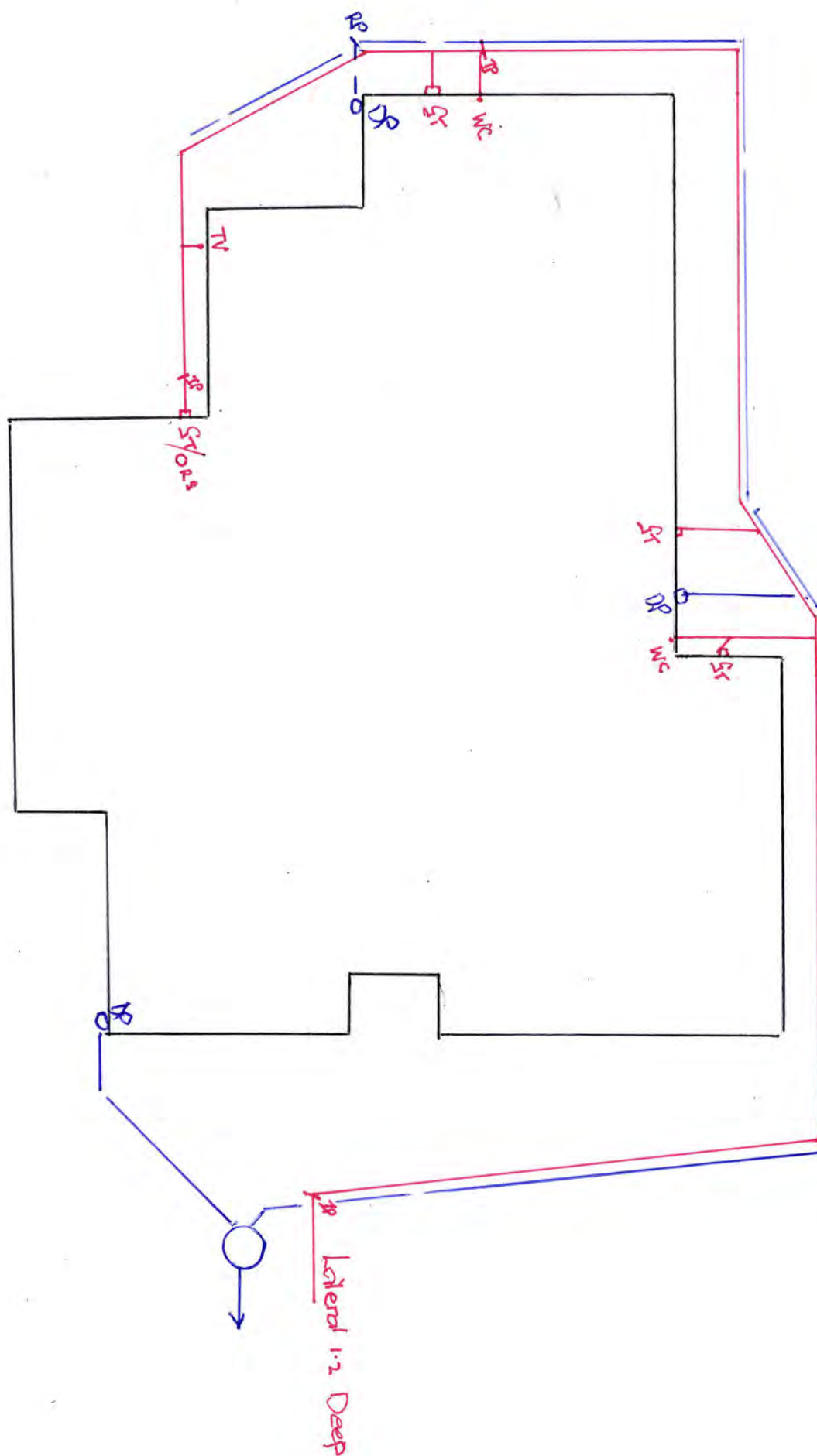
215 High Street, RANGIORA  
Tel. 03 311 8900  
Fax. 03 313 4432

LM2501283 16/07/2025 Page 45

TRIM Record Number



180607063010  
BC171675.02



LEGEND: SEWER — STORMWATER —		DRAINAGE PLAN	
SCALE: 1-100	DRAWN BY: Les Crosswell	JOB N°: 171675	VAL N°: 2161105720
NAME: J. & R. Foote		INSPECTED: L.B.	DATE DRAWN: 3. 5. 18
ADDRESS: 5 Catchpole Place Woodend			
DRAINLAYER: F. Newfield 08059			

QS-E205-AF 09/01 (1st)






## Legend

LM2501283 16/07/2025 Page 46

 Land Parcel

 Property Boundary

NZS3604:2011

 High 44 MS

NZS3604:2011

## ZONE

 2

Author: Debbie Walls

Date: 16/07/2025

Scale 1:297

Original page size: A4



## Disclaimer:

Land and property boundary information is sourced from and derived using Land Information New Zealand (LINZ) Land Parcels licensed for re-use by LINZ under the Creative Commons Attribution 4.0 International licence. The Waimakariri District Council does not give and expressly disclaims any warranty as to the accuracy or completeness of this information or its fitness for any purpose. Information on this map may not be used for legal disputes and should be independently verified before taking any action reliant upon it.

## Credits:

2025 Urban Aerial Imagery, 2024 Rural Aerial Imagery, 2023 Birch Hill Cemetery UAV Imagery, 2022 Rural Aerial Imagery, 2022-23 Cust Cemeteries UAV Imagery, Waimakariri District Council, Waimakariri District Council, Land Information New Zealand, Waimakariri District Council

# STATEMENT OF SUITABILITY OF EARTH FILL FOR RESIDENTIAL DEVELOPMENT

To:	Subdivisions Engineer	(name and address of Local Authority)
	Waimakariri District Council Private Bag 1005 RANGIORA	

## STATEMENT OF SUITABILITY OF EARTH FILL FOR RESIDENTIAL DEVELOPMENT

Subdivision	Two Roads Subdivision
Owner/Developer	GW Woodend Ltd
Location	Petries Road, Woodend

The earth fill shown on the attached plan titled:

GW Woodend Ltd, Two Roads - Woodend; Earthworks Plan  
Number: 2554-C1.0 - 2554-C1.5

has been placed in compliance with NZS4431.

While work was in progress I retained as my inspecting engineer (or staff under his control) the engineer named below who is experienced in earthwork construction.

**John Bannock, CPEng, MIPENZ**

Address C/- Site Solutions Limited, PO Box 36-420, Merivale, Christchurch

During the work, the inspecting engineer or staff under his control made periodic visits of inspection to the site as detailed in his report No 2554 (dated 21 September 2016) which is attached. Details of the soil testing carried out to check the quality of the fill by the inspecting engineer and his testing agency are also included in this report.

The attached plan titled GW Woodend Ltd, Two Roads - Woodend; Earthworks Plan [2554-C1.0 - 2554-C1.5] dated February 2016 has been placed in compliance with the terms of NZS 4431 shows Lots No. 1 - 4, 7 - 9, 12, 15 - 22 to be affected by filling and the extent of the fill (both engineered and non-engineered).

In the opinion of the inspecting engineer the following special limitations should be observed:

- Foundation design in all filled lots to take into account the location of the cut/fill interface (to be confirmed on site) and design appropriately.
- The natural ground has been considered to be TC2 (refer geotech report). Foundation investigation to confirm TC2 foundation requirements is recommended
- Other considerations and recommendations as stated in earthwork report are followed

*This certification, that the earth fills have been placed in compliance with the terms of NZS 4431, does not remove the necessity for the normal inspection and design of foundations as would be made in natural ground.*

.....  
Professional Engineer  
21 September 2016

on behalf of:

GW Woodend Ltd  
(Owner/ Developer)



Project No:	2554	Issue Date	21 September 2016
-------------	------	------------	-------------------

## Earthfill Report

### Stage I, Two Roads Subdivision

### Petries Road

### Woodend

for

**GW Woodend Ltd**

Earthfill report for the first stage of the 'Two Roads' subdivision off Petries Road, Woodend.

This fill report is to be read in conjunction with other fill reports associated with other stages of this development, geotechnical reports or construction guidelines.

Note that the report relates only to areas subjected to engineered fill. Significant surface contouring has occurred throughout the site. This contouring is generally within 200mm of the original surface and this has not been considered.

It is recommended that all builders confirm the ground conditions prior to construction.



GW Woodend Ltd  
Two Roads Subdivision, Petries Road, Woodend



1. Introduction .....	3
2. Location and Site Conditions .....	3
3. Earth-fill Works .....	4
4. Conclusions and Recommendations .....	6



## 1. Introduction

This report relates to the areas of earth-fills constructed within the first stage of the 'Two Roads' subdivision located on the southern side of Petries Road, Woodend. The earth-fills have been constructed as a part of the re-contouring of the site for the purpose of providing suitable areas for residential development and to improve the overland flow paths. Earthworks affected most of the site.

Site Solutions Ltd was engaged by the developer to provide design advice, construction supervision and final sign off.

This report covers

- Supervision Records
- Earth-fill Certification for the earth-fill areas (refer attached Statement of Suitability of Earth-fill for Residential Development)

Site Solutions Ltd was also responsible for the following

- Advice to the Contractor during construction
- Earthworks construction monitoring
- Civil works construction monitoring

The earthworks were generally carried out in accordance with the requirements of NZS4431.

## 2. Location and Site Conditions

The site is located on the southern side of Petries Road on the eastern side of the Woodend township. The site is bounded by existing residential housing along the western and southern boundaries with rural pastoral land on the eastern side and across Petries Road to the north. The subdivision is partially serviced by the extension of existing infrastructure within the near vicinity.

The site was originally grassed pasture land and used for grazing. The area has been farmed and the site was generally in average pasture. There were fences associated with the farming operation along with a small amount of fly tipping and assorted agricultural rubbish.

The site was generally flat with gentle undulations and was bounded with a range of residential fencing (where adjacent to these areas) and post and wire fencing along the road and to the east.

The underlying ground conditions were investigated and reported upon by Kirk Roberts Consulting Engineers Ltd in a report dated 9 March 2012. These indicated that the site's subsoil profile was generally 250mm - 300mm of topsoil overlying loose to dense sand and silty sand to a depth of 2.10m followed by a layer of firm to stiff silt with disseminated organics or peat to depths up to 10m where after there are dense to very dense Sandy-Gravel and Gravels extending to depth.

The ground water level was noted as being some 3m below ground level.

Excavation and observation of the drainage trenches confirmed the soil profile and the ground water was noted to match that anticipated within the geotechnical report.

The fill material for the earth-fills was sourced from material cut from the roads, service trenches and from reshaping of the sections.

Topsoil was stockpiled and as each area was completed (filling) the topsoil was replaced as soon as practical after the bulk filling operation.





### 3. Earth-fill Works

#### 3.1 Scope of Work

The construction of the earth-fill was carried out during April 2016 - July 2016.

The work was carried out by Texco Excavating Ltd under the project management and site supervision of Site Solutions Ltd.

The bulk earthworks included:

- Stripping of the site topsoil (stockpiled on site) from cut and fill areas
- Excavation of cut material and carted to fill areas
- Compaction of earth-fill
- Placement of topsoil (from stockpile)
- Grading of topsoil

The earth-fill was constructed in line with the guidelines contained within NZS4431.

Fills in excess of 200mm in depth were tested (in layers) and are identified as Engineered Fill on the drawing in Appendix A.

Areas identified as Non-Engineered Fill are fills less than 300mm in total depth and may include areas where topsoil has been used to dress the surface. Where fill has been placed in these areas all the topsoil have been removed prior to the placement of fill material.

Significant re-contouring has occurred across the site and as a result most of the top 200mm of the site has been modified in some way this has included shallow fills and adjustment of in-situ topsoil depths. At all times either topsoil was stripped prior to re-contouring or the shaping of the sections.

The earthworks were carried out by bulldozers, graders and excavators. Compaction was achieved using a self-propelled drum roller. A water cart was intermittently used to ensure that the moisture content of the fill material was within the optimum range. In general the fill material was at optimum in-situ and minimal additional water was required. Water was introduced into the fill material by water tankers when required.

Much of the cut material has been sourced from localized high areas and the internal road cuts. The sites affected by filling (proposed allotments, reserves etc.) are throughout the whole of the proposed development. Surplus material was carted to other areas of the development.

The filling operation for the majority of the total development is on-going at the time of the completion of Stage I. As part of the site development the whole site was stripped of topsoil and reshaped with some minor filling (<200mm) in locations to achieve uniform slopes.

This report relates to fill areas identified by survey as being in excess of 200mm.

The lots affected by section filling are:

Stage	Lots
1	1 - 4, 7 - 9, 12, 15 - 22

Note: Some of the above lots have minimal areas of fill or fill placed outside the likely building areas. These zones have been filled at the same time as the bulk areas of the earthworks but may not have been individually tested.





### 3.2 Earthworks Specifications

The bulk construction was carried out in compliance with the general requirements of the following documents.

- NZS4431:1989 Code of Practice for Earthfill for residential development
- NZS4402 Methods of Testing Soils for Civil Engineering Purposes

Initial site investigation was carried out by Kirk Roberts Consulting Engineers Ltd and consisted of borelogs, soil profiling, assessment of ground water and response to earthquakes.

Lab tests of the differing materials were carried out by Opus Ltd as listed below.

These documents are attached in Appendix B

The majority of the filling was with the site SILTS

Material Type	Max DD t/m <sup>3</sup>	Opt MC %	Compaction DD t/m <sup>3</sup>
On-site silts <sup>(1)</sup>	1.76	15.0	1.67

1 Cohesive Soils - 95% of Maximum DD

The testing of the earth-fill was carried out by Jenson Solutions Ltd. The results of the site testing are enclosed in Appendix C.

Regular site inspections were carried out during the construction process at a minimum interval of 1 week during earthworks construction or when deemed prudent. The inspections were generally associated with weekly site meetings and meeting minutes recorded the scope of works and plant used. These records are available upon request.

A final inspection of the site was carried out on 19 September 2016 where the site had all earthworks completed and the site was substantially grassed.



#### 4. Conclusions and Recommendations

The residential sites as noted as being filled in the enclosed certification are considered suitable for residential development as defined in NZS 4431 and NZS 3604.

- The location of the cut/fill interface is to be identified on-site in relation to the impact of the proposed residential development and foundations designed to take this into account when assessing foundation performance.
- The areas identified as 'non-engineered fill' may include the placement of topsoil in addition to the natural topsoil.
- The site has been considered by the Geotechnical Report as being classified as Technical Category 2 for the purpose of foundation design. It is recommended that confirmation testing of the sites associated with proposed dwelling is carried out.
- The provision of any fill certification does not forgo the requirement to test the ground for suitability for the founding of buildings

Recommendations and opinions expressed in the report are based on the field test results carried out by the Contractor. The nature and continuity of subsurface conditions away from the test conditions are inferred and it must be appreciated that the actual conditions may vary from the assumed model.

##### 4.1 Earth Fill Certification

All the fills have been placed in accordance with NZS4431:1989 - Code of Practice for Earth Fill for Residential Development.

Earth-fill Certification is included in Appendix D

## APPENDIX A

---

### CUT / FILL DESIGN (PREPARED BY SITE SOLUTIONS LTD)

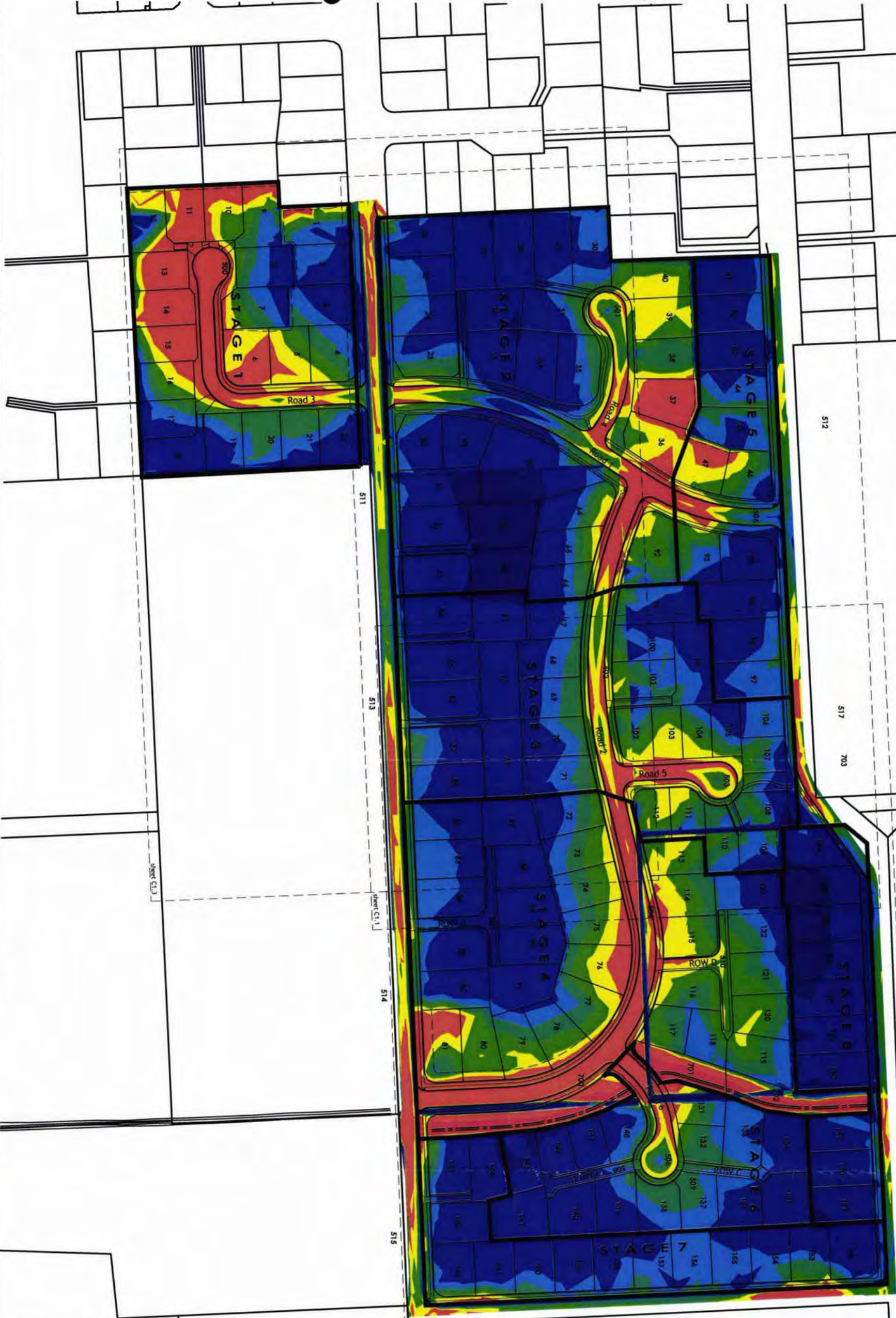
*Drawing No. 2554-C1.0 R5 & 2554-C1.3 R5*

---



This drawing is subject to copyright and remains the property of optimum projects ltd at all times. It shall not be reproduced without the written consent of optimum projects ltd and is confidential in terms of the building act.

Z:\JOB FILES\2554 - GWL - TWO ROADS - WOODEND\DRAWINGS\2554-C.DWG 24/02/16 15:15 A1 ORIGINAL



Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Red	-1.254	-1.249
2	Orange	-1.249	-1.154
3	Yellow	-1.154	-1.075
4	Light Green	-1.075	-0.894
5	Green	-0.894	-0.675
6	Dark Green	-0.675	-0.154
7	Blue	-0.154	0.399
8	Dark Blue	0.399	1.399

5	Revised for approval	15	24/02/16
3	For approval	10	28/01/16
2	For approval	05	09/12/15
1	For approval	11	11/11/15

kb	kb	1:1000 @A1	1:2000 @A3
kb	kb	1:1000 @A1	1:2000 @A3

gwl woodend ltd	two roads - woodend
-----------------	---------------------

optimum projects ltd	optimum projects ltd
----------------------	----------------------

pn: 443 343 846	pn: 443 343 846
-----------------	-----------------

solutions	solutions
-----------	-----------

earthworks plan	earthworks plan
-----------------	-----------------

C1.0	2554
------	------





**aurecon**

**Project: Gladstone Road  
Subdivision, Woodend**  
Geotechnical Subdivision Report

**Reference: 248126**

**Prepared for: Gillman  
Wheelans Woodend  
Limited**

**Revision: 1**

**28 August 2015**



## Executive Summary

Gillman Wheelans Woodend Limited (Gillman Wheelans) is proposing to subdivide a 12.4ha area of rural land in Woodend, north of Christchurch. The subdivision will result in approximately 120 residential lots, associated drainage and recreation reserve land, and roads and right of ways. Aurecon has been engaged to assess the suitability of the land for development from a geotechnical perspective.

Aurecon has conducted and supervised geotechnical investigations in 2015 including 32 CPTs, 14 hand augers and 14 DCP tests. Based on our site investigations, the inferred ground profile is presented in the table below. There is a significant variation across the site, with distinctly different geotechnical characteristics in the western third of the site, compared to the eastern two thirds. The ground conditions consisted of:

Unit	Depth (western one third)	Depth (eastern two thirds)	Material
	Surface to 0.25 – 0.75m	Surface to 0.15– 0.3m	Sandy silt topsoil
1	0.25 -0.75m to 1.1 – 2.1m	0.15 - 0.3m to 0.8 – 3.4m	Loose to dense sand and silty sand
2	1.1 – 2.1m to 6.0 – 10m	0.8m to 3.4m to 2.0 to 4.0m	Predominantly firm to stiff silt, with interbedded layers of sand, gravel and disseminated organics or peat.
3	6.0 – 10m onwards	2.0 to 4.0m onwards	Predominantly dense to very dense Sandy-Gravel and Gravel, with some interbedded sand and silt lenses.

Six piezometers were installed across the site, and have indicated that the groundwater table across the site varies from approximately 2m bgl at the west end of the site, to 3m bgl at the east end of the site. Seasonal variations in groundwater depth are likely, but cannot be confirmed at this stage due to the short piezometer monitoring period.

A liquefaction assessment has been undertaken at the site and indicated the following:

- The site has not been 'sufficiently tested' to excess of SLS level shaking as per the MBIE Guidelines and therefore the lack of recorded liquefaction at the site cannot be taken as an indicator of future performance.
- The lateral spreading risk is assessed as low, however a revised assessment should be conducted if stormwater basins or swales deeper than 1.0m are proposed as part of the development.
- The majority of the eastern two thirds of the site has been identified as Technical Category 1 (TC1) equivalent, with a low liquefaction risk due to dense gravel being close to the surface. Where the gravel deepens slightly in the northeast corner the liquefaction risk increases and this area is identified as Technical Category 2 (TC2) equivalent.
- The western third of the site is predominantly identified as TC2. In the centre of this area in the vicinity of CPT5 and CPT6, there are significant layers of liquefiable sand, which have resulted in a higher liquefaction susceptibility in this area, which is identified as Technical Category 3 (TC3) equivalent.

Provided appropriate design measures are incorporated as detailed in this report, the subdivision will comply with Section 106 of the Resource Management Act. Our Limitations are attached as Section 7 of this report. This report shall be read as a whole.



# GEOTECHNICAL REPORT

---

KIRK ROBERTS CONSULTING ENGINEERS LTD



**AT 29 PETRIES ROAD,  
WOODEND.**

## SUMMARY

The proposed subdivision of 29 Petries Road, Woodend has been assessed for liquefaction risk to meet the "interim minimum requirements for geotechnical assessment of liquefaction for land subdivision development.

The initial geotechnical investigation completed by Davie Lovell Smith Ltd consisted of Machine auger boreholes to between 3.0 to 6.5 m depth and terminated in silty and sandy gravel. Further testing involving Cone Penetrometer tests was carried out over the site and encountered thin layers of gravel from 4.5m to 14.8 m and interbedded silt and sand. Reference to ECAN borelogs confirm the gravel layer at CPT004 location would extend to at least 35 m with possible thin inclusions of silt and sand to about 31m.

Liquefaction assessment based on the method by NCEER predicts ground damage of 5 to 65 mm for a 500 year ultimate limit state (ULS) earthquake event. No liquefaction settlement predicted for a 25 year serviceability limit state (SLS) event.

Cone Penetrometer Test CPT004 achieved penetration to 14.8 m depth with predicted liquefaction settlement of 65 mm, with perhaps a margin of error of +/- 50%. Therefore, liquefaction settlement of 33 to 98 mm is predicted over the entire site and is consistent with Technical Category 2 classification in accordance with the DBH guidelines.

Therefore, we recommend the site should be classified as Technical Category 2 for design of shallow foundations on liquefaction prone sites.

In our opinion, there are no other geotechnical hazards identified which could otherwise prevent a subdivision consent being granted in accordance with section 106 of the Resource Management Act 1991.



4414  
9 May 2012

Waimakariri District Council  
Private Bag 1005  
Rangiora



Attn: Gary Blay

Dear Sir,

**RE: Subdivision at 29 Petries Rd, Woodend,  
Geotechnical Assessment Peer Review**

Geotech Consulting Ltd has been asking to carry out a peer review on the geotechnical report for the 22 lot proposed subdivision for Woodend East Ltd. In particular the peer review is to ensure compliance with the CERA guidelines for the assessment of liquefaction potential. The report provided is by Kirk Roberts Consulting Engineers Ltd, addressed to Davie Lovell-Smith Ltd and titled *Geotechnical Assessment of 29 Petries Road Subdivision, Woodend*, dated 9 March 2012.

The geotechnical report summarizes the geological setting and the site investigation work carried out. Seven machine auger boreholes to between 3 and 6.5m depth were supplemented with seven cone penetration (CPT) tests to effective refusal at between 4.5 and 14.6m depth. Reference is also made to a number of Ecan well logs in the area. This number of tests complies with the intent of the CERA/DBH guidelines.

The tests show the site as generally underlain with sands and silty sand over a sandy gravel at about 3m depth. This gravel layer appears to be 1 -2m thick over much of the site but could be thicker in the southwest where CPTs 5 & 6 refused at shallow depth in the layer, and is not present in the middle of the west side where COT4 recorded only a thin, loose sand horizon at this depth. Below the gravel layer the soils are variable and frequently clayey silt, overlying a second gravel layer at 10 – 14m depth. The water table was measured at 3.0m depth in the boreholes, but a level at 2.7m depth has been adopted for analysis.

Liquefaction analysis as reported indicates liquefiable layers just above the gravel layer where this is lower than the water table, looser sand layers within the gravel unit and immediately below it, and in looser sand layers above the second gravel layer. No liquefaction is predicted at the SLS earthquake (0.13g pga) and estimated liquefaction induced settlements at ULS (0.35g pga) are between 5 and 65mm (average 31mm). It is noted that the smaller settlements are generally (although not exclusively) from the CPTs which refused at shallower depths. As there could well be liquefaction at depths greater than the test depth, these lower values may be underestimates. A comparison has been made with liquefaction analysis carried out on some widely spaced CPT tests carried out for the Council in 2006. Of the three tests closest to the site, ULS settlements were estimated at between 5 and 95mm, consistent with the range estimated by Kirk Roberts.

**Dr. Mark Yetton** E-mail myetton@geotech.co.nz  
**Nick Traylen** E-mail ntraylen@geotech.co.nz  
**Ian McCahon** E-mail mccahon@geotech.co.nz

Tel (03) 9822 538  
Fax (03) 3257 555  
PO Box 130 122  
4 / 6 Raycroft Street  
Christchurch 8141 New Zealand

**GEOLOGICAL & ENGINEERING SERVICES**

29 Petreis Rd Subdivision, Woodend

page 2

There is no comment in the report with respect to whether any liquefaction related ground damage was recorded on the site with the recent earthquakes. The site will have experienced peak ground accelerations approaching a SLS event in September 2010. We understand from other sources that there was little liquefaction damage in the general area.

We agree with the conclusions of the geotechnical report that there is some liquefaction potential at the site and a TC2 technical land classification is appropriate. The extent of the investigation reported does, in our opinion, comply with the intent of the CERA/DBH requirements.

Yours faithfully

**Geotech Consulting Limited**



Ian McCahon



# ***Soil Contamination Risk Stage 1 - Preliminary Site Investigation Report***

## ***Petries & Gladstone Roads Woodend***

*July 2015*



***Malloch Environmental Ltd***

*801 East Maddisons Road, Rolleston 7614*

*021 132 0321*

*nicola@mallochenviro.co.nz*

---

*Stormwater Solutions • Soil Contamination Investigations • Environmental Planning*

## **1 Executive Summary**

The subject site involves seven adjacent lots with the street addresses 67A, 67B & 75 Gladstone Road and 29, 30 & 58 Petries Road, Woodend. It is proposed to develop these lots for a residential use. This will result in a change of use and disturbance of soils. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Health) Regulations 2011 (NES) require an assessment of the likelihood of soil contamination being present. This report details the work undertaken to assess that risk.

The investigations undertaken have revealed that the majority of the subject site has been used for pastoral purposes for all of its known history. There is no evidence of any HAIL activities having been carried out now or in the past on the southern block Pt RES 367 and Lot 1 DP 82307. It is considered highly unlikely that these lots site have been used in a manner that could have resulted in soil contamination. No further investigation is considered necessary on these lots.

However, there is evidence that sheep dipping, possible lead paint contamination, and possible pesticide spray drift could have occurred on Lots 1 & 2 DP 10562, the northern block Pt RES 367 and Pt Lot 1 DP 33116. Two sheep foot rot troughs have been positively identified on Lot 2 DP 10562. The run out area from the foot rot troughs may have been onto the northern part of Pt RS 367A so that lot may also be affected. There is considered to be a moderate to high risk to human health if these lots were used for residential use. It is recommended that detailed investigations are performed on these lots to determine whether any soil contamination has occurred.

## **2 Objectives of the Investigation**

This report has been prepared in accordance with the Ministry for the Environment's "Contaminated Land Management Guidelines No 1: Reporting on Contaminated Sites in New Zealand". This report includes all requirements for a Stage 1 preliminary site investigation report. This is one of the methods described in Section 6(3) of the NES to establish whether the regulations apply. The objective is to determine whether there is any risk of potential contamination that would warrant further investigation.

## **3 Scope of Work Undertaken**

The scope of the work undertaken has included:

- Review of Waimakariri District Council property files
- Obtaining ECan data from the Listed Land Use Register (LLUR)
- Search of LINZ NZ orchard database
- Review of historic aerial photos
- Site visit
- Preparation of report in accordance with MfE guidelines



26 October 2016

WAIMAKARIRI DISTRICT COUNCIL  
Plans and specifications APPROVED in accordance  
with the Building Act 2004, clause 49 and the Building  
Regulations 1992, Clause 3  
BC170425 17/05/2017 staceyg

GW Woodend Limited  
145 Papanui Road  
P O Box 36-511  
Christchurch 8146

Issued via email to

Attn: Kerry Watson  
Email: [Kerry@gwlimited.nz](mailto:Kerry@gwlimited.nz)

## **Two Roads Subdivision Stage 1 - Technical Classification Geotechnical Report**

### **1 Introduction**

GW Woodend Limited has recently subdivided a 1.7ha area of rural land into 22 residential lots with associated roading and drainage. This development is Stage 1 of the wider Two Roads residential development and located off Petries Road in Woodend.

A geotechnical subdivision assessment was carried out in 2012 prior to the release of the Ministry of Business, Innovation and Employment (MBIE) Guidelines which provides guidance for geotechnical investigation and classification of subdivisions in the Canterbury Region.

In order to provide an updated Technical Category Classification for the Two Roads Stage 1 development, GW Woodend Limited has engaged Aurecon to carry out additional geotechnical testing and confirm the Technical Category Classification of the site on a lot by lot basis using the latest MBIE Guidelines and methodologies.

Our work was carried out as an extension our existing 30 June 2015 agreement with GW Woodend Limited for the Two Road Woodend Subdivision. Our limitations are presented at the end of this report. This report shall be read as a whole.

This Revision 2 report incorporates minor amendments and clarifications, and supersedes all previous revisions.

### **2 Geotechnical Testing**

Three sets of geotechnical testing have been carried out across the site as follows:

- Kirk Roberts (2012) - Seven CPT tests (CPT001 to 007) were carried out by Kirk Roberts in 2012 for the previous site owner as part of the original subdivision assessment. These tests were undertaken to refusal at depths between 4.5m and 14.8mbgl.
- Elliott Sinclair (2016) - Six CPT tests (CPT01 to 06) carried out by Elliott Sinclair in July 2016 at Lots 5, 9 and 20 to confirm the Technical Category Classification of these three lots only. These tests were all carried out to a depth of 10m.
- Aurecon (2016) – 10 CPT tests (CPT101 to 110) were carried out by Aurecon in two phases. McMillan's Drilling Group carried out five CPT tests (CPT101 to 105) on Lots 16-19 and 21 on the 29 September 2016. Phase 2 by Land Test to carried out an additional five CPT tests (CPT106 to 110) on Lots 2, 6, 7, 13 and 15 on 13 October 2016. The tests were extended to effective refusal or a maximum of 10m depth.

We have used all of the CPT data above in our liquefaction and Technical Category Classification assessments and the CPT test locations are shown on the Figure 1 attached.

### **3 Ground Conditions**

Based on the geotechnical testing to date, the site is underlain by variable interbedded layers of silts and sands with some lenses of organic-silt material and an intermediate sandy-gravel / gravelly-sand layer. This gravelly layer becomes sandier and less dense towards the eastern side of the site.

Groundwater was recorded by Elliott Sinclair at 1.7mbgl during their July 2016 assessment. This matches the groundwater level we encountered during the bulk excavation of the ground remediation works on the adjacent Two Roads Stage 2 area and the stand pipe piezometer installed in the southwest corner of Stage 2 on the northern side of Petries Road. Groundwater is expected to vary seasonally or following periods of drought or heavy precipitation.

### **4 Liquefaction Hazard Assessment**

We have undertaken a liquefaction hazard assessment using the method prescribed in the MBIE Guidelines using both the 2016 Aurecon and the 2012 Kirk Roberts CPT data and reviewed the results of the 2016 Elliott Sinclair assessment which uses the same MBIE methodology as our assessment. Additionally, ground damage has been assessed under the various MBIE design level earthquake events using the Liquefaction Severity Number (LSN) methodology detailed in T&T (2013) and using the method of Ishihara (1985).

Accounting for seasonal variation and the measurement of groundwater during a dry winter period, for design purposes we have assumed a groundwater table at 1.5m depth.

The results of our assessment are summarised in Table 1 appended to this letter. Based upon our assessment there is no distinct geological feature causing higher liquefaction induced settlements (i.e. an old infilled river channel etc.), but the variability in the thickness and density of the sand and silty-sandy soils.

Based upon this assessment and review of Elliott Sinclair's assessments for Lots 5, 9 and 20 we make the following comments:

#### ***Lots 1 to 7, 9 to 15, 17, 18, 21 and 22***

The calculated liquefaction induced ground deformations are within the limits of a Technical Category 2 (TC2) classification, i.e. minor to moderate ground damage could be expected in a future major seismic event.

#### ***Lots 8, 16, 19 and 20***

Lots 8, 16, 19 and 20 in their natural form were identified as being noncompliant with the requirements of a TC2 classification based on an indexed liquefaction induced reconsolidation settlement criteria. The wider site is underlain by interbedded silty-sandy soils. However the sand content increases in these lots resulting an increase theoretical reconsolidation settlement in the areas with the higher sand content in the surficial soils.

### **5 Liquefaction Risk Mitigation**

The following liquefaction hazard mitigation is recommended for the site:



***Lots 1 to 7, 9 to 15, 17, 18, 21 and 22***

No additional liquefaction risk mitigation is required for these lots other than an enhanced TC2 type of foundation system.

***Lots 8, 16, 19 and 20***

In order to ensure a TC2 classification across the entire site and provide additional seismic resilience we recommend that the 1.2m thick geogrid reinforced gravel ground improvement layer is constructed below and extending at least 1m beyond the building footprint of new houses. The ground improvement works have been based upon *Type G1d Shallow Densified Crust Treatment* option presented in Section 15 of the MBIE (2012) Guidelines. With this ground improvement implemented a TC2 foundation system can be used at these sites. An indicative cross section of this capping layer is appended to this report.

**6 Foundation Recommendations**

The following foundation recommendations are made for residential houses to be built at the site:

***Lots 1 to 7, 9 to 15, 17, 18, 21 and 22 – Natural Ground***

With Lots 1 to 7, 9 to 15, 17, 18, 21 and 22 TC2 foundation are required as outlined in Section 5 of the MBIE (2012) Guidelines. In accordance with the Guidelines standard shallow lot specific shallow geotechnical investigations are required during the detailed house design to assess the lot specific ground conditions and bearing capacity values. These shallow investigations should be undertaken by the designer of the house foundation to confirm appropriate foundation types and shallow bearing capacities.

***Lots 8, 16, 19 and 20 – Capping Layer***

With Lots 8, 16, 19 and 20 it is recommended the houses are:

- Founded directly onto the underlying gravel capping layer utilising the 200kPa bearing capacity TC2 type enhanced slab foundations (Options 2 to 4 in Section 5.3.1 of the MBIE Guidelines), or a suspended timber floor (based upon the recommendations in Section 5.3.2 of the MBIE Guidelines / NZS3604:2011) with the design pro rata to use 200kPa bearing capacity.
- To provide the best seismic resilience houses should:
  - Be formed from conventional one to two storey residential construction
  - Single storey only if heavy cladding and roofing is used
  - Up to two storeys if light to medium weight cladding and roofing is used.
  - The structural form should be restricted to timber frame (or light weight cold-rolled steel equivalent).

These foundations systems can be founded directly onto the underlying gravel. With the enhanced raft foundation options all topsoil and silty-sandy soil should be removed below the entire house footprint and if required replaced with compacted hardfill (95% of maximum dry density).

Due to the presence of the geogrid reinforcement within the gravel, and the capping function that the geogrid reinforced gravel raft preforms, penetrations through the geogrid must be avoided. Houses build in these lots should not have basements protruding through the

capping layer. Underfloor hydraulic services and conduits (wastewater, stormwater etc.), where possible should be designed in such a way that they do not penetrate through the geogrid reinforcement either and stay within the upper 900mm of the reinforced gravel layer.

## 7 References

Aurecon, 2015. *Gladstone Road Subdivision Geotechnical Subdivision Report, Revision 1* - dated 28 August 2015. Aurecon New Zealand Limited, Christchurch, New Zealand.

Boulanger R.W. and Idriss, I.M. (2014). *CPT and SPT Based Liquefaction Triggering Procedures*, Center for Geotechnical Modelling. Report No. UCD/CGM-14/01

Ishihara. (1985). *Stability of natural deposits during earthquakes*. Proceedings, 11<sup>th</sup> International Conference on Soil Mechanics and Foundation engineering, Vol 1, pp. 321-376.

MBIE, 2012. *Repairing and rebuilding houses affected by the Canterbury earthquakes*. Ministry of Business, Innovation and Employment, Wellington, New Zealand.

Tonkin and Taylor. (2013). *Liquefaction Vulnerability Study*, Tonkin and Taylor Report 52020.0200/v1.0. February 2013. 52 pages and 14 appendices.

## 8 Limitations

We have prepared this report in accordance with the brief as provided. The contents of the report are for the sole use of the Client and no responsibility or liability will be accepted to any third party. Data or opinions contained within the report may not be used in other contexts or for any other purposes without our prior review and agreement.

The recommendations in this report are based on data collected at specific locations and by using suitable investigation techniques. Only a finite amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it must be appreciated that actual conditions could vary from the assumed model.

Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

Subsurface conditions, such as groundwater levels, can change over time. This should be borne in mind, particularly if the report is used after a protracted delay.

This report is not to be reproduced either wholly or in part without our prior written permission.

This conclusions in this report draws on investigations, analysis and conclusions from various investigations stages and numerous reports. For specific details please refer to the above mentioned references or contact the writers.

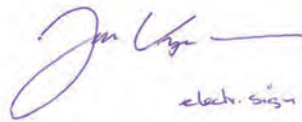


If you have any queries regarding the content of this letter, please do not hesitate to contact the undersigned.

Yours sincerely



**Tim Mitchell**  
*Geotechnical Engineer*



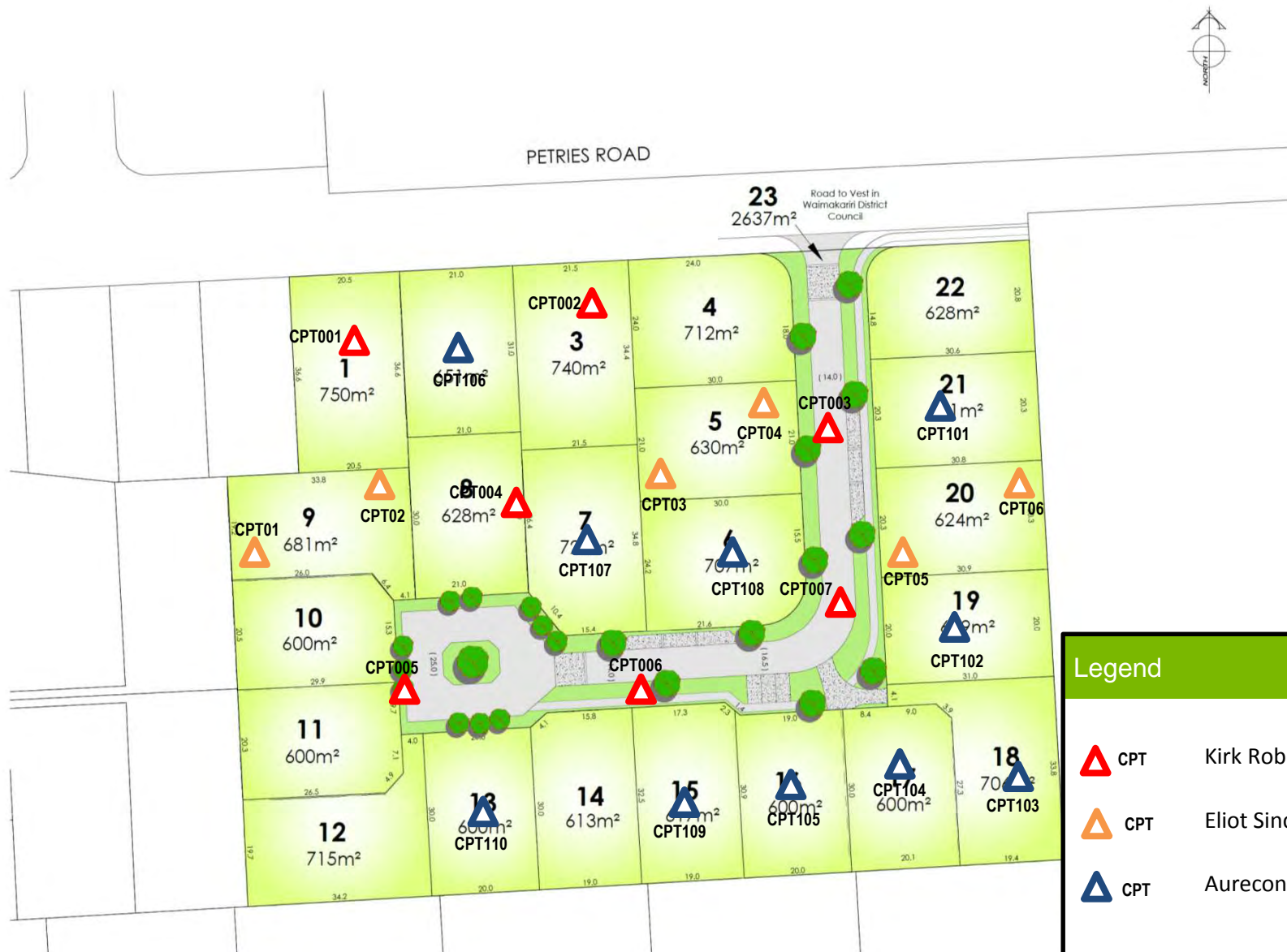
**Dr Jan Kupec**  
*Technical Director – Ground Engineering*

Enc:

Figure 1 – CPT Test Location Plan

Figure 2 – Geogrid Capping Layer Detail

Table 1 – Liquefaction Assessment Results



### Legend

- △ CPT Kirk Roberts 2012 CPT
- △ CPT Eliot Sinclair 2016 CPTu
- △ CPT Aurecon 2016 CPTu

CLIENT

PRELIMINARY NOT FOR CONSTRUCTION

ALL DIMENSIONS APPROXIMATE ONLY

SCALE

SIZE

TITLE

CPT TEST LOCATION PLAN

NTS

A4

BY

T. MITCHELL

APPROVED

D. MAHONEY

DATE

26 OCTOBER 2016

REFERENCE

BACKGROUND IMAGE FROM DAVIE LOVELL SMITH  
DRAWING NO. C17796

FIGURE No.

PROJECT	WBS	TYPE	DISC	NUMBER	REV
248126	001	FIG	TRA	01	B

FIGURE

FIGURE 1

PROJECT

TWO ROAD SUBDIVISION



1. COMPACTED REINFORCED GRAVEL RAFT BACKFILL MATERIAL SHALL BE CAP40, CAP65 OR CRUSHED RECYCLED CONCRETE TO AP65 GRADING WITH AT LEAST TWO BROKEN FACES (NOT PIT RUN/RIVER RUN) COMPACTED TO 95% MAXIMUM DRY DENSITY AT  $\pm 2\%$  OF OPTIMUM WATER CONTENT. FILL GRADING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

1. EXCAVATION IS REQUIRED FOR CONSTRUCTION OF THE GRAVEL RAFT. THE DETAILS PROVIDED ON THE DRAWINGS SHOW NET FINISHED CONSTRUCTION PROFILES. THE CONTRACTOR SHALL ESTABLISH THE METHODS OF EXCAVATION NEEDED, THE PLANT REQUIREMENT AND GENERAL SEQUENCING OF CONSTRUCTION TO MAINTAIN A STABLE AND SAFE CONDITION INCLUDING SAFE SLOPES.
2. ALL TEMPORARY EXCAVATIONS AND CONSTRUCTION ACTIVITY SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH GUIDELINES.
3. ANY SOFT GROUND, LOW STRENGTH OR ORGANIC MATERIAL ENCOUNTERED AT SUBGRADE LEVEL SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL. REFER TO THE GEOTECHNICAL REPORT FOR ANTICIPATED GROUND CONDITIONS.
4. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO KEEP EXCAVATIONS DRY AND STABLE UNTIL CONSTRUCTION OF GRANULAR BACKFILL IS COMPLETE.
5. WHERE MATERIAL IS USED AS ENGINEERED BACKFILL BENEATH GRAVEL RAFT, THE BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY BASED ON MODIFIED COMPACTION (NZS4402:1986, TEST 4.1.3)

1. REINFORCING GEOGRID TO BE TRIAX TX160 OR NAUE SECUGRID 30/30 Q1 GEOGRID OR EQUIVALENT APPROVED BY THE ENGINEER.
2. LAYERS OF GEOGRID SHALL BE LAID IN ALTERNATING PERPENDICULAR ORIENTATION (i.e. EACH LAYER OF GEOGRID SHALL BE LAID PERPENDICULAR TO THE LAYER BELOW).
3. GEOGRIDS SHALL BE LAID TO THE MANUFACTURER'S SPECIFICATION WITH MIN. LAP OF 500mm UNLESS CONFIRMED OTHERWISE BY MANUFACTURER.
4. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY QA/QC DOCUMENTATION FOR ALL GEOGRIDS INCORPORATED INTO PERMANENT WORKS.
5. ALL GEOTEXTILE AND GEOGRIDS SHALL BE HANDLED AND STORED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION AND GOOD PRACTICE. ALL GEOTEXTILES SHALL BE PROTECTED FROM DEGRADATION BY UV LIGHT.
6. ALL GEOTEXTILES AND GEOGRIDS SHALL BE LAID ON A FLAT SURFACE AND APPROPRIATELY TENSIONED PRIOR TO PLACEMENT OF FILL. THE GEOTEXTILE AND GEOGRID SHALL REMAIN TENSIONED DURING GRAVEL PLACEMENT AND COMPACTION.

1. ALL SERVICES SHALL BE AT LEAST 100mm ABOVE GEOGRIDS.

1. IF GROUNDWATER IS ENCOUNTERED IN THE EXCAVATION THE GEOTECHNICAL ENGINEER SHALL BE CONTACTED TO UNDERTAKE AN INSPECTION BEFORE ANY DEWATERING IS UNDERTAKEN.

2. ANY DEWATERING POINTS SHALL BE LOCATED OUTSIDE THE BUILDING FOOTPRINT. DEWATERING METHOD, EITHER WELL POINTS OR SUMP PUMP, TO BE CONFIRMED BY CONTRACTOR AND AGREED WITH GEOTECHNICAL ENGINEER.

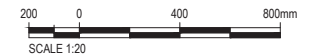


Table 1 – Liquefaction Hazards Assessment Results

	Test	Test Depth	SLS-a			SLS-b			ULS			Technical Category
			Settlement	Surface Expression		Settlement	Surface Expression		Settlement	Surface Expression		
			Indexed	Ishihara	LSN	Indexed	Ishihara	LSN	Indexed	Ishihara	LSN	
Kirk Roberts 2012	CPT001	10.5m	1mm	No	1	4mm	No	1	17mm	No	9	TC1
	CPT002	14m	7mm	No	3	18mm	No	2	46mm	No	16	TC2
	CPT003	10m	36mm	No	12	60mm	No	10	104mm	Yes	33	TC3
	CPT004	14.8m	53mm	No	18	81mm	Yes	17	94mm	Yes	25	TC3
	CPT005	5m	2mm	No	2	8mm	No	1	28mm	No	13	TC2*
	CPT006	5m	1mm	No	1	5mm	No	1	8mm	No	3	TC2*
	CPT007	7m	10mm	No	7	6mm	No	6	39mm	No	13	TC2*
Aurecon 2016	CPT101	10m	6mm	No	5	21mm	No	4	57mm	Yes	23	TC2
	CPT102	10m	45mm	No	22	89mm	Yes	19	112mm	Yes	36	TC3
	CPT103	10m	20mm	No	10	42mm	No	8	78mm	Yes	26	TC2
	CPT104	10m	25mm	No	13	51mm	No	11	94mm	Yes	33	TC2
	CPT105	10m	50mm	No	13	70mm	No	12	107mm	Poss	31	TC3
Aurecon 2016	CPT106	10m	17mm	No	5	28mm	No	4	54mm	Poss	16	TC2
	CPT107	10m	14mm	No	7	34mm	No	5	68mm	Yes	22	TC2
	CPT108	10m	24mm	No	6	47mm	No	5	100mm	Yes	29	TC2
	CPT109	10m	15mm	No	10	37mm	No	9	71mm	Yes	25	TC2
	CPT110	10m	20mm	No	7	33mm	No	6	56mm	Yes	18	TC2
Elliott Sinclair 2016	CPT01	10m	6mm		2	45mm		6	47mm		14	TC2
	CPT02	10m	38mm		9	66mm		20	90mm		28	TC2/3**
	CPT03	10m	5mm		2	22mm		11	45mm		19	TC2
	CPT04	10m	40mm		9	64mm		18	85mm		26	TC2/3**
	CPT05	10m	33mm		7	64mm		17	82mm		21	TC2/3
	CPT06	10m	55mm		11	87mm		23	107mm		29	TC3

Notes:

\* Due to the CPT refusing on very dense sandy-gravelly material and the limited settlements in the upper 5-7m these tests have been assessed as TC2

\*\* Classified TC2 equivalent by Elliott Sinclair due to depth of liquefiable layers.



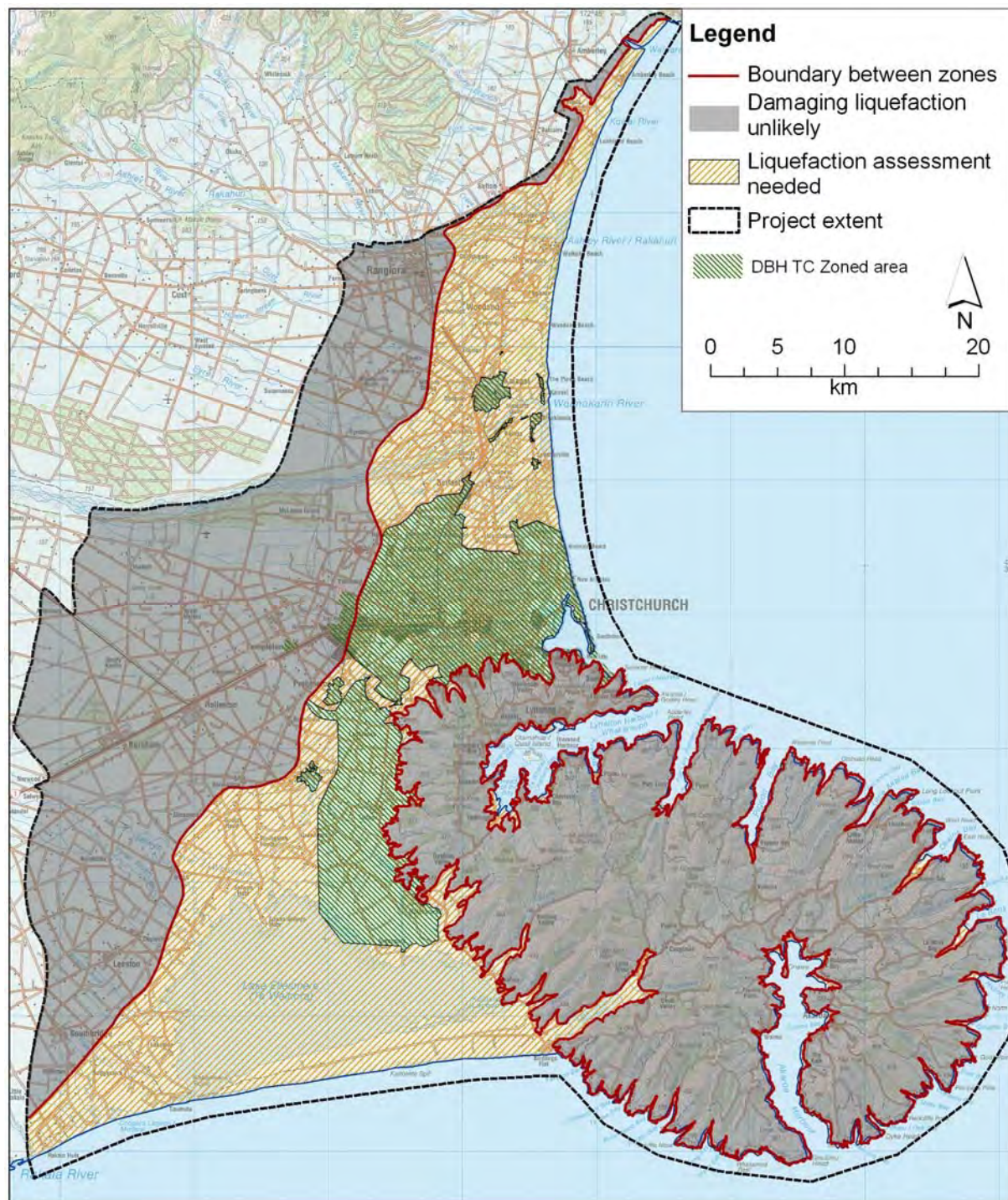
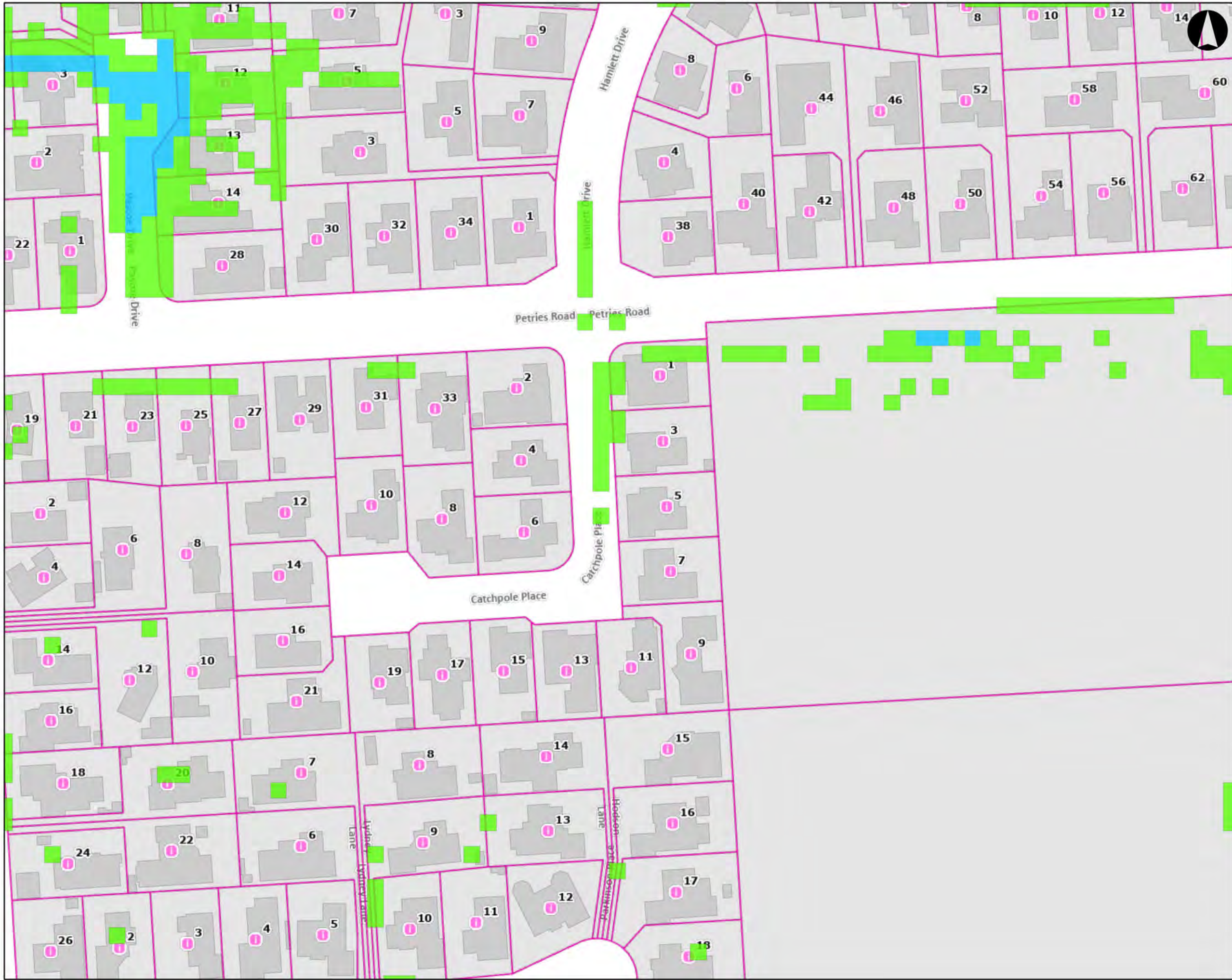


Figure 2.1 Liquefaction assessment area map for the eastern Canterbury project area. Liquefaction susceptibility is categorised in two areas, “damaging liquefaction unlikely” and “liquefaction assessment needed”. The area covered by DBH Technical Categories at the time of this report is excluded.





**Legend**  
LM2501283 16/07/2025 Page 73  
All Flooding Hazard 200 year

**ClassName**

- Low
- Medium
- Properties < 1 ha

**Property Boundaries with Attributes**

- Current Property
- Deposited Land Parcels
- Road Names
- Road Names (WDC)

debbie.walls@wmk.govt.nz  
Waimakariri District Council  
Date: 5/06/2025  
Scale 1:1,128 Original page size: A3

0 10 20 30 40  
Metres

Disclaimer:  
Land and property boundary information is sourced from and derived using Land Information New Zealand (LINZ) Land Parcels licensed for re-use by LINZ under the Creative Commons Attribution 4.0 International licence. The Waimakariri District Council does not give and expressly disclaims any warranty as to the accuracy or completeness of this information or its fitness for any purpose. Information on this map may not be used for legal disputes and should be independently verified before taking any action reliant upon it.

Credits:  
Waimakariri District Council, Land Information New Zealand, Waimakariri District Council



## Notes on Flood Hazard Mapping

The attached plan shows the result of a flood mapping exercise that has been carried out by the Waimakariri District Council.

There are a number of notes that need to be considered when using this information.

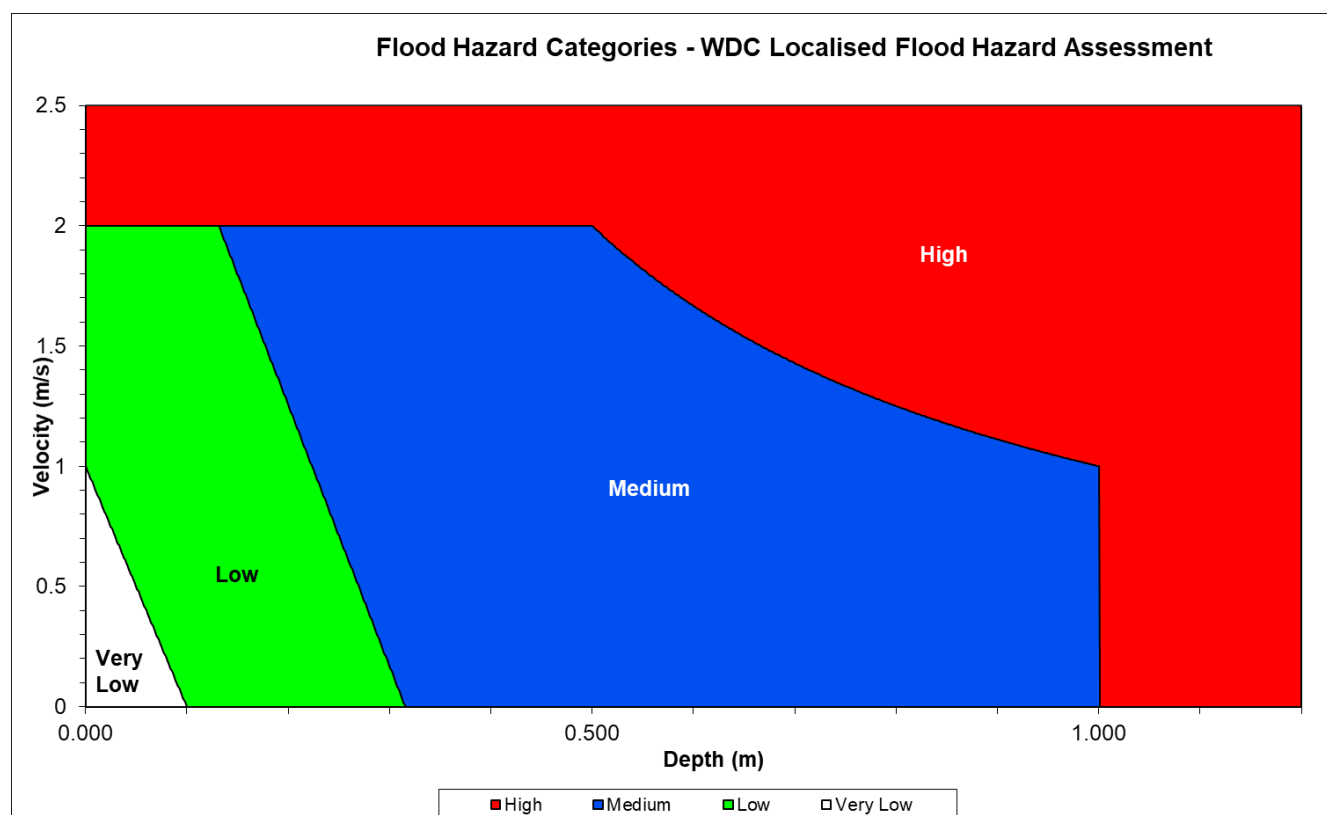
### 1. Annual Exceedence Probability.

The rainfall used in this mapping is the 0.5% Annual Exceedence Probability (AEP) rainstorm. This is based on there being a 0.5% probability in any one year that there will be a rainstorm of this severity. This is sometimes referred to as the 1 in 200 year storm.

Note that if a property has flood hazard shown in the 0.5% AEP it will likely be subject to flooding in more frequent events.

### 2. Flood Hazard Categories.

The flood hazard categories are based on both the depth and velocity of the flood water as shown on the following diagram.



### 3. Flood Modelling

This flood modelling shows the combined effects of:

- Localised Flooding, flooding in response to rainfall
- Ashley Breakout, flooding in response to a breakout event on the Ashley River
- Coastal Inundation, flooding in response to storm surge, sea level rise and river flows

Detailed information on the flood models including the technical modelling reports are available on the Council's Natural Hazards Portal on the Council website.

### 4. Generalised Flooding

This flood modelling is for generalised, area wide, flooding risk mapping only. It does not take into account all site specific flood risks that may occur on individual properties. There may be areas of ponding or overland flow that occur but are not shown on this flood modelling. This may be due to local topographical characteristics or due to the location and levels of building floors in relation to the surrounding ground. This flood mapping has been carried out to help identify areas that may be at an increased risk of flooding, it is not an accurate prediction of flood levels.

## 5. Land Changes

The results from this exercise will be less accurate in areas where major development or significant changes in the shape of the land has occurred since 2005. This is particularly important to note in new subdivision areas where new roads have been constructed or filling has occurred. The eastern area of the district including Rangiora, Kaiapoi and Woodend uses ground information updated in 2014. In some cases more recent subdivision areas have been included where information was available.

## 6. District Plan

The attached Flood Map, published in 2020, is based on recent flood modelling work. This flood mapping has been formally adopted by Council and included in the Proposed Waimakariri District Plan.

## 7. Further Information

To find further information on flooding and flood hazard please refer to the following links:

- <https://www.waimakariri.govt.nz/environment/natural-hazards>
- <https://www.ecan.govt.nz/your-region/your-environment/natural-hazards/floods/>
- <https://www.cdemcanterbury.govt.nz/hazards/floods/>
- <https://niwa.co.nz/natural-hazards/hazards/floods>



This property is eligible for the Council's kerbside collection service. This includes collection of recycling and an optional organics and rubbish wheelie bin service. Information on these services is available at:

<https://www.waimakariri.govt.nz/services/recycling-rubbish-and-organics>

New property owners may swap the size of bins allocated to their property within 3 months of taking possession, without paying a bin delivery/removal fee, by telephoning the Customer Services Team on 0800 965 468.



Waimakariri District Council  
215 High Street  
Private Bag 1005  
Rangiora 7440, New Zealand  
Phone 0800 965 468

Our Reference: CUS-03-04/190626090676

1 July 2019

## Kerbside Bins – Information for New property Owners

The Council's optional kerbside rubbish and organics collection service was introduced on 1 July 2019 to complement the existing wheelie bin recycling collection.

If there are rubbish and/or organics bins at your property, your annual rates will include the rubbish and/or organics service. These rates are set for the financial year and vary according to the size of the bin supplied.

### Organics (green lid) and Rubbish (red lid) bins at the property

As a new property owner, you have the opportunity to join the wheelie bin rubbish and organics collection. Also for a limited time, you may change the bin selections made by the previous owner of your property.

If you have rubbish and/or organics wheelie bins at your property and these are not suitable for your use, you are able to change the size of the bin or bins within 3 months of the sale settlement date without paying a delivery/removal fee or the cost of additional capacity. You may also cancel the service.

Contact Customer Services to arrange a swap of bin sizes or to send the bins back. *Please remember that there is no adjustment to your rates until next 1 July, and if your request is received more than 3 months after settlement, a fee for additional capacity will be payable if you are upsizing the bin, and a delivery/removal fee will be payable per set of bins.*

### Joining the Organics and Rubbish bin collection

To join the optional services, contact Customer Services to request the bin or bins you require. You will be asked to pay a proportion of the cost of the collection service for the remainder of the rating year, and a bin delivery fee per set of bins. The fees will need to be paid before the bins are ordered. The cost of the collection will be added to your rates from the start of the next rating year.

### Ohoka/Swannanoa/Mandeville area have Recycling and Rubbish bin collections only

As part of the new kerbside service a wheelie bin rubbish collection service is available to those properties in this area that currently have a recycling wheelie bin. Please let us know if you would like to have a fortnightly wheelie bin rubbish collection. The rubbish **bag and organics** collection is not available here. You can see if your property is inside the collection area by using our interactive map on [waimakariri.govt.nz/rethinkrubbish](http://waimakariri.govt.nz/rethinkrubbish).





### **More about the Service**

The services offered are outlined on our website, together with costs, collection day calendars and information on what is accepted for collection in each bin.

**Sign up for alerts and collection day reminders using our new website tool feature – [waimakariri.govt.nz/rethinkrubbish](https://waimakariri.govt.nz/rethinkrubbish)**

**You can make your choice by talking to Customer Services at any Council Service Centre, sending an email to [office@wmk.govt.nz](mailto:office@wmk.govt.nz) or phone us on 0800 965 468**

### **Landlords**

As the ratepayer, you are the only person who can request the Organics and Rubbish bin kerbside collection services as the chosen services will directly affect your rates. Your tenants may wish to talk to you about their preferred choice and may be willing to pay extra for a bin service.

### **Kerbside Recycling**

If you decide not to choose any of the rubbish or organics wheelie bin options, you will still have a recycling wheelie bin allocated to your property. Collection is fortnightly, and this service is funded by the annual Kerbside Collection Rate. *You may also swap the size of this bin for free within 3 months of your property sale settlement. Outside this time a delivery/removal fee will apply.*

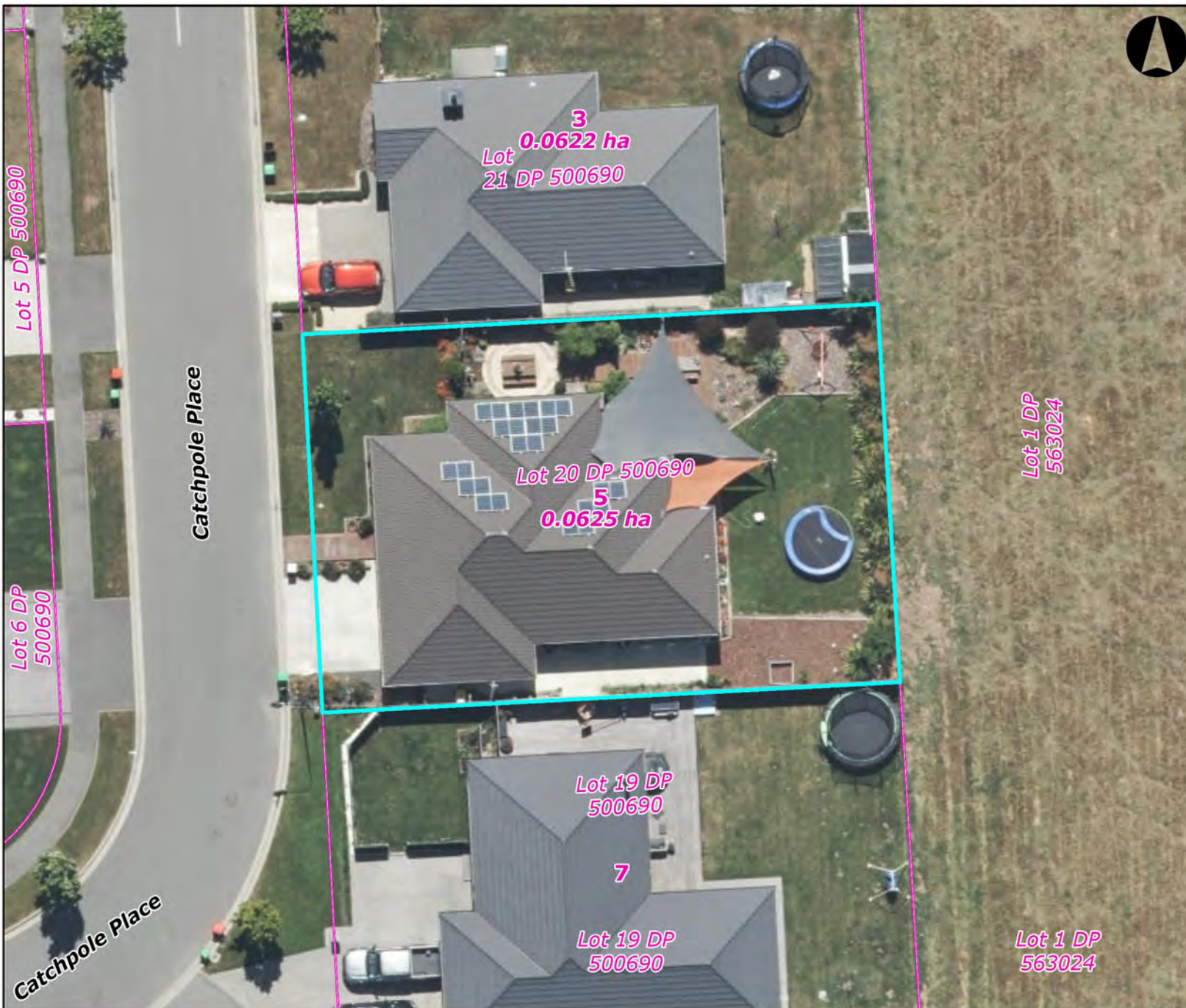
If your property is a new build you may need to order your recycling wheelie bin from Customer Services.

### **Find out more...**

Have a look at the information on our website, then if you have any questions, please call us on 0800 965 468.

Yours faithfully


*Customer Services*



## Legend

LM2501283 16/07/2025 Page 79

 Land Parcel

 Property Boundary

Author: Debbie Walls

Date: 16/07/2025

Scale 1:297

Original page size: A4



### Disclaimer:

Land and property boundary information is sourced from and derived using Land Information New Zealand (LINZ) Land Parcels licensed for re-use by LINZ under the Creative Commons Attribution 4.0 International licence. The Waimakariri District Council does not give and expressly disclaims any warranty as to the accuracy or completeness of this information or its fitness for any purpose. Information on this map may not be used for legal disputes and should be independently verified before taking any action reliant upon it.

### Credits:

2025 Urban Aerial Imagery, 2024 Rural Aerial Imagery, 2023 Birch Hill Cemetery UAV Imagery, 2022 Rural Aerial Imagery, 2022-23 Cust Cemeteries UAV Imagery, Waimakariri District Council, Waimakariri District Council, Land Information New Zealand