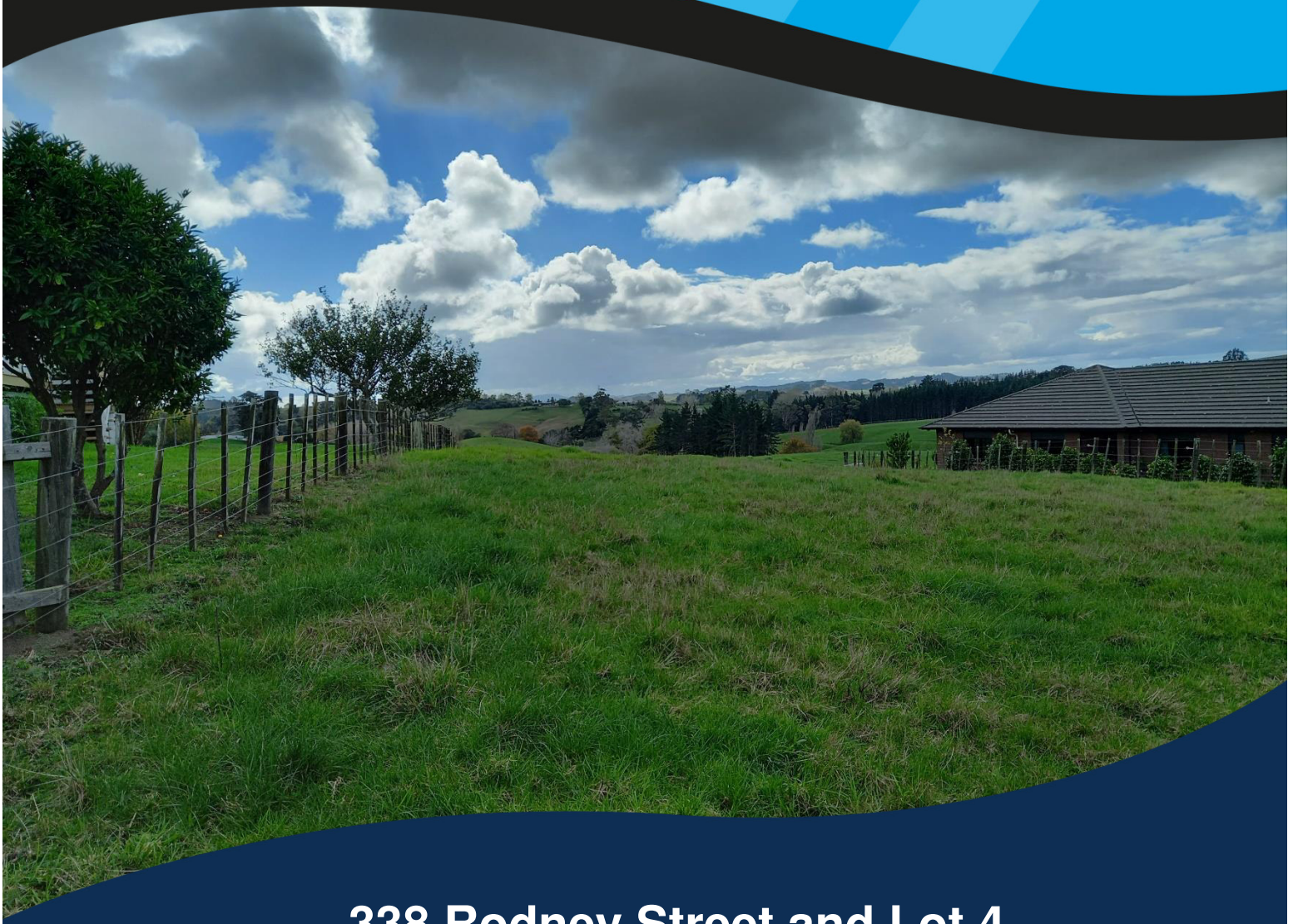

338 Rodney Street and Lot 4 Monowai Street, Wellsford

Stage 1 Engineering Memo

Prepared for Wellsford Welding Club

January 2022 **Ref L23343A**

Hutchinson
CONSULTING ENGINEERS

Wellsford Welding Club

Stage 1 Engineering Memo

At

338 Rodney Street and Lot 4 Monowai Street Wellsford

Prepared by Matthew Hughes
ENGINEER

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Approved by Ian Hutchinson
MANAGING DIRECTOR

Date 28 January 2022
Status Version 2

Contents

Appendix

1.0 Introduction

Hutchinson Consulting Engineers (HCE) have been engaged by Wellsford Welding Club to provide civil engineering input into two residential subdivision developments located at 338 Rodney Street and Lot 4 Monowai Street, Wellsford.

The above residential subdivision proposals form the first stage of an overall subdivision development that proposes to construct around 650 lots across several property titles that are all owned by the client. A proposed plan change will soon be lodged to enable this development.

This memo provides civil engineering input to assist a fast track consenting application under the Covid-19 Recovery Act 2020 for Stage 1 of the residential subdivision located at 338 Rodney Street and Lot 4 Monowai Street, Wellsford.

The following engineering input has been addressed within this memo to support the fast track consenting application:

- Earthworks
- Erosion and sediment control
- Stormwater
- Wastewater
- Water supply
- Power
- Telecommunications
- Roading

This report should be read in conjunction with the appendices contained to this memo.

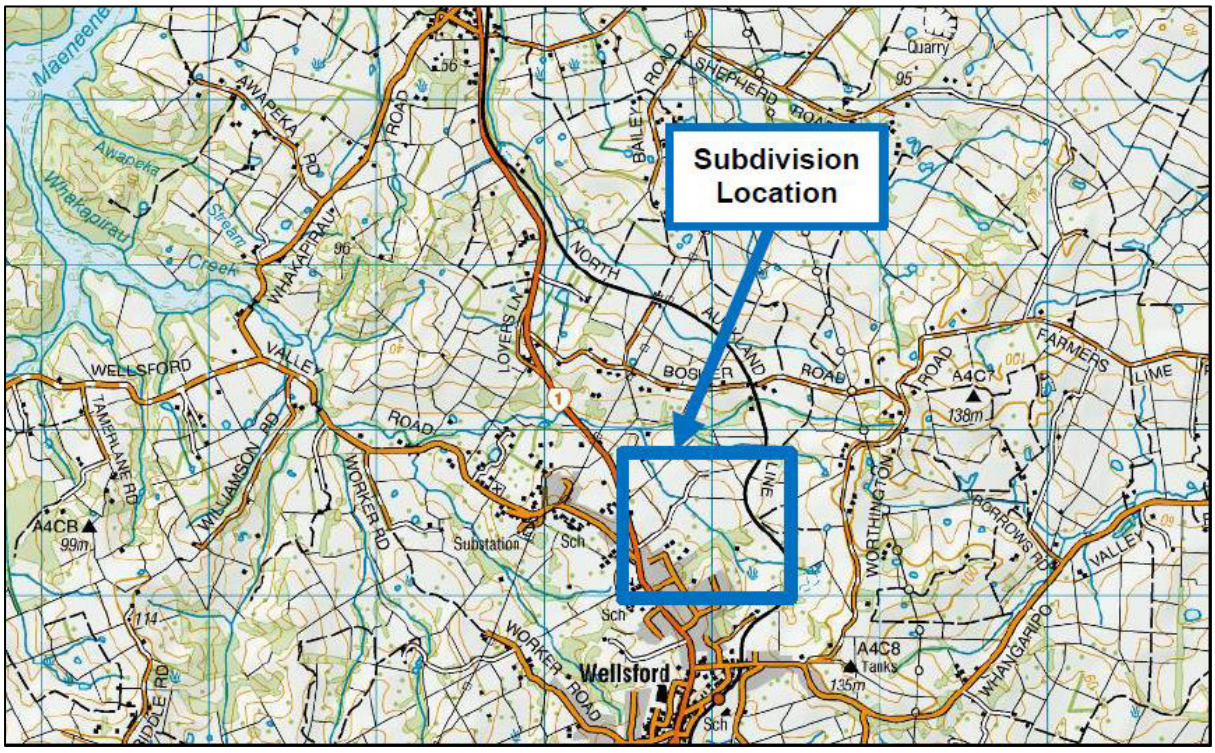


Figure 1: Site Locality

1.1 Overall Subdivision Development

The properties that make up the overall residential subdivision development is outlined within Table 1 below.

Address	Site Area (Ha)
338 Rodney Street	24.75
PT 117, SO 22925, State Highway One	11.87
PT Lot 4, DP 9919	6.72
PT Lot 2, DP 26722	5.75
PT Sec 25, DP 9682 Monowai Street	2.09
26 Batten Street	0.92
11 Wi Apo Place	3.40
Total	55.5

Table 1 - Property Details

The overall subdivision development will encompass an area of around 56 Ha of Future Urban Zoned land and is located on the eastern side of the Rodney Street (State Highway One) carriageway and bound by a railway track along the eastern boundaries.

The staged subdivision development will contain around 650 residential lots and a small neighbourhood centre that would encompass an area of around 2,700m2. The residential lots are to comprise of a mixture of terraced housing, duplex and standalone dwellings. The subdivision master plan is shown in Figure 2 below and attached to Appendix A of this report.

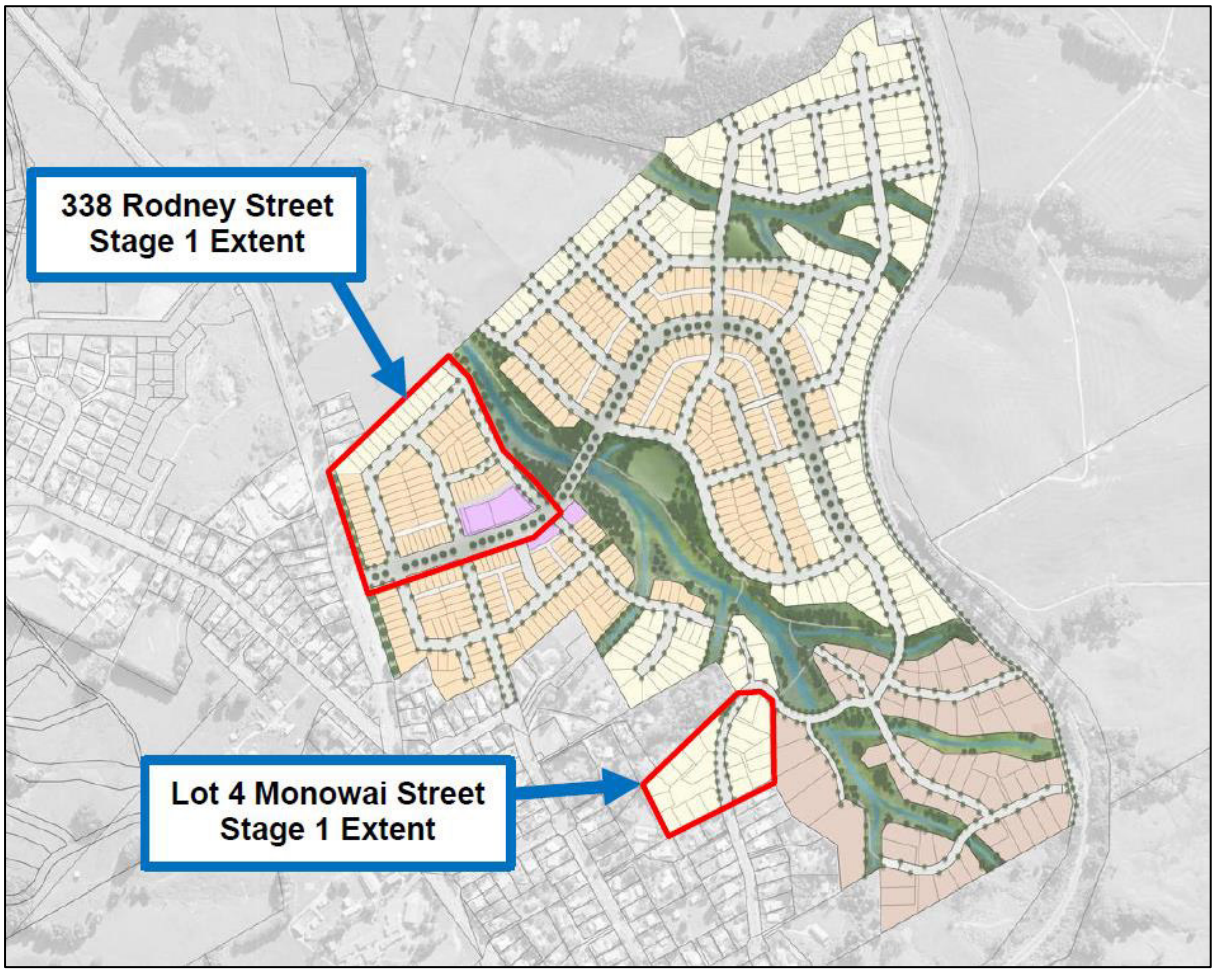


Figure 2: Overall Subdivision Master Plan:

2.0 Overall Subdivision Development Site Description

The properties that form the residential subdivision comprise of undulating pastural land of moderate to steep slopes that fall towards existing gullies that extend through the properties. The gullies typically fall in a south east to north west direction into the downstream receiving environment, refer to Figure 3 for Auckland Council GeoMap aerial view of development.

The Auckland Council GeoMaps System indicates two predominant watercourses that extend through the properties existing gullies and have been referred to as Watercourses A and Watercourse B, refer to Figure 3 for locality details.

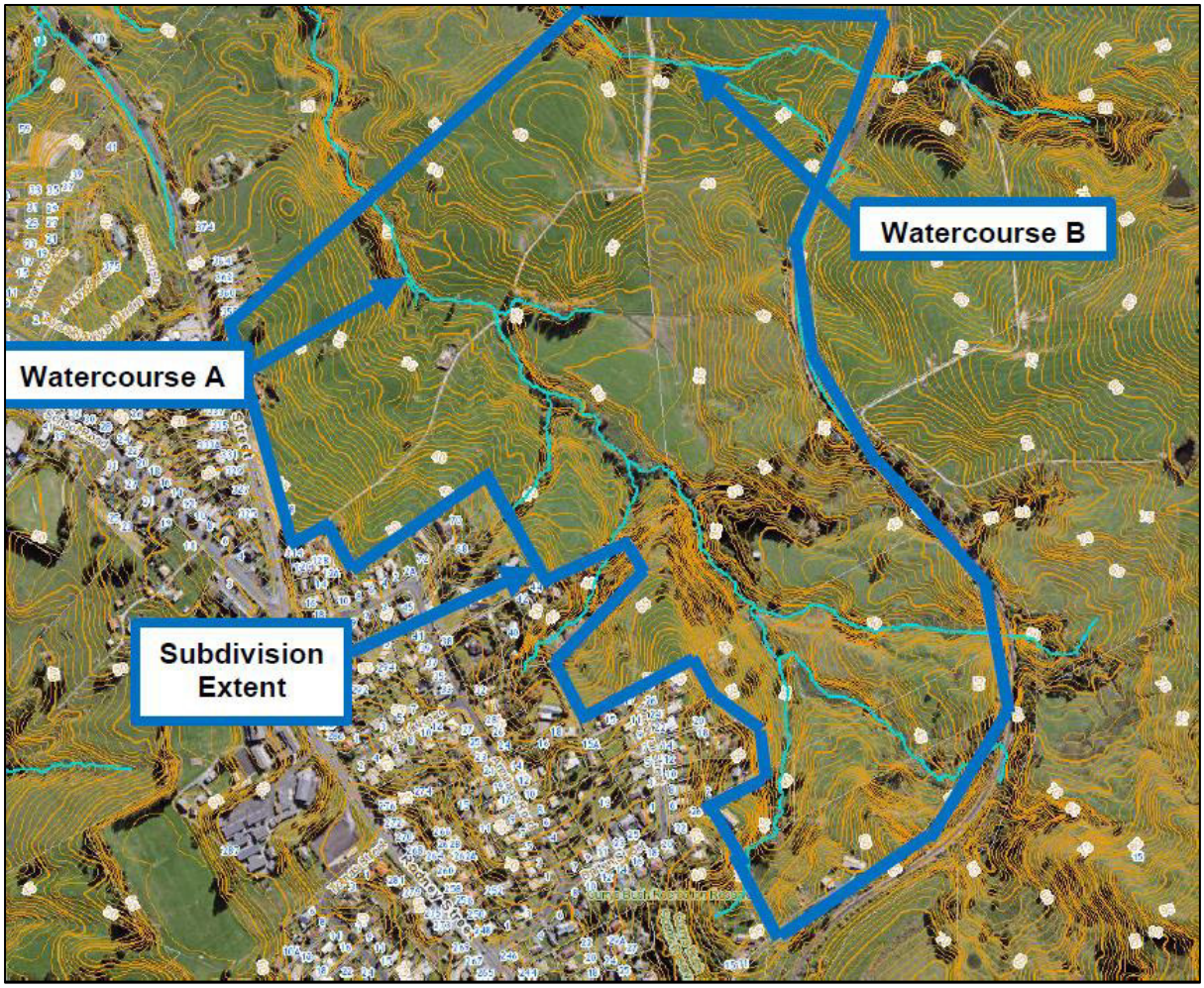


Figure 3: Auckland Council GeoMap Aerial View of Overall Subdivisional Development

Watercourse A contains numerous tributaries that traverse through 338 Rodney Street, PT Lot 4 Monowai Street, PT Lot 2 Monowai Street, PT Sec 25 Monowai Street, 26 Batten Street and 11 Wai Apo Place. Watercourse B extends through PT 117 State Highway One and 338 Rodney Street and contains one tributary. Both watercourses are part of the same stormwater catchment, who's reach extends to just upstream of the subdivision.

The properties have several access points that are located on Rodney Street, Armitage Road, Batten Street, Wai Apo Place and Monowai Street. The existing sites comprise of pasture with bushed covered areas surrounding the gullies.

2.1 Rodney Street Site Description

The property at 338 Rodney Street comprises of a 24.75 Ha irregular shaped lot that is located to the east of Rodney Street. The property is directly accessed off the Rodney Street carriageway via an existing vehicle crossing, refer to Figure 4 for aerial view of property.

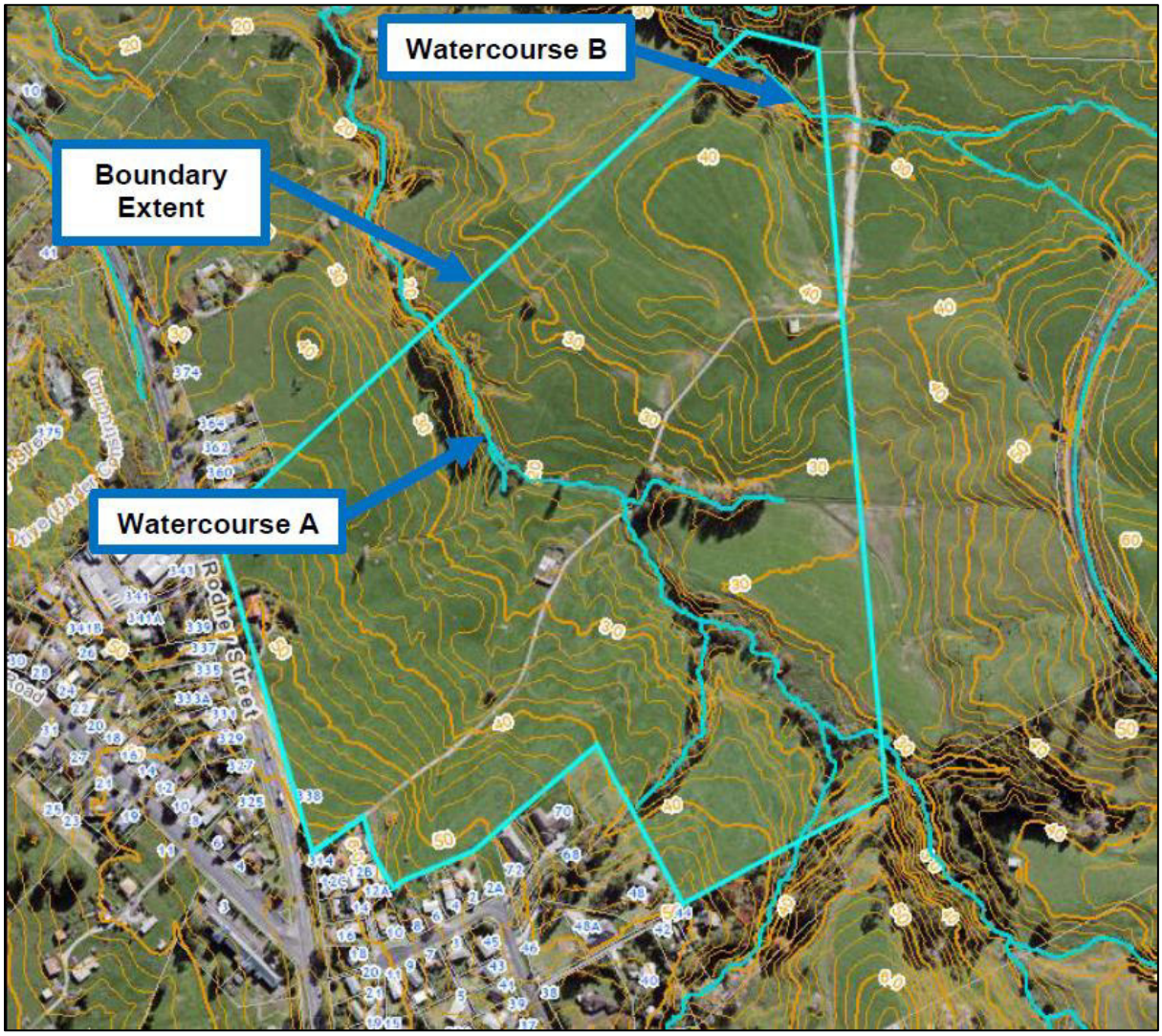


Figure 4: Auckland Council GeoMap Aerial View of 338 Rodney Street

Watercourse A enters the south eastern corner of the property and flows north west through the central portion of the site and continues through to the northern property boundary. Watercourse B bisects the northern corner of the site and flows in a south east to north west direction into the downstream receiving environment, refer to Figure 4 for watercourse locality details.

The western half of the property generally slopes north east towards watercourse A. The southern half of the property contains a knoll in the northern portion of the site which directs flows south west and north east towards the respective watercourses.

An existing dwelling is located on the property and is positioned immediately east of the Rodney Street carriageway within the northern half of the site.

The property comprises of pastural land with bush covered areas.

2.2 Monowai Street Site Description

The property at Lot 4 Monowai Street comprises of a 6.72 Ha irregular shaped lot that is located at the end of Monowai Street. The property is accessed directly from Monowai Street via an existing entrance.

An aerial view of the property is shown in Figure 5 below.

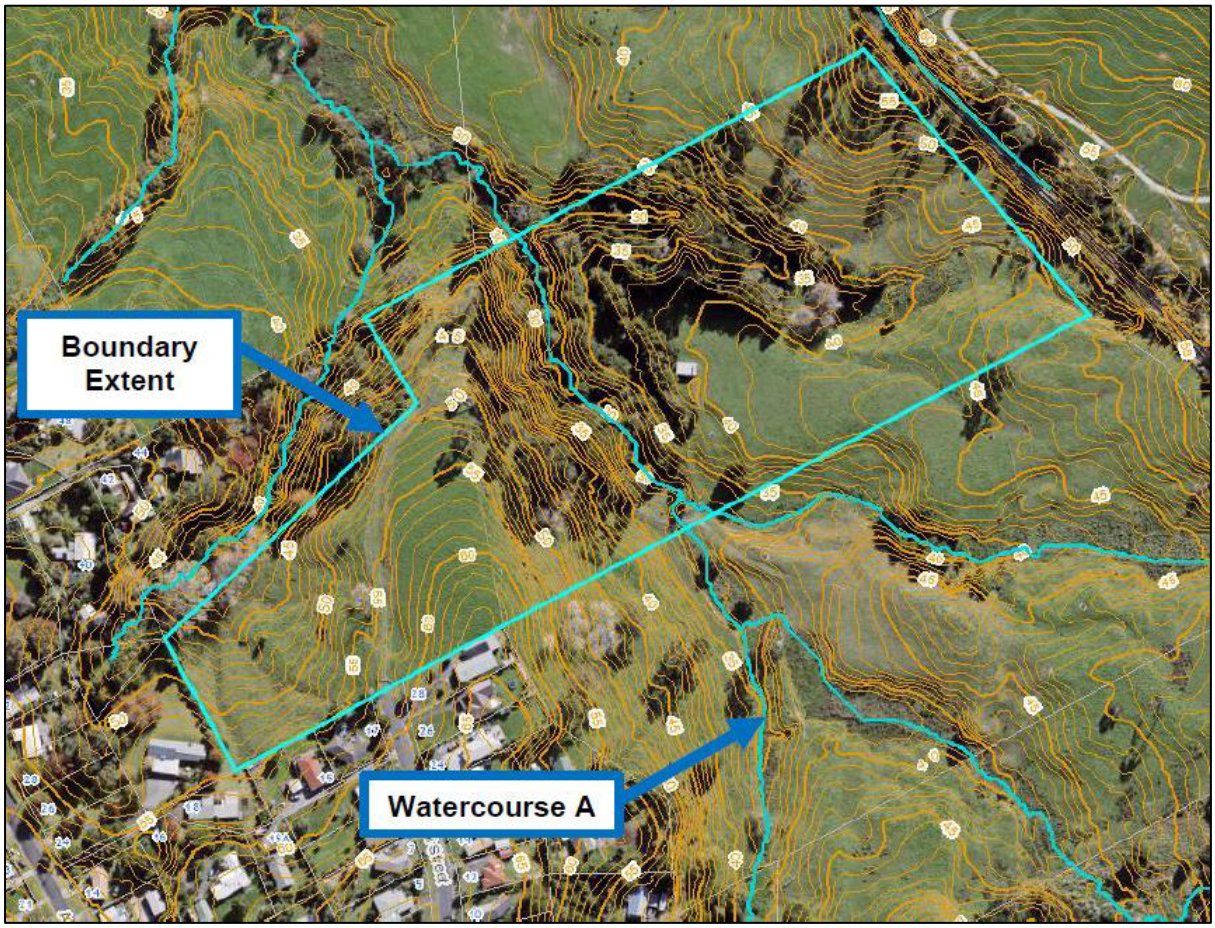


Figure 5: Auckland Council GeoMap Aerial View of Lot 4 Monowai Street

Watercourse A bisects through the central portion of the property and flows in a south east to north west direction into the downstream receiving environment, refer to aerial image above.

The western half of the site generally slopes in a north to north east direction towards watercourse A and the eastern half of the site similarly falls north west towards watercourse A.

The property does not contain any dwelling and comprises of pastural land with bush covered areas enclosed around watercourse A.

3.0 Proposal

The first stage of the subdivisional development comprises of subdividing 338 Rodney Street and Lot 4 Monowai Street to form a total of 84 residential lots for Stage 1.

338 Rodney Street is to be subdivided into 65 residential sized lots and will occupy the north western corner of the property title, refer to Figure 2 for Stage 1 subdivision extent. A scheme plan has been prepared for the first stage at 338 Rodney Street and is attached to Appendix B and shown in Figure 6 below.

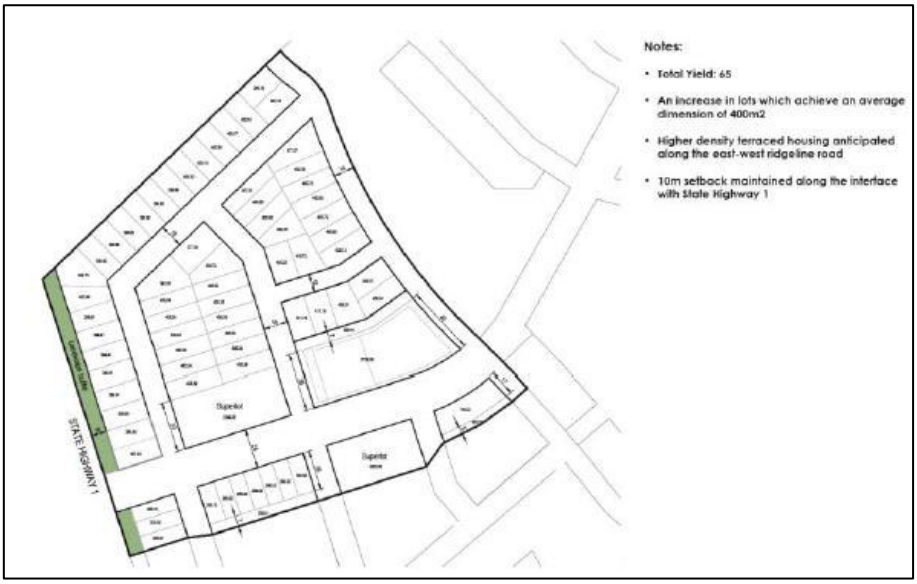


Figure 6: 338 Rodney Street - Stage 1 Scheme Plan

Lot 4 Monowai Street is to be subdivided into 19 residential sized lots and is to be located within the south western portion of the property title, at the end of Monowai Street, refer to Figure 2 for Stage 1 subdivision extent. A scheme plan has been completed for the first stage at Lot 4 Monowai Street and is attached to Appendix C and shown in Figure 7 below.

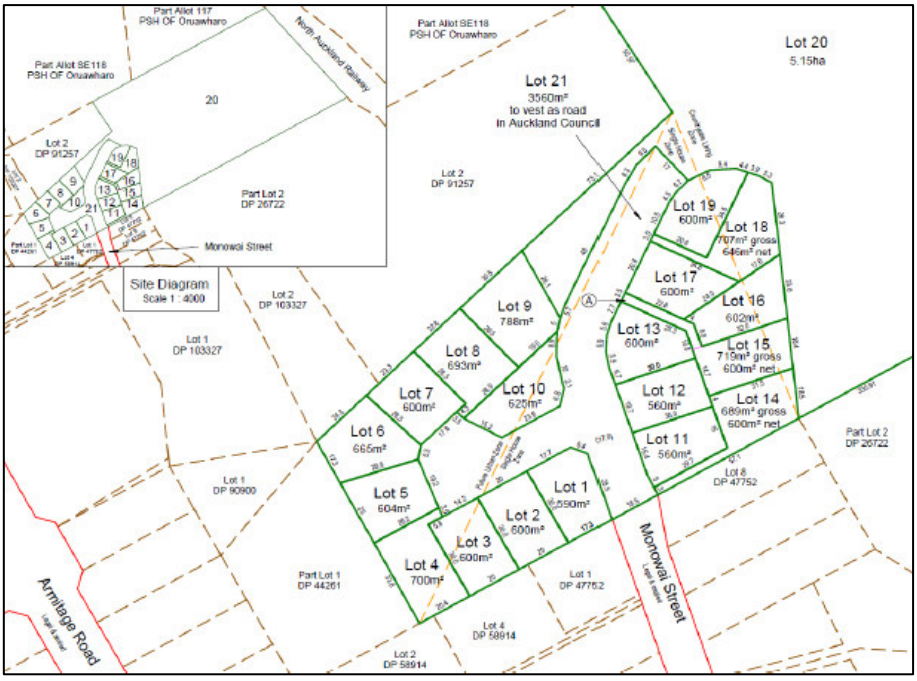


Figure 7: Lot 4 Monowai Street - Stage 1 Scheme Plan

This memo provides high level comments on the civil engineering aspects for Stage 1 of the subdivision development to assist with the fast track consent application.

4.0 Stormwater

Woods have been engaged by the client to address the subdivisions stormwater management requirements as part of this fast track consenting application and their reporting should be referred to for the Stage 1 stormwater management approach.

5.0 Wastewater

The Auckland Council GeoMap System indicates an existing public wastewater network located within the south western corner of 338 Rodney Street and to the south of Lot 4 Monowai Street within road reserve, refer to Figure 8 for locality details.

Figure 8: Auckland Council GeoMap Depicting Existing Wastewater Network

Watercare has been approached by this office earlier last year to discuss the public wastewater network capacity as there are known capacity issues within Wellsford.

Watercare have confirmed that a new wastewater treatment plant is proposed for the Wellsford area, but construction timeframes are still to be finalised. According to Watercare, the upgraded wastewater treatment plant will provide enough capacity to cater for the overall subdivision development.

Watercare have confirmed that there is sufficient capacity within the existing wastewater network to service the 19-lot residential subdivision proposed under Stage 1.

An internal wastewater network will be reticulated through the Stage 1 subdivision road reserve in preparation for the connection into the public network. The stage 1 internal wastewater network will most likely be a mixture of a low pressurised system and gravity fed networks that would feed into the public system and will be designed to cater for the overall subdivision design flows.

The Stage 1 internal wastewater network design is to be further investigated as part of the detailed design.

6.0 Water Supply

The Auckland Council GeoMaps System indicates existing public water supply available within the road reserves of Rodney Street, Kelgary Place, Armitage Place, Batten Street and Monowai Street, refer to Figure 9 for locality details.

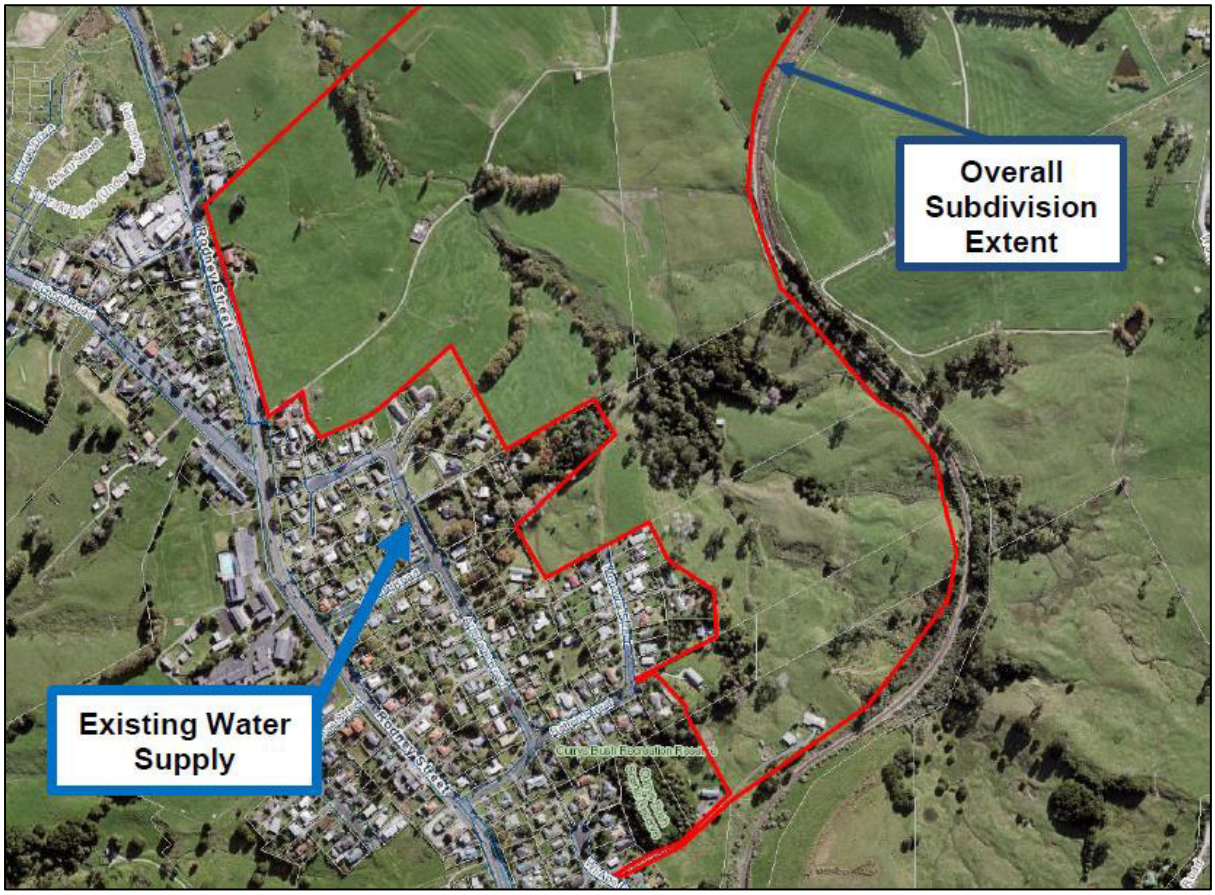


Figure 9: Auckland Council GeoMap of Existing Water Supply Layout

This office understands that the Wellsford water supply network is under capacity and cannot provide for further subdivision developments.

Barker & Associates have been in discussions with Watercare to discuss the future water supply network capacities.

Watercare are currently applying for a new bore consent that will provide additional capacity for the water supply network and should be granted by the end of 2022. The new bore should provide enough capacity to service Stage 1 the subdivision development.

The water supply network will be reticulated through the Stage 1 road reserve and located within the combined services trench that will be shared with the pressurised wastewater,

power, and telecommunications. Water supply connections will be supplied to each residential lot where a single water meter will be installed at the connection end.

The Stage 1 water supply network is to be sized to cater for the overall subdivisional development and will be investigated further as part of the detailed design.

7.0 Telecommunications

The telecommunications network will provide both a telephone and broadband connection for the Stage 1 subdivision development.

This office has been in discussion with Chorus who have confirmed that there is sufficient capacity within their network to service the Stage 1 subdivision development.

The chorus ducting is to be installed within the Stage 1 road reserve and located within the combined services trench that will be shared with the pressurised wastewater, power, and water supply. A telephone connection will be supplied to each subdivisional lot.

Chorus will be engaged at detailed design stage to design the Stage 1 telecommunications network.

8.0 Power

This office has been in discussions with Vector to confirm if their network has sufficient capacity to service the Stage 1 residential subdivision.

Vector have confirmed that there is sufficient capacity within their network to service the subdivision without significant upgrades to their network.

The Vector ducting is to be installed within the Stage 1 road reserve and located within the combined services trench that will be shared with the pressurised wastewater, telephone, and water supply. A power connection will be supplied to each subdivisional lot.

Vector will be engaged at detailed design stage to design the Stage 1 power network.

9.0 Earthworks

An earthworks operation will be required to form Stage 1 of the subdivisional development to subgrade levels and minimise the earthworks where possible.

The earthworks will ideally comprise of a cut to fill operation and include the following construction methodology:

- Installation of erosion and sediment control devices
- Excavation and stockpiling topsoil
- Excavation of cut material
- Placement of fill material to raise low lying areas
- Stabilising and forming subdivision roads
- Top soiling exposed areas

A combination of retaining walls and engineered batters is likely required to form near level building platforms and maximise building development potential or alternatively through integrated building design.

An earthworks model should be competed at resource consent stage to design finished levels and calculate earthworks areas and volumes to assist with the subdivisions resource consent.

10.0 Erosion and Sediment Control

Erosion and sediment control devices will be designed and constructed to treat sediment laden water generated from the earthworks operation in accordance with *Auckland Councils Guideline Document 2016/05 - Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05).*

The exposed earthworks areas would need to be divided into sub-stage catchments so that the earthworks treatment areas do not exceed 5 Ha. The sub staged earthwork catchments can be operated simultaneously.

Proposed sediment retention ponds will be installed within each sub-stage catchment to treat sediment laden water for a maximum earthworks catchment area of 5 Ha in accordance with GD05. Chemical treatment will be utilised to increase the treatment performance of the sediment

A combination of diversion bunds and contour drains will be installed along the boundaries of each sub staged catchment to contain and convey the dirty flows downstream to a sediment retention pond for treatment purposes.

Clean water diversion bunds will be installed along the upper end of the sub staged catchments to divert clean water flows away from the earthworks areas to avoid sediment contamination within the downstream environment.

An erosion and sediment control design will be completed at resource consent stage to assist with the subdivision consent.

11.0 Roading

Stage 1 will require internal public roads to be provided within the development to enable vehicular access to each lot. The public roads would be situated within a road reserve that would also contain the public infrastructure services (i.e stormwater, power etc.), pedestrian footpaths and vehicle crossings to each residential lot.

Commute Traffic Engineers are addressing the Stage 1 roading network as part of this fast track consenting application and there reporting should be referred to for the internal subdivision roads.

12.0 Summary

Hutchinson Consulting Engineers have been engaged by Wellsford Welding Club Limited to provide high level civil engineering input into Stage 1 of the subdivisional development located at 338 Rodney Street and Lot 4 Monowai Street to assist a fast track application.

The Stage 1 subdivision is considered feasible from a civil engineering perspective but will require further civil engineering design input at detailed design stage.

A summary of the engineering input is outlined below:

- The Stage 1 development is located at 338 Rodney Street and Lot 4 Monowai Street and proposes to form a total of 84 residential lots.

- Woods are providing comment on the stormwater management approach for Stage 1 of the subdivisional development.

- Watercare have confirmed that a new wastewater treatment plant is proposed for the Wellsford area, but construction timeframes are still to be finalised. Watercare have confirmed that there is sufficient capacity within the existing wastewater network to service the 19-lot residential subdivision proposed under Stage 1.

- Watercare have confirmed that the existing water supply network in Wellsford is currently under capacity and cannot cater for any further subdivisional developments. Watercare are currently applying for a new bore consent that will increase the water supply network capacity and is anticipated to be granted by the end of 2022. The new bore should provide enough capacity to service Stage 1 the subdivision development.

- Vector have confirmed that there is currently capacity within their network to reticulate the Stage 1 subdivisional development.

- Chorus have confirmed that there is capacity within their network to reticulate the Stage 1 subdivisional development with telecommunications.

- Earthworks will be required to form the subdivisional development to proposed design levels. An earthworks model is to be completed at detailed design stage.

Should you wish to discuss any aspects of the above information, please contact this office.

We trust this meets with your approval.

Yours faithfully,
HUTCHINSON CONSULTING ENGINEERS LTD

Prepared by Matthew Hughes
ENGINEER

Reviewed by Paige Farley
CIVIL MANAGER

Approved by Ian Hutchinson
MANAGING DIRECTOR

Appendix A
Subdivision Master Plan

Appendix B

338 Rodney Street Scheme Plan

Notes:

- **Total Yield: 65**
- **An increase in lots which achieve an average dimension of 400m2**
- **Higher density terraced housing anticipated along the east-west ridgeline road**
- **10m setback maintained along the interface with State Highway 1**

Wellsford North Development
Stage 1 Lot Layout

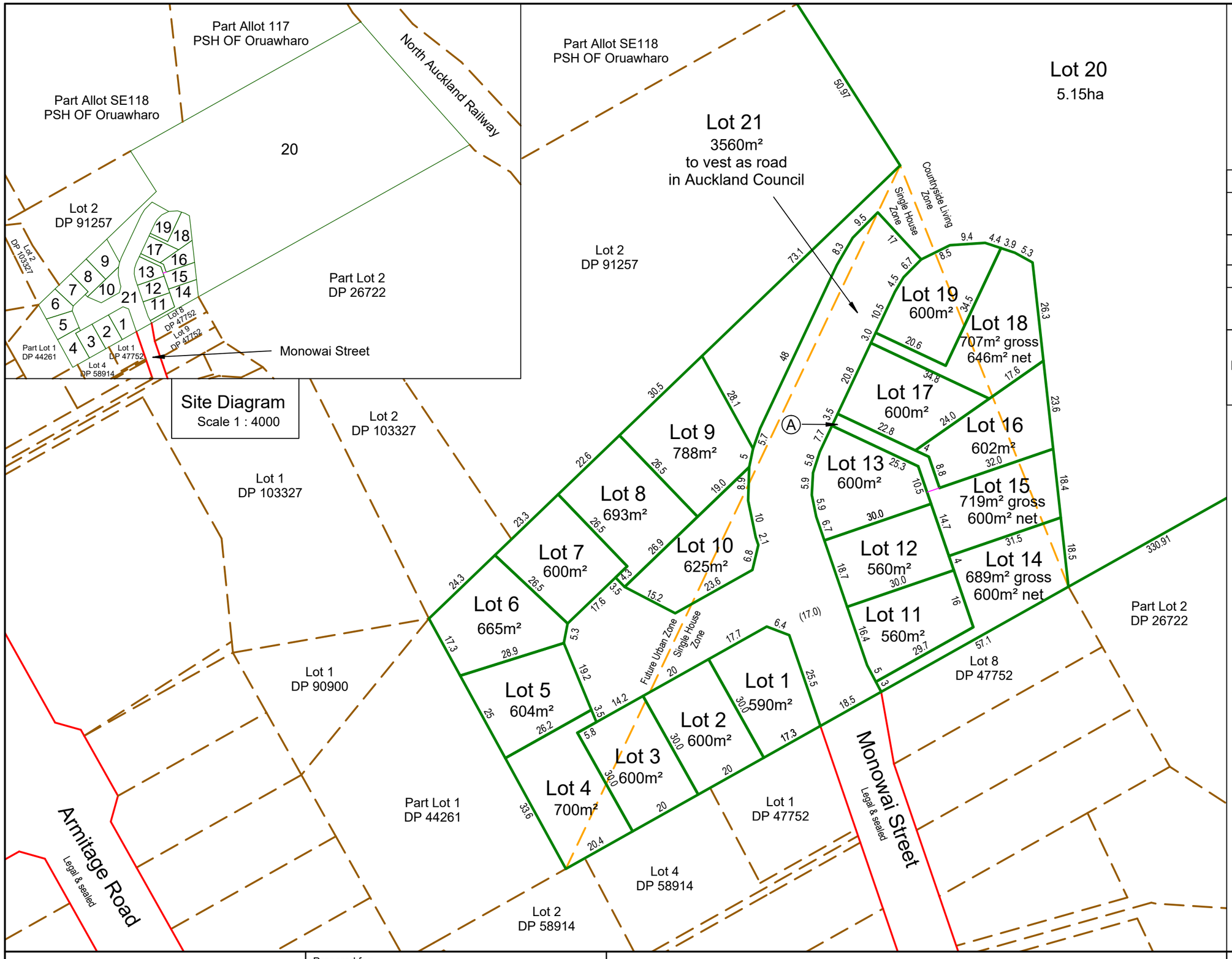
Scale. 1:1500 at A3
Date. 14/10/2021

Status. For Information
Sheet. 1/1

B&A
Urban & Environmental

Appendix C

Lot 4 Monowai Street Scheme Plan



Memorandum of Easements			
Purpose	Shown	Servient Tenement (Burdened Land)	Dominant Tenement (Benefited Land)
ROW	Ⓐ	Lot 15 hereon	Lot 16 hereon

Schedule of Easements			
Purpose	Shown	Servient Tenement (Burdened Land)	Dominant Tenement (Benefited Land)
Right to convey Electricity & Telecomm -unications	Ⓐ	Lot 15 hereon	Lot 16 hereon

Notes:

- Areas and dimensions are approximate only and are subject to survey.
- Zone:
  - Future Urban Zone
  - Rural - Countryside Living Zone
  - Residential - Single House Zone
- This plan is for Resource Consent Purposes only.
- This plan is subject to geotechnical, planning and engineering design.
- Comprised in RT NA1358/94
  Total Area - 6.7213ha
- Contour Interval is 2.0m (page 3)
- Vertical Datum: AVD 46
- Origin: BM Wellsford Fundamental (ABHL)
  RL: 65.62 m
- AUP Zone Boundary

Scale 1:1000

10 0 10 20 30 40 50

buckton
consulting surveyors ltd
16 Mill Lane, P.O.Box 107, Warkworth 0941, 09 425 8950
www.buckton.co.nz, surveyors@buckton.co.nz

Prepared for:
Wellsford Welding Club Ltd

Proposed subdivision of Part Lot 4 DP 9919

Address: Monowai Street, Wellsford

Scale:			
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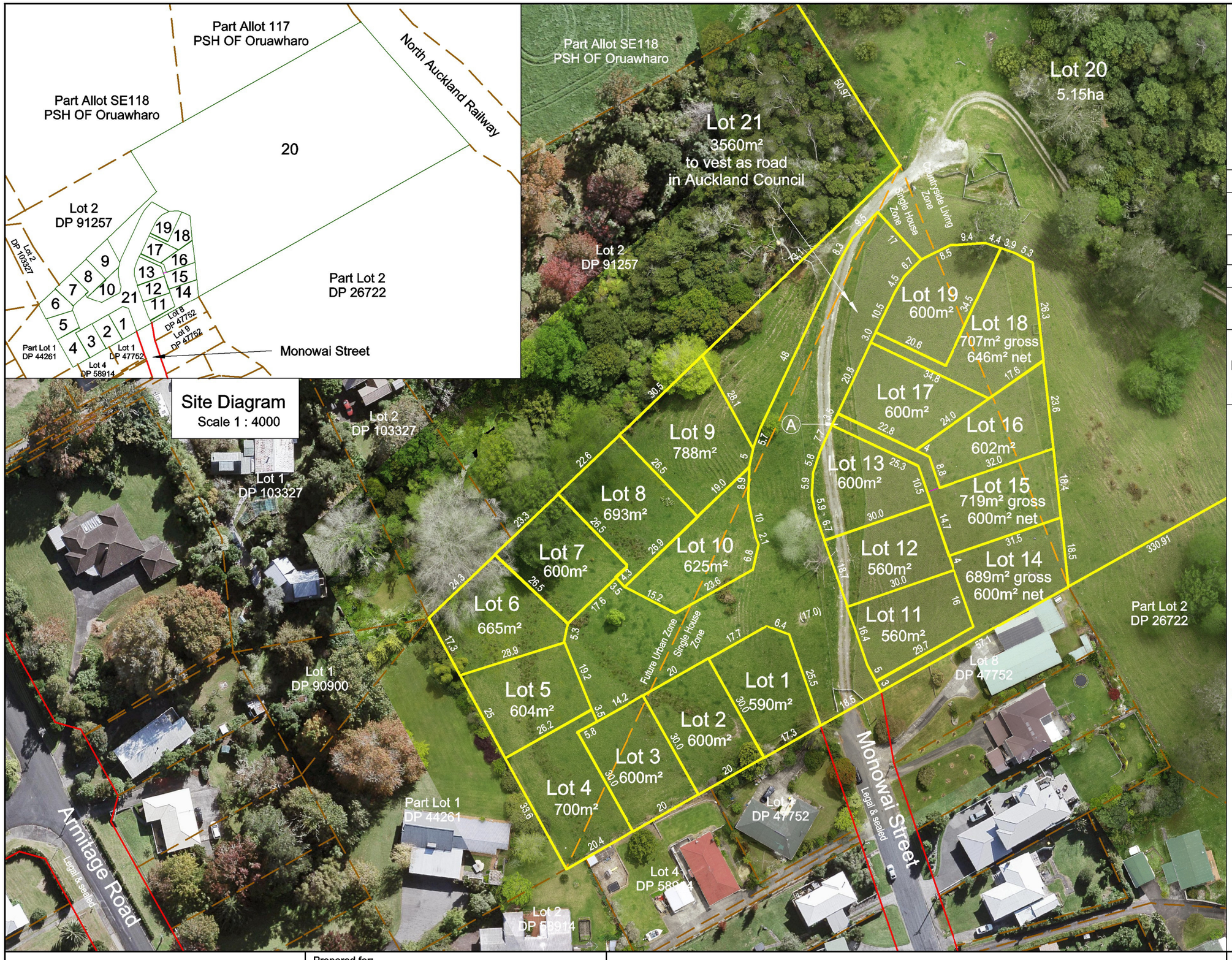
Job: 8274	Date: 16/09/21	Drawn: PS	Reviewed: GH
Drawing: SP 01	Rev: -	Sheet: 1 of 3	



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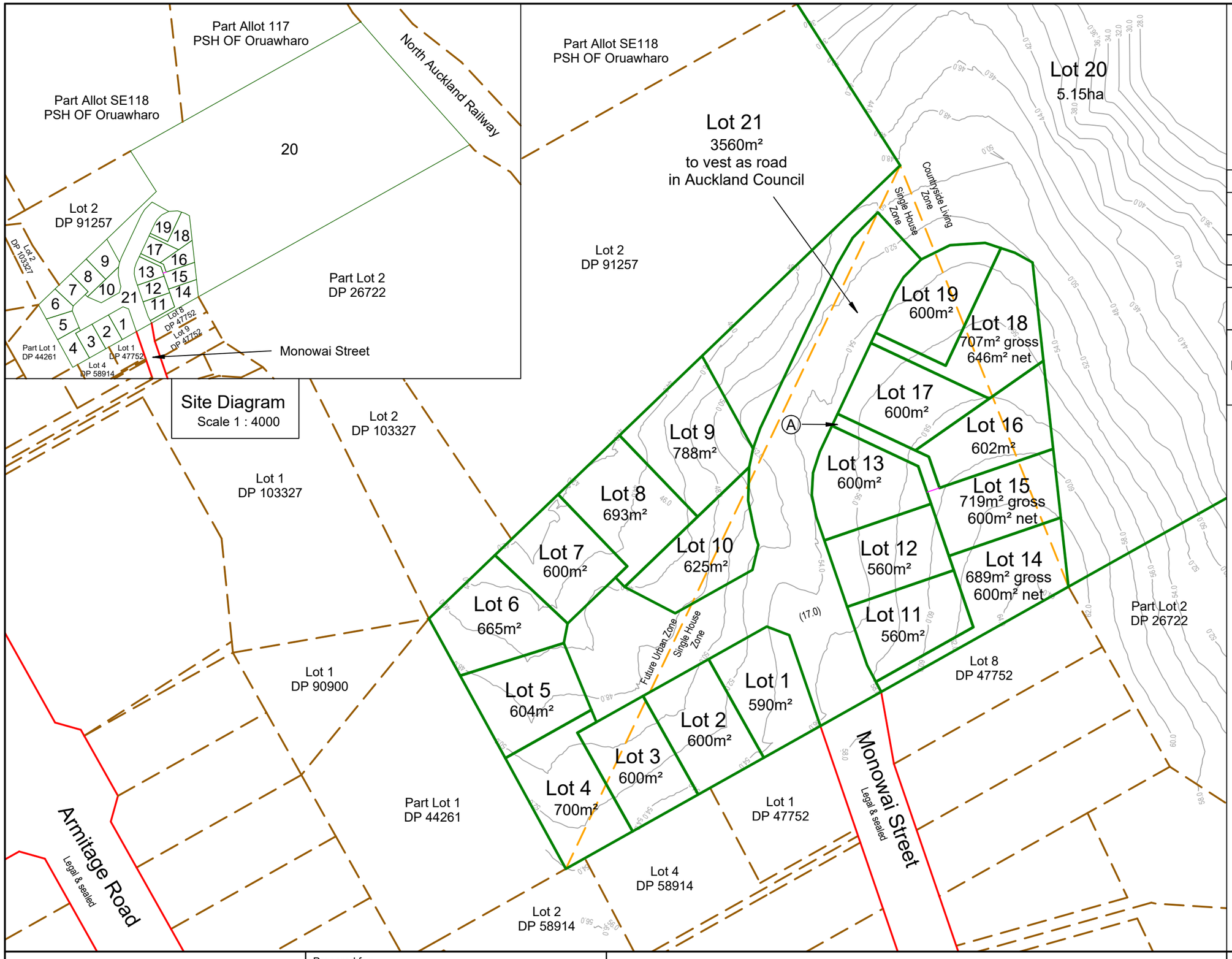

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