Te Kaunihera o Te Hiku o te Ika
Far North District Council

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Schedule 4). Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges — both available on the Council's web page.

1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement? (✓) **Yes** ( ) **No**

2. Type of Consent being applied for

(more than one circle can be ticked):

(✓) **Land Use**
( ) **Fast Track Land Use***
(✓) **Subdivision**
( ) **Consent under National Environmental Standard**
(e.g. Assessing and Managing Contaminants in Soil)
( ) **Other (please specify)** _____

( ) **Discharge**
( ) **Change of Consent Notice (s.221(3))**
( ) **Extension of time (s.125)**

** The fast track is for simple land use consents and is restricted to consents with a controlled activity status.*

3. Would you like to opt out of the Fast Track Process?

( ) **Yes** ( ) **No**

4. Consultation

Have you consulted with Iwi/Hapū? (✓) **Yes** ( ) **No**

If yes, which groups have you consulted with?	Te Runanga O Whaingaroa
Who else have you consulted with?	FENZ

For any questions or information regarding iwi/hapū consultation, please contact Te Hono at Far North District Council tehonosupport@fndc.govt.nz

5. Applicant Details

Name/s: Te Runanga O Whaingaroa

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

6. Address for Correspondence

Name and address for service and correspondence (if using an Agent write their details here)

Name/s: Andrew Hill - Chestr Consultants

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

** All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.*

7. Details of Property Owner/s and Occupier/s

Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s: Te Runanga O Whangaroa

Property Address/ Location: 2B Ash Grove Circle, Haruru

Postcode

8. Application Site Details

Location and/or property street address of the proposed activity:

Name/s:	
Site Address/ Location:	2B Ash Grove Circle, Haruru Postcode
Legal Description:	Appellation Lot 2 DP 563441 **Val Number:**
Certificate of title:	See attached

Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff? ◯ **Yes** ✓ **No**

Is there a dog on the property? ◯ **Yes** ✓ **No**

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. This is important to avoid a wasted trip and having to re-arrange a second visit.

9. Description of the Proposal:

Please enter a brief description of the proposal here. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

This application seeks land use and subdivision consent to construct 19 residential units, with associated earthworks, and undertake a freehold subdivision of the property at 2B Ash Grove Circle

If this is an application for a Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s), with reasons for requesting them.

10. Would you like to request Public Notification?

◯ **Yes** ✓ **No**

11. Other Consent required/being applied for under different legislation

(more than one circle can be ticked):

◯ **Building Consent** Enter BC ref # here (if known)

(✓) **Regional Council Consent (ref # if known)** AUT.042368.01 and AUT.0423

◯ **National Environmental Standard consent** Consent here (if known)

◯ **Other (please specify)** Specify 'other' here

12. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following:

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL) ◯ **Yes** (✓) **No** ◯ **Don't know**

Is the proposed activity an activity covered by the NES? Please tick if any of the following apply to your proposal, as the NESCS may apply as a result. ◯ **Yes** (✓) **No** ◯ **Don't know**

◯ **Subdividing land**

◯ **Changing the use of a piece of land**

◯ **Disturbing, removing or sampling soil**

◯ **Removing or replacing a fuel storage system**

13. Assessment of Environmental Effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as Written Approvals from adjoining property owners, or affected parties.

Your AEE is attached to this application (✓) **Yes**

13. Draft Conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? (●) **Yes** ◯ **No**

If yes, do you agree to extend the processing timeframe pursuant to Section 37 of the Resource Management Act by 5 working days? (✓) **Yes** ◯ **No**

14. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write in full) Te Runanga O Whaingaroa

Email:

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

[redacted]

Fees Information
An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

Declaration concerning Payment of Fees
I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: (please write in full) [redacted]

Signature:
(signature of bill payer [redacted] **MANDATORY**

Date 5/12/24

15. Important Information:

Note to applicant
You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.
You may apply for 2 or more resource consents that are needed for the same activity on the same form.
You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement.
A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:
Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, www.fndc.govt.nz. These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

15. Important information continued...

Declaration

The information I have supplied with this application is true and complete to the best of my knowledge.

Name: (please write in full)

Signature:

Date

A signature is not required if the application is made by electronic means

Checklist (please tick if information is provided)

- ◯ Payment (cheques payable to Far North District Council)
- ◯ A current Certificate of Title (Search Copy not more than 6 months old)
- ◯ Details of your consultation with Iwi and hapū
- ◯ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ◯ Applicant / Agent / Property Owner / Bill Payer details provided
- ◯ Location of property and description of proposal
- ◯ Assessment of Environmental Effects
- ◯ Written Approvals / correspondence from consulted parties
- ◯ Reports from technical experts (if required)
- ◯ Copies of other relevant consents associated with this application
- ◯ Location and Site plans (land use) AND/OR
- ◯ Location and Scheme Plan (subdivision)
- ◯ Elevations / Floor plans
- ◯ Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

Assessment of Environmental Effects

2A Ash Grove Circle, Haruru
Proposed Subdivision & Land Use

Prepared For:
Te Rūnanga O Whaingaroa

Job No.: 15757
Rev: 0 **Date:** 4 December 2024

CHESTER

Revision History

Revision No	Description/comments	Prepared By	Date
0	Original	Andrew Hill	4/12/2024

Document Control

Action	Name	Signed	Date
Prepared by	Andrew Hill Principal Planner		4/12/2024
Reviewed by	H. Anderson Planning Team Leader		4/12/2024

Distribution

Business/company	Attention	Role

Table of Contents

1 Executive Summary

This application seeks land use and subdivision consent to construct 19 residential units, with associated earthworks, and undertake a freehold subdivision of the property at 2B Ash Grove Circle. Resource consent is required as a discretionary activity under the Operative Far North District Plan.

Section 88 of the Resource Management Act 1991 ('the RMA') sets out the particular requirements for persons making an application to a local authority for a resource consent. Section 88(2)(b) states that:

> *"an application must be made in the prescribed form and manner; and include, in accordance with Schedule 4 of the Act, an assessment of environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment".*

The following assessment is made in accordance with these requirements.

2 Background

Te Rūnanga O Whaingaroa (the applicant) purchased the site from OTL Developments Limited who were granted resource consent in 2021 from the Far North District Council (FNDC) under 2300241-RMACO. The consent was for a proposed subdivision to create twenty residential lots plus four access lots, including earthworks. This also included land use consent to enable future residential units to be built less than 20m from areas of vegetation and for future impermeable surfaces to exceed permitted and controlled activity stormwater management rules. Consent was also granted by the Northland Regional Council for Earthworks exceeding a volume greater than 5000 m^3 in a 12-month period and the diversion and discharge of stormwater from land disturbance activities are deemed controlled activities.

Figure 1 Previous scheme consent as part of resource consent 2300241-RMACO

Upon receipt of the original plans from OTL Development Limited, the applicant realised the proposed development was difficult to achieve given the gradients in the southern part of the site and the scheme needed to be redesigned. Funding for the development from the Ministry of Housing and Development (MHUD) also dictates that the original 19 lot subdivision density stills needs to be achieved.

Figure 2 New layout proposed under this resource consent

This new design (see Figure 2) by Chester Consultants still achieves the desired 19 lots but has meant that the lower part of the site has been more densely developed to achieve this. The remainder of the plans are similar to what was consented with access being granted off State Highway 11, an internal access way to service the lots (including 2A Ash Grove Circle). However, the amount of proposed earthworks, bush removal and internal roading is considerably less than the original plans.

3 Subject Site

3.1 Subject Site Details

Address	2B Ash Grove Circle, Haruru
Appellation	Lot 2 DP 563441
Property Area	2.5ha
Territorial Authority	Far North District Council
Zones	Residential

4 Site and Surrounding Environment

4.1 Site Description

The site being 2B Ash Grove Circle, Haruru is legally described as above. A copy of the Record of Title is included in Appendix 1.

As shown in Figure 3 below, the site is located on Ash Grove Circle. The northern part of the subdivision site slopes south to north, the southern portion of the site is much steeper and will not be developed (remainder of Lot 19).

Figure 3 Aerial image of locality (Source: Googe Maps)

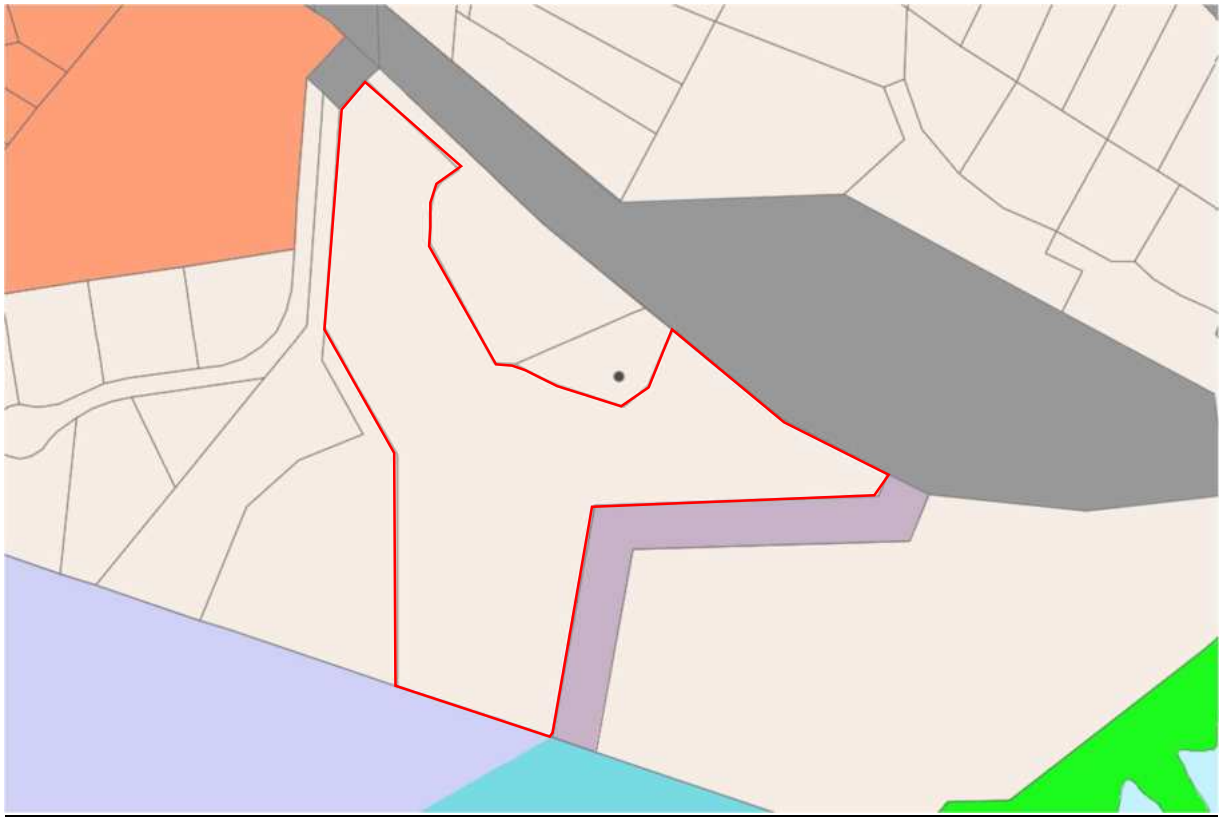


Figure 4 Operative District Plan Zoning (Source: FNDC GIS)

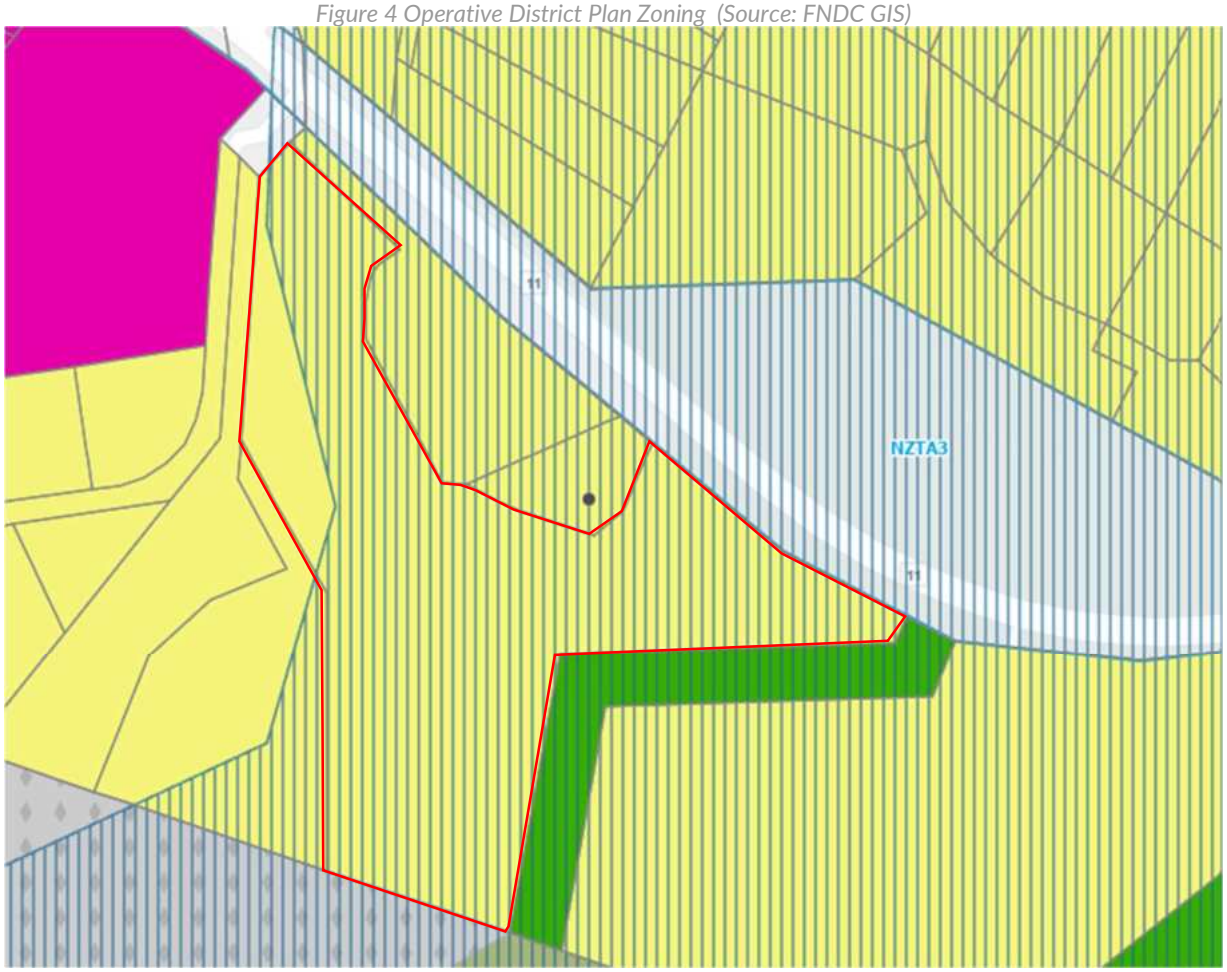


Figure 5 Proposed District Plan Zoning (Source: FNDC GIS)

4.2 Surrounding Environment

The site adjoins a recreation reserve to the east (Lot 6 DP 102209), of which, the northern end is connected to State Highway 11. This recreation reserve is in bush and includes natural gullies that discharge to Kaipatiki Creek. There are no formed paths within the reserve. Surrounding land is generally developed for residential use and motel accommodation. To the south, is a bush block with Rural Living Zoning.

Figure 6: Existing site looking North

The subject sites are recorded as part of a wider kiwi habitat in Far North Maps ("kiwi present" zoning). They are not part of any Protected Natural Areas. Note that the bush to the south of the subject site is part of the Opua Forest ecological unit (P05/058).

The Proposed District Plan maps show that for the most part, the site is within the coastal environment but does not contain areas of high or outstanding natural character and does not include outstanding natural landscape or features.

5 Proposal

5.1 Description of the Proposal

The applicant proposes to develop the site by erecting 5 * 2-bedroom dwellings, 9 * 3-bedroom dwellings and 5 * 4-bedroom dwellings on the site (19 units total) and one vacant Lot for the common access. A new vehicle crossing from State Highway 11 will be formed, and new internal roading will be constructed.

The proposal includes installation of reticulation and a connection to each lot for water, stormwater and sanitary sewer, details of which are within the Land Development Report (attached as Appendix 6). The existing right of way to 2A Ashgrove Circle will be relinquished and new access will be granted via the right of way (Lot 100). Other easements have been established to provide electricity, communications, wastewater, drinking water, stormwater, bush protection, pedestrian access and firefighting purposes (these are shown in the Scheme Plan in Appendix 3).

Earthworks required to form access roading and form stormwater and service trenching has been calculated as 5006m^3 of cut, with 3080m^3 of fill. The vehicle access alignment will be cleared of vegetation. The Development Plans can be found in Appendix 5.

Figure 7 Proposed Site Layout

6 Consultation

During the design of the proposal the design team meet with FNDC to discuss the site and the proposed development. Feedback was received regarding planning and infrastructure matters which has been considered; however, no objections were raised by Council. A copy of the meeting discussion and feedback is located in Appendix 7.

Consultation with iwi was also carried out with Te Runanga O Whaingaroa and a letter of support is located in Appendix 7.

Consultation was carried out with the owners of 2B Ash Grove who will have their access way and services upgraded as part of the development.

7 Statutory Context

7.1 Far North District Council

The FNDC is undergoing a review of their District Plan, at this stage the Proposed District Plan (PDP) has limited legal effect. The following rules assessment has considered those relevant rules under the Operative District Plan (ODP) and those rules which have legal effect under the Proposed District Council at the time of writing this AEE.

7.2 Operative District Plan

Under the ODP resource consents is required in respect of the following matters:

1.1.5 Residential – Chapter 7

Each residential unit for a single household shall have available to it a minimum net site area of: *Sewered sites: 300m²* and therefore is a **restricted discretionary** activity under 7.6.5.3.1 residential intensity.

All of the dwellings meet the 8m height limits except for Lot 18 and 19 therefore this is a **restricted discretionary** activity under 7.6.5.3.

There are no external height in relation to boundary (HIRB) breaches, however, Lots 2-9 and 16 breach internal HIRB therefore this is a **restricted discretionary** activity under 7.6.5.3.

1.1.6 Natural and Physical Resources – Chapter 12

Indigenous Flora and Fauna

The total amount of vegetation clearance is approximately 6230m^2 therefore this is a **restricted discretionary** activity under 12.2.6.2.2

Soils and Minerals

The total earthworks for the sites is approximately 10,785m^3 and therefore is a **discretionary** activity under Rule 12.3.6.3.

Natural Hazards

Some of the buildings will be within 20m from the drip line of trees and are therefore a **discretionary** activity under Rule 12.4.6.3.

7.2.1 Subdivision – Chapter 13

Each lot is sewered and less than 600m^2 in area but is greater than 300m^2 and therefore is a **discretionary** activity under Rule 13.7.2.1. Minimum area for vacant new lots and new lots which already accommodate structures.

Most lots cannot comply with the minimum 14m x 14m dimensions and are therefore a **discretionary** activity under 13.7.2.2 allotment dimensions.

Transport - Chapter 15

There will be more than 40 daily one way traffic movements and are therefore a **discretionary** consent under 15.1.6A.1.

The subdivision will create a private access lot with more than 8 users and will be a **discretionary** activity under Rule 15.1.6C.2.

A summary of the OPD rules compliance and non-compliance is shown in the table below.

Rules Assessment Table for ODP

Rule	Commentary	Complies

7.6.5.1.2 Residential intensity	The sewered sites are less than 600m^2, but more than 300m^2 and is RD	Does not comply
7.6.5.1.4 Building height	All buildings are less than 8m high except for Lot 18 and 19	Does not comply
7.6.5.1.5 Sunlight	All of the buildings comply except for Lots 2-9 and 16	Does not comply
7.6.5.1.6 Stormwater management).	The gross impermeable site coverage is less than 50%	Complies
7.6.5.1.7 Set back from boundaries	All of the buildings comply with the permitted setbacks	Complies
7.6.5.1.17 Building coverage	None of the buildings have exceed the 45% coverage	Complies
12.3.6.2.2 Excavation and/or filling	The earthworks are greater than 500m^3	Does not comply
12.4.6.1.2(a). Fire risk to residential units	Buildings are within 20m of dripline	Does not comply
12.2.6.1.4 Indigenous vegetation clearance in other zones	The vegetation clearance is more than 500m^2	Does not comply
13.7.2 Allotment sizes, dimensions and other standards	The lots are less the 600m^2, but greater than 300m^2 and will not comply with the minimum 14mx14m dimensions	Does not comply
15.1.6C.1 Private accessway in all zones	There are more than 8 lots off the private accessway	Does not comply
15.1.6A.1 Maximum daily one-way traffic movements	There are more than 20	Does not comply
15.1.6B.1 Permitted activities	The design meets all of the parking requirements	Complies

7.3 Proposed District Plan

No consent is required under the PDP as the application meets the permitted standards for indigenous vegetation clearance which does have legal effect. Under Rule IB-R1, the indigenous vegetation clearance is considered a permitted activity as a 20m set back is required from dwellings for fire risk and for health and safety, much of the bush proposed to be removed has been cleared within the last 10 years and is for essential infrastructure to construct each lot. The average amount of bush cleared per lot is 311m^2, which is well below the permitted threshold. While Council has previously raised, as a concern, the clearance of indigenous vegetation within a Significant Natural Area (SNA) (Rule IB R3), this SNA has been removed from the Proposed District Plan maps. Therefore, this rule is no longer triggered, this was confirmed by Nick Williamson of FNDC 21/11/2024 (see Appendix 7). More information regarding vegetation clearance can be found in Appendix 11.

7.4 Activity Status

Overall, land use consent is required for the proposal as a discretionary activity under the Far North ODP.

7.5 Proposed Plan Variation 1

The submission period closed on 12 November 2024. Council is currently summarising submissions and is aiming to notify the Summary of Decisions Requested and call for further submissions are open until the 10th of December 2024. This plan does not yet have legal effect.

7.6 Resource Management Act 1991- s95-95E and s104-104C

In terms of notification considerations in sections 95A-95E of the Act the following matters are noted:

i. public notification is not requested by the applicant

ii. there are no special circumstances necessitating public notification

As a discretionary activity, the provisions in sections 104 and 104B direct the substantive determination of applications and the following sections of this AEE have regard to the relevant provisions referred to therein.

8 Assessment of Environmental Effects

8.1 Existing Environment

The existing environment is a key consideration when assessing the effects of the proposed subdivision in the same location as a previously granted consent (2300241-RMACOM). the existing environment is a key factor in determining the scope of the assessment. The existing environment includes:

1. The current physical state of the site and surroundings.
2. Any permitted activities that can be undertaken without consent under the district plan.
3. Consented but unimplemented activities, including the effects of the existing consented subdivision, which are treated as part of the environment because they could lawfully proceed.

Since the new proposal is similar scale to the previously consented subdivision and aims to serve the same number of units and vehicles and includes bush clearance, earthworks and stormwater infrastructure, the assessment of effects will focus on new, additional, or cumulative effects that differ from or add to those already consented. The council cannot revisit or reassess effects that were fully considered and approved under the existing consent. The assessment will be confined to new or cumulative effects that go beyond what has already been consented or those new rules which have been triggered under this proposal. The following section clarifies those what those new or additional effects are to help limit the scope of the assessment of effects.

8.1.1 New or Additional Effects

8.1.1.1 Vegetation Clearance

Clearance of the bush is less than what was originally consented, the focus will shift to what has changed in the previous 3 years since the previous consent was granted.

8.1.1.2 Traffic Safety and Accessway Impacts

The accessway design and location remains similar to that previously consented, this will limit the scope of the assessment to any additional effects, such as the internal layout, parking and access.

8.1.1.3 Amenity and Character Impacts

The lot sizes in the new application are smaller than those already consented, the assessment of amenity effects will be limited to the decrease in lots sizes from the original plan.

8.1.1.4 Stormwater Management and Impermeable Surfaces

The stormwater effects will assess whether stormwater management remains adequate given the impermeable surfaces from the new proposal meets the permitted standards. This includes whether the surface coverage or discharge volume is similar to the previously consented development and if there are new or increased risks.

1.1.6.1 Earthworks

The earthworks volumes will be more than originally consented development, due to the reconfiguration of the subdivision and the accessway. The assessment of effects will be limited to any increase in earthwork volumes.

1.1.6.2 Natural Hazards

The natural hazards pertaining to fire is the same as what was originally consented under the previous consent and triggers the same rule. The focus of this assessment will be on what has changed from the previous proposal.

8.2 Assessment of Environmental Effects

As a discretionary activity, the assessment of effects is not limited to the assessment matters related to the non-compliances. For the purposes of the assessment the effects of the proposal have been separated into the following categories:

- Positive Effects
- Neighbourhood Character and Residential Amenity
- Urban Design and On-Site Amenity
- Traffic
- Earthworks
- Vegetation Clearance
- Geotechnical
- Infrastructure and Servicing
- Natural Hazards

- Coastal Environment

These matters are addressed below.

8.3 Positive Effects

The new design of the subdivision will have positive effects through the reduction in earthwork volumes on parts of the site which are very steep. This will reduce the probability of land instability and potential for sediment to effect waterways. The new design also requires less vegetation removal and will retain the amenity and natural values associated with the surrounding bush.

New Zealand has a housing crisis and there is a housing shortage in Northland in particular, the design provides much needed housing for iwi. The new design is a more efficient use of land and provides a more affordable product which can realistically be constructed.

The proposal also has positive cultural effects as this will provide much need housing for Te Rūnanga O Whaingaroa on their whenua. This opportunity for hapū-led housing upholds and enhances the hapū's rangatiratanga and mana and helps to deliver housing that suits the needs and aspirations of the hapū. A letter of support has been included in Appendix 7.

8.4 Neighbourhood Character and Amenity

The proposed homes will be a design, colour and construction commensurate with that expected for the Residential Zone. The density is anticipated in this zone and is compliant with the minimum site size of 300m^2 none of the sites will be less than this. A similar density can be seen at Sun Seeker Cottages in the adjacent site at 4 Ash Grove Circle. The sites will be visible from SH11 as they are situated on a ridge above the road, which is well vegetated, a bush covenant will help to protect this vegetation. All of the lots will have outdoor space on the northern side of the site. This separation distance, coupled with the 1-storey maximum height will mean that the units will not dominate the street scene.

The proposed planting design shown in the landscape plans has principally focused on the amenity of the streetscape with the inclusion of specimen street trees along the road corridor where space is available. These will define the corridor and provide buffering between the access and the dwellings within the lots to either side. In addition, low shrub planting has been proposed to emphasise and highlight the turning head, and along the foot of the retaining walls. The purpose of this latter strip of planting is to soften the walls. Shrub planting and scattered specimen nikau are proposed along the road reserve on the eastern boundary of the site. Lots 14 to 17 will be retained (through a land covenant the bush areas to the east of the site, along SH11 to act as a buffer and will be underplanted with low flammability indigenous species) to help manage any risk of fire.

Where the road 'dog-legs' the planting will help filter headlight wash on the building within Lot 9 from vehicles travelling west along the internal access. Proposed plant species will - in accordance with the prevailing indigenous character of the area - be predominantly native. Tree species will be titoki, nikau, coastal maire, pōhutukawa or puriri. This list offers a range of sizes and selection / location will consider potential shading and available space. Flowering shrub species have been included to impart touches of colour.

The majority of the native shrubland within Lots 18 and 19 will be retained. Where vegetation is cleared, for building sites or retaining walls, then the cleared edge will be planted with a 5m strip of low flammability native species and generally, cleared areas associated with the native shrubland vegetation will be revegetated with a mix of locally appropriate native vegetation, and the 'low flammability mix'. This low flammability mix is detailed in the ecology report in Appendix 11.

Given the contour of the site, the dwellings within Lots 5 17, will be terraced and this will afford a sense of increased spaciousness that might otherwise be lacking on a flat site whereby the elevation offered by each

dwelling will (in some cases), enable views over buildings on lower terraces, but generally serves to reduce the perception of scale associated with the adjoining dwelling on the lower terrace (refer to cross sections contained in architectural plans). This terracing will also enable a sense of separation between the dwellings.

Between lots, where privacy is essential, 1.8m screen fences are proposed. Road frontages will be maintained with an open aspect with low, visually permeable 900mm fences (as will the Ash Grove Circle frontage of the development). The transition between the 1.8m solid fence to the 900m fence will be raked.

That planting will provide additional softening of the development and visual interest along both the northern and southern boundaries.

8.5 Urban Design

The development consists of 19 lots, all of the homes are below the permitted maximum height limit except Lots 18 and 19 which have minimal breaches due to the exiting contours of the site. These sites are isolated from the neighbouring sites, surrounded by bush and will have no external effects. The development has been designed to provide variation in the layout of the site and is in line with the natural contours, landscaping and the native vegetation provides sufficient visual interest this is shown in the architect's drawings in Appendix 2.

Due to the site's contours most of the lots will not meet the minimum 14m x 14m dimensions, other than Lots 12, 14, 15, 17 and 19. However, all lots have been appropriately sized both internally and externally. The development has been designed for the indoor and outdoor living areas to receive good sun and daylight throughout the day. All outdoor living areas will be directly accessible from the internal living areas and will be oriented toward the north. In addition to this, the site will be landscaped to provide privacy and amenity value.

All of the proposed dwellings meet the minimum set back requirements under the District Plan, however there are some internal height in relation to boundary (HIRB) infringements on Lots 2-9 and 16. These are minor infringements and will have no discernible effects on the internal amenity of the development. There are no external HIRB infringements and the existing planting and proposed landscaping and fences along the boundaries will help to provide privacy and visual interest by adding variety to the built form at a human scale. The landscape planting is suitable for an urban situation and trees selected will be of a suitable size. In addition to this the existing planting on boundaries and the driveways along Ash Grove Circle will also provide separation from neighbours to the west. The development is almost entirely surrounded by bush to provide amenity benefits and bush covenants have been provided on parts of the eastern and western side of the development.

For the above reasons, it is considered that the development has been appropriately designed and responds well to the location and the surrounding environment and any adverse effect on urban design and on-site amenity will be less than minor.

8.6 Traffic

The following comments have been provided from TEAM attached as Appendix 9).

The accessway design and location remains similar to the previously consented one, this will limit the scope of the assessment to any additional effects, such as the internal layout. The current proposal generally follows the consented subdivision with respect to the number of dwellings anticipated and vehicle movements generated by the development. The main differences between proposed and consented outcomes when considering traffic and transport relates effects are:

- There will be no direct vehicle access via Ash Grove Circle.
- The geometry of the proposed private road and accessways has been adjusted to better reflect site topography and feasible build platforms; and
- Pedestrian footpath is included to provide continuous connection between Ash Grove Circle and all proposed dwellings.

Compared to the previous design these are much improved and will have positive effects for access and pedestrian safety.

8.6.1 Parking

Each of the proposed dwellings will have a formed parking pad for two cars or light vehicles. This level of parking provision aligns with requirements for standard residential units as defined in Appendix 3C of the District Plan. Proposed parking pads will be formed to a width of at least 5.0 metres and a typical depth of 6.0 metres within individual lot boundaries. Parking spaces that access directly onto the proposed private road will have effective manoeuvring depth of at least 8.5 metres when allowing for the carriageway width and berm and/or footpath along the property frontage. All parking spaces that access onto the private road comply with dimensional requirements prescribed for regular users in Appendix 3D of the District Plan.

8.6.2 Access

External: The proposed site access will be via SH11 at a location subject to agreement with NZTA. The general layout and design of the proposed access is shown on Drawing Sheet 703 of the Civil Design prepared by Chester Consultants. The proposed works to form the access include realignment of the existing traffic lanes and centre line to provide for effective widening on the northern side of the carriageway to achieve intended 'Diagram D' operation for eastbound traffic passing a vehicle turning right into the site. The proposed access design allows for variable vertical grading through the transition from the SH11 carriageway into the site with suitable entry platform grades provided. Approval from NZTA for the latest design is pending and will be provided to Council.

Internal: Internal vehicle access will be a combination of formed roads and accessways which will be maintained on a private basis. Proposed road formation will extend from the site access at SH 11 to a turning circle with continuous provision of two-way operation. The proposed internal road includes curve widening where necessary to maintain two-way operation for cars and light vehicles.

The proposed private road carriageway will generally be 6.0 metres wide, kerb to kerb. The proposed width aligns with the minimum width shown in Appendix 3B-2 of the District Plan for public roads, albeit the road type category applies to rural areas. The site can be considered urban for which the required minimum road carriageway width is 6.5 metres for public roads. The proposed carriageway width of 6.0 metres is considered suitable for normal traffic operation and two-way movement within a residential cul-de-sac.

Curve widening where necessary and a standard residential turning circle provides for acceptable access and on-site turning for service vehicles. This outcome is considered acceptable given low frequency of service vehicle access and similarly low incidence of opposing vehicles meeting at the horizontal curves.

The proposed private road will have two short sections where the design vertical grade exceeds a standard upper value of 12.5%. The two relevant sections are between Chainages 13 and 36 (20%) and between Chainages 120 and 152 (17.6%). These sections are clear of proposed access crossings for individual lots with the steeper road sections providing for appropriate manoeuvring grades for proposed parking pads. The proposed vertical grading along the private roads is considered acceptable for residential activity.

8.6.3 Traffic Movements

The underlying agreement with NZTA allows for up to 19 residential lots to access the site via the proposed new access/crossing point. General traffic operation on SH 11 since the NZTA approval confirmation is largely unchanged with similar traffic volumes of circa. 5,200 vehicles per day and no changes to posted speed limits along the site frontage. There are no reported crashes on SH 11 in the near vicinity of the proposed site access between the previous assessment period of 2020/2021 and the time of writing.

The general effects of traffic generated by the proposal can be considered to be anticipated through the underlying consent for a 20-lot residential subdivision. Notwithstanding this, we note that the proposal will exceed relevant permitted (20 vehicle trips) and discretionary (40 vehicle trips) values stated in Table 15.1.6A.1 of the Far North District Plan.

The proposed dwellings with two on-site parking spaces each can be expected to generate variable rates of vehicle movements depending on dwelling size and residents. Average rates in the order of six to eight vehicle trips per day and up to one trip per hour during peak periods are considered appropriate for assessment purposes. A resulting peak hour generation of up to 20 vehicle trips per hour, split by direction of travel on SH11 and inbound/outbound movement can comfortably be accommodated by the proposed access arrangements. The proposed access design can accommodate this number of vehicles safely.

The proposed development generally aligns with an underlying subdivision consent for the site which was granted approval from Council and NZTA. The proposed vehicle access for the site on SH 11 is unchanged from the previously approved location and intended formation with traffic movements at the access point similarly in line with anticipated outcomes.

The assessment of TEAM traffic is adopted, and it is considered that any adverse traffic effect will be less than minor.

8.7 Infrastructure and Servicing

The infrastructure and servicing for the development have been designed by engineers from Chester and the assessments are attached in the Land Development Report (Appendix 6). The findings of those reports are discussed in brief below.

8.7.1 Water Supply

The existing consent has demonstrated the site has access to public water supply service from the connection on SH11/Ash Grove Circle. As per the FNDC GIS data, an existing 125mmØ OD water main terminates within the northwestern corner of the site, two existing water meters servicing No.2 and 2A Ash Grove Circle are also recorded inside the 2B Ash Grove Circle property boundary. For potable water supply it is proposed to extend the public water supply network from Ash Grove Circle with 100mm ID water main. Easements in gross in favour of council are proposed over the JOALs. The proposed layout provides each Lot with a metered connection to the public water supply network.

For these reasons any adverse effect on water supply will be less than minor.

8.7.2 Fire Fighting

Hydrant testing was undertaken at Ash Grove Circle on the 19th of November 2024 by Fire & Safety Design NZ Limited. The results indicate that best results were achieved under a single hydrant at maximum flow. A maximum flow of 840 L/min with a residual pressure of 20 kPa was recorded across the single hydrant which does not meet the FW2 requirements of 1500 L/min (750 L/min each) from 2 hydrants.

Therefore, based on these results and to provide sufficient firefighting water supply, it is proposed to install a 25,000L underground water tank that provides a minimum of 20,000L dedicated firefighting water supply within the berm of the proposed road. With regard firefighting, no change to supply from previous consent but an updated approval from Fire and Emergency New Zealand (FENZ) is attached in Appendix 6.

For these reasons any adverse effect on water for firefighting will be less than minor.

8.7.3 Wastewater

As per the FNDC GIS data, there is an existing public gravity wastewater network consisting of 100mm and 150mm Ø uPVC pipes running across the northern portion of the site.

We note that in the site suitability report by Haigh Workman referenced 19109, dated 12 October 2020, Council has confirmed that the site can be connected to the Council sanitary sewer system, the new proposal does not increase the number of proposed residential lots, therefore we understand the site can continue to be connected to the public network.

It is proposed to extend the existing public network to provide connections to each lot. A gravity system is proposed to service the northern portion of the site including lots 1-13 by installing a new public inspection chamber over the existing 100mmØ uPVC pipe within the site. For the southern portion of the site including lots 14-19, each Lot will have its own private pump station and individual rising main that pumps up to a common private receiving chamber, before discharging into the proposed public network.

The existing dwelling on 2A Ash Grove Circle has a pump that connects to the public network via the neighbouring motel. This site pump discharge will be diverted to the new receiving chamber as part of the development work

Any adverse effects from wastewater will be less than minor.

8.7.4 Stormwater

It is proposed to install two new public stormwater networks designed in accordance with the FNDC Engineering Standards to service the northern and southern catchments of the site. A new stormwater connection will be provided to service each individual lot. The northern catchment will be collected into a proposed public stormwater network and continue to drain through the existing public network within the neighbouring property into the existing overland flow path to the west of the site. The southern catchment will drain into the proposed public network via catchpits and stormwater connections and eventually discharge into the tidal reach of Kaipatiki Stream via a proposed engineered stormwater outlet with adequate energy dissipation measures.

The site is not located at the top of the catchment and not within a flood plain, local surface water and secondary flow path has been considered in the design, no flood risk assessment is required for the development site. Downstream flooding has been identified, and 1% AEP event attenuation is proposed to mitigate the potential effects of the development. Refer to stormwater management section for more details. Refer to Appendix 6 for further detail.

Any adverse effect from stormwater will be less than minor.

Other Utility Services

As the property is located in a well-established residential area, it is not expected that power and telecommunication services connections will be problematic. The existing services will be extended from the road to service each of the units. Service providers will be contacted at a later stage to determine the “Point of Supply”.

With regard postal service and rubbish collection discussions are underway with providers and this will be arranged closer to the time of detailed design.

For the aforementioned reasons, it is considered that the site can be adequately serviced, and any adverse effects will be acceptable.

8.8 Earthworks

Earthworks consist of a cut volume of approximately 7559m^3 cut and 3226m^3 fill, which is more than the original consent granted which was for 4285m^3 cut and 818m^3 fill. Given the level of development that is proposed, these earthworks are not considered excessive on this 2.35ha site. For the majority of the site, the earthworks will largely be limited to a scraping of the surface to create the building platforms and the associated access parking and manoeuvring space. However, the access from State Highway 11 will require an area of cut through the existing bank, following this more cut will be required on the eastern side of the site to create building platform for 3 lots. Another area of cut is also required around the centre of the site to create level building platforms and maximise development in the flattest part of the site. The original proposal required more development in the southern portion of the site, where the land is very steep. Under this proposal there will be much less bush removal compared to the original proposal and the cuts will be in more stable/usable areas of the site. While there are more earthworks proposed under this proposal there are positive effects due to the retention of more native bush and a more viable design with less risk of slips and erosion.

Retaining walls are proposed to support fill along the accessway, and to supports cuts within Lots 14 to 16. The plans provided by Chester Consultants indicate six individual retaining walls (RW01, RW03 to RW07). Maximum retained height along the accessway (RW01) is approximately 3.07m supporting site-fill material (Ch. 36 m). The maximum retained heights for the walls supporting cut (RW04 –Lot 14) is 2.87 m at wall Ch. 51.6 m. All retaining walls should be designed by a Chartered Professional Engineer familiar with the contents of the report. Loading from adjacent structures, traffic, slope surcharges above and/or below retaining wall cuts and fills shall be considered during wall design. The locations of the walls are shown on the Retaining Wall Plan in the Civil Plan set contained in Appendix 5.

Potential impacts from sedimentation and dust nuisance will be controlled by an Erosion and Sediment Control Plan which will be prepared in accordance with Auckland Council's GD05 publication. In terms of any noise or disturbance effects during the earthworks process, truck movements are not anticipated to be significant – given that they will be for a temporary period only and spread over the period of construction.

In respect of visual amenity, the earthworks will not be visible from the street or surrounds and in time they will be covered by buildings, the vehicle / pedestrian access, and landscaped areas.

There are no mapped archaeological sites on the property; however, any person carrying out earthworks or other land disturbance should be made aware of Heritage New Zealand Pouhere Taonga's Accidental Discovery Protocol and follow the protocol should any archaeological sites be inadvertently uncovered. This can be included as an advice note on the consent.

The subject sites are not currently, and not known or expected to have been used historically, for any activity on the Hazardous Activities and Industries List. They are not recorded on the NRC Selected Land-use Register (SLR) for any current or historical Hazardous Activities and Industries (HAIL) activities.

Based on the above assessment, it is considered that the earthworks associated with the proposal will have less than minor effects.

8.9 Vegetation Removal

The site is situated on the edge of the Opua Forest. The vegetation cover is dominated by a *Kunzea ericoides* (Kanuka) / *Leptospermum scoparium* (Manuka) stand, approximately 15-20 years old that has reached an average height of 3-5m. The Manuka /Kanuka cover is in poor condition and is showing signs of ongoing deterioration. The ground cover is sparse and limited to species that can survive in poor soil. The sub-canopy layer of broad leaf flora found in a healthy forest eco-system is absent, being almost entirely devoid of indigenous re-growth. It is characterised by dry hanging Manuka and Kanuka stems. The biodiversity in this area of the greater Opua Forest environment is limited. The Ecology report is attached in Appendix 11.

There is an estimated 6230m^2 of vegetation clearance required to establish accessways and building areas. It should be noted that the clearance of the vegetation is much less than what was originally consented but is in similar locations. The redesigned subdivision layout includes significant changes. Smaller lots are now proposed on the typically gentler sloping upper portion of the site (Lots 1 –13). The number of lots proposed down slope of the accessway off Puketona Road has been reduced from 8 to 2. This has enabled the retention, enhancement and protection of a significantly increased total area of bush on the subdivision.

It is recommended that the understorey planting of low flammability indigenous species is to be carried out where there are areas of bush clearance / replanting. This planting is also to enhance bush edge protection. Low flammability broadleaf species are to be planted within retained bush areas to a depth of 20 metres back from any adjoining houses.

As the site is part of a 'kiwi present' habitat area as recorded in Far North Maps, it is suggested that an advice note be added to the consent recommending there is to be a maximum of one dog and one cat.

Taking into account the residential zoning of the land, it is considered that the effects of the proposal in terms of ecological values and the bush removal associated with the proposal will have less than minor effects.

8.10 Natural Hazards

The Geotechnical Report, which assesses the site in terms of ground strength and stability concludes that the land for the proposed subdivision is stable, and the subsoil properties are appropriate for residential development. The report recommends specific geotechnical investigation and foundation design is carried out at the building designs stage for the individual lots, which should be presented in conjunction with building consent application. The Geotechnical Report also makes recommendations for earthworks. Provided that appropriate engineering controls for stormwater discharge onto steep slopes and the recommended controls (particularly the specific design for foundations) building platform development are adhered to, the Land Development Report assesses that there is no significant risk from natural hazards. There are no recorded flood hazards on the site according to the Far North District Council GIS maps. The risk from stormwater or geotechnical hazard is considered to be adequately mitigated and less than minor.

A five-metre minimum cleared area between any areas of vegetation and residential dwellings is proposed for the sites where future built development may be in close proximity to areas of vegetation. A further five metres can be maintained as a zone where high intensity fires are not supported, by way of thinning and pruning. Combined with the provision of fire hydrants, the risk from fire hazard is considered to be adequately mitigated so as to be less than minor.

8.11 Coastal Environment

The site is within the coastal environment but is not mapped as having high or outstanding natural character. The subdivision density is in accordance with the standards expected for the residential zone and much of the indigenous vegetation and proposed planting will help to retain the natural character. As such, the proposal is considered appropriate in terms of its effects on natural character. Based on the above assessment, it is considered that effects on the Coastal Environment with the proposal will be less than minor effects.

8.12 Summary

Overall, it is considered that the proposal will have no more than minor adverse effects upon the surrounding environment.

9 Notification Assessment

9.1 Public Notification Assessment (s95A)

9.1.1 Step 1 - Mandatory in certain circumstances

The application does not meet any of the criteria under s95A(3), therefore public notification is not required by Step 1.

9.1.2 Step 2 - Precluded in certain circumstances

The application does not meet either of the criteria under s95A(5), therefore public notification is not precluded by Step 2.

9.1.3 Step 3 (Part 1) - Required by rule

The application does not require public notification under s95A(8), therefore Step 3 of the Public Notification assessment is to be continued below.

9.1.4 Step 3 (Part 2) - Effects on wider environment assessment (s95D)

In accordance with s95D, the application will not have and is not likely to have adverse effects on the environment that are more than minor, therefore public notification is not required by Step 3.

9.1.5 Step 4 - Special circumstances

It is considered that no special circumstances warranting public notification of the application exist, therefore public notification is not required by Step 4.

9.2 Limited Notification Assessment (s95B)

9.2.1 Step 1 - Certain affected groups and affected persons must be notified

No affected groups and/or affected persons have been identified in relation to the application (under s95B(2) and s95B(3)), therefore, no limited notification is required under Step 1.

In terms of the tests for limited notification the adjacent properties in proximity to the proposed development are listed as:

- 1 Ash Grove Circle
- 2 Ash Grove Circle
- 3 Ash Grove Circle
- 4 and 4A Ash Grove Circle
- 5 Ash Grove Circle
- 7 Ash Grove Circle
- 251 Puketona Road, Haruru 0252

No persons are considered to be adversely affected for the following reasons:

1,3, 5 and 7 Ash Grove Circle

These site boundaries are more than 15m from each other and are separated by Ash Grove Circle and a hedge on the proposed development. All of the properties on these sites face away from the property. Due to the site configuration and contours the proposed development will not be perceivable.

2 Ash Grove Circle

The proposed development will be an improvement from the previous design which had the driveway on the boundary with 2 Ash Grove Circle. As such any traffic noise will no longer be an issue. There are no external HIRB or setback infringements and the existing planting and proposed landscaping and fences along the boundary will help to provide privacy and visual interest by adding variety to the built form at a human scale. The landscape planting is suitable for an urban situation and trees selected will be of a suitable size.

2A Ash Grove Circle

The proposed development will improve access for this site as the existing accessway is an informal gravel track. The new access will be paved and improve access to the site, only one home is proposed on the eastern boundary, there are no external HIRB or setback infringements and the existing planting and proposed landscaping and fences along the boundary will help to provide privacy and visual interest by adding variety to the built form at a human scale. The landscape planting is suitable for an urban situation and trees selected will be of a suitable size.

4 Ash Grove Circle

The dwellings are 45m apart from the proposed development and are separated by Ash Grove Circle and a hedge. All of the properties on these sites face away from the property. Due to the site configuration and contours the proposed development will not be perceivable.

4A Ash Grove Circle

The dwelling is 15m apart from the proposed development and separated by the driveway and a hedge. The properties on these sites face away from the property. Due to the site configuration and contours the proposed development will not be perceivable.

251 Puketona Road

The dwellings are 40m apart from the proposed development and are separated by a gully, a stream and some bush, due to the site configuration and contours the proposed development will not be perceivable.

9.2.2 Step 2 - Precluded in certain circumstances

The application does not meet either of the criteria under s95B(6), therefore limited notification is not precluded by Step 2.

9.2.3 Step 3 - Affected persons assessment (s95E)

The application does not meet either of the criteria under s95B(7)-(8) and does not result in any persons considered to be affected persons in accordance with s95E, therefore limited notification is not required by Step 3.

9.2.4 Step 4 - Special circumstances

It is considered that no special circumstances warranting limited notification of the application exist, therefore no one else is to be notified under Step 4.

9.3 Notification Conclusion

The steps set out in s95A and s95B of the RMA were followed to determine whether public or limited notification is warranted for this application. Overall, it is considered that no circumstances warranting public or limited notification exist, therefore the application can be processed on a non-notified basis.

10 Section 104 Assessment

10.1 Actual, Potential and Positive Effects (s104(1)(a)-(ab))

The actual and potential effects of the proposal on the environment have been assessed to be less than minor in the previous section of this report. The relevant statutory documents assessed, as follows:

- Far North District Council Operative District Plan Objectives and Policies
- Far North District Council Proposed District Plan Objectives and Policies
- Proposed Regional Plan for Northland Objectives and Policies
- Northland Regional Policy Statement
- NES - Contamination Soils
- New Zealand Coastal Policy Statement

In summary, for the reasons set out in Appendix 10 otherwise having regard to the assessment of effects (including relevant assessment matters), the proposal is considered to be consistent with the relevant provisions of the relevant statutory documents listed above.

10.2 Other Matters

10.2.1 Mitigation Measures

Based on the assessment of effects in the previous section, no particular mitigation measures are considered necessary for this proposal.

10.2.2 Consideration of Alternatives

The preceding assessment of effects shows that the proposal will not have any significant adverse effects on the environment. Therefore, an assessment of alternatives is not required.

10.3 Conclusion

In summary, for the reasons set out in Appendix 10 and otherwise having regard to the assessment of effects (including relevant assessment matters), the proposal is considered to be consistent with the relevant provisions of the relevant .

11 Other Relevant RMA Sections

11.1 Subdivision (s106)

Under s106 of the RMA, there are no grounds to refuse consent as:

- There is no significant risk from natural hazards.
- Sufficient provision has been made for legal and physical access as per the proposed scheme plan, Appendix 3.

Under s106, consent authority may grant this subdivision consent subject to conditions.

11.2 Part 2 (sections 5-8) Resource Management Act 1991

The relevant statutory documents are considered a valid, complete and certain planning documents and have already given substance to the principles in Part 2 of the RMA. They were prepared in a manner that reflects Part 2, therefore no further assessment against Part 2 matters are required for this application (*R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316).

Regardless, the proposed development is considered to recognise and provide for the relevant matters of Sections 6, 7 and 8 and to represent a sustainable management of the land resource and achieve the purpose of the RMA, as well as give substance to Part 2 of the RMA.

12 Conclusion

In conclusion, the proposal is consistent with the purpose and principles of the RMA in that it enables people to provide for their economic and social wellbeing, whilst maintaining and enhancing the quality and amenity of the local environment and avoiding adverse effects.

In terms of section 104, the proposal will be consistent with the relevant provisions of the Operative and Proposed District Plan and will have actual or potential effects on the environment which are less than minor and consistent with the environmental outcomes envisaged by the relevant statutory planning framework.

Accordingly, it is concluded that the Council should grant consent to the activity on a non-notified basis in accordance with sections 104, 104C, 106 and Part 2 of the Act, subject to appropriate conditions.

13 Limitations

This assessment contains the professional opinion of Chester Consultants Ltd as to the matters set out herein, in light of the information available to it during the preparation, using its professional judgement and acting in accordance with the standard of care and skill normally exercised by professional consultants providing similar services in similar circumstances. No other express or implied warranty is made as to the professional advice contained in this report.

We have prepared this report in accordance with the brief as provided and our terms of engagement. The information contained in this report has been prepared by Chester Consultants Ltd at the request of Te Rūnanga O Whaingaroa and is exclusively for its client's use and reliance. It is not possible to make a proper assessment of this assessment without a clear understanding of the terms of engagement under which it has been prepared, including the scope of the instructions and directions given to and the assumptions made by Chester Consultants Ltd. The assessment will not address issues that would need to be considered for another party if that party's particular circumstances, requirements, and experience were known and, further, may make assumptions about matters of which a third party is not aware. No responsibility or liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this assessment by any third party.

The assessment is also based on information that has been provided to Chester Consultants Ltd from other sources or by other parties. The assessment has been prepared strictly on the basis that the information that has been provided is accurate, completed, and adequate. To the extent that any information is inaccurate, incomplete, or inadequate, Chester Consultants Ltd takes no responsibility and disclaims all liability whatsoever for any loss or damage that results from any conclusions based on information that has been provided to Chester Consultants Ltd.

Appendices

Appendix 1 – Record of Title

Appendix 2 – Development Plans

Appendix 3 – Scheme Plan

Appendix 4 – Landscape Plans

Appendix 5 – Civil Drawings

Appendix 6 – Land Development Report

Appendix 7 – Record of Consultation

Appendix 8 – Geotechnical Report

Appendix 9 – Traffic Assessment

Appendix 10 – Statutory Assessment

Appendix 11 – Ecological Assessment

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**1018776**
Land Registration District	**North Auckland**
Date Issued	23 December 2021

Prior References
478763

Estate	Fee Simple
Area	2.3500 hectares more or less
Legal Description	Lot 2 Deposited Plan 563441
Registered Owners	

Te Puna Koanga Limited

Interests

Subject to Section 8 Coal Mines Amendment Act 1950 (affects part formerly Section 11 Block IV Kawakawa Survey District)

8102056.1 Notice pursuant to Section 94C Transit New Zealand Act 1989 declaring the adjoining State Highway 11 Paihia to Puketona Junction to be a limited access road - 16.3.2009 at 9:00 am

12246212.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 23.12.2021 at 9:50 am

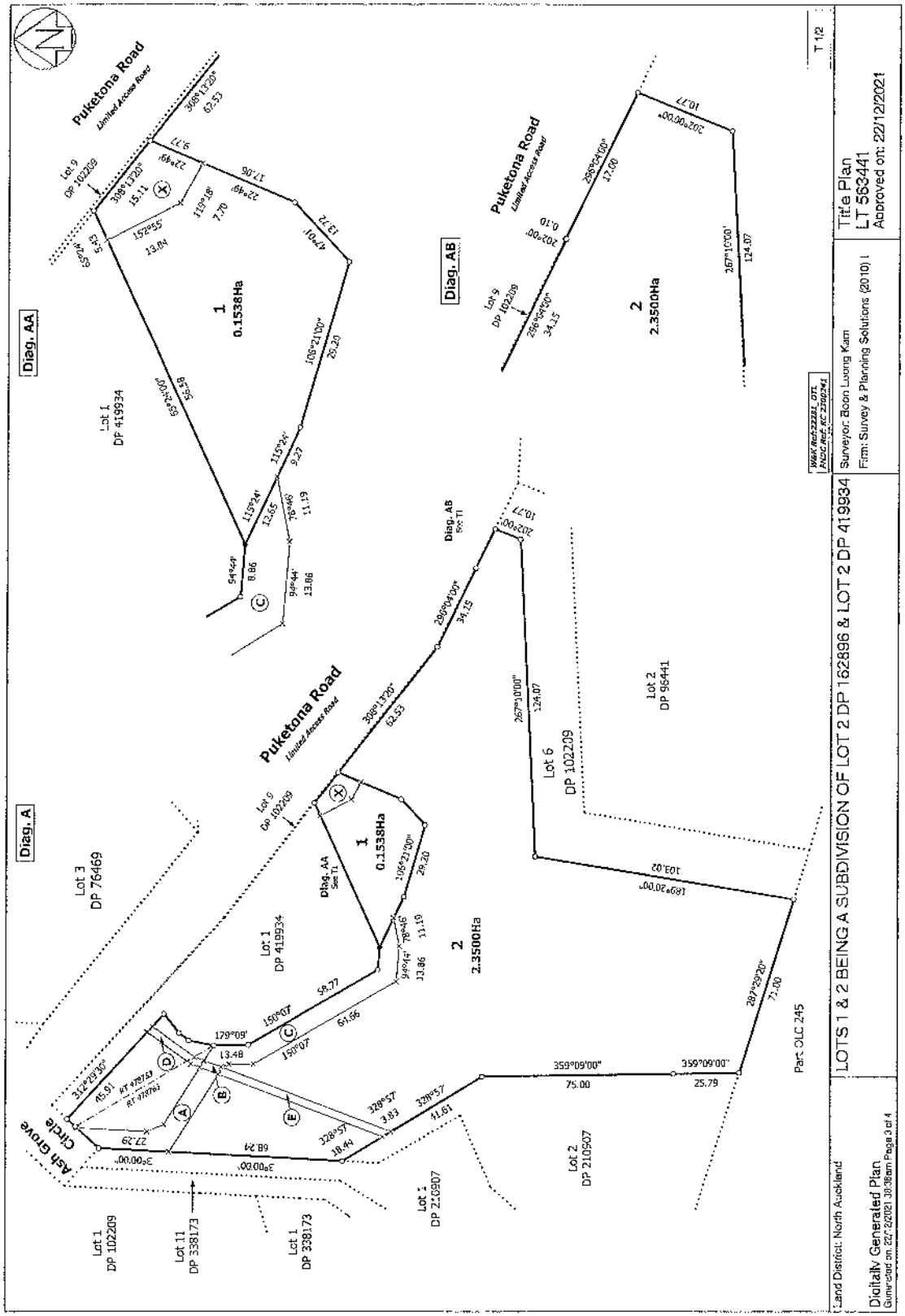
Subject to a right (in gross) to drain sewage over part marked B, D and E on DP 563441 in favour of Far North District Council created by Easement Instrument 12246212.3 - 23.12.2021 at 9:50 am

Subject to a right (in gross) to convey telecommunications over part marked A, B and C on DP 563441 in favour of Chorus New Zealand Limited created by Easement Instrument 12246212.4 - 23.12.2021 at 9:50 am

Subject to a right of way and a right to convey water, electricity and telecommunications over part marked A, B and C and a right to drain sewage over part marked B and C all on DP 563441 created by Easement Instrument 12246212.5 - 23.12.2021 at 9:50 am

The easements created by Easement Instrument 12246212.5 are subject to Section 243 (a) Resource Management Act 1991

13081464.3 Mortgage to Westpac New Zealand Limited - 2.9.2024 at 5:19 pm


Puketona Road
Limited Access Road
Diag. AA
Diag. AB
Diag. A
1
0.1538Ha
2
2.3500Ha
Lot 1 DP 419934
Lot 2 DP 96441
Lot 6 DP 102209
Lot 3 DP 76469
Lot 9 DP 102209
Lot 11 DP 338173
Lot 1 DP 338173
Lot 1 DP 210907
Lot 2 DP 210907
Part SLC 245
Ash Grove Circle
LOTS 1 & 2 BEING A SUBDIVISION OF LOT 2 DP 162896 & LOT 2 DP 419934
Land District: North Auckland
Digitally Generated Plan
Title Plan
LT 563441
Approved on: 22/12/2021
Surveyor: Boon Luong Kam
Firm: Survey & Planning Solutions (2010) L

NOTES:

1. THIS PLAN IS FOR A RESOURCE CONSENT APPLICATION ONLY. AREAS, BOUNDARY DIMENSIONS AND LEVELS ARE SUBJECT TO A LAND TRANSFER SURVEY AND APPROVAL BY THE LOCAL AUTHORITY AND LAND INFORMATION NZ.
2. ANY DISCREPANCIES ON THIS PLAN ARE TO BE REFERRED TO CHESTER CONSULTANTS LTD FOR COMMENT OR RESOLUTION.
3. THIS DOCUMENT HAS BEEN PREPARED FOR THE AGREED PURPOSES OF OUR CLIENT. NO REPRODUCTION, COPYING, REUSE, SALE, HIRE, LOAN OR GIFT OF THIS DOCUMENT DIRECTLY OR INDIRECTLY IS PERMITTED WITHOUT PRIOR WRITTEN CONSENT OF CHESTER CONSULTANTS LTD.

SITE DESCRIPTION:

TERRITORIAL AUTHORITY: FAR NORTH DISTRICT COUNCIL
ADDRESS: 2B ASH GROVE CIRCLE, HARURU
APPELLATION: LOT 2 DP 563441
ZONING: RESIDENTIAL
RECORD OF TITLE: 1018776
AREA: 2.3500 Ha

AMALGAMATION CONDITION:

THAT LOT 100 HEREON (JOINTLY OWNED LOT) BE HELD AS TO TWENTY UNDIVIDED ONE - ONE TWENTIETH SHARES BY THE OWNERS OF LOTS 1 TO 19 AND LOT 1 DP 563441 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

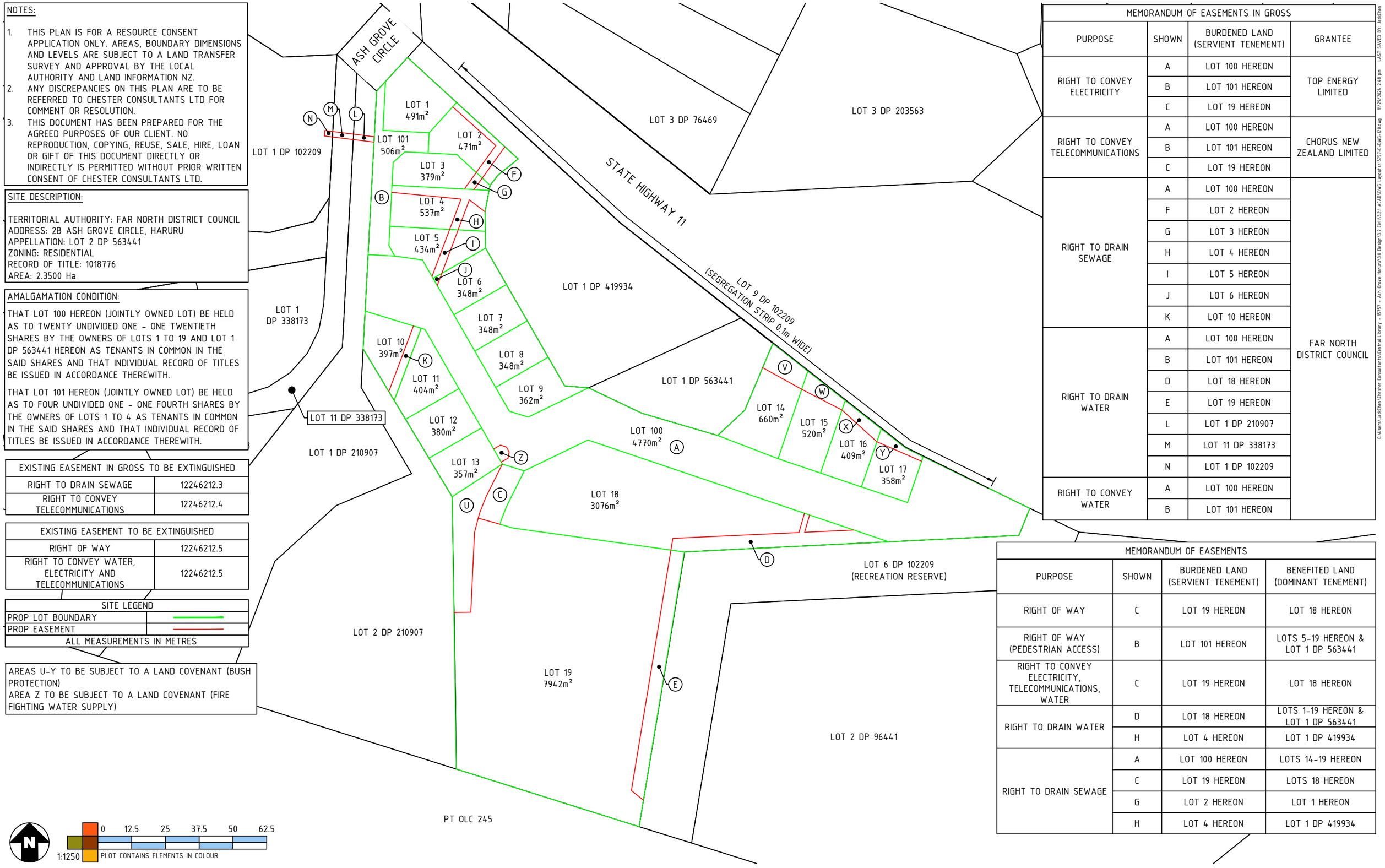
THAT LOT 101 HEREON (JOINTLY OWNED LOT) BE HELD AS TO FOUR UNDIVIDED ONE - ONE FOURTH SHARES BY THE OWNERS OF LOTS 1 TO 4 AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

EXISTING EASEMENT IN GROSS TO BE EXTINGUISHED	
RIGHT TO DRAIN SEWAGE	12246212.3
RIGHT TO CONVEY TELECOMMUNICATIONS	12246212.4

EXISTING EASEMENT TO BE EXTINGUISHED	
RIGHT OF WAY	12246212.5
RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS	12246212.5

SITE LEGEND	
PROP LOT BOUNDARY	
PROP EASEMENT	
ALL MEASUREMENTS IN METRES	

AREAS U-Y TO BE SUBJECT TO A LAND COVENANT (BUSH PROTECTION)
AREA Z TO BE SUBJECT TO A LAND COVENANT (FIRE FIGHTING WATER SUPPLY)



MEMORANDUM OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY	A	LOT 100 HEREON	TOP ENERGY LIMITED
	B	LOT 101 HEREON	
	C	LOT 19 HEREON	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 100 HEREON	CHORUS NEW ZEALAND LIMITED
	B	LOT 101 HEREON	
	C	LOT 19 HEREON	
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	FAR NORTH DISTRICT COUNCIL
	F	LOT 2 HEREON	
	G	LOT 3 HEREON	
	H	LOT 4 HEREON	
	I	LOT 5 HEREON	
	J	LOT 6 HEREON	
	K	LOT 10 HEREON	
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	
	B	LOT 101 HEREON	
	D	LOT 18 HEREON	
	E	LOT 19 HEREON	
	L	LOT 1 DP 210907	
	M	LOT 11 DP 338173	
	N	LOT 1 DP 102209	
RIGHT TO CONVEY WATER	A	LOT 100 HEREON	
	B	LOT 101 HEREON	

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITED LAND (DOMINANT TENEMENT)
RIGHT OF WAY	C	LOT 19 HEREON	LOT 18 HEREON
RIGHT OF WAY (PEDESTRIAN ACCESS)	B	LOT 101 HEREON	LOTS 5-19 HEREON & LOT 1 DP 563441
RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS, WATER	C	LOT 19 HEREON	LOT 18 HEREON
RIGHT TO DRAIN WATER	D	LOT 18 HEREON	LOTS 1-19 HEREON & LOT 1 DP 563441
	H	LOT 4 HEREON	LOT 1 DP 419934
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	LOTS 14-19 HEREON
	C	LOT 19 HEREON	LOTS 18 HEREON
	G	LOT 2 HEREON	LOT 1 HEREON
	H	LOT 4 HEREON	LOT 1 DP 419934

1:1250 0 12.5 25 37.5 50 62.5 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: PROPOSED SCHEME PLAN

Drawing: 120 Rev: 0
Scale: 1:1250 @ A3
Project: 15757
Issue: CONSENT

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Simon Cocker
Landscape Architecture

MEMORANDUM

To: **Andrew Hill**
Chester Ltd.

From: **Simon Cocker**
Simon Cocker Landscape Architecture

Date: **4 December 2024**

Subject: **2 Ash Grove Circle, Haruru, Northland.**

Ref #: **24079_01**

Dear Andrew,

Simon Cocker Landscape Architecture has been engaged by Te Rūnanga O Whaingaroa to prepare a landscape plan and accompanying brief supporting report in support of a Subdivision and Land Use Consent application. The applications are for a proposed 19 residential lot subdivision.

A scheme plan for the proposed subdivision has been produced by Chester Consultants. The proposed development works involve:

- The creation of 19 residential lots, ranging from 348 m^2 (Lots 6-8) to 7,942 m^2 for Lot 19.
- A new accessway off State Highway 11 is proposed, which will cut into the existing ridge spur to create the accessway. Based on the earthwork plans, up to 5,902 m^3 of cut is proposed across the development, with 2,986 m^3 used to create the accessways into the subdivision.
- The plans indicate a maximum excavation depth of 5.22 m at Ch. 10 m along the main accessway.
- Retaining walls are proposed to support fills along the accessway, and to supports cuts within Lots 14 to 16. The maximum retained height along the accessway (RW01) is approximately 3.07 m supporting site-won fill material (Ch. 36 m). The maximum retained heights for the walls supporting cut (RW04 – Lot 14) is 2.87 m at wall Ch. 51.6 m.
- Filling up to 2.0 m deep across some of the western lots is shown on Lots 4, 5 and 10. Filling across Lots 3, 6, 11 and 12, is also shown, typically less than 1.0 m.

The property was previously granted subdivision consent and this consent involved the subdivision of the vegetated gully, which occupies the south eastern portion of the property.

The current application proposes that the residential development be clustered on the spur within the northern and north western portion of the property, with the aforementioned vegetated gully being predominantly retained under the shrubland vegetation. The report prepared by Ecoprojects titled *ADDENDUM: Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland*, details the values of this area, and also the proposed approach to weed control and the establishment of low flammability vegetation buffers where the vegetation adjoins proposed residential lots.

PO Box 222, Whangarei 0140,New Zealand
Tel: 09 430 3793 Mobile: 027 4788812
Email: simon@scla.nz

In clustering the proposed development along the spur within the northern and north western part of the property, the proposed development will 'read' as a continuation of the existing residential character development to the south west and west (refer to images 1 and 2 below)

1. *View to the south west from the north western corner of the Site*

2. *View to the west from the north western corner of the Site*

Visually, the subject Site is relatively well integrated into the landscape by virtue of the existing vegetative framework. Vegetation growing along its northern edge will be (in part) retained, and underplanted with native vegetation (as described below). This vegetation currently screens the Site, and (protected as Covenants V, W, X and Y) will continue to screen the Site from Puketona Road (refer to image 3 below). To the south, the vegetated gully, and a finger of existing vegetation which extends to the west (to converge with Ash Grove Circle) provides buffering to views from the south (refer to image 4 below).

3. *View east along Puketona Road where it adjoins the Site to the north*

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The neighbouring property, adjoining the Site on its western boundary near the south western corner is 4a Ash Grove Circle. Legally described as Lot 2 DP 21090, views from this neighbouring property will be screened by vegetation retained within Covenant U. As shown on L0004, this vegetation will be supplemented by low flammability underplanting.

Image 4 also illustrates how the existing vegetation within the context of the subject property strongly reflects the topographical patterns; emphasising the alignment of watercourses, occupying gullys, and steeper slopes. Where built form has been undertaken on the southern side of Puketona Road, it has occurred on the more gentle terrain such as on ridge crests, and the current proposal mimics this pattern of development. Further, as existing development is set within a strong framework of vegetation, so the proposed subdivision is contained within a robust framework.

Given the visual containment described above, the visual relationship is therefore principally with built form to the west and south west, but as can be seen from the image 5 below, dwellings at the end of Ash Grove Circle occupy a slope which is oriented to the north west, rather than toward the Site.

4. *Context of the subject property – Vegetative framework*

The proposed planting design (as depicted in drawings L0001 – L0005, attached) has principally focused on the amenity of the streetscape with the inclusion of specimen street trees along the road corridor where space is available. These will define the corridor and provide buffering between the access and the dwellings within the lots to either side.

In addition, low shrub planting has been proposed to emphasise and highlight the turning head, and along the foot of the retaining wall (situated to the south of Lot 1 DP 563441). The purpose of this latter strip of planting is to soften the wall. Shrub planting and scattered specimen nikau are proposed within the road reserve on the eastern boundary of Lot 9. This is where the road 'dog-legs' and the planting will help filter headlight wash on the building within Lot 9 from vehicles travelling west.

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Proposed plant species will - in accordance with the prevailing indigenous character of the area - be predominantly native (refer to L0003 and L0005). Tree species will be titoki, nikau, coastal maire, pōhutukawa or puriri. This list offers a range of sizes and selection / location will consider potential shading and available space. Flowering shrub species have been included to impart touches of colour.

5. *Context of the subject property - topography*

Views to the south from the access (Lot 100), where it tracks along the top of the retaining wall above the bushed gully will impart a high level of amenity to the site and road corridor. It is anticipated that the southern side of the road (and adjoining footpath), will be contained by a visually permeable pool fence on the top of this wall.

The majority of the native shrubland within Lots 18 and 19 will be retained. Where vegetation is cleared, for building sites or retaining walls, then the cleared edge will be planted with a 5m strip of low flammability native species and generally, cleared areas associated with the native shrubland vegetation will be revegetated with a mix of locally appropriate native vegetation, and the 'low flammability mix'. This low flammability mix is detailed in the Ecoprojects report titled *ADDENDUM: Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland.* This report will also describe how existing native shrubland – where it adjoins proposed residential lots – will be underplanted with the 'low flammability mix' (refer to L0009 attached).

Planting within the residential lots has been restricted to fruit trees (citrus and pip / stone fruit) whilst the balance of the lots will be retained under lawn to provide a sense of spaciousness.

Given the contour of the site, the dwellings within Lots 14 - 17, 5 - 9 and 10 - 13 will be terraced and this will afford a sense of increased spaciousness that might otherwise be lacking on a flat site whereby the elevation offered by each dwelling will (in some cases), enable views over buildings on lower terraces, but generally serves to reduce the perception of scale associated with the adjoining dwelling on the lower terrace (refer to cross sections contained in architectural plan set prepared by Mason Street Architectural Drafting). This terracing will also enable a sense of separation between the dwellings although additional privacy between the dwellings will be provided through the use of fencing.

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Between lots, where privacy is essential, 1.8m screen fences are proposed. Road frontages will be maintained with an open aspect with low, visually permeable 900mm fences (as will the Ash Grove Circle frontage of the development). The transition between the 1.8m solid fence to the 900m fence will be raked (refer to L0007 and L0008 attached).

Fences atop retaining walls will be of the same typology as the 900mm visually permeable fences, but will be 1,100mm in height.

The landscape plans also depict the proposed location of washing lines and mail boxes. The detail of pedestrian access within lots, and the location of rubbish storage will be refined at detailed design (refer to L0007 and L0008 attached).

Yours sincerely,

Simon Cocker

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Simon Cocker
Landscape Architecture

ATTACHMENT 1 –Landscape Concept Plan set

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Tel: 09 430 3793 Mobile: 027 4788812
Email: simon@scla.nz

PROPOSED RESIDENTIAL SUBDIVISION

2A ASH GROVE CIRCLE HARURU

PROJECT NUMBER: 24079

LANDSCAPE CONCEPT

DATE: 04/12/2024

PREPARED FOR: TE RŪNANGA O WHAINGAROA C/O SCOPE

Simon Cocker
Landscape Architecture

GENERAL NOTES

These drawings shall be read in conjunction with all other Consultants drawings, specifications and such written instructions as may be issued at anytime during the Contract. Contractor is responsible for under and above ground services.

PROJECT NOTES

Confirm all existing construction, dimensions, heights and levels before commencing works. Any discrepancy shall be referred to the Landscape Architect for decisions before proceeding with the works. All work to be undertaken in accordance with Kāainga Ora Standard M255; Building Code; Conditions of Resource Consent; NZ Standards.

LEGEND

- Amenity specimen tree
- Fruit tree on medium root stock
- Citrus tree
- *Rhopalostylis sapida* PB8
- Low shrub mix and groundcovers (300 - 500mm high)
- Groundcovers and medium height shrub mix (500mm - 1.2m high)
- Lawn
- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish
- RW Proposed retaining walls

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Overview Planting Concept

D o n o t s c a l e.
The contractor shall verify all dimensions before commencing work , and all discrepancies to be referred to Simon Cocker Landscape Architecture for clarification. These plans are confidential and are not to be discussed or copied without the express permission of Simon Cocker Landscape Architecture.

Scale	Project No.	Drawing No.	Rev
Scale 1 : 1000	24079	L0001	A

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

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LEGEND

- Amenity specimen tree
- Fruit tree on medium root stock
- Citrus tree
- *Rhopalostylis sapida* PB8
- Low shrub mix and groundcovers (300 - 500mm high)
- Groundcovers and medium height shrub mix (500mm - 1.2m high)
- Lawn
- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish
- RW Proposed retaining walls

Note: For detail please refer to ADDENDUM:
Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland.

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Planting Concept Detail 1

D o n o t s c a l e.
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Scale	Project No.	Drawing No.	Rev
Scale 1 : 500	**24079**	**L0002**	**A**

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LEGEND

- Amenity specimen tree
- Fruit tree on medium root stock
- Citrus tree
- *Rhopalostylis sapida* PB8
- Low shrub mix and groundcovers (300 - 500mm high)
- Groundcovers and medium height shrub mix (500mm - 1.2m high)
- Lawn
- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish
- RW — Proposed retaining walls

Note: For detail please refer to ADDENDUM:
Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland.

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Planting Concept Detail 2

Do not scale.
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Scale	Project No.	Drawing No.	Rev
Scale 1 : 500	**24079**	**L0003**	**A**

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

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LEGEND

- Amenity specimen tree
- Fruit tree on medium root stock
- Citrus tree
- *Rhopalostylis sapida* PB8
- Low shrub mix and groundcovers (300 - 500mm high)
- Groundcovers and medium height shrub mix (500mm - 1.2m high)
- Lawn
- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish
- RW Proposed retaining walls

Note: For detail please refer to ADDENDUM:
Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland.

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Planting Concept Detail 3

D o n o t s c a l e.
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Scale	Project No.	Drawing No.	Rev
Scale 1 : 500	**24079**	**L0004**	**A**

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

LOW SHRUB MIX AND GROUNDCOVERS UP TO 500mm HIGH

Dianella 'Petit Marie'

Coprosma 'Taiko'

Grevillea 'Bronze Rambler'

Zephyranthes candida

Coprosma 'Hawera'

GROUNDCOVERS AND MEDIUM SHRUB MIX UP TO 1.2m HIGH

Arthropodium cirratum

Lomandra 'Lime Tuff'

Coprosma 'Taiko'

Coprosma 'Black Cloud'

Coprosma 'Poor Knights'

Corokia 'Little Prince'

Dietes grandiflora

Hebe diosmifolia

Hymenospormum 'Gold Nugget'

Phormium 'Black Rage'

GENERAL NOTES

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Simon Cocker Landscape Architecture

Client

Te Rūnanga o Whaingaroa c/o Scope

Consultants

Mason Street Architectural Drafting Ltd CHESTER

Date

4/12/2024

Project Title

2A Ash Grove Circle, Haruru

Title

Landscape Concept

Page Title

Plant Palette

Scale **Scale 1 : 500**

Project No. **24079**

Drawing No. **L0005**

Rev **A**

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

AMENITY TREES

Alectryon excelsus

Nestegis apetala

Metrosideros 'Maori Princess'

Rhopalostylis sapida

Vitex lucens

PLANT SCHEDULE

Specimen trees and palms	Common name	Grade	Spacing	Height
Alectryon excelsus	titoki	Pb95	As shown	10m
Metrosideros 'Maori Princess'	pohutukawa	Pb95	As shown	10m
Nestegis apetala	coatal maire	PB95	As shown	10m
Rhopalostylis sapida	nikau	PB8	As shown	10m
Vitex lucens	puriri	PB95	As shown	10m+
Low shrub mix and groundcovers up to 500mm high				
Dianella 'Petit Marie'	Dianella cultivar	2L	0.5m	0.4m
Coprosma 'Hawera'	Coprosma cultivar	1L	1.0m	0.3m
Coprosma 'Taiko'	Coprosma gc	1L	1.0m	0.4m
Grevillea 'Bronze Rambler'	Grevillea	1L	1.0m	0.3m
Zephyranthes candida	Rain lilly	bulb	0.5m	0.3m
Groundcovers and medium shrub mix up to 1.2m high				
Arthropodium cirratum	Rengarenga	1L	1.0m	0.75m
Lomandra 'Lime Tuff'	Lomandra cultivar	2L	0.6m	0.6m
Coprosma 'Black Cloud'	Coprosma cultivar	2L	1.0m	1.0m
Coprosma 'Poor Knights'	Coprosma gc	1L	1.0m	0.6m
Coprosma 'Taiko'	Coprosma gc	1L	1.0m	0.4m
Corokia 'Little Prince'	korokia cultivar	2L	1.0m	1.0m
Dietes grandiflora	Fairy iris, African iris	1L	0.75m	0.75m
Hebe diosmifolia	Hebe	2L	1.0m	1.0m
Hymenospormum 'Gold Nugget'	Dwarf frangipani	2.5L	1.2m	1.2m
Phormium 'Black Rage'	Harakeke cultivar	1L	0.8m	0.8m
Fruit trees				
Citrus x limon 'Yen Ben'	Lemon	12L	As shown	3.0m
Citrus 'Harwoods Late'	Orange	12L	As shown	5.0m
Citrus reticulata	Mandarin 'Kara'	PB18	As shown	3.0m
Malus domestica	Apple 'Captain Kid'	PB18	As shown	5.0m
Malus domestica	Apple 'Vaile Early'	PB18	As shown	5.0m
Prunus domestica	Plum Wilsons Early	PB18	As shown	3.0m
Prunus persica 'Blackboy'	Peach	PB18	As shown	5.0m

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Simon Cocker Landscape Architecture

Client

Te Rūnanga o Whaingaroa c/o Scope

Consultants

Mason Street Architectural Drafting Ltd CHESTER

Date

4/12/2024

Project Title

2A Ash Grove Circle, Haruru

Title

Landscape Concept

Page Title

Plant Schedule

Scale **Scale 1 : 500**

Project No. **24079**

Drawing No. **L0006**

Rev **A**

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

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FENCE TYPES

- Visually Impermeable Fence 1.8m high
- Raked Fence 900mm - 1.8m high
- Visually Impermeable Fence 1.5m high
- Raked Fence 900mm - 1.5m high
- Visually Permeable Fence 1100mm high
- Visually Permeable Fence 900mm high

HARD SURFACES

- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish

OTHERS

- Austral Standard 28 clothes line
- Letterbox
- Retaining walls

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Overview Fences and Hard Surfaces

Scale **Scale 1 : 500**

Project No. **24079**

Drawing No. **L0007**

Rev **A**

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

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FENCE TYPES

- Visually Impermeable Fence 1.8m high
- Raked Fence 900mm - 1.8m high
- Visually Impermeable Fence 1.5m high
- Raked Fence 900mm - 1.5m high
- Visually Permeable Fence 1100mm high
- Visually Permeable Fence 900mm high

HARD SURFACES

- Driveways TBC concrete
- Concrete footpath with 5% black oxide broom finish

OTHERS

- Austral Standard 28 clothes line
- Letterbox
- Retaining walls

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Overview Fences and Hard Surfaces

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Scale	Project No.	Drawing No.	Rev
Scale 1 : 500	24079	L0008	A

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

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LEGEND

- Site boundary
- Proposed area of vegetation clearance
- Proposed area of retained bush to be underplanted with low flammability indigenous species
- Proposed planting of low flammability indigenous species
- Areas of natural revegation

For further detail please refer to:

ADDENDUM:
Ecological assessment update for redesigned subdivision, 2 Ash Grove Circle, Haruru, Northland.

Simon Cocker Landscape Architecture

Client
Te Rūnanga o Whaingaroa c/o Scope

Consultants
Mason Street Architectural Drafting Ltd CHESTER

Date
4/12/2024

Project Title
2A Ash Grove Circle, Haruru

Title
Landscape Concept

Page Title
Overview Vegetation Management

D o n o t s c a l e.
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Scale	Project No.	Drawing No.	Rev
Scale 1 : 1000	24079	L0009	A

CAD File Ref.: 24079_SCLA_AshGrove_Concept_20241129.vwx

CIVIL ENGINEERING DRAWING SCHEDULE

REVISION DATE	28/11/2024									

SHEET	TITLE	REVISION									
001	DRAWING SCHEDULE	0									
002	NOTES AND ABBREVIATIONS	0									
100	EXISTING SITE PLAN	0									
110	PROPOSED SITE PLAN	0									
111	PROPOSED SITE PLAN - AERIAL	0									
200	EARTHWORKS PLAN	0									
201	BULK EARTHWORKS LONG SECTIONS 01	0									
202	BULK EARTHWORKS LONG SECTIONS 02	0									
210	EROSION AND SEDIMENT CONTROL PLAN	0									
220	BUSH CLEARANCE PLAN	0									
300	RETAINING WALL PLAN	0									
301	RETAINING WALL PLAN - ENLARGEMENT	0									
302	RETAINING WALL LONG SECTIONS 01	0									
303	RETAINING WALL LONG SECTIONS 02	0									
304	RETAINING WALL LONG SECTIONS 03	0									
305	RETAINING WALL LONG SECTIONS 04	0									
400	STORMWATER LAYOUT PLAN - PUBLIC	0									
401	STORMWATER PLAN 01	0									
402	STORMWATER PLAN 02	0									
410	STORMWATER MITIGATION PLAN	0									
420	STORMWATER OUTLET DETAILS	0									
500	WASTEWATER LAYOUT PLAN - PUBLIC	0									
501	WASTEWATER PLAN 01	0									
502	WASTEWATER PLAN 02	0									
600	WATER SUPPLY LAYOUT PLAN	0									
601	WATER SUPPLY PLAN 01	0									
602	WATER SUPPLY PLAN 02	0									
700	ROADING PLAN	0									
701	ROAD LONG SECTION	0									
702	ROAD TYPICAL CROSS SECTION DETAILS	0									
703	PROPOSED INTERSECTION PLAN AND DETAILS	0									
704	PROPOSED INTERSECTION ADVANCED WARNING SIGN PLAN	0									
800	COMMON ACCESS WAY PLAN	0									
801	COMMON ACCESS WAY LONG SECTIONS	0									
802	COMMON ACCESS WAY TYPICAL SECTIONS	0									

SCHEDULE LEGEND	
ORIGINAL ISSUE	0
NOT REVISED	
REVISED	1
NOT INCLUDED IN SET	-
DELETED FROM SET	~~TITLE~~

CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
TE RŪNANGA O WHAINGAROA C/O SCOPE
2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: DRAWING SCHEDULE

Drawing: 001 Rev: 0
Scale: NTS
Project: 15757
Issue: CONSENT

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GENERAL ABBREVIATIONS

EX	EXISTING
PROP	PROPOSED
BNDY	BOUNDARY
RL	REDUCED LEVEL
FFL	FINISH FLOOR LEVEL
GFL	GARAGE FLOOR LEVEL
RW	RETAINING WALL
TOW	TOP OF WALL
BOW	BOTTOM OF WALL

GEOMETRY ABBREVIATIONS

L	LEFT
R	RIGHT
CL	CENTRE LINE
HP	HIGH POINT
LP	LOW POINT
CH	CHAINAGE
BOA	BEGIN OF ALIGNMENT
EOA	END OF ALIGNMENT
BP	BEGIN POINT
EP	END POINT
MID	MIDDLE POINT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
I.P.	INTERSECTION POINT
BLS	BEGIN LONGSECTION
ELS	END LONGSECTION
VPC	VERTICAL POINT OF CURVATURE
VPT	VERTICAL POINT OF TANGENCY
BRK	GRADE BREAK
K	CURVE COEFFICIENT

UTILITY ABBREVIATIONS

SW	STORMWATER
WW	WASTEWATER
PUB.	PUBLIC
PRIV.	PRIVATE
IC	INSPECTION CHAMBER (675mmØ AND LARGER)
IP	INSPECTION POINT (100/150mmØ)
CP	CATCH PIT
SP	SPLAY PIT
LL	LID LEVEL
INV	INVERT LEVEL
RCRRJ	REINFORCED CONCRETE RUBBER RING JOINT
CLn	CLASS n CONCRETE
PE	POLYETHYLENE
uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
AC	ASBESTOS CONCRETE
VC	VITRIFIED CLAY
EW	EARTHENWARE
CONC	CONCRETE
CLS	CEMENT LINED STEEL
DI	DUCTILE IRON
WS	WATER SERVICE
SV	SLUICE VALVE
GV	GATE VALVE
FH	FIRE HYDRANT
EC	END CAP
FP	FLUSHING POINT
IV	ISOLATION VALVE
AB	ANCHOR BLOCK
E	ELECTRICAL POWER
G	NATURAL GAS
T	TELECOMMUNICATIONS
CS	COMBINED SERVICES

PUBLIC WASTEWATER NOTES

1. ALL PIPE EMBEDMENT AND TRENCHFILL IS TO BE IN ACCORDANCE WITH FAR NORTH DISTRICT COUNCIL ENGINEERING STANDARD DETAILS (FNDCS) SHEET 30 & 31.
2. ALL NEW WWIC'S ARE TO BE CONSTRUCTED AS PER FNDCS SHEET 39 & 40.
3. INTERNAL DROP STRUCTURES REQUIRE A MINIMUM 1200mmØ IC, AND IS TO BE CONSTRUCTED AS PER FNDCS SHEET 39.
4. 150mm THICK REINFORCED CONCRETE LIDS WITH HEAVY DUTY DUCTILE FRAMES & COVERS TO BE USED IN DRIVEWAYS CARRIAGEWAYS & BERMS. 100mm THICK CONCRETE LIDS WITH LIGHT DUTY CAST IRON FRAMES & COVERS MAY BE USED ELSEWHERE AS PER FNDCS SHEET 39.
5. INSPECTION CHAMBER OUTLET TO BE OVER OUTLET AS PER FNDCS SHEET 39.
6. USE ANCHOR BLOCKS PIPES LESS THAN 450Ø ON GRADIENTS STEEPER THAN 33%.
7. USE SLIDING JOINT WHEN CONNECTING PE PIPE TO INSPECTION CHAMBER AS PER FNDCS SHEET 33.
8. MINIMUM PIPE GRADE FOR LOT CONNECTIONS TO BE NOT LESS THAN:
   - 1.65% FOR DN 100mm,
   - 1.2% FOR DN 150mm,
   - 1.0% FOR DN 150-300mm FOR PERMANENT UPSTREAM END SERVING ≤10 RESIDENTIAL DWELLINGS.
9. PIPE POSITION TOLERANCE AT ANY POINT ALONG THE LENGTH OF THE INSTALLATION SHALL BE THE LESSER OF ±5% OR ±20mm FROM A STRAIGHT LINE BETWEEN INVERTS OF SUCCESSIVE MANHOLES.

PUBLIC STORMWATER NOTES

1. ALL PIPE EMBEDMENT AND TRENCHFILL IS TO BE IN ACCORDANCE WITH FAR NORTH DISTRICT COUNCL ENGINEERING STANDARD DETAILS (FNDCS) SHEET 30 & 31.
2. ALL NEW SWIC'S ARE TO BE CONSTRUCTED AS PER FNDCS SHEET 39 & 40.
3. USE LOW-STRENGTH CONCRETE BEDDING PIPES ON GRADIENTS STEEPER THAN 1:3 AS PER FNDCS SHEET 31.
4. USE ANCHOR BLOCKS PIPES LESS THAN 450Ø ON GRADIENTS STEEPER THAN 33%.
5. USE SLIDING JOINT WHEN CONNECTING PE PIPE TO INSPECTION CHAMBER AS PER FNDC SHEET 33.
6. JOINT FLEXIBILITY IS TO BE MAINTAINED WHERE PIPELINES ARE IN CONTACT WITH CONCRETE. THEY PIPES SHALL BE SEPARATED FROM CONCRETE USING DPC.
7. TERMINAL BLANK ENDS ARE REQUIRED FOR STORMWATER CONNECTIONS.
8. CONNECTIONS TO MAIN LINE ARE TO PER AS FNDCS SHEET 37.
9. 150mm THICK REINFORCED CONCRETE LIDS WITH HEAVY DUTY DUCTILE FRAMES & COVERS TO BE USED IN DRIVEWAYS CARRIAGEWAYS & BERMS. 100mm THICK CONCRETE LIDS WITH LIGHT DUTY CAST IRON FRAMES & COVERS MAY BE USED ELSEWHERE AS PER FNDCS SHEET 39.
10. PIPE POSITION TOLERANCE AT ANY POINT ALONG THE LENGTH OF THE INSTALLATION SHALL BE THE LESSER OF ±5% OR ±20mm FROM A STRAIGHT LINE BETWEEN INVERTS OF SUCCESSIVE MANHOLES.

PRIVATE STORMWATER NOTES

1. PRIVATE STORMWATER TO COMPLY WITH NEW ZEALAND BUILDING CODE E1-SURFACE WATER AND, E1/AS1.
2. DRAINAGE PIPES TO BE 100mmØ uPVC SN8 UNLESS OTHERWISE NOTED.
3. MINIMUM GRADIENTS FOR 100mmØ DRAINS TO BE NO LESS THAN 1 IN 120 (0.8%).
4. TYPE 2 CATCHPIT LEADS TO BE 150mmØ uPVC SN8 UNLESS OTHERWISE NOTED.
3. MINIMUM GRADIENTS FOR 150mmØ DRAINS TO BE NO LESS THAN 1 IN 200 (0.5%).
4. SUB-SOIL DRAINAGE, INCLUDING RETAINING WALL DRAINAGE, TO BE 110mmØ NOVACOIL UNLESS OTHERWISE NOTED.
5. SUB-SOIL DRAINS TO DISCHARGE TO PRIVATE CATCHPITS WITHIN THE SITE BOUNDARY.
6. INSPECTION POINTS TO BE LOCATED AT CHANGES IN DIRECTION GREATER THAN 45° UNLESS OTHERWISE NOTED.
7. INSPECTION POINTS TO BE LOCATED AT JUNCTIONS OF DRAINS, UNLESS DRAIN SERVES A SINGLE DOWNPIPE LESS THAN 2m AWAY, OR UNLESS OTHERWISE NOTED.
8. INSPECTION CHAMBERS OR NON-ACCESS CHAMBERS TO BE LOCATED AT CHANGES TO BOTH GRADIENT AND DIRECTION OCCUR AND WHERE EITHER IS GREATER THAN 22.5° UNLESS OTHERWISE NOTED.
9. DRAINS LAID UNDER BUILDINGS SHALL BE RUN IN A STRAIGHT LINE FROM ONE SIDE TO THE OTHER WITH A RODDING POINT LOCATED WITHIN 2 METRES FROM EXTERIOR BUILDING FACE.
10. WHERE TRENCH GRADIENTS ARE 1 IN 8 (12.5%0 OR STEEPER, ANTI-SCOUR BLOCKS SHALL BE REQUIRED.
11. TRENCHES SHALL BE OPEN FOR NO MORE THAN 48 HOURS WITHOUT SPECIFIC APPROVAL FROM ENGINEER.
12. TRENCHES SHALL REMAIN OUTSIDE THE ZONE-OF-INFLUENCE OF BUILDING FOUNDATIONS AS DEFINED BY NZBC EA/AS1, SECTION 3.9.7.
13. PRIVATE DRAIN OUTFALLS MAY REQUIRE A RESOURCE CONSENT.

PRIVATE WASTEWATER NOTES

1. PRIVATE WASTEWATER TO COMPLY WITH NEW ZEALAND BUILDING CODE G13-FOUL WATER AND, G13/AS2.
2. DRAINAGE PIPES TO BE 100mmØ uPVC SN8 UNLESS OTHERWISE NOTED.
3. MINIMUM GRADIENTS FOR 100mmØ DRAINS TO BE NO LESS THAN 1 IN 120 (0.8%).
4. INSPECTION POINTS TO BE LOCATED AT CHANGES IN DIRECTION GREATER THAN 45° UNLESS OTHERWISE NOTED.
5. INSPECTION POINTS TO BE LOCATED AT JUNCTIONS OF DRAINS, UNLESS DRAIN SERVES A GULLY TRAP LESS THAN 2m AWAY, OR UNLESS OTHERWISE NOTED.
6. DRAINS LAID UNDER BUILDINGS SHALL BE RUN IN A STRAIGHT LINE FROM ONE SIDE TO THE OTHER WITH A RODDING POINT LOCATED WITHIN 2 METRES FROM THE DOWNSTREAM EXTERIOR BUILDING FACE.
7. WHERE TRENCH GRADIENTS ARE 1 IN 8 (12.5%) OR STEEPER, ANTI-SCOUR BLOCKS SHALL BE REQUIRED.
8. TRENCHES SHALL BE OPEN FOR NO MORE THAN 48 HOURS WITHOUT SPECIFIC APPROVAL FROM ENGINEER.
9. TRENCHES SHALL REMAIN OUTSIDE THE ZONE-OF-INFLUENCE OF BUILDING FOUNDATIONS AS DEFINED BY NZBC EA/AS1, SECTION 3.9.7.

GENERAL NOTES

1. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED AGAINST THE SITE DRAWINGS PRIOR TO COMMENCING WORK.
2. DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
3. ANY VARIATIONS OR DISCREPANCIES ARE TO BE REFERRED TO CHESTER CONSULTANTS LTD FOR RESOLUTION.
4. ALL SERVICES ARE TO BE LOCATED AND FLAGGED PRIOR TO COMMENCING WORK ON SITE.
5. WORKS TO BE IN ACCORDANCE WITH WSL STANDARDS, AUCKLAND COUNCIL STANDARDS, AND THE NEW ZEALAND BUILDING CODE.
6. THE CONTRACTOR IS TO OBTAIN ALL NECESSARY CONSENTS AND PERMITS FOR WORKS ON, IN, AND AROUND EXISTING SERVICES, ASSETS, AND THE ROAD AND ROAD RESERVE.
7. ELECTRONIC FILES PROVIDED AS SUPPLEMENTAL INFORMATION TO DRAWINGS AND REPORTS. IF DISCREPANCIES ARE FOUND BETWEEN ELECTRONIC FILES AND DRAWINGS, CONTRACTOR TO NOTIFY ENGINEER. DRAWINGS SHALL TAKE PRECEDENT OVER ELECTRONIC FILES UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER.

TOPOGRAPHIC SURVEY NOTES

1. TOPOGRAPHIC SURVEY DATA PROVIDED BY WILLIAMS AND KING.
2. DATA COLLECTED ON 15/09/2021
3. DATA LOCATED ON MOUNT EDEN 2000 HORIZONTAL COORDINATE DATUM.
4. DATA SET TO LINZ VERTICAL DATUM 2016.

UNDERGROUND UTILITIES NOTES

1. UNDERGROUND UTILITIES SHOWN IN PLANS ARE BASED ON VARIOUS SOURCES OF DIFFERING QUALITY AND SHALL BE CONSIDERED INDICATIVE.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES TO CONFIRM LOCATIONS OF SHOWN UTILITIES OR IDENTIFY UTILITIES NOT SHOWN ON PLANS ALONG PATHS OF EXCAVATION.

SEDIMENT AND EROSION CONTROL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL GUIDANCE DOCUMENT 2016/05 (GD05), EROSION AND SEDIMENT CONTROL GUIDE.
2. THESE PLANS DETAIL THE GENERAL SEDIMENT AND EROSION CONTROL MEASURES. ACTUAL CONTROLS ARE TO BE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE ADAPTED TO SUIT THE CURRENT STAGE OF WORKS.

RETAINING NOTES

1. RETAINING WALLS SHOWN IN PLANS ARE INDICATIVE TO ILLUSTRATE LOCATIONS AND EXTENTS.
2. SPECIFIC RETAINING WALL TYPE AND DESIGN PER STRUCTURAL AND GEOTECHNICAL ENGINEERS.

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024
Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	NOTES AND ABBREVIATIONS
Drawing:	002 Rev: 0
Scale:	NTS
Project:	15757
Issue:	CONSENT

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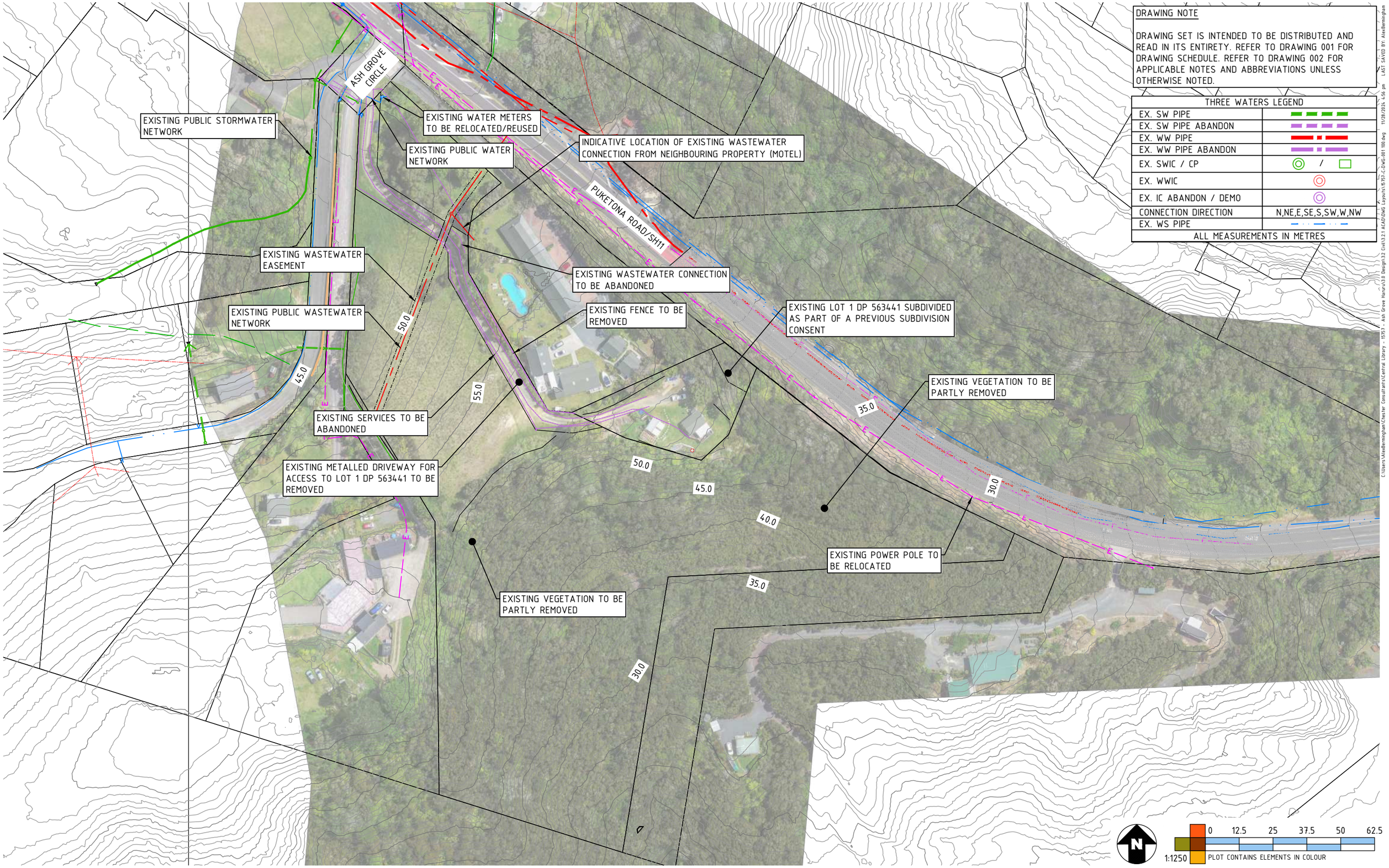

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX. SW PIPE	
EX. SW PIPE ABANDON	
EX. WW PIPE	
EX. WW PIPE ABANDON	
EX. SWIC / CP	/
EX. WWIC	
EX. IC ABANDON / DEMO	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX. WS PIPE	
ALL MEASUREMENTS IN METRES	

N

0 12.5 25 37.5 50 62.5

1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: EXISTING SITE PLAN

Drawing: 100 Rev: 0
Scale: 1:1250 @ A3
Project: 15757
Issue: CONSENT

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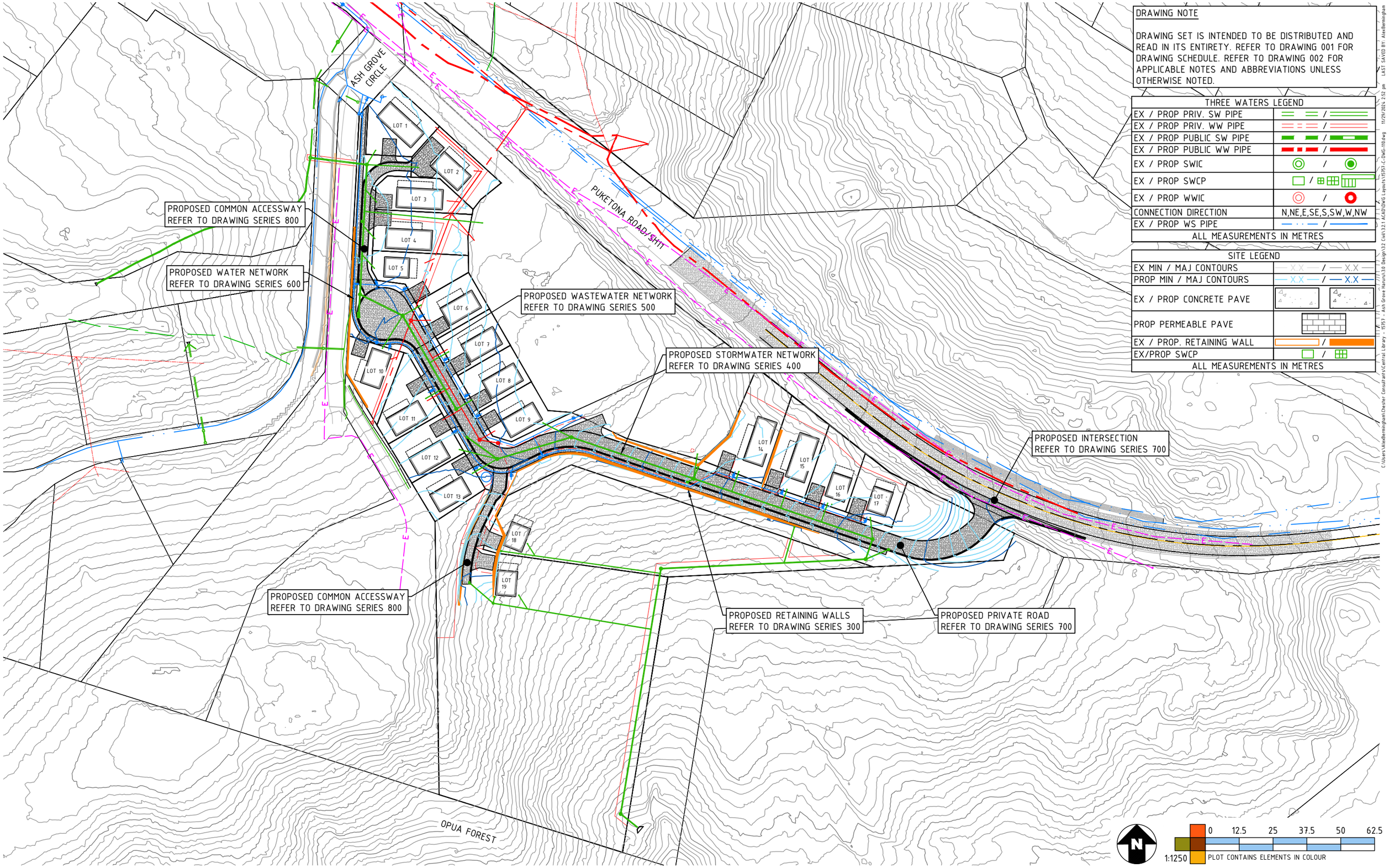

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	
EX / PROP PRIV. WW PIPE	
EX / PROP PUBLIC SW PIPE	
EX / PROP PUBLIC WW PIPE	
EX / PROP SWIC	
EX / PROP SWCP	
EX / PROP WWIC	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	
ALL MEASUREMENTS IN METRES	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	
EX/PROP SWCP	
ALL MEASUREMENTS IN METRES	

1:1250 — 0 12.5 25 37.5 50 62.5 — PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN – PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	PROPOSED SITE PLAN

Drawing:	110	Rev:	0
Scale:	1:1250 @ A3		
Project:	15757		
Issue:	CONSENT		

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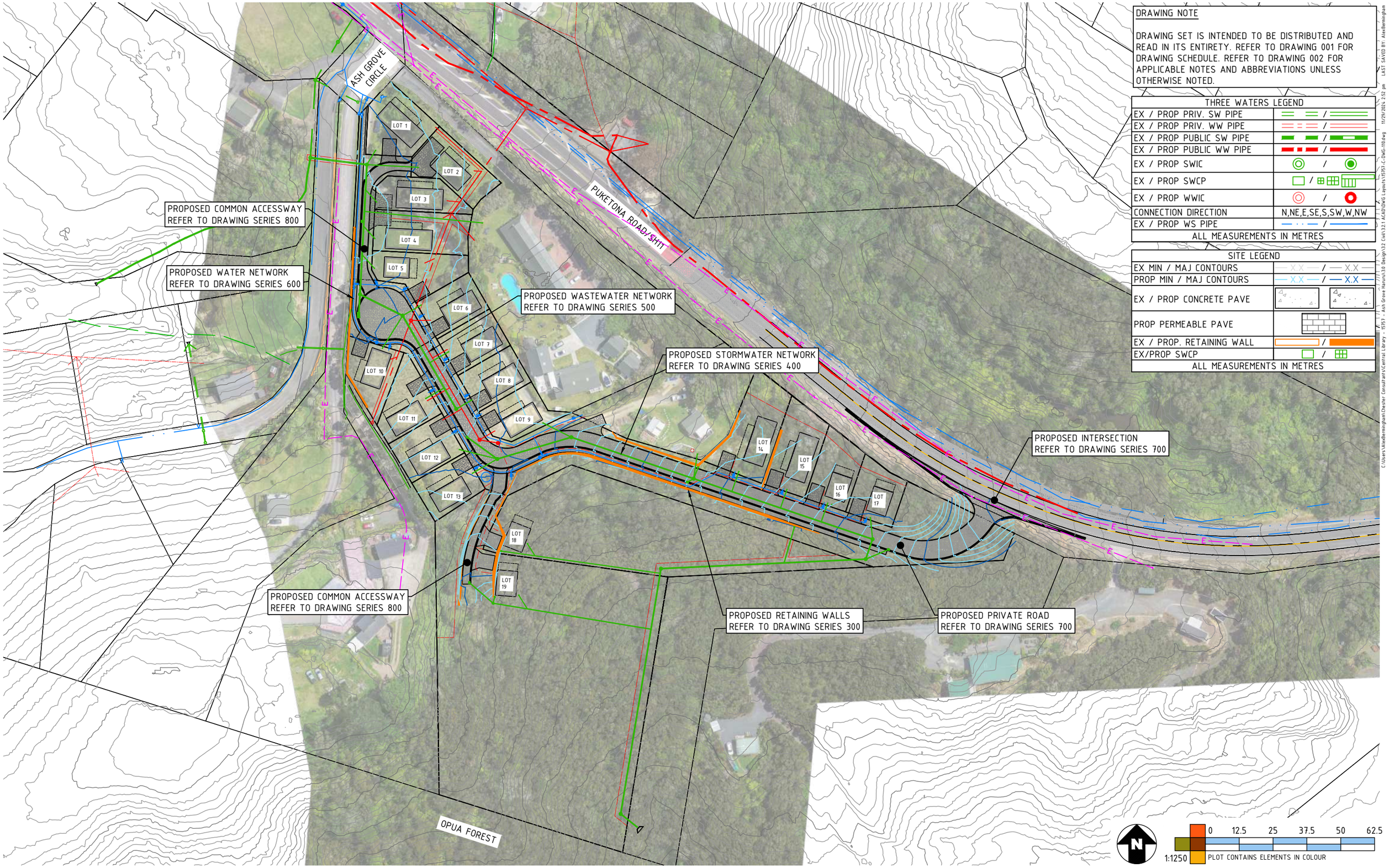

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

0 12.5 25 37.5 50 62.5

1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	PROPOSED SITE PLAN - AERIAL

Drawing:	111	Rev:	0
Scale:	1:1250 @ A3		
Project:	15757		
Issue:	CONSENT		

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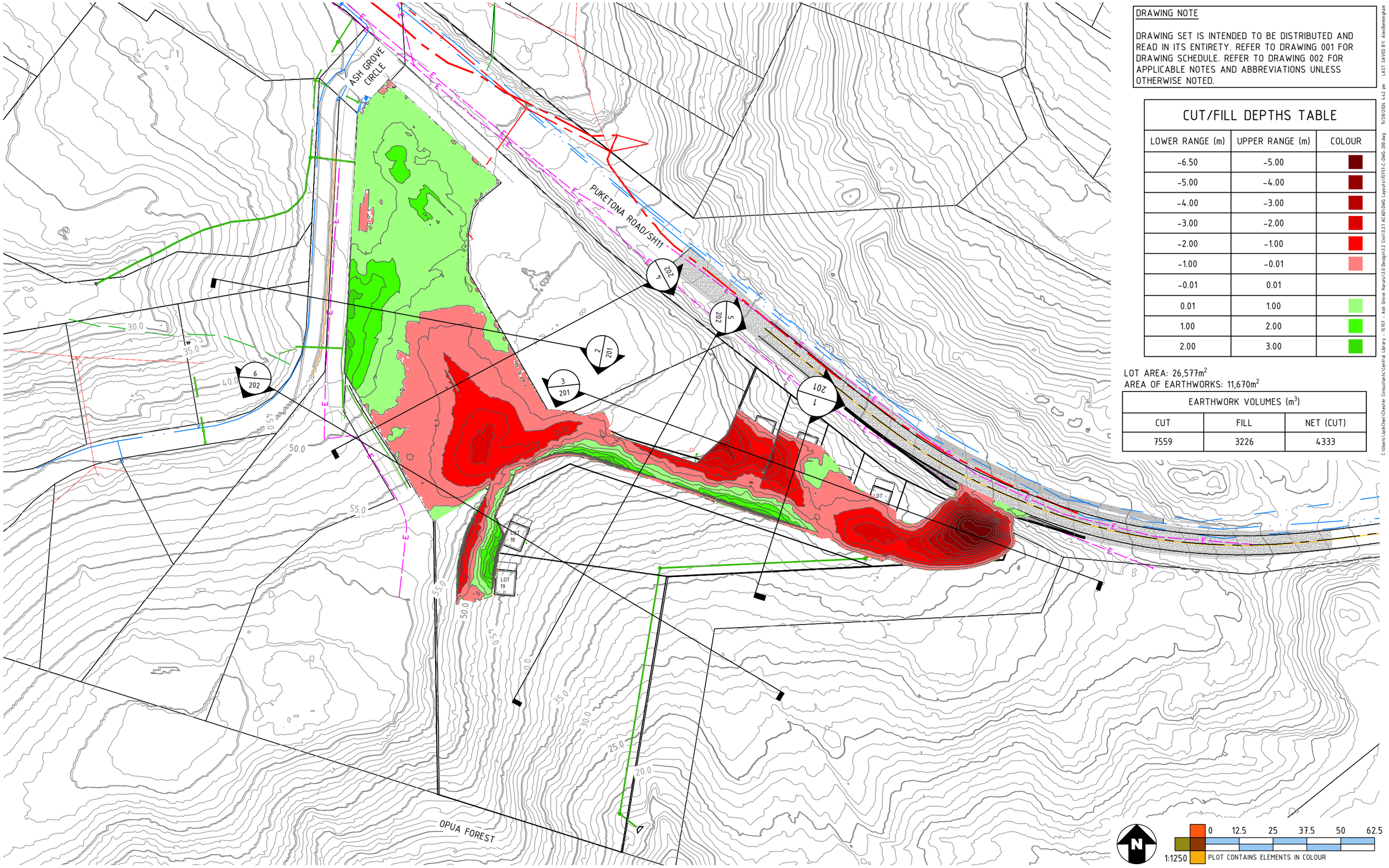

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

CUT/FILL DEPTHS TABLE

LOWER RANGE (m)	UPPER RANGE (m)	COLOUR
-6.50	-5.00	
-5.00	-4.00	
-4.00	-3.00	
-3.00	-2.00	
-2.00	-1.00	
-1.00	-0.01	
-0.01	0.01	
0.01	1.00	
1.00	2.00	
2.00	3.00	

LOT AREA: 26,577m^2
AREA OF EARTHWORKS: 11,670m^2

EARTHWORK VOLUMES (m^3)		
CUT	FILL	NET (CUT)
7559	3226	4333

1:1250 0 12.5 25 37.5 50 62.5 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: EARTHWORKS PLAN

Drawing: 200 Rev: 0
Scale: 1:1250 @ A3
Project: 15757
Issue: CONSENT

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DRAWING NOTE

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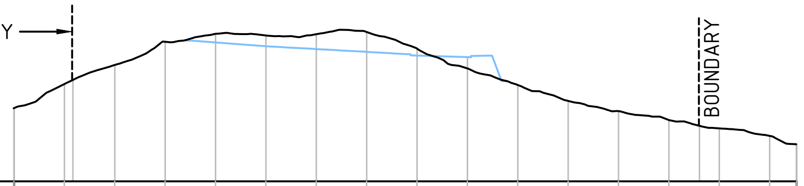
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	

0 7.5 15 22.5 30 37.5

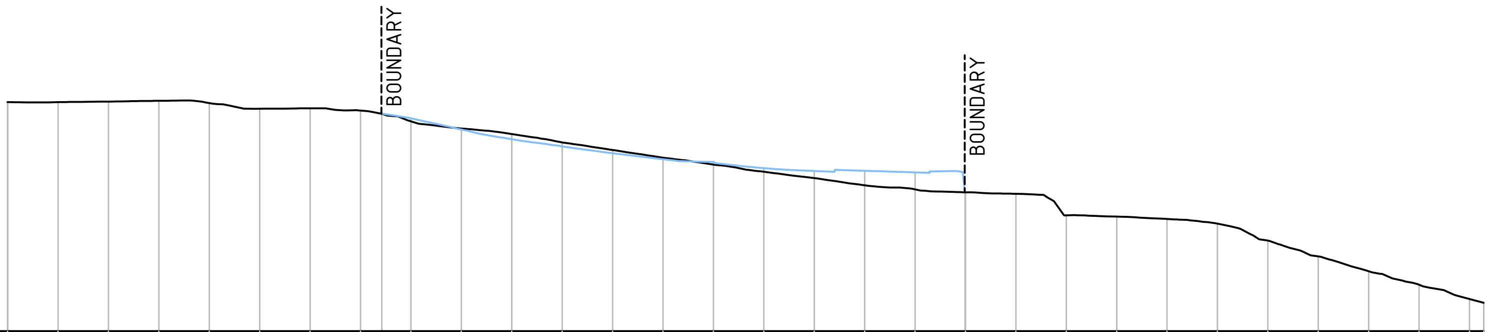
1:750 PLOT CONTAINS ELEMENTS IN COLOUR

EW 1
DATUM: 30.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS					-0.84	-1.06	-1.46	-1.97	-0.70	1.12							
DESIGN LEVELS					43.71	43.33	43.05	42.77	42.41	42.25							
EXISTING LEVELS	37.18	39.56	41.46	43.76	44.55	44.39	44.51	44.74	43.11	41.13	39.50	37.92	36.90	36.03	35.20	34.46	33.62
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	78

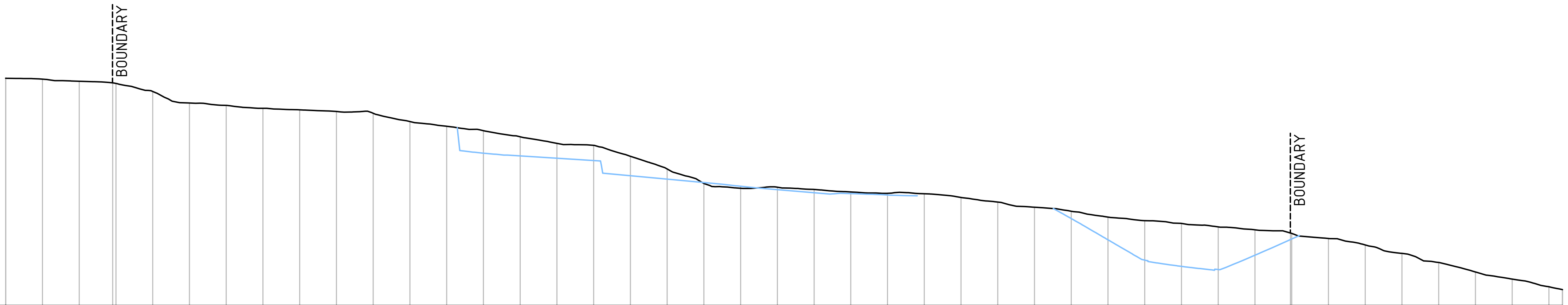
EW 2
DATUM: 34.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS									0.29	-0.11	-0.53	-0.40	-0.34	-0.16	0.24
DESIGN LEVELS									55.05	53.95	52.98	52.27	51.59	50.99	50.72
EXISTING LEVELS	56.66	56.66	56.72	56.79	56.57	56.00	56.05	55.83	54.76	54.05	53.50	52.67	51.93	51.16	50.48
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70

CUT/FILL DEPTHS	0.34	0.69	1.42	1.67												
DESIGN LEVELS	50.11	49.83	49.85	49.69												
EXISTING LEVELS	49.77	49.14	48.43	48.02	47.73	47.59	45.44	45.33	45.10	44.63	42.95	41.39	39.92	38.58	37.17	36.79
CHAINAGE	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	146

EW 3
DATUM: 26.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS														-3.07	-2.61	-2.02	-2.08	-2.64	-1.38	0.12	0.28	-0.34
DESIGN LEVELS														46.71	46.34	46.03	45.71	43.65	43.19	42.72	42.22	41.75
EXISTING LEVELS	56.91	56.79	56.50	56.21	55.13	53.55	53.23	52.83	52.62	52.39	52.16	51.02	50.38	49.78	48.95	48.05	47.79	46.30	44.57	42.61	41.94	42.09
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105

CUT/FILL DEPTHS	-0.45	-0.22	-0.24					-0.99	-3.09	-5.37	-5.84	-5.79	-3.45	-0.76								
DESIGN LEVELS	41.34	41.22	41.02					37.82	34.93	32.17	31.32	30.89	32.84	35.04								
EXISTING LEVELS	41.79	41.44	41.26	41.20	40.69	40.07	39.36	38.81	38.02	37.54	37.16	36.69	36.29	35.80	35.11	34.23	33.08	31.85	30.56	29.59	28.54	28.15
CHAINAGE	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	212

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: BULK EARTHWORKS LONG SECTIONS 01

Drawing: 201 Rev: 0
Scale: 1:750 @ A3
Project: 15757
Issue: CONSENT

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DRAWING NOTE

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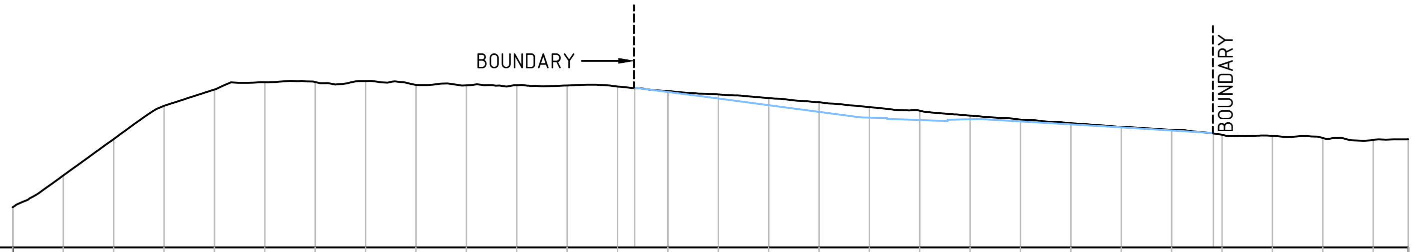
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	

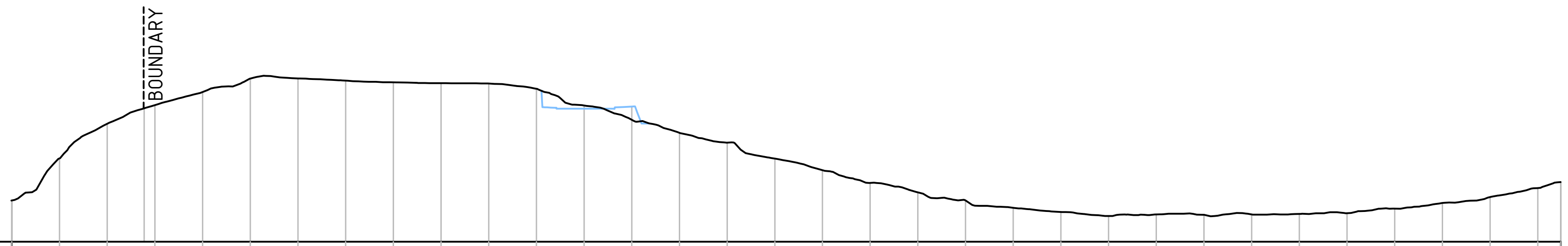
1:750 — 0 7.5 15 22.5 30 37.5 — PLOT CONTAINS ELEMENTS IN COLOUR

EW 4
DATUM: 40.00
VERT. EXAGGERATION 1:1



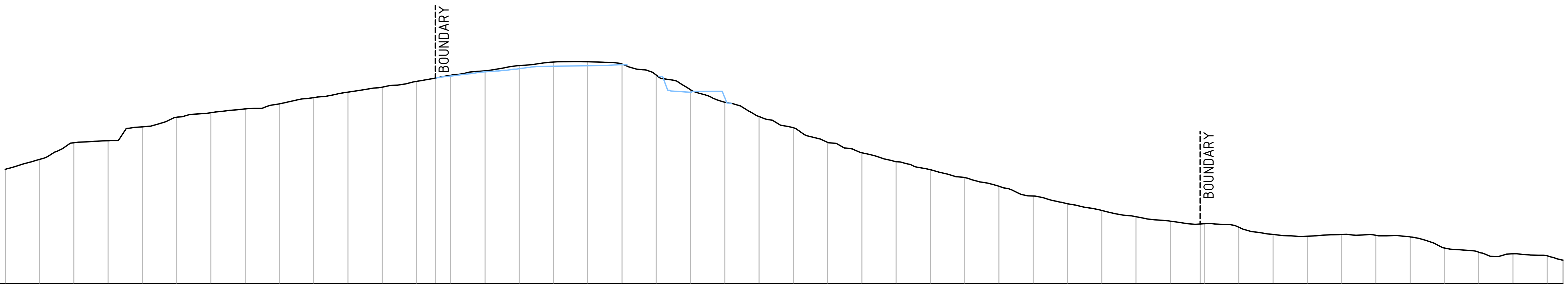
CHAINAGE	EXISTING LEVELS	DESIGN LEVELS	CUT/FILL DEPTHS
0	43.97		
5	47.10		
10	50.73		
15	54.03		
20	55.66		
25	56.39		
30	56.42		
35	56.51		
40	56.12		
45	56.08		
50	56.10		
55	56.07		
60	55.97		
65	55.52	55.39	-0.13
70	55.18	54.73	-0.45
75	54.82	54.07	-0.75
80	54.40	53.41	-0.99
85	53.91	52.84	-1.08
90	53.56	52.59	-0.97
95	53.07	52.66	-0.41
100	52.67	52.45	-0.22
105	52.32	52.16	-0.16
110	51.97	51.87	-0.10
115	51.66	51.56	-0.10
120	51.18		
125	51.07		
130	50.85		
135	50.65		
138	50.72		

EW 5
DATUM: 36.00
VERT. EXAGGERATION 1:1



CHAINAGE	EXISTING LEVELS	DESIGN LEVELS	CUT/FILL DEPTHS
0	40.28		
5	44.68		
10	48.30		
15	50.27		
20	51.63		
25	53.05		
30	53.08		
35	52.85		
40	52.67		
45	52.59		
50	52.54		
55	52.00		
60	50.25	49.91	-0.33
65	48.76	50.14	1.38
70	47.39		
75	46.34		
80	44.68		
85	43.47		
90	42.12		
95	41.15		
100	40.30		
105	39.52		
110	39.08		
115	38.66		
120	38.82		
125	38.78		
130	38.82		
135	38.88		
140	38.96		
145	39.43		
150	40.02		
155	40.64		
160	41.59		
162	42.22		

EW 6
DATUM: 24.00
VERT. EXAGGERATION 1:1



CHAINAGE	EXISTING LEVELS	DESIGN LEVELS	CUT/FILL DEPTHS
0	40.75		
5	42.21		
10	44.64		
15	44.94		
20	46.96		
25	48.37		
30	49.03		
35	49.59		
40	50.32		
45	51.22		
50	52.04		
55	52.75		
60	53.61		
65	54.50	54.38	-0.11
70	55.13	55.00	-0.13
75	55.91	55.45	-0.46
80	56.44	55.82	-0.62
85	56.48	55.90	-0.58
90	56.14	56.04	-0.10
95	54.53		
100	52.38	52.01	-0.38
105	50.57	51.24	0.67
110	48.46		
115	46.84		
120	44.69		
125	43.17		
130	41.87		
135	40.69		
140	39.55		
145	38.29		
150	36.85		
155	35.73		
160	34.75		
165	33.83		
170	33.18		
175	32.80		
180	32.30		
185	31.24		
190	30.97		
195	31.23		
200	31.11		
205	30.88		
210	29.25		
215	28.64		
220	28.41		
225	28.12		
227	27.49		

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: BULK EARTHWORKS LONG SECTIONS 02

Drawing: 202 Rev: 0
Scale: 1:750 @ A3
Project: 15757
Issue: CONSENT

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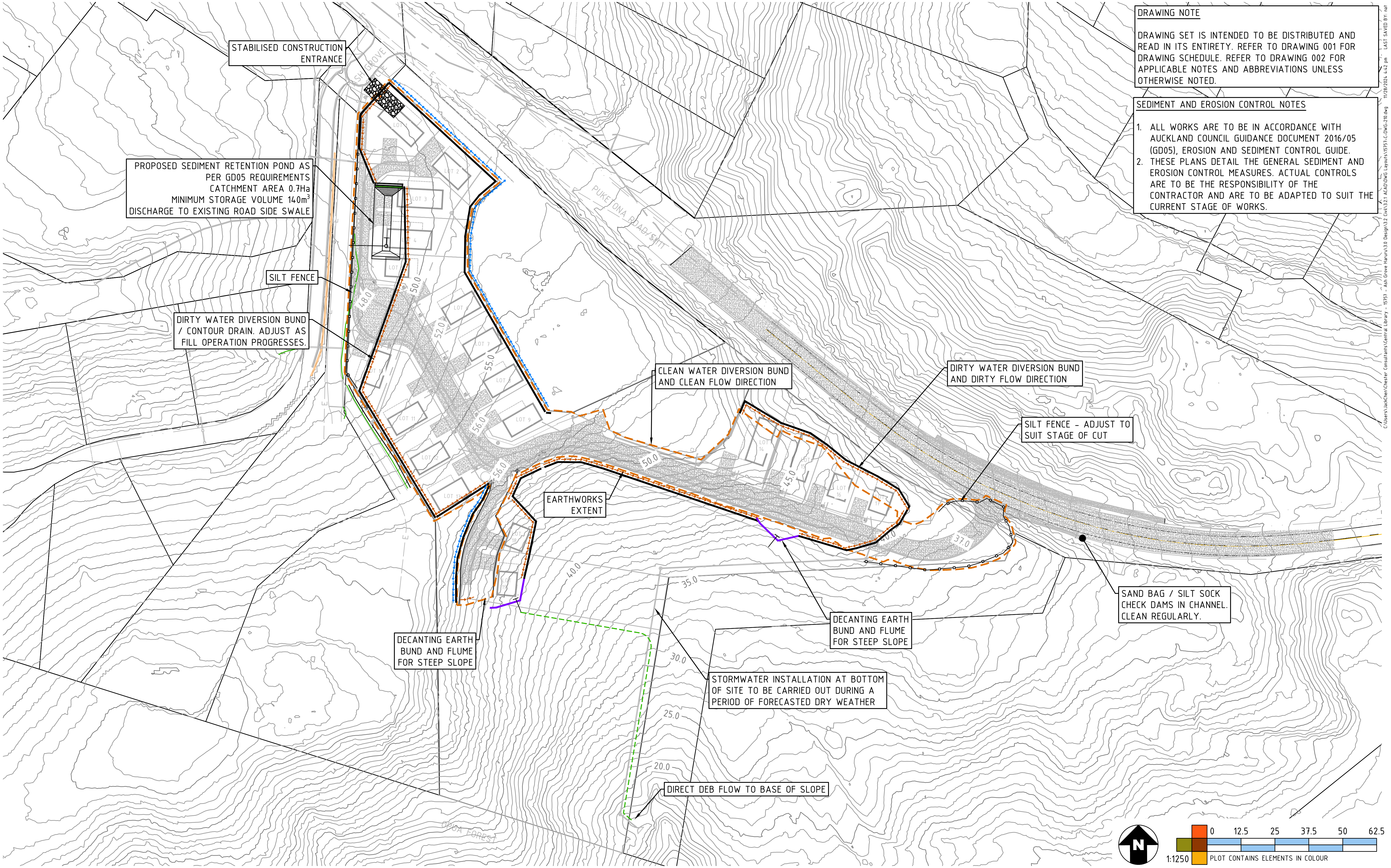

DRAWING NOTE

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SEDIMENT AND EROSION CONTROL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL GUIDANCE DOCUMENT 2016/05 (GD05), EROSION AND SEDIMENT CONTROL GUIDE.
2. THESE PLANS DETAIL THE GENERAL SEDIMENT AND EROSION CONTROL MEASURES. ACTUAL CONTROLS ARE TO BE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE ADAPTED TO SUIT THE CURRENT STAGE OF WORKS.

N

0 12.5 25 37.5 50 62.5

1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	15/11/2024	Drawing Title:	EROSION AND SEDIMENT CONTROL PLAN

Drawing:	210 Rev: 0
Scale:	1:1250 @ A3
Project:	15757
Issue:	CONSENT

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ASH GROVE CIRCLE

PUKETONA ROAD / SH11

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12

INDICATIVE BUSH CLEARANCE EXTENT
APPROXIMATELY 6230m^2

INDICATIVE BUSH CLEARANCE REQUIRED
FOR STORMWATER PIPE INSTALLATION

OPUA FOREST

N

0 12.5 25 37.5 50 62.5

1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

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Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN – PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	15/11/2024	Drawing Title:	BUSH CLEARANCE PLAN

Drawing:	220	Rev:	0
Scale:	1:1250 @ A3		
Project:	15757		
Issue:	CONSENT		

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ASH GROVE CIRCLE

PUKETONA ROAD/SH1T

RETAINING WALL 04

RETAINING WALL 03

RETAINING WALL 02

RETAINING WALL 06

RETAINING WALL 05

RETAINING WALL 01

OPUA FOREST

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
LOT 18
LOT 19

PROPOSED BOULDER RETAINING STRUCTURE AT ENTRANCEWAY TO A HEIGHT OF APPROX. 2m. BATTERED 1:3 SLOPE BEHIND STRUCTURE. REFER TO LANDSCAPE PLANS FOR DETAILS.

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

1:1250 0 12.5 25 37.5 50 62.5 PLOT CONTAINS ELEMENTS IN COLOUR

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Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024
Job Title:	CIVIL DESIGN – PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	RETAINING WALL PLAN
Drawing:	300 Rev: 0
Scale:	1:1250 @ A3
Project:	15757
Issue:	CONSENT

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TIMBER RETAINING WALL 03
MAX. RETAINED HEIGHT 3.35m
REFER TO DRAWING 303 FOR DETAILS

TIMBER RETAINING WALL 02
MAX. RETAINED HEIGHT 1.70m
REFER TO DRAWING 303 FOR DETAILS

TIMBER RETAINING WALL 06
MAX. RETAINED HEIGHT 2.55m
REFER TO DRAWING 305 FOR DETAILS

TIMBER RETAINING WALL 01
MAX. RETAINED HEIGHT 3.30m
REFER TO DRAWING 302 FOR DETAILS

TIMBER RETAINING WALL 05
MAX. RETAINED HEIGHT 3.15m
REFER TO DRAWING 304 FOR DETAILS

TIMBER RETAINING WALL 04
MAX. RETAINED HEIGHT 2.75m. REFER TO DRAWING 304 FOR DETAILS

LOT 9, LOT 12, LOT 13, LOT 14, LOT 15, LOT 16, LOT 17, LOT 18, LOT 19, LOT 10, LOT 11, LOT 5, LOT 4, LOT 3, LOT 1

ASH GROVE CIRCLE

RW 01 CH 0, RW 01 CH 20, RW 01 CH 40, RW 01 CH 60, RW 01 CH 80, RW 01 CH 100
RW 02 CH 0, RW 02 CH 20
RW 03 CH 0, RW 03 CH 20, RW 03 CH 40, RW 03 CH 60
RW 04 CH 0, RW 04 CH 20, RW 04 CH 40, RW 04 CH 60, RW 04 CH 69
RW 05 CH 0, RW 05 CH 20, RW 05 CH 40, RW 05 CH 50
RW 06 CH 0, RW 06 CH 20, RW 06 CH 40, RW 06 CH 47

DRAWING NOTE

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SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

0 5 10 15 20 25
1:500 PLOT CONTAINS ELEMENTS IN COLOUR

N

0 5 10 15 20 25
1:500 PLOT CONTAINS ELEMENTS IN COLOUR

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Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	RETAINING WALL PLAN - ENLARGEMENT

Drawing:	301 Rev: 0
Scale:	1:500 @ A3
Project:	15757
Issue:	CONSENT

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DRAWING NOTE

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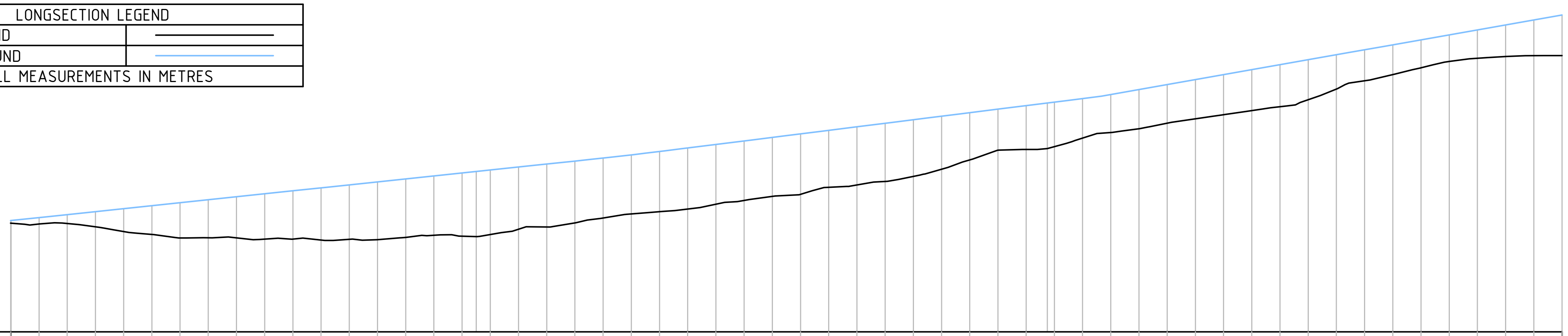
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	



RW 01
DATUM: 36.00
VERT. EXAGGERATION 1:1

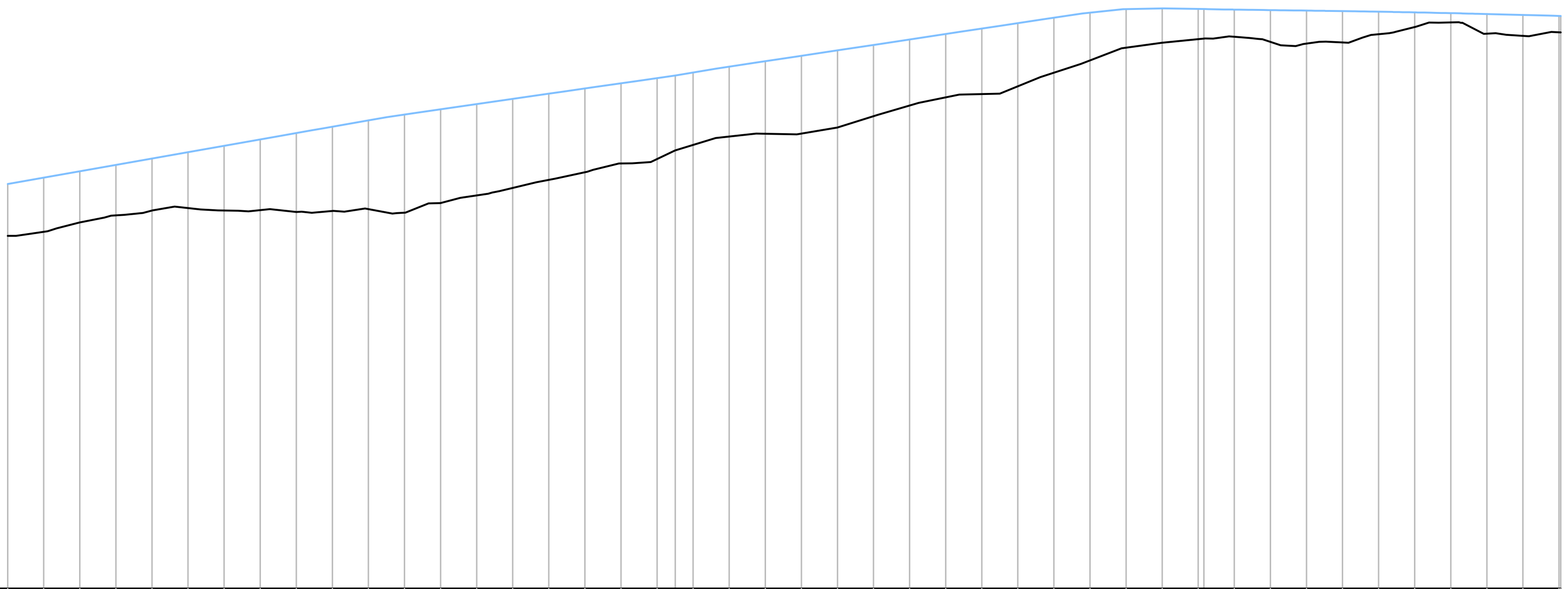
TOP OF WALL LEVELS	40.72	40.85	40.97	41.10	41.22	41.35	41.48	41.60	41.73	41.86	41.98	42.11	42.24	42.36
RETAINED HEIGHT	0.11	0.27	0.38	0.64	0.97	1.22	1.50	1.62	1.74	1.93	2.05	2.21	2.31	2.45
BOTTOM OF WALL LEVEL	40.61	40.57	40.60	40.46	40.26	40.13	39.98	39.99	39.99	39.93	39.93	39.89	39.92	39.91
CHAINAGE	0.0	1.2	2.4	3.6	4.8	6.0	7.2	8.4	9.6	10.8	12.0	13.2	14.4	15.6

TOP OF WALL LEVELS	42.49	42.62	42.74	42.87	42.99	43.12	43.25	43.38	43.51	43.66	43.80	43.95	44.10	44.25
RETAINED HEIGHT	2.49	2.52	2.69	2.74	2.65	2.67	2.63	2.55	2.51	2.56	2.60	2.54	2.53	2.51
BOTTOM OF WALL LEVEL	40.00	40.10	40.06	40.13	40.35	40.45	40.62	40.83	41.00	41.10	41.21	41.41	41.57	41.75
CHAINAGE	16.8	18.0	19.2	20.4	21.6	22.8	24.0	25.2	26.4	27.6	28.8	30.0	31.2	32.4

TOP OF WALL LEVELS	44.40	44.55	44.70	44.85	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.07	46.29	46.50
RETAINED HEIGHT	2.57	2.42	2.47	2.47	2.41	2.25	2.01	1.74	1.86	1.89	1.68	1.61	1.66	1.64
BOTTOM OF WALL LEVEL	41.83	42.13	42.23	42.38	42.60	42.90	43.29	43.71	43.74	43.86	44.22	44.46	44.62	44.86
CHAINAGE	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2

TOP OF WALL LEVELS	46.71	46.92	47.13	47.34	47.56	47.77	47.98	48.19	48.40	48.61	48.82	49.04	49.25	49.46
RETAINED HEIGHT	1.67	1.70	1.74	1.79	1.70	1.46	1.32	1.26	1.19	1.13	1.21	1.34	1.52	1.73
BOTTOM OF WALL LEVEL	45.04	45.22	45.39	45.56	45.85	46.31	46.66	46.93	47.21	47.48	47.62	47.69	47.73	47.73
CHAINAGE	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8	66.0

HORIZONTAL GEOMETRY: 19.80m 288°41'53" (ch 0.0–20.4); 24.30m 288°41'53" (ch 20.4–44.4); 44.10m 288°41'53" (ch 44.4–66.0)



RW 01
DATUM: 36.00
VERT. EXAGGERATION 1:1

TOP OF WALL LEVELS	49.46	49.67	49.88	50.09	50.31	50.52	50.73	50.94	51.15	51.36	51.58	51.77	51.94	52.11	52.29
RETAINED HEIGHT	1.73	1.81	1.70	1.68	1.73	1.86	2.15	2.35	2.63	2.81	2.96	3.26	3.12	3.04	2.96
BOTTOM OF WALL LEVEL	49.46	49.67	49.88	50.09	50.31	50.52	50.73	50.94	51.15	51.36	51.58	51.77	51.94	52.11	52.29
CHAINAGE	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8

TOP OF WALL LEVELS	52.46	52.63	52.81	52.98	53.17	53.36	53.54	53.72	53.90	54.08	54.26	54.44	54.63	54.81	54.99
RETAINED HEIGHT	2.87	2.78	2.67	2.69	2.41	2.32	2.41	2.59	2.57	2.37	2.20	2.11	2.18	2.10	1.83
BOTTOM OF WALL LEVEL	52.46	52.63	52.81	52.98	53.17	53.36	53.54	53.72	53.90	54.08	54.26	54.44	54.63	54.81	54.99
CHAINAGE	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8

TOP OF WALL LEVELS	55.16	55.27	55.30	55.28	55.26	55.24	55.22	55.21	55.19	55.17	55.14	55.11	55.08	**55.05**
RETAINED HEIGHT	1.59	1.28	1.14	1.01	0.90	1.06	1.10	1.04	0.75	0.49	0.31	0.65	0.70	**0.55**
BOTTOM OF WALL LEVEL	55.16	55.27	55.30	55.28	55.26	55.24	55.22	55.21	55.19	55.17	55.14	55.11	55.08	**55.05**
CHAINAGE	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6	112.8	114.0	115.2	116.4	**117.6**

HORIZONTAL GEOMETRY: 44.10m 288°41'53" (ch 66.0–88.8); 11.88m 244°27'19" (ch 106.8–117.6)

0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: RETAINING WALL LONG SECTION 01

Drawing: 302 Rev: 0
Scale: 1:250 @ A3
Project: 15757
Issue: CONSENT

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DRAWING NOTE

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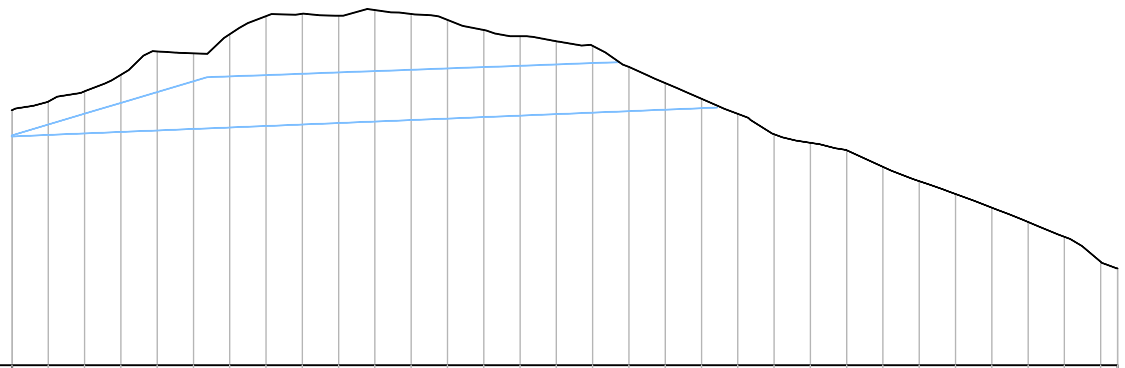
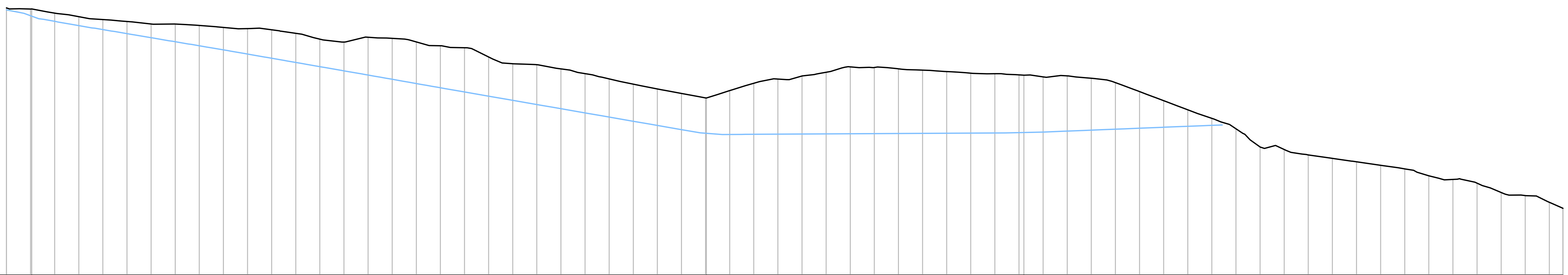
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	



RW 02
DATUM: 36.00
VERT. EXAGGERATION 1:1

HORIZONTAL GEOMETRY: 36.56m, 18°49'28"

CHAINAGE	TOP OF WALL LEVELS	RETAINED HEIGHT	BOTTOM OF WALL LEVEL
0.0	43.58	0.03	43.55
1.2	43.94	0.34	43.59
2.4	44.29	0.65	43.64
3.6	44.65	0.96	43.69
4.8	45.01	1.27	43.74
6.0	45.37	1.57	43.79
7.2	45.53	1.69	43.84
8.4	45.57	1.68	43.89
9.6	45.62	1.68	43.94
10.8	45.66	1.67	43.99
12.0	45.70	1.67	44.04
13.2	45.75	1.66	44.09
14.4	45.79	1.66	44.13
15.6	45.84	1.65	44.18
16.8	45.88	1.65	44.23
18.0	45.92	1.64	44.28
19.2	45.97	1.64	44.33
20.4			44.38
21.6			44.43
22.8			44.48
24.0			
25.2			
26.4			
27.6			
28.8			
30.0			
31.2			
32.4			
33.6			
34.8			
36.0			
36.6			



RW 03
DATUM: 40.00
VERT. EXAGGERATION 1:1

HORIZONTAL GEOMETRY: 1.26m, 199°32'59" | 33.58m, 108°41'53" | 15.81m, 47°00'25" | 26.83m, 22°49'41"

CHAINAGE	TOP OF WALL LEVELS	RETAINED HEIGHT	BOTTOM OF WALL LEVEL
0.0	53.32	0.10	53.22
1.2	53.27	0.34	52.93
2.4	53.06	0.40	52.66
3.6	52.88	0.45	52.44
4.8	52.74	0.50	52.24
6.0	52.64	0.61	52.04
7.2	52.52	0.68	51.84
8.4	52.52	0.88	51.63
9.6	52.45	1.01	51.43
10.8	52.35	1.12	51.23
12.0	52.29	1.27	51.02
13.2	52.23	1.42	50.81
14.4	52.05	1.45	50.60
15.6	51.76	1.37	50.39
16.8	51.62	1.43	50.18
18.0	51.86	1.88	49.97
19.2	51.80	2.04	49.76
20.4	51.62	2.07	49.55
21.6	51.43	2.10	49.34
22.8	51.34	2.21	49.13
24.0	50.87	1.95	48.92
25.2	50.54	1.82	48.71
26.4	50.49	1.98	48.51
27.6	50.28	1.98	48.30
28.8	50.05	1.96	48.09
30.0	49.78	1.90	47.88
31.2	49.52	1.85	47.67
32.4	49.28	1.82	47.46
33.6	49.06	1.80	47.25
34.8	48.84	1.76	47.07
36.0	49.20	2.19	47.01
37.2	49.56	2.54	47.02
38.4	49.77	2.74	47.03
39.6	49.93	2.89	47.04
40.8	50.11	3.07	47.04
42.0	50.38	3.33	47.05
43.2	50.35	3.30	47.05
44.4	50.28	3.22	47.06
45.6	50.22	3.15	47.07
46.8	50.15	3.08	47.07
48.0	50.07	2.99	47.08
49.2	50.04	2.96	47.09
50.4	49.98	2.88	47.11
51.6	49.88	2.75	47.13
52.8	49.93	2.75	47.18
54.0	49.81	2.58	47.23
55.2	49.59	2.32	47.27
56.4	49.15	1.83	47.32
57.6	48.70	1.32	47.37
58.8	48.24	0.82	47.42
60.0	47.82	0.35	47.47
61.2	47.30		
62.4	46.39		
63.6	46.26		
64.8	45.99		
66.0	45.82		
67.2	45.65		
68.4	45.48		
69.6	45.30		
70.8	44.95		
72.0	44.77		
73.2	44.59		
74.4	44.12		
75.6	43.97		
76.8	43.63		
77.5	43.33		

0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: RETAINING WALL LONG SECTION 02

Drawing: 303 Rev: 0
Scale: 1:250 @ A3
Project: 15757
Issue: CONSENT

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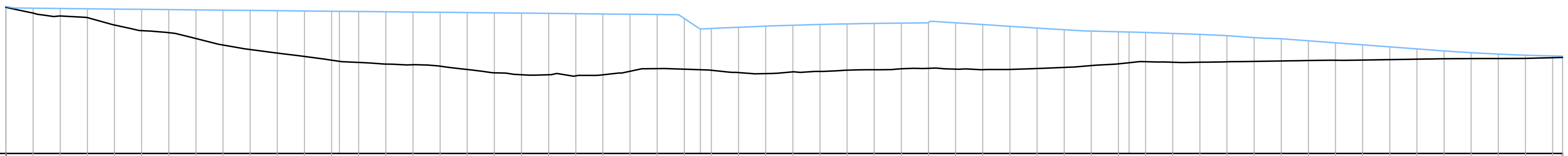
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	

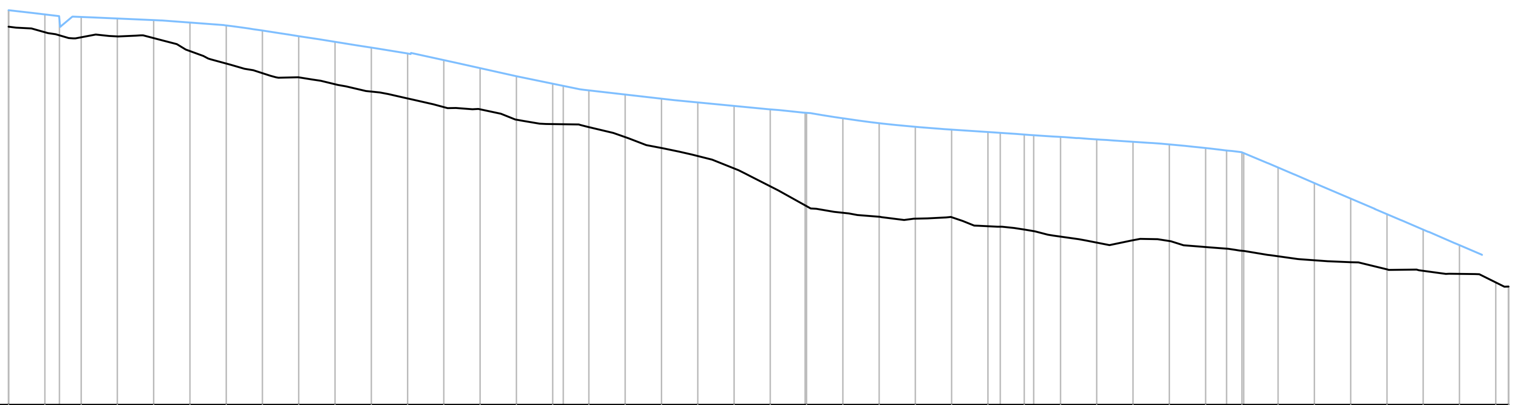


RW 04
DATUM: 44.00
VERT. EXAGGERATION 1:1

CHAINAGE	TOP OF WALL LEVELS	RETAINED HEIGHT	BOTTOM OF WALL LEVEL
0.0	50.46	0.04	50.43
1.2	50.38	0.21	50.17
2.4	50.37	0.33	50.04
3.6	50.35	0.39	49.97
4.8	50.34	0.70	49.65
6.0	50.33	0.94	49.39
7.2	50.32	1.01	49.30
8.4	50.30	1.26	49.05
9.6	50.29	1.53	48.76
10.8	50.28	1.72	48.57
12.0	50.27	1.86	48.41
13.2	50.26	2.00	48.26
14.4	50.25	2.15	48.09
15.6	50.23	2.24	47.99
16.8	50.22	2.30	47.92
18.0	50.21	2.32	47.89
19.2	50.20	2.36	47.83
20.4	50.19	2.50	47.69
21.6	50.17	2.64	47.54
22.8	50.16	2.71	47.45
24.0	50.15	2.70	47.45
25.2	50.14	2.74	47.40
26.4	50.13	2.68	47.45
27.6	50.11	2.51	47.60
28.8	50.10	2.38	47.72
30.0	49.93	2.23	47.70
31.2	49.49	1.84	47.65
32.4	49.54	1.99	47.55
33.6	49.59	2.08	47.50
34.8	49.63	2.05	47.58
36.0	49.66	2.06	47.60
37.2	49.69	2.04	47.65
38.4	49.71	2.03	47.67
39.6	49.72	2.01	47.72
40.8	49.76	2.02	47.74
42.0	49.74	2.04	47.70
43.2	49.66	1.98	47.68
44.4	49.58	1.89	47.69
45.6	49.51	1.78	47.73
46.8	49.43	1.66	47.77
48.0	49.37	1.52	47.86
49.2	49.34	1.41	47.93
50.4	49.31	1.28	48.03
51.6	49.27	1.27	48.00
52.8	49.22	1.22	48.00
54.0	49.17	1.15	48.02
55.2	49.09	1.05	48.04
56.4	49.04	0.98	48.06
57.6	48.95	0.87	48.08
58.8	48.86	0.77	48.09
60.0	48.77	0.67	48.10
61.2	48.68	0.56	48.12
62.4	48.59	0.45	48.14
63.6	48.50	0.34	48.16
64.8	48.42	0.26	48.16
66.0	48.36	0.20	48.17
67.2	48.31	0.14	48.17
68.4	48.28	0.08	48.20
68.8	48.27	0.06	48.21

HORIZONTAL GEOMETRY

14.75m	15.96m	18.96m	19.17m
328°57'00"	3°00'00"	3°00'00"	3°00'00"



RW 05
DATUM: 42.00
VERT. EXAGGERATION 1:1

CHAINAGE	TOP OF WALL LEVELS	RETAINED HEIGHT	BOTTOM OF WALL LEVEL
0.0	55.05	0.55	54.50
1.2	54.91	0.59	54.32
2.4	54.83	0.67	54.15
3.6	54.77	0.59	54.18
4.8	54.72	0.59	54.13
6.0	54.64	0.94	53.70
7.2	54.55	1.26	53.29
8.4	54.38	1.41	52.97
9.6	54.19	1.36	52.83
10.8	54.00	1.40	52.60
12.0	53.81	1.45	52.36
13.2	53.62	1.49	52.13
14.4	53.40	1.55	51.84
15.6	53.13	1.36	51.77
16.8	52.87	1.44	51.43
18.0	52.62	1.34	51.28
19.2	52.40	1.22	51.18
20.4	52.26	1.41	50.85
21.6	52.12	1.63	50.50
22.8	52.00	1.77	50.23
24.0	51.89	2.07	49.82
25.2	51.77	2.55	49.23
26.4	51.66	3.08	48.57
27.6	51.47	3.12	48.35
28.8	51.32	3.10	48.22
30.0	51.19	3.03	48.16
31.2	51.10	2.90	48.20
32.4	51.02	3.11	47.91
33.6	50.94	3.14	47.79
34.8	50.86	3.29	47.57
36.0	50.78	3.42	47.36
37.2	50.70	3.26	47.44
38.4	50.61	3.19	47.42
39.6	50.49	3.27	47.22
40.8	50.35	3.26	47.10
42.0	49.85	2.94	46.91
43.2	49.33	2.55	46.78
44.4	48.82	2.10	46.72
45.6	48.31	1.83	46.48
46.8	47.79	1.36	46.43
48.0	47.28	0.95	46.33
49.2			46.05
49.6			45.91

HORIZONTAL GEOMETRY

1.68m	16.66m	8.00m	6.45m	1.11m	6.38m	0.56m	8.76m
197°30'16"	206°42'07"	156°21'56"	201°21'56"	195°13'19"	190°31'03"	184°45'03"	181°56'42"

0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: RETAINING WALL LONG SECTION 03

Drawing: 304 Rev: 0
Scale: 1:250 @ A3
Project: 15757
Issue: CONSENT

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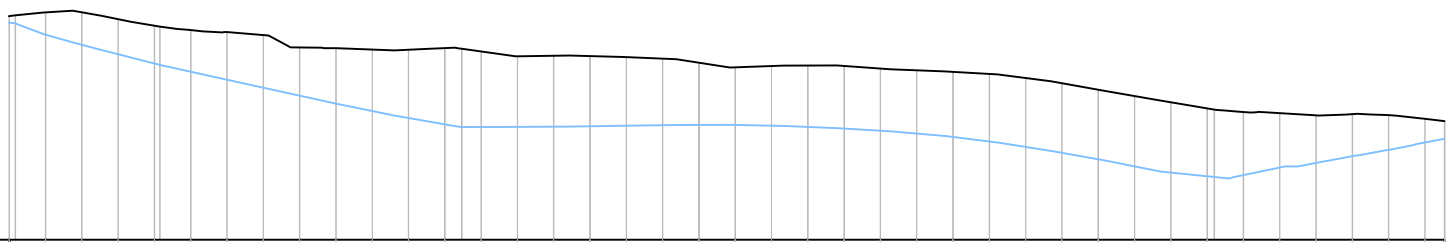
LONGSECTION LEGEND	
EXISTING GROUND	(black line)
PROPOSED GROUND	(blue line)
ALL MEASUREMENTS IN METRES	

RW 06
DATUM: 48.00
VERT. EXAGGERATION 1:1



CHAINAGE	TOP OF WALL LEVELS	RETAINED HEIGHT	BOTTOM OF WALL LEVEL	HORIZONTAL GEOMETRY
0.0	55.39	0.21	55.17	0.20m 185°03'00"
1.2	55.51	0.73	54.77	
2.4	55.52	1.08	54.44	
3.6	55.29	1.16	54.13	
4.8	55.07	1.25	53.82	
6.0	54.93	1.38	53.55	9.98m 206°34'32"
7.2	54.86	1.57	53.29	
8.4	54.76	1.74	53.02	
9.6	54.35	1.59	52.76	
10.8	54.32	1.83	52.49	
12.0	54.28	2.03	52.25	
13.2	54.27	2.26	52.02	
14.4	54.33	2.52	51.81	
15.6	54.22	2.50	51.72	
16.8	54.06	2.34	51.72	
18.0	54.08	2.35	51.73	
19.2	54.07	2.32	51.74	
20.4	54.03	2.27	51.76	
21.6	53.98	2.20	51.78	
22.8	53.85	2.06	51.79	
24.0	53.69	1.91	51.79	
25.2	53.73	1.97	51.76	
26.4	53.75	2.03	51.72	
27.6	53.74	2.07	51.67	
28.8	53.65	2.06	51.60	
30.0	53.59	2.09	51.50	
31.2	53.54	2.15	51.39	
32.4	53.47	2.23	51.24	
33.6	53.34	2.28	51.06	
34.8	53.17	2.30	50.87	
36.0	52.95	2.30	50.65	
37.2	52.74	2.32	50.42	
38.4	52.54	2.32	50.21	
39.6	52.34	2.25	50.09	
40.8	52.22	2.09	50.13	7.62m 185°23'21"
42.0	52.18	1.80	50.38	
43.2	52.11	1.58	50.53	
44.4	52.15	1.39	50.75	
45.6	52.11	1.15	50.96	
46.8	51.99	0.78	51.21	
47.5	51.91			

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0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: RETAINING WALL LONG SECTION 04

Drawing: 305 Rev: 0
Scale: 1:250 @ A3
Project: 15757
Issue: CONSENT

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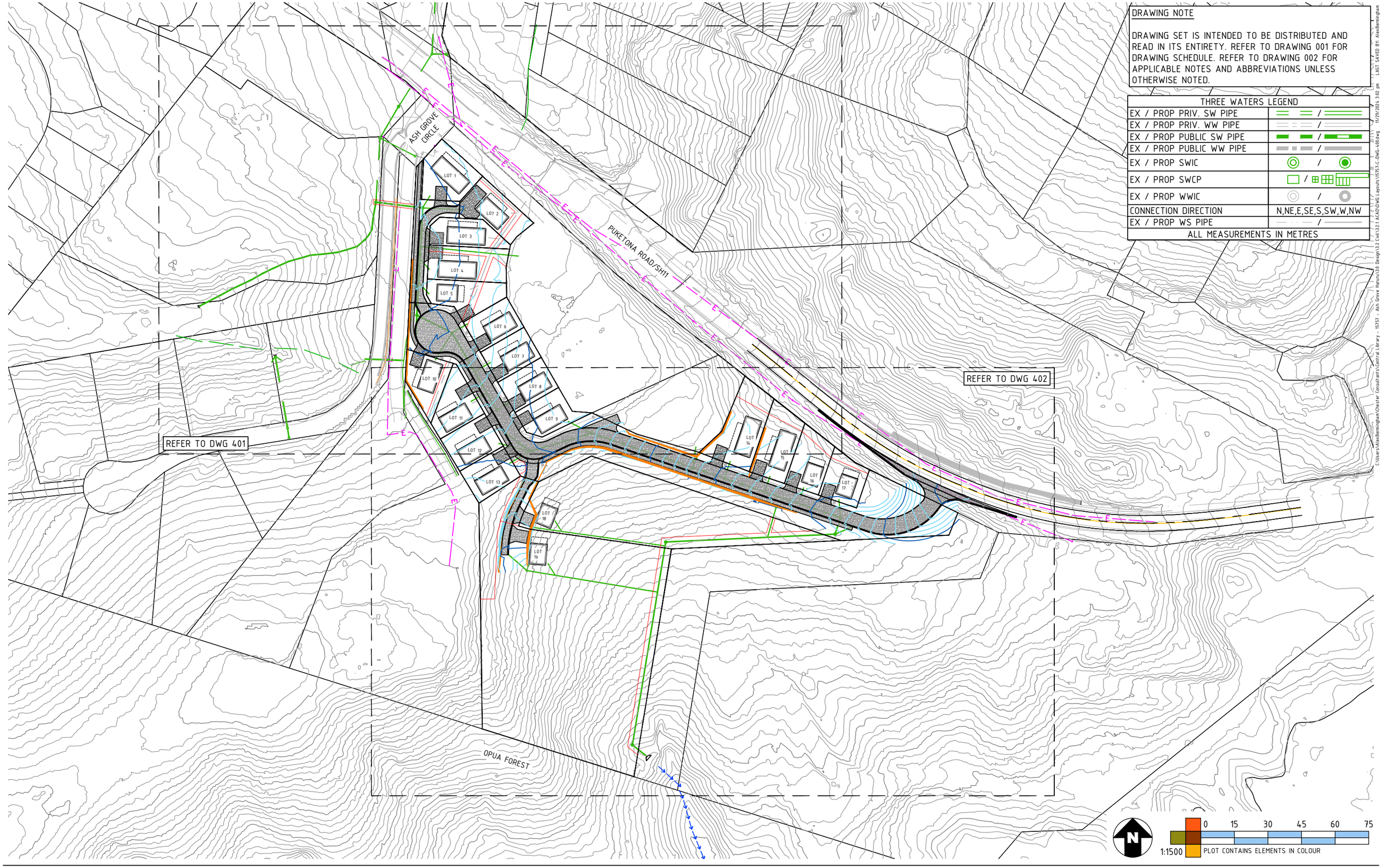

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

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Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024

Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	STORMWATER LAYOUT PLAN - PUBLIC

Drawing:	400 Rev: 0
Scale:	1:1500 @ A3
Project:	15757
Issue:	CONSENT

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

EX. PUBLIC 300mmØ CONC. CULVERT

PROPOSED STROMWATER DISCHARGE CONNECTION POINT TO EXISTING PUBLIC 1050mmØ INSPECTION CHAMBER
LL: 47.27
IL: 46.5

EX. PUBLIC 450mmØ CONC. CULVERT

PROPOSED EASEMENTS FOR PROPOSED PUBLIC SW INFRASTRUCTURE

PROPOSED DOUBLE BACK ENTRY CATCHPIT

EXISTING PUBLIC OUTLET STRUCTURE WHICH DISCHARGES TO EXISTING STORMWATER WATER COURSE
IL: 26.52

EX. 300mmØ CONC. CULVERT COLLECTING STORMWATER RUNOFF FROM NEIGHBOURING CHANNEL DRAIN

PROPOSED 100mmØ SW LOT CONNECTION TYPICAL

EXISTING SW LOT CONNECTION TO MOTEL TO BE ABANDONED AND PROVIDE MOTEL WITH NEW PUBLIC LOT CONNECTION TO PROPOSED SW NETWORK. LOCATION OF EXISTING CONNECTION TO BE DETERMINED AT DETAILED DESIGN.

PROPOSED PUBLIC STORMWATER NETWORK TO SERVICE DEVELOPMENT. DETAILED DESIGN TO BE CONFIRMED AT ENGINEERING PLAN APPROVAL.

PROPOSED PUBLIC STORMWATER NETWORK TO SERVICE DEVELOPMENT DISCHARGING TO THE SOUTH

ASH GROVE CIRCLE

PUKETONA ROAD/SH11

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12

N

0 7.5 15 22.5 30 37.5
1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	STORMWATER PLAN 01

Drawing:	401	Rev:	0
Scale:	1:750 @ A3		
Project:	15757		
Issue:	CONSENT		

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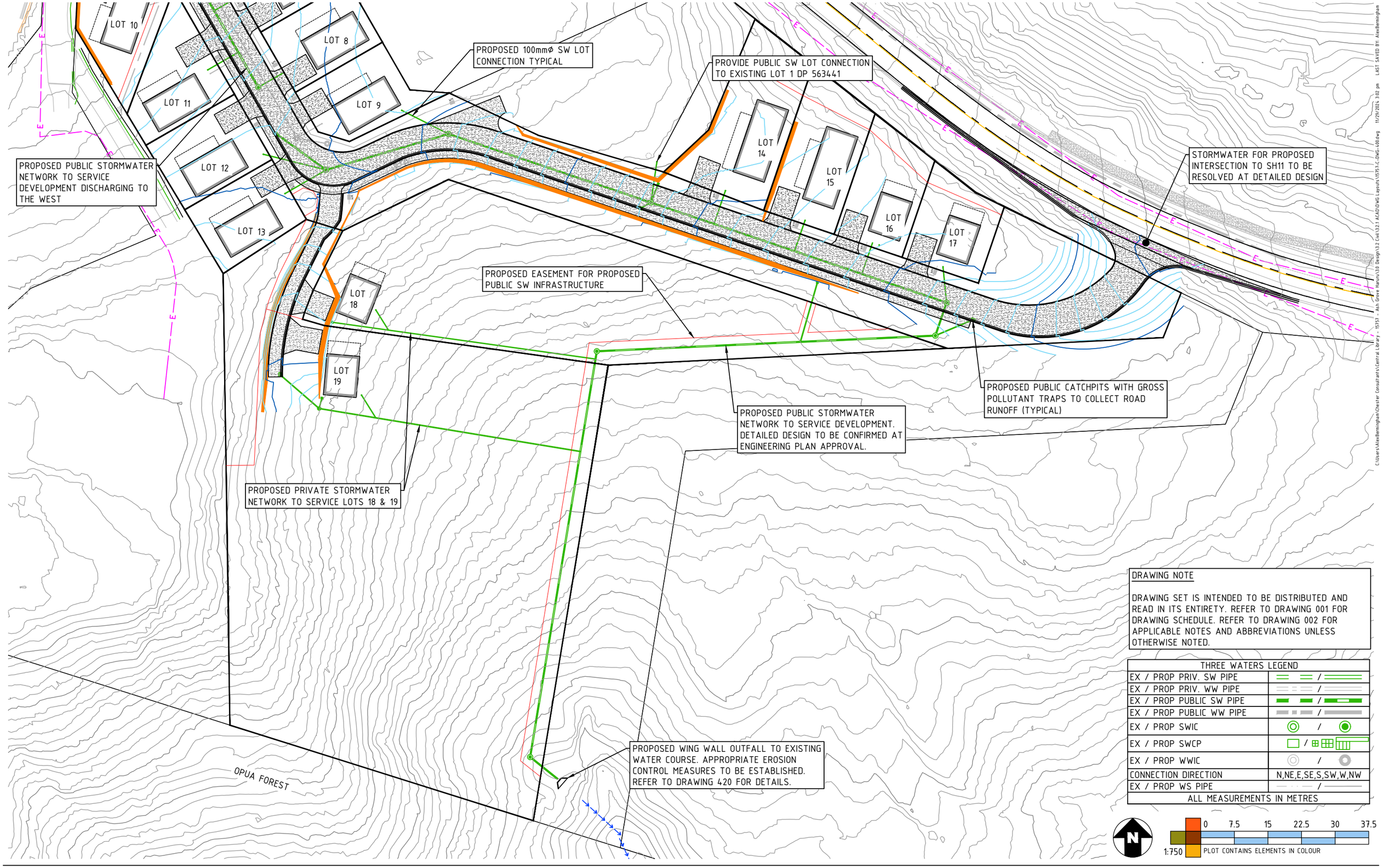

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

N

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	STORMWATER PLAN 02

Drawing:	402	Rev:	0
Scale:	1:750 @ A3		
Project:	15757		
Issue:	CONSENT		

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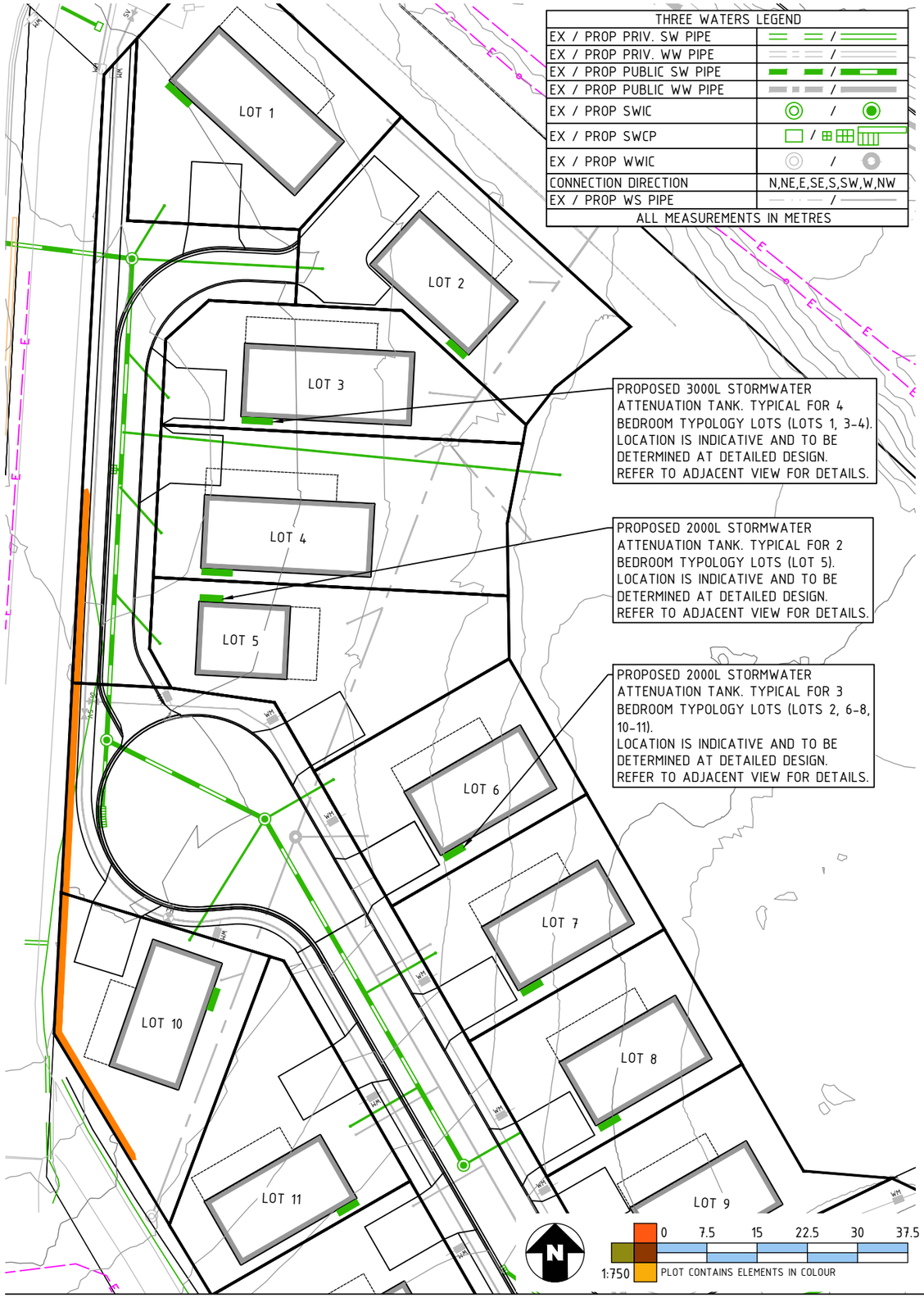


THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

STORMWATER ATTENUATION TANK DETAILS

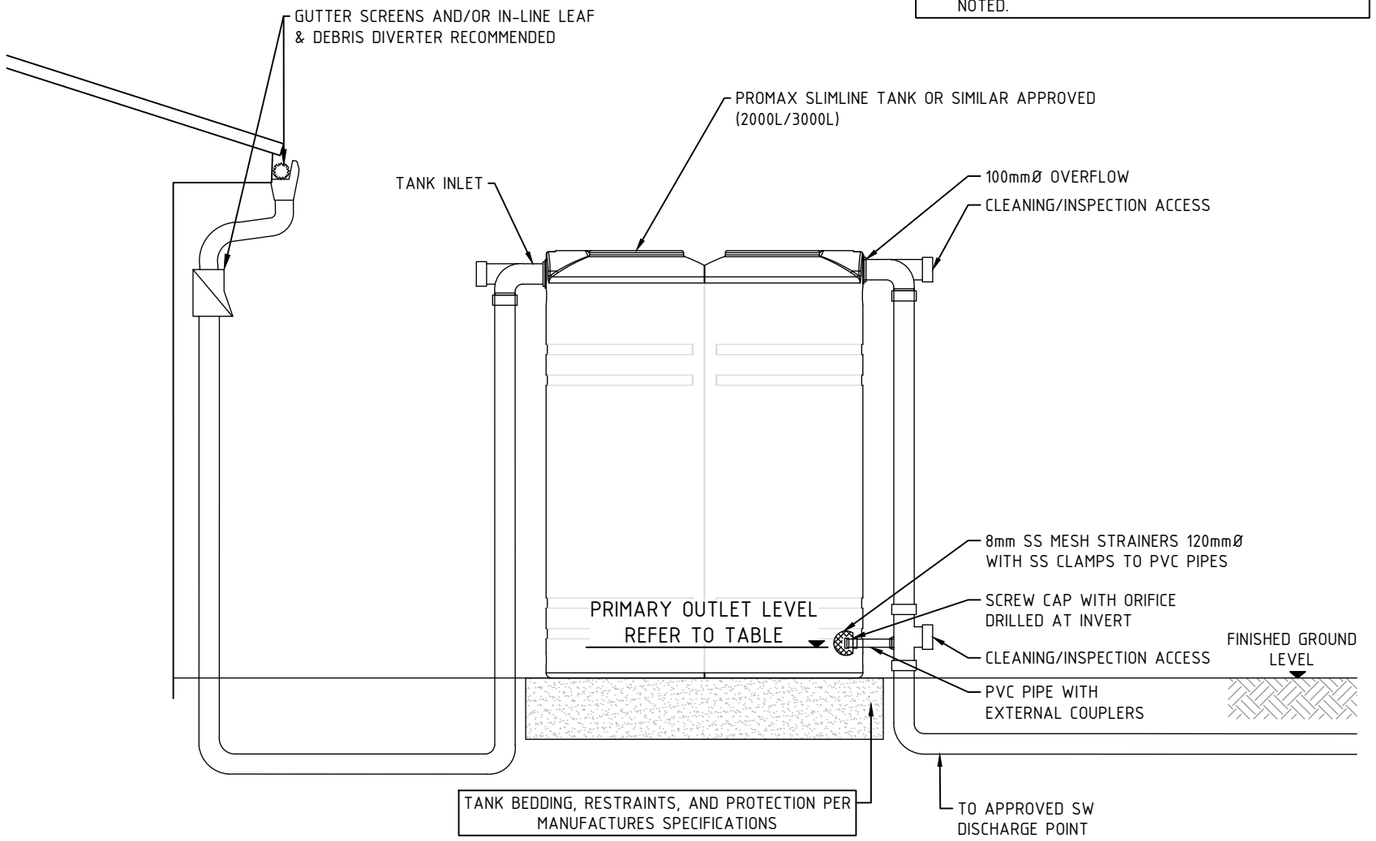
TYPOLOGY	TANK SIZE	ROOF AREA	ORIFICE DIAMETER (0.15m FROM BASE)	PRE-DEVELOPMENT BASELINE FLOW	POST-DEVELOPMENT PEAK FLOW
2 BEDROOM	2000L	81m^2	22mm	1.25 L/s	1.10 L/s
3 BEDROOM	2000L	115m^2	26mm	1.64 L/s	1.60 L/s
4 BEDROOM	3000L	145m^2	30mm	2.46 L/s	2.34 L/s

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

STORMWATER MITIGATION TANK NOTES:

1. RAINWATER TANK AND RAINWATER HARVESTING SYSTEMS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.
2. SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE NEW ZEALAND BUILDING CODE.
3. CONTRACTOR TO CHECK ALL LEVELS PRIOR TO CONSTRUCTION.
4. ORIFICE PROTECTION REQUIRED TO THE RAINWATER HARVESTING OUTLET AND/OR FLOW CONTROL ORIFICE TO PREVENT BLOCKING.
5. ORIFICES MUST BE EASILY ACCESSIBLE FOR INSPECTION AND CLEANING BY THE PROPERTY OWNER, COUNCIL, OR THIRD PARTY WITHOUT THE USE OF SPECIAL EQUIPMENT, TOOLS, OR EXPERIENCE.
6. TANK ENTRY ONLY BY PERSONNEL TRAINED ON CONFINED SPACE ENTRY.
7. ALL MEASUREMENTS IN METRES UNLESS OTHERWISE NOTED.



Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	STORMWATER MITIGATION PLAN

Drawing:	410	Rev:	0
Scale:	1:500 @ A3		
Project:	15757		
Issue:	CONSENT		

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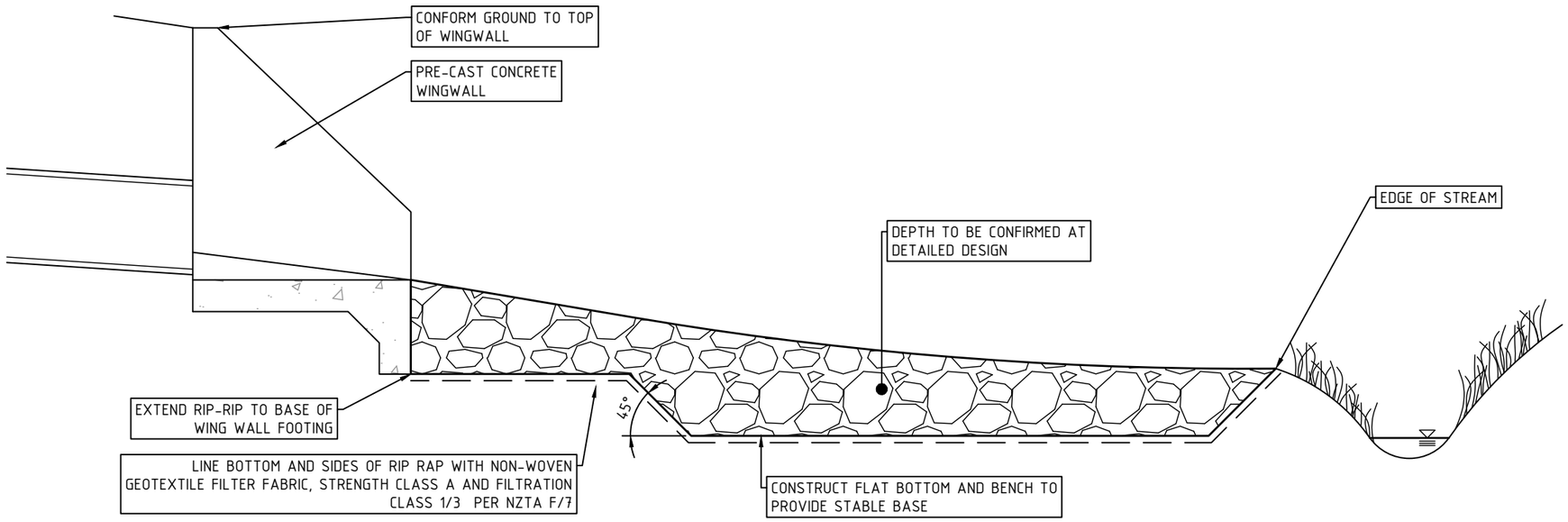
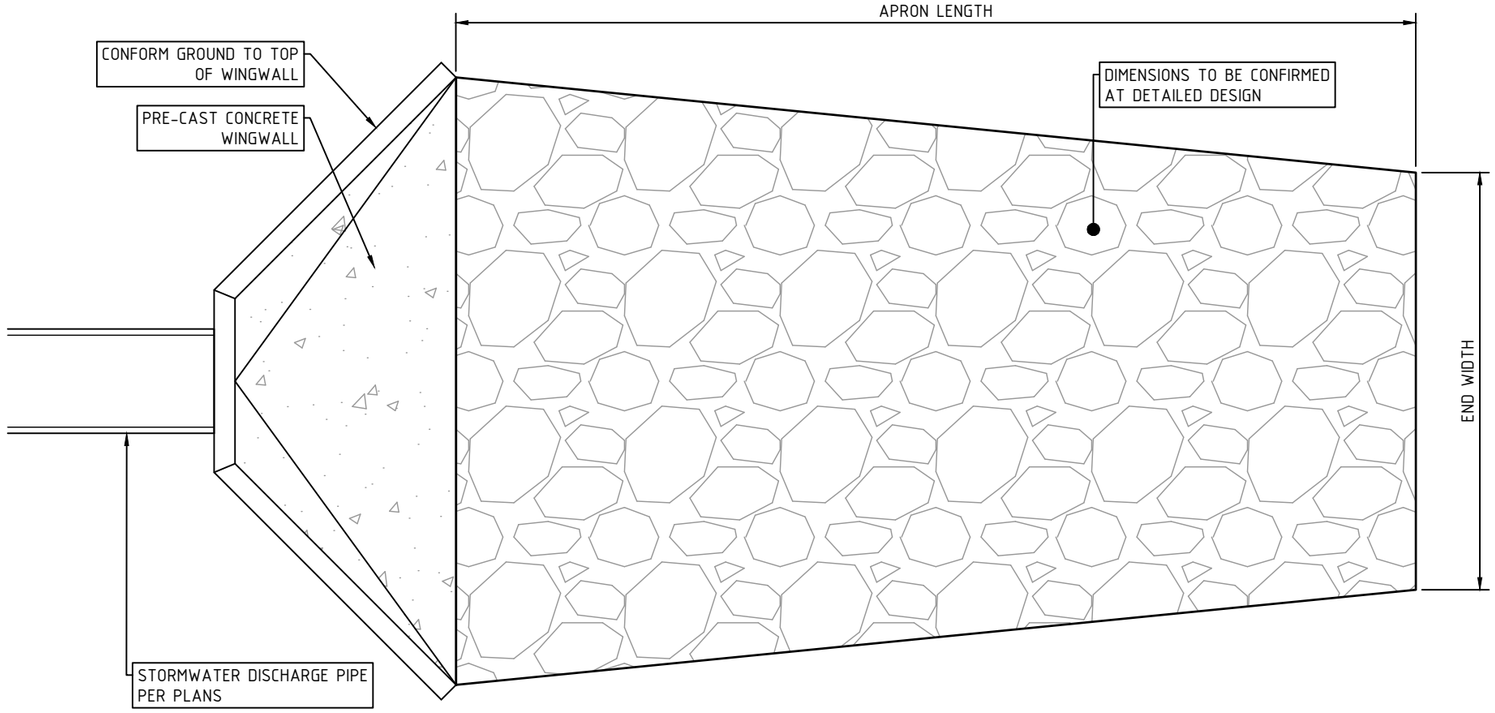


2 TYPICAL STORMWATER DISCHARGE - SECTION VIEW

SCALE: NTS



1 TYPICAL STORMWATER DISCHARGE - PLAN VIEW

Scale: NTS

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	STORMWATER OUTLET DETAILS

Drawing:	420	Rev:	0
Scale:	NTS @ A3		
Project:	15757		
Issue:	CONSENT		

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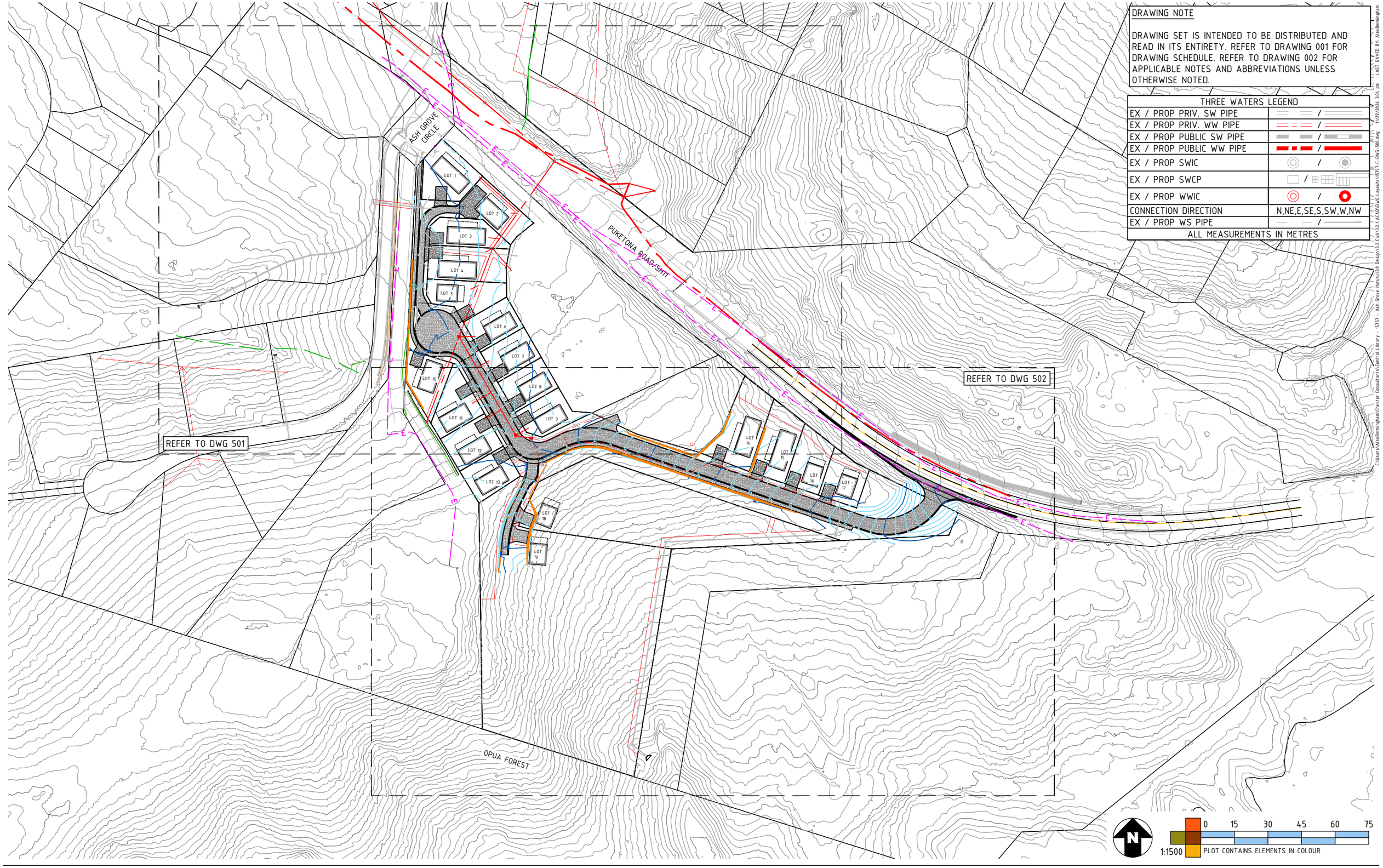

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024
Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	WASTEWATER LAYOUT PLAN - PUBLIC
Drawing:	500 Rev: 0
Scale:	1:1500 @ A3
Project:	15757
Issue:	CONSENT

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THREE WATERS LEGEND	
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EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

ASH GROVE CIRCLE

EX. PUBLIC 150mmØ uPVC WW PIPE

EX. PUBLIC 225mmØ AC WW PIPE

PUKETONA ROAD/SH11

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

LOT 12

EXISTING PUBLIC 1050mmØ INSPECTION CHAMBER LL: 51.42 IL: 49.32

EX. PUBLIC 100mmØ uPVC WW PIPE

INDICATIVE LOCATION OF WASTEWATER CONNECTION FROM NEIGHBOURING SITE (MOTEL). ACTUAL LOCATION TO BE CONFIRMED AT DETAILED DESIGN

PROPOSED 100mmØ WW LOT CONNECTION TYPICAL

PROPOSED CONNECTION POINT TO EXISTING PUBLIC WASTEWATER NETWORK

PROPOSED PUBLIC GRAVITY WASTEWATER NETWORK. DETAILED DESIGN TO BE CONFIRMED AT ENGINEERING PLAN APPROVAL.

PROPOSED EASEMENT FOR EXISTING PUBLIC WW PIPE

EXISTING PUBLIC 1050mmØ INSPECTION CHAMBER

N

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	WASTEWATER PLAN 01

Drawing:	501	Rev:	0
Scale:	1:750 @ A3		
Project:	15757		
Issue:	CONSENT		

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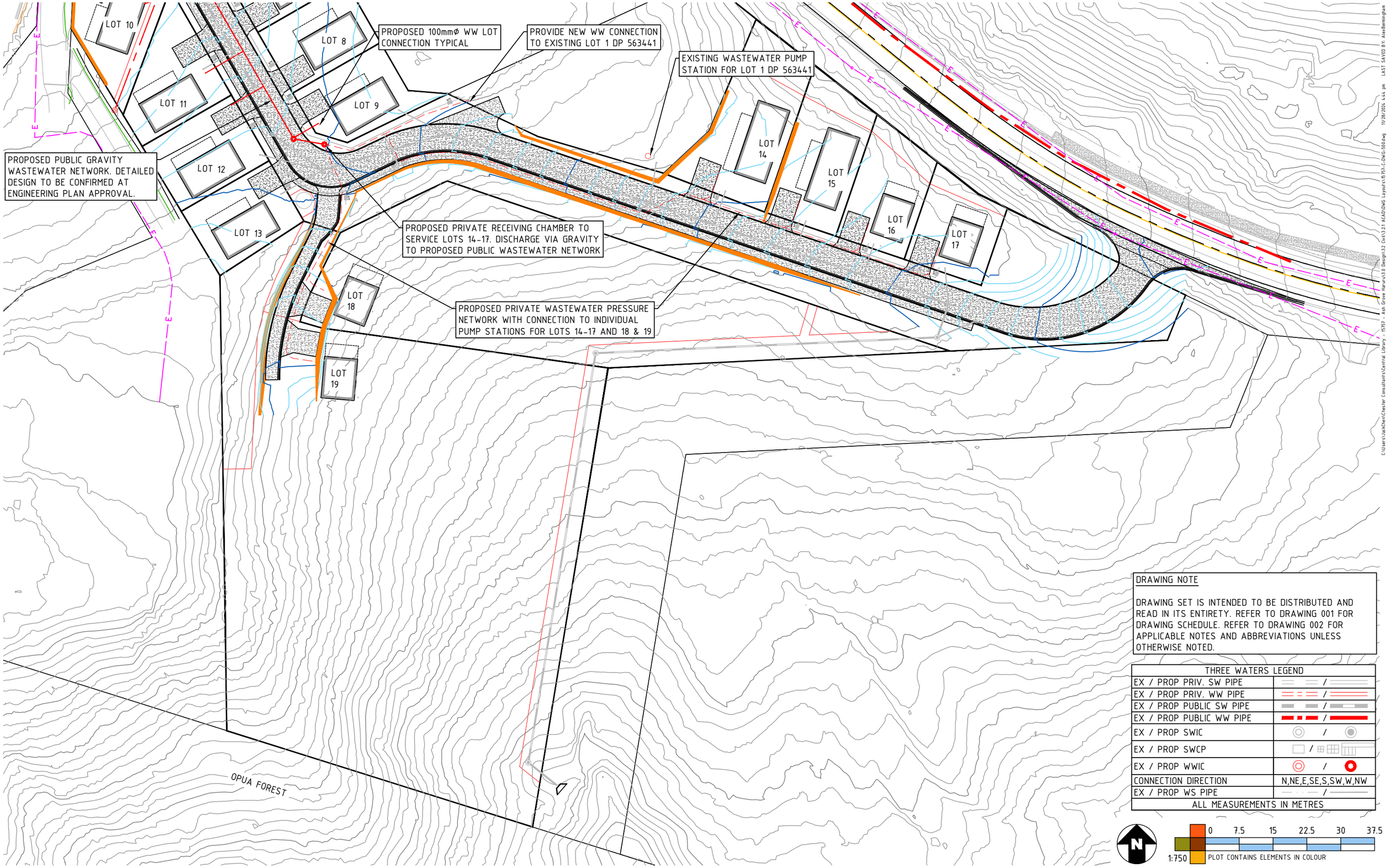

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024
Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	WASTEWATER PLAN 02
Drawing:	502 Rev: 0
Scale:	1:750 @ A3
Project:	15757
Issue:	CONSENT

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

ASH GROVE CIRCLE

PUKETONA ROAD/SH1I

OPUA FOREST

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
LOT 18
LOT 19

REFER TO DWG 601

REFER TO DWG 602

N

0 15 30 45 60 75

1:1500 PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\JackChen\Chester Consultants\Central Library - 15757 - Ash Grove Haruru\30 Design\32 Civil\321 ACAD\DWG Layouts\15757-C-DWG-600.dwg 11/28/2024 4:44 pm LAST SAVED BY: AlexBermingham

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN – PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	WATER SUPPLY LAYOUT PLAN

Drawing:	600	Rev:	0
Scale:	1:1500 @ A3		
Project:	15757		
Issue:	CONSENT		

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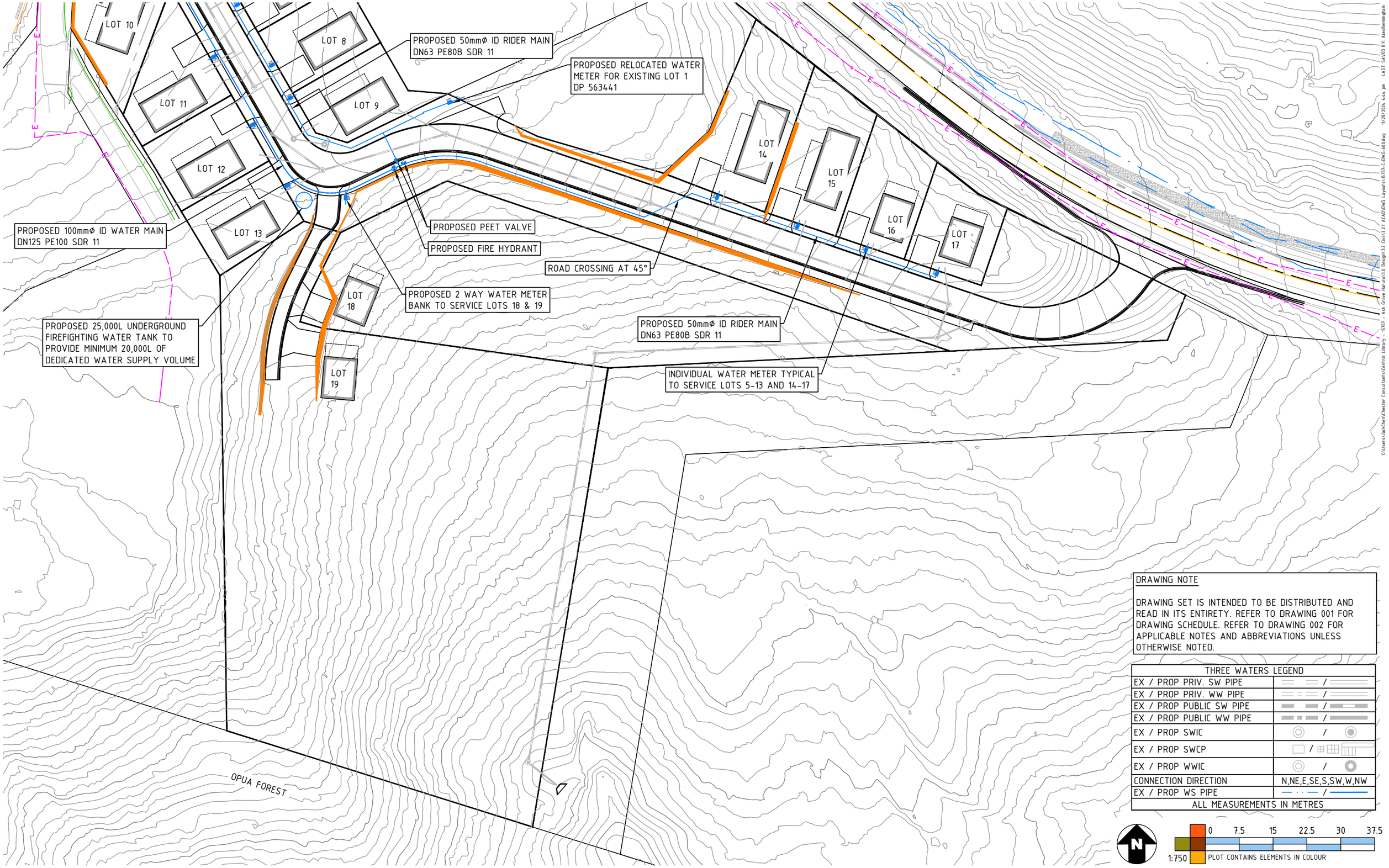

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

N

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 28/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: WATER SUPPLY PLAN 02

Drawing: 602 Rev: 0
Scale: 1:750 @ A3
Project: 15757
Issue: CONSENT

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EXISTING FIRE HYDRANT

EXISTING 125mm OD PUBLIC WATER MAIN

EXISTING 125mm OD PUBLIC WATER MAIN

CONNECTION TO EXISTING PUBLIC WATER MAIN

ASH GROVE CIRCLE

REARRANGE EXISTING WATER METERS AND IF POSSIBLE RETAIN EXISTING METER FOR LOT 1

PROPOSED SLUICE VALVE

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

LOT 12

PUKETONA ROAD/SH11

PROPOSED 100mmØ ID WATER MAIN DN125 PE100 SDR 11

PROPOSED 3 WAY WATER METER BANK TO SERVICE LOTS 2-4

PROPOSED PEET VALVE

PROPOSED SLUICE VALVE

PROPOSED 50mmØ ID RIDER MAIN DN63 PE80B SDR 11

PROPOSED FIRE HYDRANT

INDIVIDUAL WATER METER TYPICAL TO SERVICE LOTS 5-13 AND 14-17

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

N

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	WATER SUPPLY PLAN 01

Drawing:	601	Rev:	0
Scale:	1:750 @ A3		
Project:	15757		
Issue:	CONSENT		

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ASH GROVE CIRCLE

PUKETONA ROAD/SH11

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 9
LOT 10
LOT 12
LOT 13
LOT 15
LOT 16
LOT 17
LOT 18
LOT 19

TYPE B CUL-DE-SAC AS PER FNDC ENGINEERING STANDARDS SHEET 11

R9.50

PROPOSED ON SITE CAR PARKING TO ACCOMMODATE TWO CARS. TYPICAL FOR EACH LOT

PROVIDE EXISTING LOT 1 DP 563441 WITH NEW SEALED VEHICLE CROSSING

PROPOSED DOUBLE VEHICLE CROSSING IN GENERAL ACCORDANCE WITH FNDC ENGINEERING STANDARDS. TYPICAL FOR EACH LOT

PROPOSED TYPICAL INTERSECTION D AS PER NZTA REQUIREMENTS. REFER TO DRAWING 703 FOR DETAILS

PROPOSED FOOTPATH

PROPOSED PRIVATE ROAD
REFER TO DRAWING 701 FOR LONG SECTION DETAILS

CH 272
CH 260
CH 240
CH 220
CH 200
CH 180
CH 160
CH 140
CH 120
CH 100
CH 80
CH 60
CH 40
CH 20
CH 0

6.00
12.00
R8.00
6.00
16.00
R25.00
8.30

1
702

N

0 10 20 30 40 50
1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	ROADING PLAN

Drawing:	700 Rev: 0
Scale:	1:1000 @ A3
Project:	15757
Issue:	CONSENT

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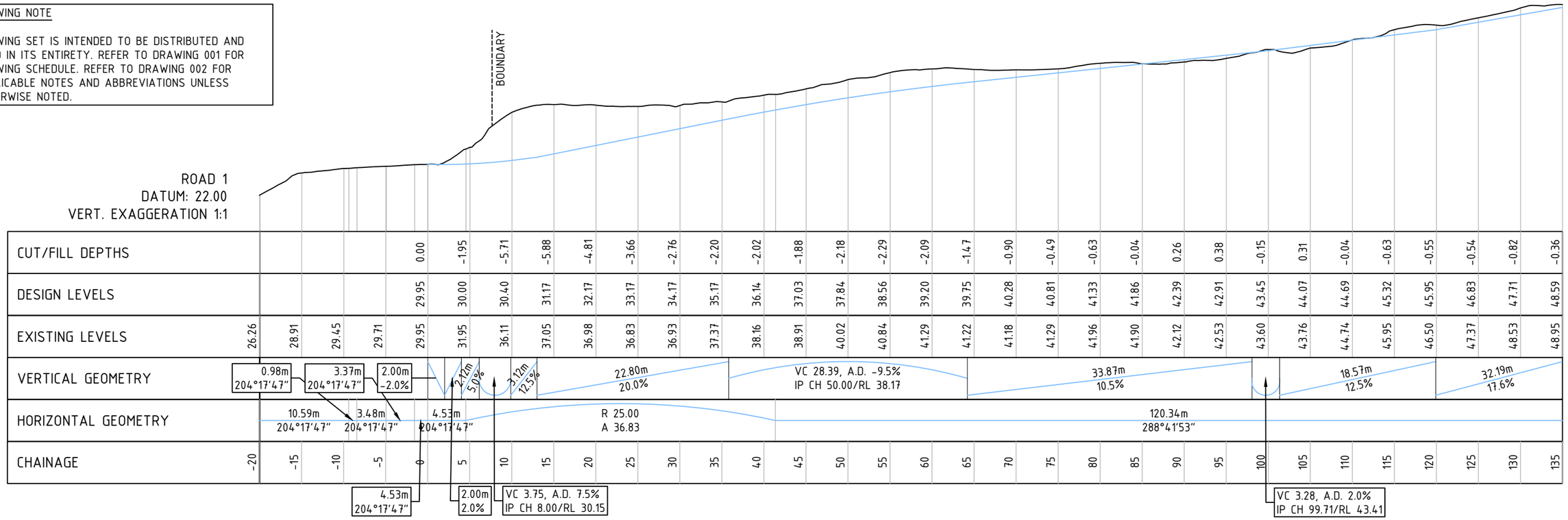

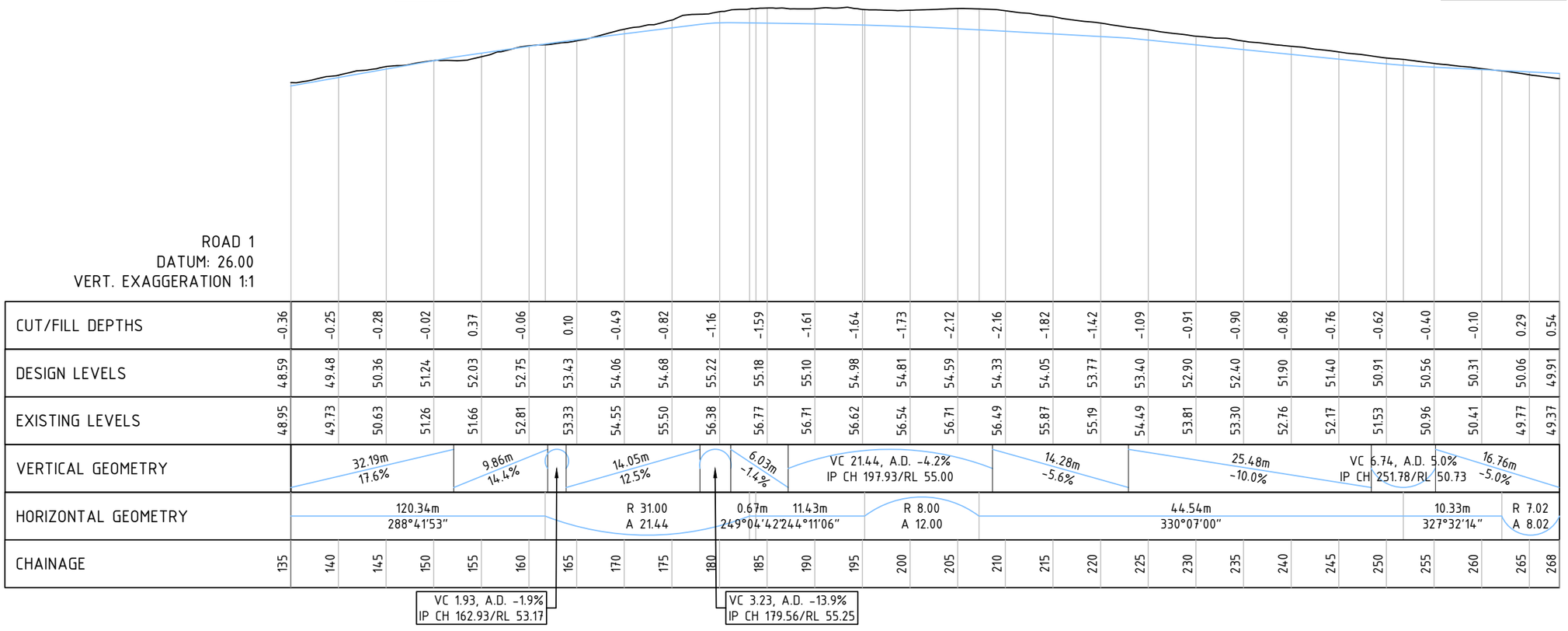

0 5 10 15 20 25
1:500 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	ROAD LONG SECTION

Drawing:	701	Rev:	0
Scale:	1:500 @ A3		
Project:	15757		
Issue:	CONSENT		

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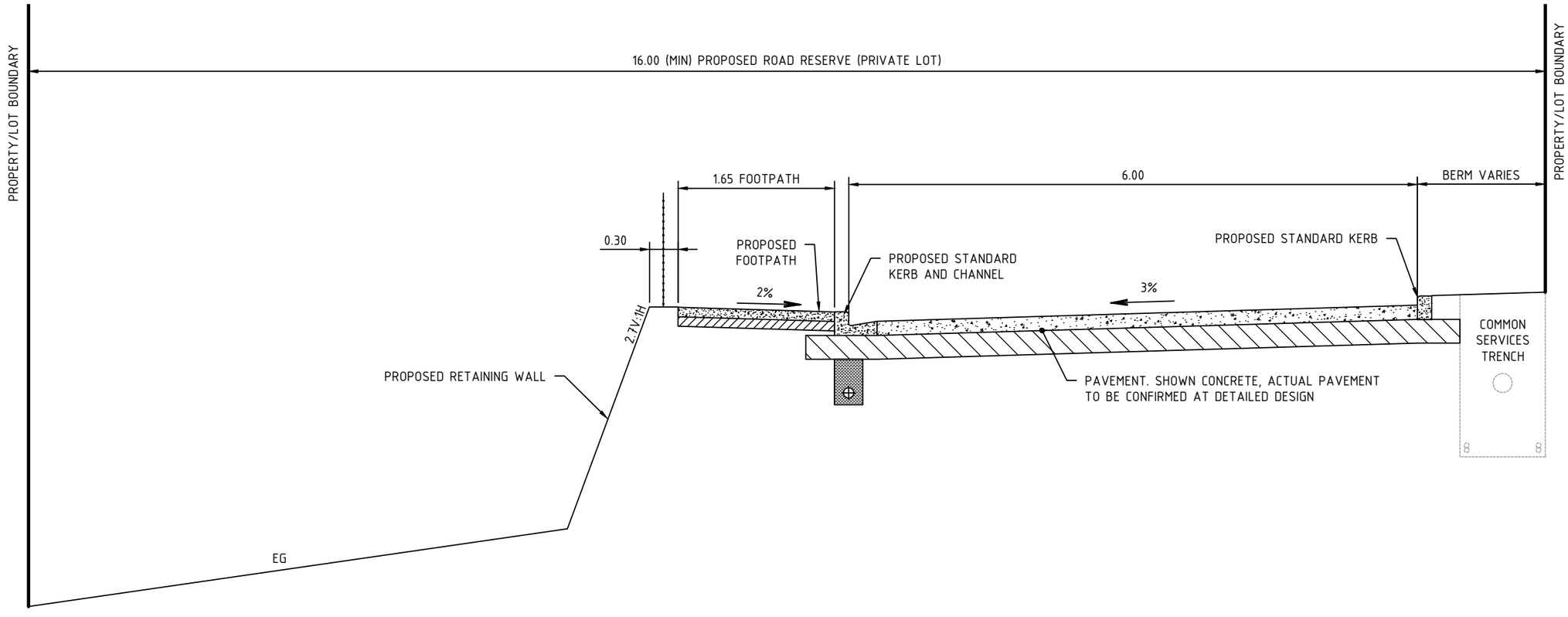
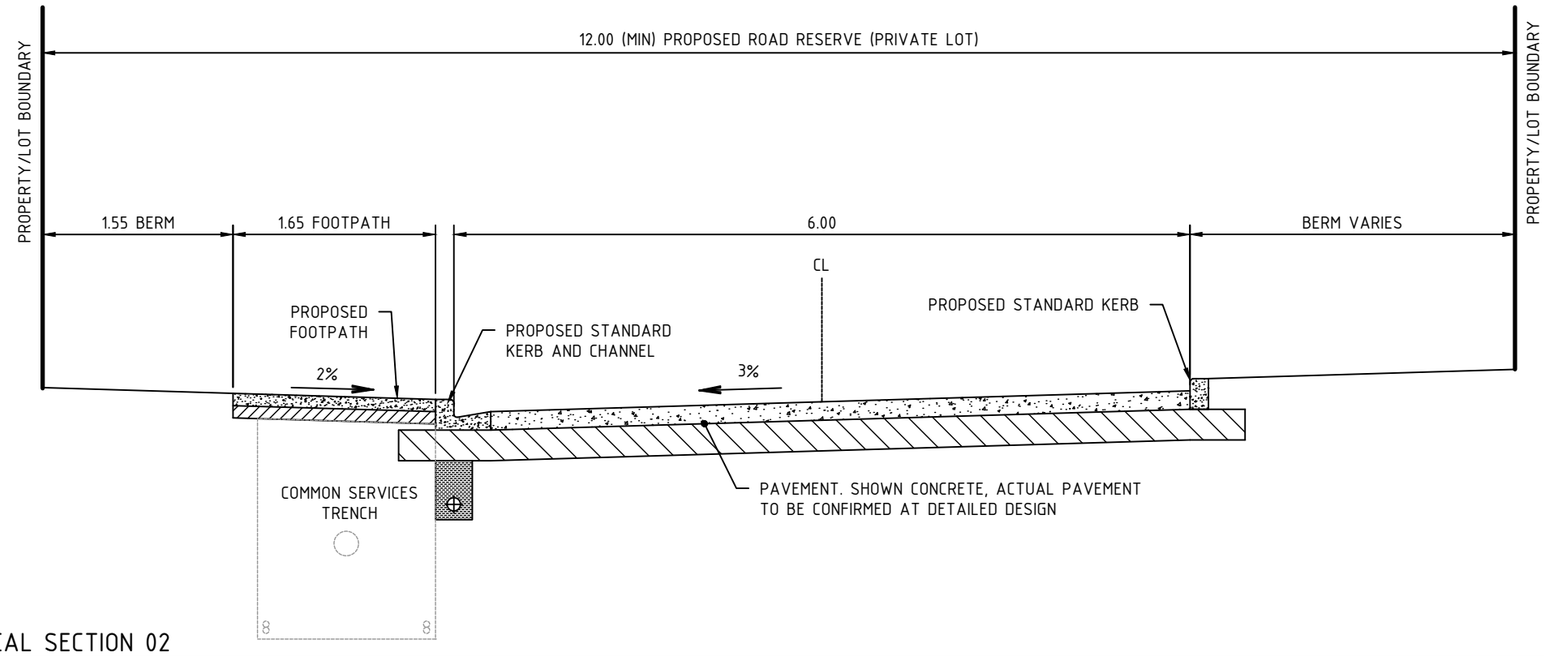


1 ROAD TYPICAL SECTION 01

Scale: 1:50



2 ROAD TYPICAL SECTION 02

Scale: 1:50

DRAWING NOTE

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0 0.5 1 1.5 2 2.5

1:50 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	ROAD TYPICAL CROSS SECTION DETAILS

Drawing:	702	Rev:	0
Scale:	1:50 @ A3		
Project:	15757		
Issue:	CONSENT		

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TIE IN WITH EXISTING STORMWATER CHANNEL

PUKETONA ROAD/SH11

52.69

EXISTING FOOTPATH

EXISTING CENTRE LINE

CH -20

EXISTING EDGE OF SEAL TO REMAIN

EXISTING ROAD BARRIER TO REMAIN

PROPOSED REALIGNED CENTRE LINE AND TRAFFIC LANE MARKINGS TO ALLOW FOR THROUGH TRAFFIC TO PASS VEHICLES TURNING RIGHT INTO DEVELOPMENT SITE

LOT 16

LOT 17

2.57

6.00

3.50

3.50

2.50

CH 0

EXISTING POWER POLE TO BE RELOCATED

GRADE BREAK

PROPOSED VEHICLE CROSSING IN GENERAL ACCORDANCE WITH NZTA DIAGRAM D

8.30

2.50

TIE IN WITH EXISTING STORMWATER CHANNEL

R25.00

25.00

CH 60

INVERT OF NEW STORMWATER CHANNEL

CH 20

PROPOSED 4m WIDE CONCRETE SWALE AT 2% SLOPE TOWARDS THE STORMWATER CHANNEL INVERT TO COLLECT RUNOFF FROM ROAD AND ENTRANCEWAY

CH 40

N

0 2 4 6 8 10

1:200 PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\JackChen\Chester Consultants\Central Library - 15757 - Ash Grove Haruru\3.0 Design\3.2 Civil\3.2.1 ACAD\DWG Layout\15757-C-DWG-700.dwg 11/28/2024 4:45 pm LAST SAVED BY: AlexBermingham

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM
Designer:	A BERMINGHAM
Checker:	N JULL
Date:	28/11/2024

Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title:	PROPOSED INTERSECTION PLAN AND DETAILS

Drawing:	703 Rev: 0
Scale:	1:250 @ A3
Project:	15757
Issue:	CONSENT

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Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN – PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	PROPOSED INTERSECTION ADVANCED WARNING SIGN PLAN

Drawing:	704	Rev:	0
Scale:	1:1500 @ A3		
Project:	15757		
Issue:	CONSENT		

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PROPOSED FOOTPATH FOR PEDESTRIAN CONNECTION TO ASH GROVE CIRCLE

ASH GROVE CIRCLE

PROPOSED COMMON ACCESSWAY SEE TYPICAL CAW SECTION ON DRAWING 804

PROPOSED WIDENING TO 5m AT BEGINNING OF ACCESSWAY

PROPOSED ON SITE CAR PARKING TO ACCOMMODATE TWO CARS. TYPICAL FOR EACH LOT

PUKETONA ROAD/SH11

PROPOSED DOUBLE VEHICLE CROSSING IN GENERAL ACCORDANCE WITH FNDC ENGINEERING STANDARDS. TYPICAL FOR EACH LOT

TYPE B CUL-DE-SAC AS PER FNDC ENGINEERING STANDARDS SHEET 11

PROPOSED INTERSECTION AS PER NZTA REQUIREMENTS. REFER TO DRAWING 703 FOR DETAILS

PROPOSED WIDENING TO 5m AT BEGINNING OF ACCESSWAY

PROPOSED COMMON ACCESSWAY SEE TYPICAL CROSS SECTION ON DRAWING 804

PROPOSED PRIVATE ROAD REFER TO DRAWING SERIES 700 FOR DETAILS

LOT 1
LOT 2
LOT 3
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
LOT 19

1.65
3.00
7.50
5.00
R9.50
3.00
5.00

1 802
2 802

CH 212
CH 260
CH 240
CH 220
CH 200
CH 180
CH 160
CH 140
CH 120
CH 100
CH 80
CH 60
CH 40
CH 20
0 HJ
09 HJ

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	COMMON ACCESS WAY PLAN

Drawing:	800	Rev:	0
Scale:	1:1000 @ A3		
Project:	15757		
Issue:	CONSENT		

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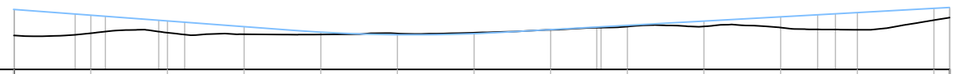
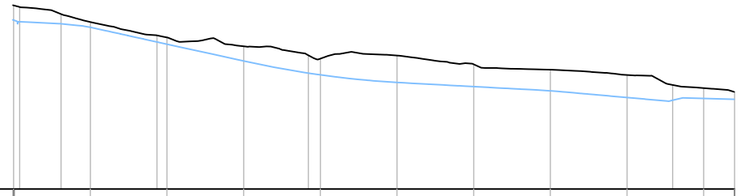
CAW 1
DATUM: 46.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS	1.77	1.16	0.74	0.47	0.13	-0.10	-0.08	-0.01	0.06	0.33	0.68	1.10	0.75 / 0.64
DESIGN LEVELS	49.97	49.50	49.12	48.75	48.39	48.22	48.29	48.56	48.83	49.11	49.39	49.67	49.94 / 50.00
EXISTING LEVELS	48.20	48.34	48.38	48.28	48.26	48.32	48.38	48.56	48.78	48.78	48.71	48.57	49.19 / 49.36
VERTICAL GEOMETRY	R 8.00 A 3.48	18.12m -7.5%			VC 13.76, A.D. 13.0% IP CH 25.00/RL 48.00				29.15m 5.6%				
HORIZONTAL GEOMETRY	3.98m 331°08'48"	1.98m 331°08'48"	1.69m 356°05'07"		26.87m 3°00'00"			0.28m 3°00'00"	R 9.00 A 14.14		1.16m 93°00'00"	7.46m 93°00'00"	
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60 / 61

CAW 2
DATUM: 44.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS	-0.96	-0.35	-0.44	-0.95	-1.03	-1.75	-1.46	-1.37	-1.46	-0.68	-0.48
DESIGN LEVELS	55.00	54.52	53.43	52.33	51.42	50.92	50.65	50.38	49.94	49.88	49.82
EXISTING LEVELS	55.96	54.87	53.86	53.28	52.46	52.68	52.12	51.75	51.41	50.56	50.31
VERTICAL GEOMETRY	3.15m -4.7%	9.75m -22.0%		VC 10.27, A.D. 16.6% IP CH 25.21/RL 51.18		8.79m -5.4%		24.70m -8.8%			
HORIZONTAL GEOMETRY	2.23m 184°10'29"	2.71m 184°10'29"	R 15.99 A 6.25	9.87m 206°34'32"			R 49.85 A 23.76			17.62m 179°16'24"	
CHAINAGE	5	10	15	20	25	30	35	40	45	50	52

VC 2.21, A.D. -17.3%
IP CH 9.22/RL 54.70

VC 1.73, A.D. -3.5%
IP CH 40.00/RL 50.38

0 4 8 12 16 20
1:400 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	COMMON ACCESSWAY LONG SECTIONS

Drawing:	801 Rev: 0
Scale:	1:400 @ A3
Project:	15757
Issue:	CONSENT

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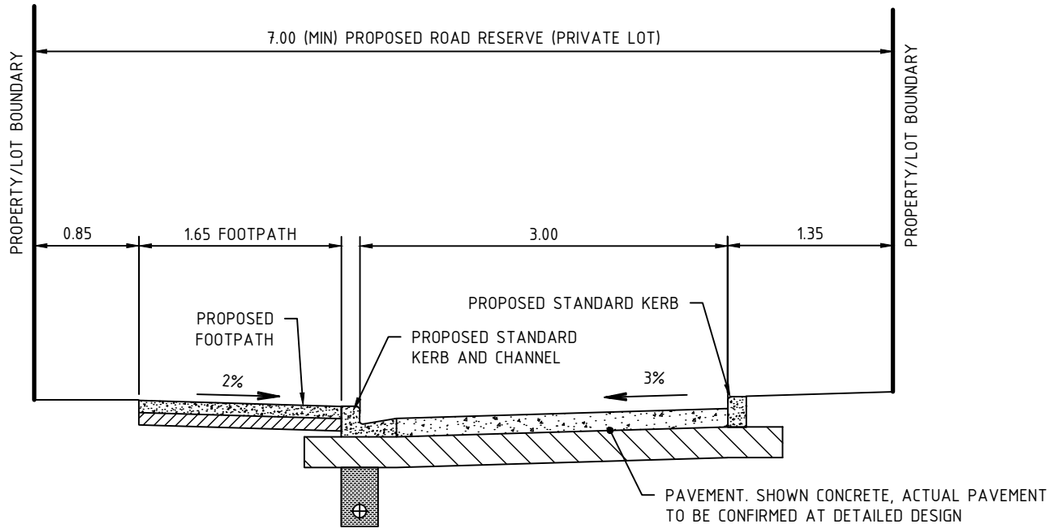
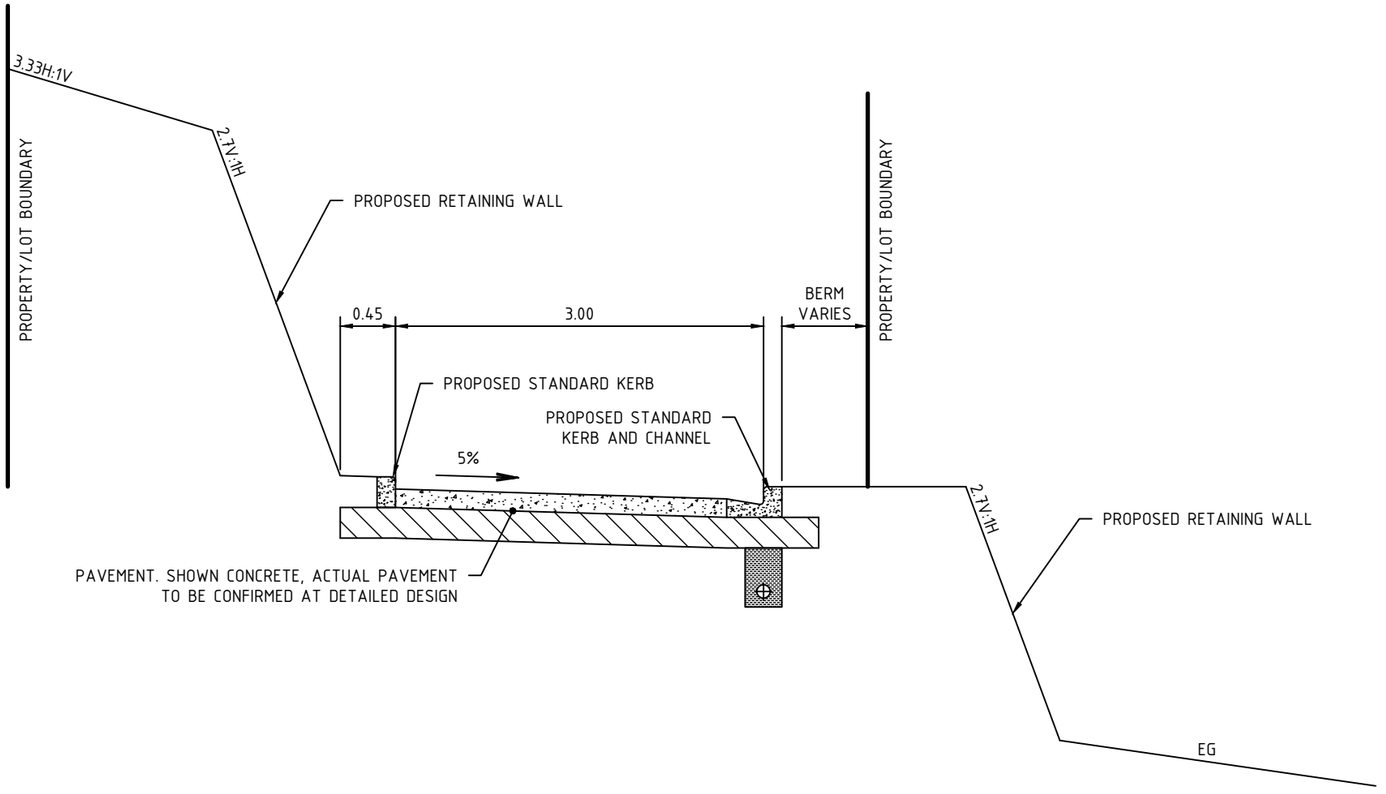


1 COMMON ACCESSWAY TYPICAL SECTION 01

Scale: 1:50



2 COMMON ACCESSWAY TYPICAL SECTION 02

Scale: 1:50

0 0.5 1 1.5 2 2.5

1:50 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	28/11/24	ISSUED FOR RESOURCE CONSENT	AB

Drafter:	A BERMINGHAM	Job Title:	CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Designer:	A BERMINGHAM	Client:	TE RŪNANGA O WHAINGAROA C/O SCOPE
Checker:	N JULL	Address:	2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Date:	28/11/2024	Drawing Title:	COMMON ACCESSWAY TYPICAL SECTIONS

Drawing:	802	Rev:	0
Scale:	1:50 @ A3		
Project:	15757		
Issue:	CONSENT		

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Non-Reticulated Firefighting Water Supplies, Vehicular Access & Vegetation Risk Reduction Application for New and Existing Residential Dwellings and Sub-Divisions

Applicant Information

Applicants Information	
Name:	Te Rūnanga O Whaingaroa c/o Chester
Address:	28 The Warehouse Way, Northcote, Auckland 0627
Contact Details:	Alex Bermingham, 0223778820
Return Email Address:	alexb@chester.co.nz

Property Details

Property Details	
Address of Property:	2B Ash Grove Circle, Haruru 0204
Lot Number/s:	Lot 2 DP 563441
Dwelling Size: (Area = Length & Width)	5x 65m2, 9x 97m2, 5x 122m2
Number of levels: (Single / Multiple)	1

Contents

Firefighting Water Supplies and Vegetation Risk Reduction Waiver

"Fire and Emergency New Zealand strongly recommends the installation of automatic fire detection system devices such as smoke alarms for early warning of a fire and fire suppression systems such as sprinklers in buildings (irrespective of the water supply) to provide maximum protection to life and property".

Waiver Explanation Intent

Fire and Emergency New Zealand [FENZ] use the New Zealand Fire Service [NZFS] Code of Practice for firefighting water supplies (SNZ PAS 5409:2008) (The Code) as a tool to establish the quantity of water required for firefighting purposes in relation to a specific hazard (Dwelling, Building) based on its fire hazard classification regardless if they are located within urban fire districts with a reticulated water supply or a non-reticulated water supply in rural areas. The code has been adopted by the Territorial Authorities and Water Supply Authorities. The code can be used by developers and property owners to assess the adequacy of the firefighting water supply for new or existing buildings.

The Community Risk Manager under the delegated authority of the Fire Region Manager and District Manager is responsible for approving applications in relation to firefighting water supplies. The Community Risk Manager may accept a variation or reduction in the amount of water required for firefighting for example; a single level dwelling measuring 200^{m2} requires 45,000L of firefighter water under the code, however the Community Risk Manager in Northland will except a reduction to 10,000L.

This application form is used for the assessment of proposed water supplies for firefighting in non-reticulated areas only and is referenced from (Appendix B – Alternative Firefighting Water Sources) of the code. This application also provides fire risk reduction guidance in relation to vegetation and the 20-metre dripline rule under the Territorial Authority's District Plan. Fire and Emergency New Zealand are not a consenting authority and the final determination rests with the Territorial Authority.

For more information in relation to the code of practice for Firefighting Water supplies, Emergency Vehicle Access requirements, Home Fire Safety advice and Vegetation Risk Reduction Strategies visit www.fireandemergency.nz

1. Fire Appliance Access to alternative firefighting water sources - Expected Parking Place & Turning circle

Fire and Emergency have specific requirements for fire appliance access to buildings and the firefighting water supply. This area is termed the hard stand. The roading gradient should not exceed 16%. The roading surface should be sealed, able to take the weight of a 14 to 20-tonne truck and trafficable at all times. The minimum roading width should not be less than 4 m and the property entrance no less 3.5 metres wide. The height clearance along access ways must exceed 4 metres with no obstructions for example; trees, hanging cables, and overhanging eaves.

1 (a) Fire Appliance Access / Right of Way	
Is there at least 4 metres clearance overhead free from obstructions?	☒YES ☐NO
Is the access at least 4 metres wide?	☒YES ☐NO
Is the surface designed to support a 20-tonne truck?	☒YES ☐NO
Are the gradients less than 16%	☐YES ☒NO
Fire Appliance parking distance from the proposed water supply is less than 5 metres	

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

If access to the proposed firefighting water supply is not achievable using a fire appliance, firefighters will need to use portable fire pumps. Firefighters will require at least a one-metre wide clear path / walkway to carry equipment to the water supply, and a working area of two metres by two metres for firefighting equipment to be set up and operated.

1 (b) Restricted access to firefighting water supply, portable pumps required
Has suitable access been provided? ☒YES ☐ NO
Comments: Click or tap here to enter text.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2. Firefighting Water Supplies (FFWS)

What are you proposing to use as your firefighting water supply?

2 (a) Water Supply Single Dwelling	
Tank	☐ Concrete Tank ☐ Plastic Tank ☐ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500 mm above ground) ☐ Fully Buried (access through filler spout) Volume of dedicated firefighting water Click or tap here to enter text.litres

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2 (b) Water Supply Multi-Title Subdivision Lots / Communal Supply	
Tank Farm	☐ Concrete Tank ☐ Plastic Tank ☐ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500mm above ground) ☒ Fully Buried (access through filler spout) Number of tanks provided 1 Number of Tank Farms provided Click or tap here to enter text. Water volume at each Tank Farm Click or tap here to enter text. Litres Volume of dedicated firefighting water 20,000 litres

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2 (c) Alternative Water Supply	
Pond:	Volume of water: Click or tap here to enter text.
Pool:	Volume of water: Click or tap here to enter text.
Other:	Specify: Click or tap here to enter text.
	Volume of water: Click or tap here to enter text.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3. Water Supply Location

The code requires the available water supply to be at least 6 metres from a building for firefighter safety, with a maximum distance of 90 metres from any building. This is the same for a single dwelling or a Multi-Lot residential subdivision. Is the proposed water supply within these requirements?

3 (a) Water Supply Location	
Minimum Distance:	*Is your water supply at least 6 metres from the building?* ☒YES ☐ NO
Maximum Distance	*Is your water supply no more than 90 metres from the building?* ☐YES ☒ NO Hydrants are prospoed within 135m of the buildings with a max. flow of 840 L/min.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3 (b) Visibility
How will the water supply be readily identifiable to responding firefighters? E.g.: tank is visible to arriving firefighters or, there are signs / markers posts visible from the parking place directing them to the tank etc.
Comments: The location of the tank will be sign posted.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3 (c) Security
How will the FFWS be reasonably protected from tampering? E.g.: light chain and padlock or, cable tie on the valve etc.
Explain how this will be achieved: The tank will be underground.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

4. Adequacy of Supply

The volume of storage that is reserved for firefighting purposes must not be used for normal operational requirements. Additional storage must be provided to balance diurnal peak demand, seasonal peak demand and normal system failures, for instance power outages. The intent is that there should always be sufficient volumes of water available for firefighting, except during Civil Défense emergencies or by prior arrangement with the Fire Region Manager.

4 (a) Adequacy of Water supply
Note: *The owner must maintain the firefighting water supply all year round. How will the usable capacity proposed be reliably maintained? E.g. automatically keep the tank topped up, drip feed, rain water, ballcock system, or manual refilling after use etc.*
Comments: Tank will be topped up with rain water from roofs.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

5. Alternative Method using Appendix's H & J

If Table 1 + 2 from the Code of Practice is not being used for the calculation of the Firefighting Water Supply, a competent person using appendix H and J from the Code of Practice can propose an alternative method to determine firefighting water supply adequacy.

Appendix H describes a method for determining the maximum fire size in a structure. Appendix J describes a method for assessing the adequacy of the firefighting water supply to the premises.

5 (a) Alternative Method Appendix H & J	
If an alternative method of determining the FFWS has been proposed, who proposed it? Name: Click or tap here to enter text.	
Contact Details: Click or tap here to enter text.	
Proposed volume of storage?	Litres: Click or tap here to enter text.
Comments: Click or tap here to enter text. ** Please provide a copy of the calculations for consideration.*	

Internal FENZ Risk Reduction comments only: Click or tap here to enter text.

6. Diagram

Please provide a diagram identifying the location of the dwelling/s, the proposed firefighting water supply and the attendance point of the fire appliance to support your application.

See plans attached.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

7. Vegetation Risk Reduction - Fire + Fuel = Why Homes Burn

Properties that are residential, industrial or agricultural, are on the urban–rural interface if they are next to vegetation, whether it is forest, scrubland, or in a rural setting. Properties in these areas are at greater risk of wildfire due to the increased presence of nearby vegetation.

In order to mitigate the risk of fire spread from surrounding vegetation to the proposed building and vice-versa, Fire Emergency New Zealand recommends the following;

I. Fire safe construction

Spouting and gutters – Clear regularly and consider screening with metal mesh. Embers can easily ignite dry material that collects in gutters.

Roof – Use fire resistant material such as steel or tile. Avoid butanol and rubber compounds.

Cladding – Stucco, metal sidings, brick, concrete, and fibre cement cladding are more fire resistant than wood or vinyl cladding.

II. Establish Safety Zones around your home.

Safety Zone 1 is your most import line of defence and requires the most consideration. Safety Zone 1 extends to 10 metres from your home, you should;

- *a) Mow lawn and plant low-growing fire-resistant plants; and*
- *b) Thin and prune trees and shrubs; and*
- *c) Avoid tall trees close to the house; and*
- *d) Use gravel or decorative crushed rock instead of bark or wood chip mulch; and*
- *e) Remove flammable debris like twigs, pine needles and dead leaves from the roof and around and under the house and decks; and*
- *f) Remove dead plant material along the fence lines and keep the grass short; and*
- *g) Remove over hanging branches near powerlines in both Zone 1 and 2.*

III. Safety Zone 2 extends from 10 – 30 metres of your home.

- *a) Remove scrub and dead or dying plants and trees; and*
- *b) Thin excess trees; and*
- *c) Evenly space remaining trees so the crowns are separated by 3-6 metres; and*
- *d) Avoid planting clusters of highly flammable trees and shrubs*
- *e) Prune tree branches to a height of 2 metres from the ground.*

IV. Choose Fire Resistant Plants

Fire resistant plants aren't fire proof, but they do not readily ignite. Most deciduous trees and shrubs are fire resistant. Some of these include: poplar, maple, ash, birch and willow. Install domestic sprinklers on the exterior of the sides of the building that are less 20 metres from the vegetation. Examples of highly flammable plants are: pine, cypress, cedar, fir, larch, redwood, spruce, kanuka, manuka.

For more information please go to https://www.fireandemergency.nz/at-home/the-threat-of-rural-fire/

If your building or dwelling is next to vegetation, whether it is forest, scrubland, or in a rural setting, please detail below what Risk Reduction measures you will take to mitigate the risk of fire development and spread involving vegetation?

7 (a) Vegetation Risk Reduction Strategy
Click or tap here to enter text.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

8. Applicant

Checklist	
☒	Site plan (scale drawing) – including; where to park a fire appliance, water supply, any other relevant information.
☒	Any other supporting documentation (diagrams, consent).

I submit this proposal for assessment.

Name: Alex Bermingham Dated: 25/11/2024

Contact No.: 0223778820

Email: alexb@chester.co.nz

Signature: 

9. Approval

In reviewing the information that you have provided in relation to your application being approximately a Click or tap here to enter text. *square metre,* Choose an item. *dwelling/sub division, and non-sprinkler protected.*

The Community Risk Manager of Fire and Emergency New Zealand under delegated authority from the Fire Region Manager, Te Hiku, and the District Manager has assessed the proposal in relation to firefighting water supplies and the vegetation risk strategy. The Community Risk Manager Choose an item. *agree with the proposed alternate method of Fire Fighting Water Supplies. Furthermore, the Community Risk Manager agrees with the Vegetation Risk Reduction strategies proposed by the applicant.*

Name: Click or tap here to enter text.

Signature: Click or tap here to enter text. Dated: Click or tap to enter a date.

P.P on behalf of the Comm

Fire and Emergency New Zealand
Te Tai Tokerau / Northland District

APPROVED
By GoffinJ at 7:57 am, Dec 03, 2024

Jason Goffin- Advisor Risk Reduction

Land Development Report

2B Ash Grove Circle, Haruru
Proposed Residential Subdivision

Prepared For:
Te Rūnanga O Whaingaroa c/o Scope

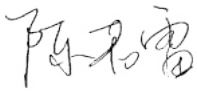
Job No.: 15757
Rev: 0
Date: 28 November 2024

CHESTER

Revision History

Revision No	Description/comments	Prepared By	Date
0	First Issue	A. Bermingham	28/11/2024

Document Control

Action	Name	Signed	Date
Prepared by	A. Bermingham Civil Engineer		28/11/2024
Reviewed by	J. Chen Civil Engineer		28/11/2024

Distribution

Business/company	Attention	Role
Scope	Kelly Haora	Project Manager

Table of Contents

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List of Tables

1 Introduction

Chester Consultants Ltd has been engaged by Te Rūnanga O Whaingaroa c/o Scope to provide a Land Development Report with respect to the proposed development at 2B Ash Grove Circle, Haruru.

This report has been prepared solely for the benefit of this specific project, and Far North District Council (FNDC). Chester Consultants Ltd accepts no liability for inaccuracies in third party information used as part of this report. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such parties' sole risk.

This report is based on development data provided by the client, and data obtained from Far North District Council and Northland Regional Council maps current to the site at the time of this document's production. Should alterations be made which impact upon the development not otherwise authorised by this report then the design / comments / recommendations contained within this report may no longer be valid.

In the event of the above, the property owner should immediately notify Chester Consultants Ltd to enable the impact to be assessed and, if required, the design and or recommendations shall be amended accordingly and as necessary.

2 Existing Site Description

The development site is located at 2B Ash Grove Circle, Haruru and is legally described as Lot 2 DP 563441. The total site area is 2.35 ha. The site is bisected by a gently sloping ridgeline and contains gently sloping grass area to the west and steeply sloping regenerating forest to the east. The site can be accessed off Ash Grove Circle via an existing right of way access from the northwestern corner of the property.

The site is zoned as 'Residential' under the Operative Far North District Plan 2009 and 'General Residential' with Coastal Environment overlay under the Proposed Far North District Plan.

Figure 1: Existing site aerial image (FNDC GIS Maps 04/11/2024)

3 Proposal

A subdivision is proposed on the site which will result in nineteen (19) residential Lots, two (2) Jointly Owned Access Lots (JOAL). Figure 2 below is a snip of the proposed subdivision scheme plan.

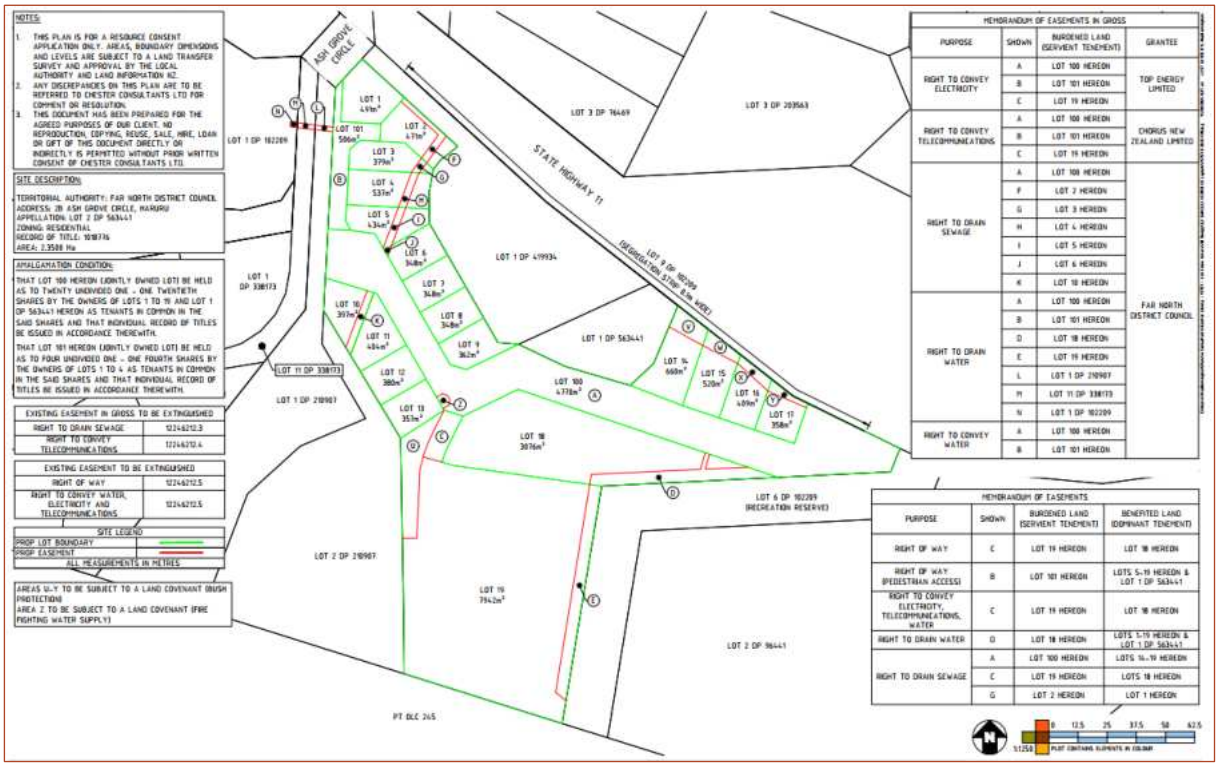


Figure 2: Proposed Subdivision Scheme (Chester Drawing 15757-120)

This report is intended to accommodate a Resource Consent application and will report on the following:

- Earthworks, Erosion & Sediment Control,
- Access,
- Water Supply,
- Wastewater,
- Stormwater,
- Flood Risk Assessment

This report is intended to be read in conjunction with the accompanying Chester drawings.

4 Earthworks, Erosion & Sediment Control

4.1 Earthworks

Earthworks are proposed across the site to create flat building areas, form access, and manage secondary flow. Given the complex topography of the site, specifically designed retaining structures and batter slopes will be required to achieve the proposed land formation. The proposed works are illustrated on the accompanying civil drawings and discussed in the Geotechnical Reporting prepared by Haigh Workman accompanying this application.

4.1.1 Earthworks Area and Volume

Table 1 below summarises the bulk earthwork volumes required in terms of existing ground versus proposed ground as shown on the civil drawings. All earthworks proposed are not within a flood hazard area.

Table 1: Cut – Fill Volumes

Location	Area (m^2)	Cut (m^3)	Fill (m^3)	Net Cut (m^3)
Total Site	11670	7559	3226	4333

Some of the excavated material may be reused onsite as fill, provided testing is undertaken and it meets the necessary requirements as recommended in the Geotechnical Report.

4.1.2 Cut/Fill Depths

Maximum cut and fill depths are anticipated to be approximately 6.4m cut and 3.1m fill across the site. Majority of the earthworks is required to form access to the proposed lots.

4.1.3 Construction Methodology

In general work operations across the site will involve:

- Vegetation clearance (with specialist ecological oversight).
- Installation of erosion and sediment controls.
- Progressive stripping of organic layers and unsuitable material, stockpiled clear of earthworks or removed from the site.
- Bulk earthworks and retaining.
- Drainage and services.
- Roading.
- Progressive Stabilization and Landscaping.
- Decommissioning of erosion and sediment controls.
- On-going mulching and establishment of vegetation.

The final construction methodology to complete works will be determined with input from the contractor at pre-commencement stage.

4.2 Erosion and sediment control

Best practice erosion and sediment control will be implemented to mitigate the effect of the earthworks to the surrounding environment. The sediment control devices will be constructed in general accordance with Auckland Council's Guidance Document 005 (GD05) and may include, but not be limited to the following:

- Stabilised Construction Entranceway,
- Silt Fences / Super Silt Fences,
- Clean / Dirty water diversion bunds,
- Decanting earth bunds,

- Sediment retention ponds,
- Progressive site stabilisation.

The Contractor will be ultimately responsible for specific design, installation, maintenance, and removal of various protection measures in accordance with GD05 as necessary to align with actual construction operations and staging.

Refer to drawing 210 of the accompanying civil design drawings for more information and an indicative erosion and sediment control plan.

5 Access

To provide access to the proposed lots a "Best Practical Option" design approach has been adopted that responds to the specific site constraints, notably steep topography, and ecology. The sections below provide a summary of the key design features, for further details please refer to the accompanying civil design drawings and Traffic Report by TEAM.

5.1 Main Private Access Road

Because it is not practical to achieve full compliance with the FNDC engineering standards for a public road, the main access into the site is proposed as a private road. In a general sense, the road has been designed to a public road standard but where that is not practical, it has fallen back to complying with the Private Accessway standards. Table 2 outlines the key road design criteria and provides civil comment against each.

Table 2: Private Road Design Criteria

Design Criteria	Adopted	Civil Comment
Minimum Legal Width	16m for CH 0 to CH 200	Provides sufficient width for proposed road cross section and services. Generally complaint with Public Road requirements.
	12m for CH 200 to END	Provides wider reserve width than previously consented 10m wide road reserve from typical road cross section.
Carriageway width	6.0m	Provides for two-way traffic. The development is tented for off-street parking therefore the reduced carriageway width is considered appropriate.
Maximum Gradient	20.0% for CH 13 to CH 50 and CH 120 to CH 165	Due to site constraints steep gradients are required to provide access. However, no vehicle crossing is proposed and no stopping or manoeuvring will be required along these steepened sections.
	12.5% for remainder of the road	Compliant with public road requirements.
Crossfall	3%	Compliant with public road requirements. Mono crossfall is being utilised as the road traverses the steep slope.
Minimum Horizonal Curve Radius	> R8m	Compliant with private accessway requirements. Public Road radius requirement not practical.
Cul-De-Sac	Off-Set Minimum R9.5	Compliant with public road requirements. Can turn 8m ridged truck in one and can accommodate 3-point turn for 11.5m ridged truck.
Intersection	NZTA Diagram D standard vehicle crossing	NZTA has given approval for the previously consented 21 lot development to access off SH11 provided a new crossing is constructed to Diagram D standard and only one lot with access off Ash Grove Circle. The current proposal

		removes the access off Ash Grove Circle and does not increase the number of properties accessing off SH 11.
Footpath	1.8m wide single side	Compliant with public road requirements.
Utility Services Corridor	Within carriageway and berm	All services have been considered in the road design. Due to the site topography constraints, services will be required to be within the carriageway.

5.2 Lot 1-5 – Private Accessway

Access to Lots 1-5 will be provided via a private accessway off the end of the Cul-De-Sac. The accessway has been designed in full compliance with the FNDC Engineering requirements for a private accessway serving 5 household equivalents.

5.3 2A Ash Grove Circle Access

It is proposed to replace the existing right of way with a new vehicle crossing from proposed Road 1 to provide access to 2A Ash Grove Circle.

6 Water Supply

6.1 Existing Water Supply Network

As per the FNDC GIS data, an existing 125mmØ OD water main terminates within the northwestern corner of the site, two existing water meters servicing No.2 and 2A Ash Grove Circle are also recorded inside the 2B Ash Grove Circle property boundary.

Figure 3: Existing Water Supply Network (FNDC Maps Accessed: 13/11/2024)

6.2 Proposed Potable Water Supply

For potable water supply it is proposed to extend the public water supply network from Ash Grove Circle with 100mm ID water main, easements in gross in favour of council are proposed over the JOALs. The proposed layout provides each Lot with a metered connection to the public water supply network.

We note that a previous resource consent has been granted for the same site to create a total of 19 residential lots. The new proposal does not increase the number of proposed residential lots, therefore no further increase in water supply demand compared to the previously consented baseline.

6.3 Fire Fighting Water Supply

The site's water supply classification for firefighting is FW2 as per the Engineering Standards and SNZ PAS 4509:2008. The requirement for FW2 is 12.5L/s within 135m (hose run) and an additional 12.5L/s within 270m (hose run) from a maximum of 2 hydrants, as shown below in Table 3.

Table 3: SNZPAS4509:2008 Firefighting Water Supply Recommendations

Fire Water Classification	Reticulated water supply			Non-reticulated water supply	
	Required water flow within a distance of 135 m	Additional water flow within a distance of 270 m	Maximum number of hydrants to provide flow	Minimum water storage (within 90m)	
				Time (firefighting) (min)	Volume (m^3)
FW1	450 L/min	-	1	15	7
FW2	750 L/min	750 L/min	2	30	45
FW3	1500 L/min	1500 L/min	3	60	180
FW4	3000 L/min	3000 L/min	4	90	540
FW5	4500 L/min	4500 L/min	6	120	1080
FW6	6000 L/min	6000 L/min	8	180	2160
FW7	*As per Appendix H of SNZPAS4509:2008*				

As part of the proposed reticulation network, 2 new fire hydrants are proposed such that all lots will be within the hose run distance requirements of fire hydrants.

Hydrant testing was undertaken at Ash Grove Circle on the 19th of November 2024 by Fire & Safety Design NZ Limited. The results indicate that best results were achieved under a single hydrant at maximum flow. A maximum flow of 840 L/min with a residual pressure of 20 kPa was recorded across the single hydrant which does not meet the FW2 requirements of 1500 L/min (750 L/min each) from 2 hydrants. Refer to Appendix B for the test results. Therefore, based on these results and to provide sufficient firefighting water supply, it is proposed to install a 25,000L underground water tank that provides a minimum of 20,000L dedicated firefighting water supply within the berm of the proposed road.

We have consulted FENZ to approve the proposed design for supplementary firefighting water supply, however, we have not had a response at the time of submitting for Resource Consent.

Refer to drawing 600 of the accompanying civil design drawings for further details.

7 Wastewater

7.1 Existing Reticulation

As per the FNDC GIS data, there is an existing public gravity wastewater network consisting of 100mmØ and 150mmØ uPVC pipes running across the northern portion of the site.

We note that in the site suitability report by Haigh Workman referenced 19109, dated 12 October 2020, Council has confirmed that the site can be connected to the Council sanitary sewer system, the new proposal does not increase the number of proposed residential lots, therefore we understand the site can continue to be connected to the public network. Refer to Appendix D for a Wastewater Capacity Assessment.

Figure 4: Existing wastewater reticulation (FNDC GIS maps, 13/11/24)

7.2 Proposed Wastewater Reticulation

It is proposed to extend the existing public network to provide connections to each lot. A gravity system is proposed to service the northern portion of the site including lots 1-13 by installing a new public inspection chamber over the existing 100mmØ uPVC pipe within the site. For the southern portion of the site including lots 14-19, each Lot will have its own private pump station and individual rising main that pumps up to a common private receiving chamber, before discharging into the proposed public network.

The existing dwelling on 2A Ash Grove Circle has an existing pump that connects to the public network via the neighbouring motel. This site pump discharge will be diverted to the new receiving chamber as part of the development works.

Refer to drawing 500 of the accompanying civil design drawings for further details.

8 Stormwater

8.1 Existing Reticulation Network

Based on FNDC GIS data, the site does not appear to have a reticulated stormwater network.

The northern catchment of the site sheet flows into an existing swale drain along the neighbouring driveway, then gets captured and conveyed via a drop structure and a rock outfall to an overland flow path, which leads to the tidal area downstream of Haruru Fall. The southern catchment of the site sheet flows down the steep bush area then drains into a tidal reach of the Kaipatiki Stream.

Figure 5: Existing stormwater reticulation (FNDC GIS maps, 13/11/24)

8.2 Proposed Network

It is proposed to install two new public stormwater networks designed in accordance with the FNDC Engineering Standards to service the northern and southern catchments of the site. A new stormwater connection will be provided to service each individual lot.

The northern catchment will be collected into a proposed public stormwater network and continue to drain through the existing public network within the neighbouring property into the existing overland flow path to the west of the site.

The southern catchment will drain into the proposed public network via catchpits and stormwater connections and eventually discharge into the tidal reach of Kaipatiki Stream via a proposed engineered stormwater outlet with adequate energy dissipation measures.

Refer to the 400 series of the accompanying civil design drawings for further details.

8.3 Stormwater Management

The following sections discuss the proposed stormwater management approach for the development in accordance with the key stormwater management criteria outlined in Table 4-1 of the FNDC Engineering Standards 2023. Our proposal considers the site-specific catchment and downstream receiving environment characteristics.

8.3.1 Stormwater Quality Treatment

The proposed impervious areas consist of roof areas and low daily traffic volume access roads, which are considered to be low contamination yielding surfaces. Permeable paving is proposed for private driveway and parking areas to provide passive stormwater quality treatment by way of infiltration and runoff reduction. Catchpits are proposed for the road to provide for gross pollutant removal from the stormwater network and the receiving environment.

Given the above no further SWQT is proposed.

8.3.2 Volume (Stream Protection)

Volume management is only required when discharging directly into a natural stream or modified channel. The northern catchment is discharging into an existing overland flow path via the existing public stormwater network and outlet. Observed from the recent site investigation, the overland flow path is well vegetated and not susceptible to erosion.

Figure 6: Vegetation within existing overland flow path downstream of northern catchment

The southern catchment is discharging into a well vegetated tidal reach which is not susceptible to erosion, and an engineered stormwater outlet with adequate energy dissipation measures is proposed to convey stormwater runoff into the receiving environment. Given the above no further volume controls are proposed nor deemed required.

8.3.3 Flow Attenuation (50% and 20% AEP event)

The northern catchment drains through an existing 450mmØ HDPE pipe, a capacity assessment has been carried out for the 450mm HDPE pipe, and confirmed that there is sufficient capacity in the existing pipe to convey the 20% AEP rainfall event with climate change adjustment peak flow for the MPD scenario of the entire catchment. Furthermore, the 900mmØ double barrel culvert further downstream under SH11 has been confirmed by the 2007 GHD model to have enough capacity for MPD scenario plus climate change adjustment. Therefore, flow attenuation for 50% and 20% AEP event for the northern catchment is not proposed nor deemed required. Refer to Appendix C for pipe capacity calculations.

Flow attenuation is not proposed for the southern catchment because it does not discharge into the existing public network and discharges directly to a tidal zone which are not susceptible to increased peak flows worsening flooding risk.

Both the proposed primary and secondary flow systems within the development will be designed in accordance with the FNDC Engineering Standards allowing for climate change.

8.3.4 Flood Control (1% AEP event)

The northern catchment ultimately discharges into a tidal area under the Haruru Fall via a 900mmØ double barrel culvert under SH11. It has been identified that the culvert does not have sufficient capacity for the 1% AEP event. Therefore, stormwater attenuation for 1% AEP event is proposed for the northern

catchment (Lot 1-8 and 10-11), carparks within the above lots are proposed to be constructed with permeable pavings. As a result of redirecting Lot 10, 12-13 towards the southern catchment, a net reduction in post development runoff has been achieved for the road and common access ways. Attenuation tanks are proposed for the northern catchment lots to mitigate the roof area runoff back to pre-development flow rate. Refer section 8.4 for attenuation design detail.

The southern catchment ultimately discharges into a tidal area and no downstream flood hazard has been identified. Specific Flood Control Attenuation is not required for the southern catchment.

8.4 Attenuation Design

The following sections summarise the design which has been completed using Autodesk Storm and Sanitary Analysis (SSA) hydraulic modelling software in accordance with the following guideline documents:

- FNDC Engineering Standards 2023 Version 0.6
- United States NRCS (SCS) TR-55 Urban Hydrology for Urban Watersheds (unit hydrograph)

8.4.1 SSA Hydrologic/Hydraulic Model Input

Table 4 below summarises the hydrologic and hydraulic model input parameters.

Table 4: SSA Model Input Parameters

Parameter	Input	Note
1% AEP Rainfall Depth	309.6 mm	HIRDS Normalised Rainfall plus 20% Climate Change
Time of Concentration	10 min	Minimum
Pervious SCS Curve Number	74	Group C Soils, Open Space, Good Grass Cover
Impervious SCS Curve Number	98	Impervious Area
Orifice Coefficient	0.61	
Storm Profile:	Type 1A	From USDA Soil Conservation Service TR-55

8.4.2 Modelling Methodology

Using Autodesk Storm and Sanitary Analysis (SSA), we have run iterative models to select appropriately size attenuation tanks and control orifices to provide peak flow attenuation for the 1% AEP design storms so that post development peak flows are less than the baseline/pervious run-off flowrates for all roof areas. For simplicity we have completed the design for each of the three proposed house typologies. In the model we have based the tank dimensions on the above ground "Promax Slimline Tank' specification. These tanks may be swapped out for a tank of equal volume however the model must be re-run to assess the need for any changes to orifice sizes due to alternative tank dimensions.

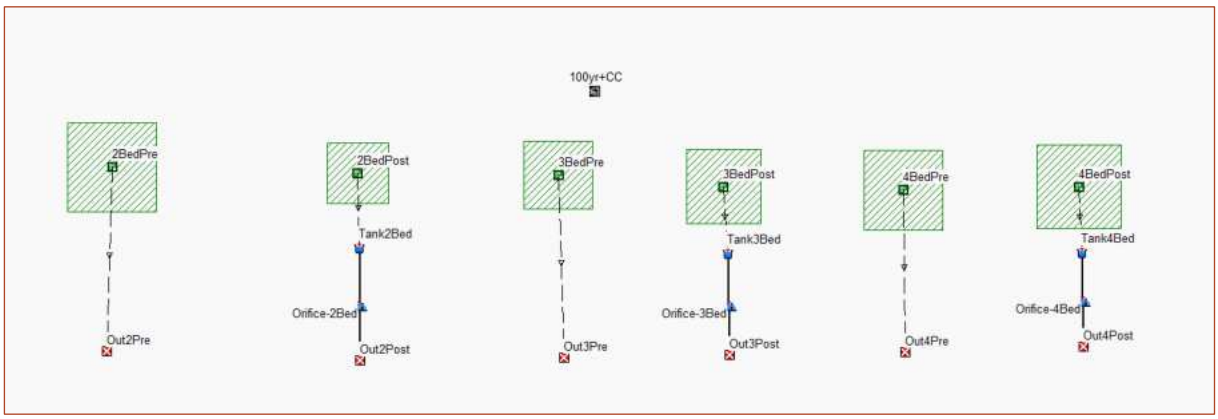


Figure 7: Autodesk Storm and Sanitary Analysis (SSA) model for proposed house typologies

8.4.3 Model Output

Table 5 below summarises the model output and tank and orifice sizing. For further details please refer to the Appendix and accompanying civil drawings.

Table 5: SSA Attenuation Design Output

Typology	Roof Area (m2)	Baseline Flow (L/s)	Tank Volume (L)	Orifice Diameter (mm)	Post-development Peak Flow (L/s)
2 Bedroom (Lot 5)	81	1.25	2000	22	1.10
3 Bedroom (Lot 2, 6-8, 10-11)	115	1.64	2000	26	1.60
4 Bedroom (Lot 1, 3-4)	145	2.46	3000	30	2.34

8.5 Proposed Regional Plan for Northland

Stormwater from the proposed development is to be reticulated and discharged via a public stormwater network. Because the discharge is from an urban area it is a controlled activity. Table 6 below sets out the relevant matters of control under Section C.6.4.3 of the Proposed Regional Plan for Northland with engineering comment.

Table 6: Engineering comment against relevant regional plan stormwater rules

Matters of Control	Engineering Comment
1) The maximum concentration or load of contaminants in the discharge.	The proposed impervious areas are considered to be low contamination yielding surfaces. Passive stormwater quality treatment and gross pollutant trap are proposed. As such there will be minimal contaminants in the discharge.
2) The size of the zone of reasonable mixing.	The size of the zone of reasonable mixing is 20m from point of discharge.
3) The adequacy of measures to minimise erosion.	All impervious areas will be reticulated and conveyed to well vegetated areas that are not susceptible to erosion. The outlets are specifically designed with scour and erosion protection measures to minimise erosion.
4) The adequacy of measures to minimise flooding caused by the stormwater network.	The stormwater network will be designed in accordance with the engineering standards. 1% AEP attenuation is proposed for the northern catchment. The southern catchment downstream area is tidal.
5) The design and operation of the stormwater system and any staging of works.	The design of the proposed stormwater works will be completed in accordance with the engineering standards. On-going maintenance will be minimal for the underground network.

9 Flood Risk Assessment

The site is not located at the top of the catchment and not within a flood plain, local surface water and secondary flow path has been considered in the design, no flood risk assessment is required for the development site.

Downstream flooding has been identified and 1% AEP event attenuation is proposed to mitigate the potential effects of the development. Refer to stormwater management section for more details.

10 Summary

In our opinion the site is suitable for the proposed development, subject to Far North District Council approval with regards to the matters addressed in this report and summarised below. The development can be undertaken in general accordance with the engineering standards with no specific area of non-compliance that in our opinion would have an actual or potential adverse effect on the environment or negatively affect any persons.

10.1 Earthworks, Erosion & Sediment Control

Bulk earthworks are proposed to enable the development. Best practice erosion and sediment control measures in accordance with GD05 are proposed to manage the potential effect on the environment.

10.2 Access

Provision for access to and within the subdivision has been made by way of a private road and common accessways.

10.3 Water Supply

The site is located within a reticulated water supply area and provision is made for each lot to have a public service connection. Firefighting water supplies will be supplied by extending the public water supply network as well as an on-site underground tank for supplementary supply.

10.4 Wastewater

The site is located within a reticulated wastewater area and provision is made for each lot to have either a public gravity connection or a private pressure sewer connection.

10.5 Stormwater

Reticulated stormwater network is proposed for the development, and provision is made for each lot to have a connection. Best practice stormwater management is proposed in accordance with the relevant standards.

10.6 Flooding Risk

The site is not subject to wider flooding risk and local surface water / secondary flow has been considered in the design.

11 Limitations

- This assessment contains the professional opinion of Chester Consultants as to the matters set out herein, in light of the information available to it during the preparation, using its professional judgement and acting in accordance with the standard of care and skill normally exercised by professional engineers providing similar services in similar circumstances. No other express or implied warranty is made as to the professional advice contained in this report.
- We have prepared this report in accordance with the brief as provided and our terms of engagement. The information contained in this report has been prepared by Chester Consultants at the request of Te Rūnanga O Whaingaroa c/o Scope and is exclusively for its client use and reliance. It is not possible to make a proper assessment of this assessment without a clear understanding of the terms of engagement under which it has been prepared, including the scope of the instructions and directions given to and the assumptions made by Chester Consultants Ltd. The assessment will not address issues which would need to be considered for another party if that party's particular circumstances, requirements and experience were known and, further, may make assumptions about matters of which a third party is not aware. No responsibility or liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this assessment by any third party.
- The assessment is also based on information that has been provided to Chester Consultants Ltd from other sources or by other parties. The assessment has been prepared strictly on the basis that the information that has been provided is accurate, completed, and adequate. To the extent that any information is inaccurate, incomplete, or inadequate, Chester Consultants Ltd takes no responsibility and disclaims all liability whatsoever for any loss or damage that results from any conclusions based on information that has been provided to Chester Consultants Ltd.

12 Appendices

Appendix A – Civil Design Drawings (Bound Separately)

Appendix B – Hydrant Flow Testing

FIRE & SAFETY DESIGN NZ LIMITED

FIRE HYDRANT FLOW TEST REPORT

ADDRESS

Ash Grove Circle

Haruru

Northland

CLIENT

Te Rūnanga O Whaingaroa c/o Scope

CONDUCTED BY

Cody van Harlingen, Cullen Kinnear & Mike Lindsay

DATE

19th November 2024

09 430 0498
info@fsd.nz
fsd.nz

FIRE & SAFETY DESIGN NZ LTD

19th November 2024

To whom it may concern,

We have pleasure in submitting our findings from the flow test that we carried out on the 19th of November 2024 for your project – Ash Grove Circle, Haruru

We have carried out flow tests of the hydrants in the area requested. Locations of the hydrants tested are shown on the annotated map attached in this report.

We have put the results onto a graph. This will show the static pressure (kPa), flow rate in litres per minute (l/min) and the residual pressure (kPa) at that flow.

Notes –

- *Only 2 hydrants available for testing in this area – we checked the hydrant pressure on the corner of Yorke Road, and it appeared to be a separate connection to Ash Grove Circle hydrants.*
- *When flow testing, we were unable to achieve 1500 l/min (750 l/min ea) from the 2 hydrants on Ash Grove Circle at max flow. The best results were achieved under a single hydrant at max flow.*

The supply pipework and sizing for the site underground supply has not been confirmed.

We note that in the region seasonal fluctuations occur in town mains supply pressure and flows. We suggest this be factored into your calculations.

It is the client's responsibility to consult with Fire and Emergency NZ and local council authorities to ensure that the available firefighting water will meet any consent requirements of SNZS4509:2008.

Kindest Regards,

Mike Lindsay
Fire & Safety Design NZ Ltd

FIRE HYDRANT FLOW TEST

Site: **Ash Grove Circle, Haruru Falls** **Date:** 19/11/2024

Client: Te Rūnanga O Whaingaroa c/o Scope **Time:** 10.40am

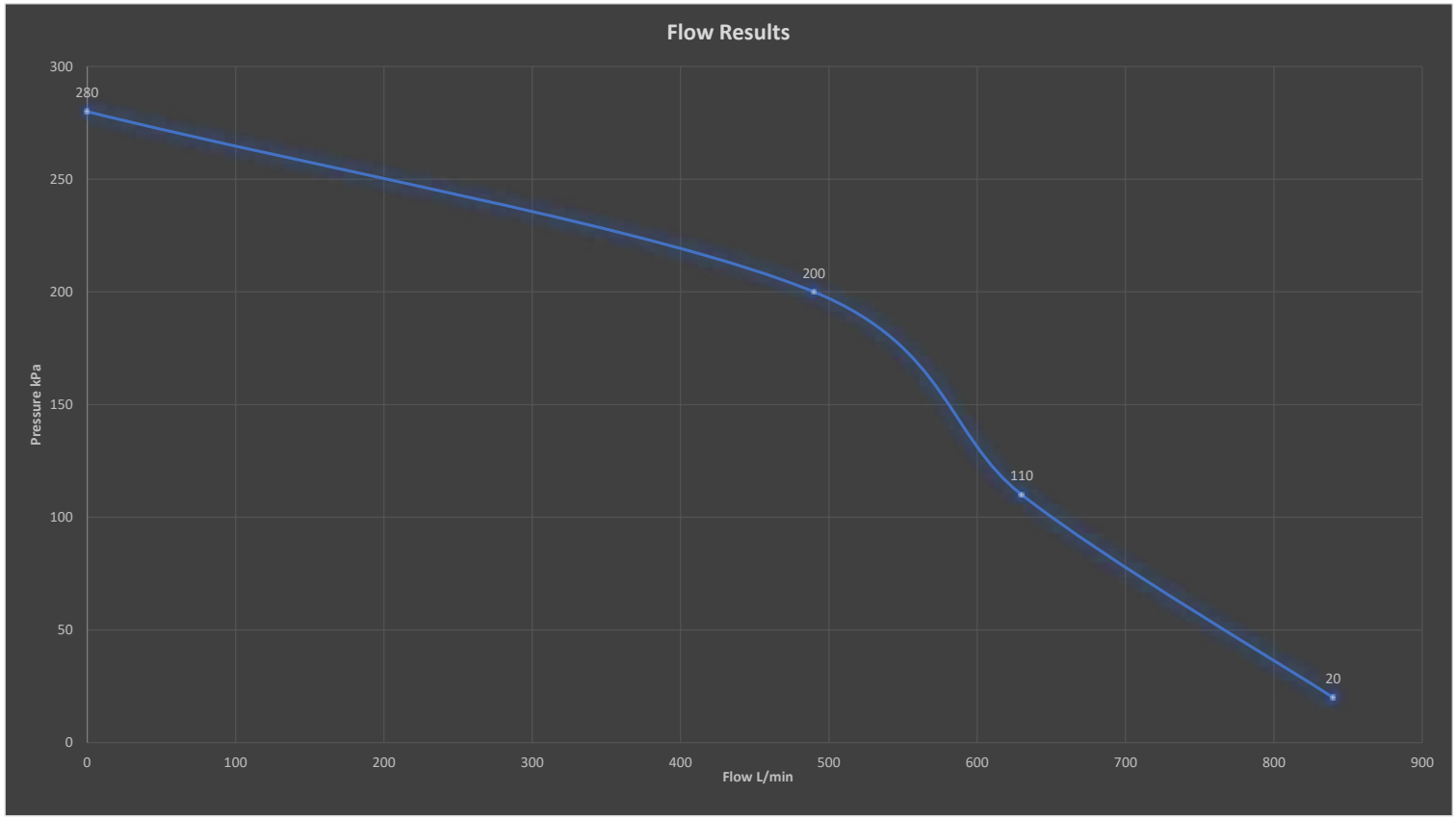
Conducted By: Cody van Harlingen, Cullen Kinnear & Mike Lindsay

Hydrant Flowed Location: 1x Hydrants Flowed - Hydrant 1 (See attached map for specific locations)

Hydrant Asset ID: Hydrant 1 - 11 Ash Grove Circle - Flow

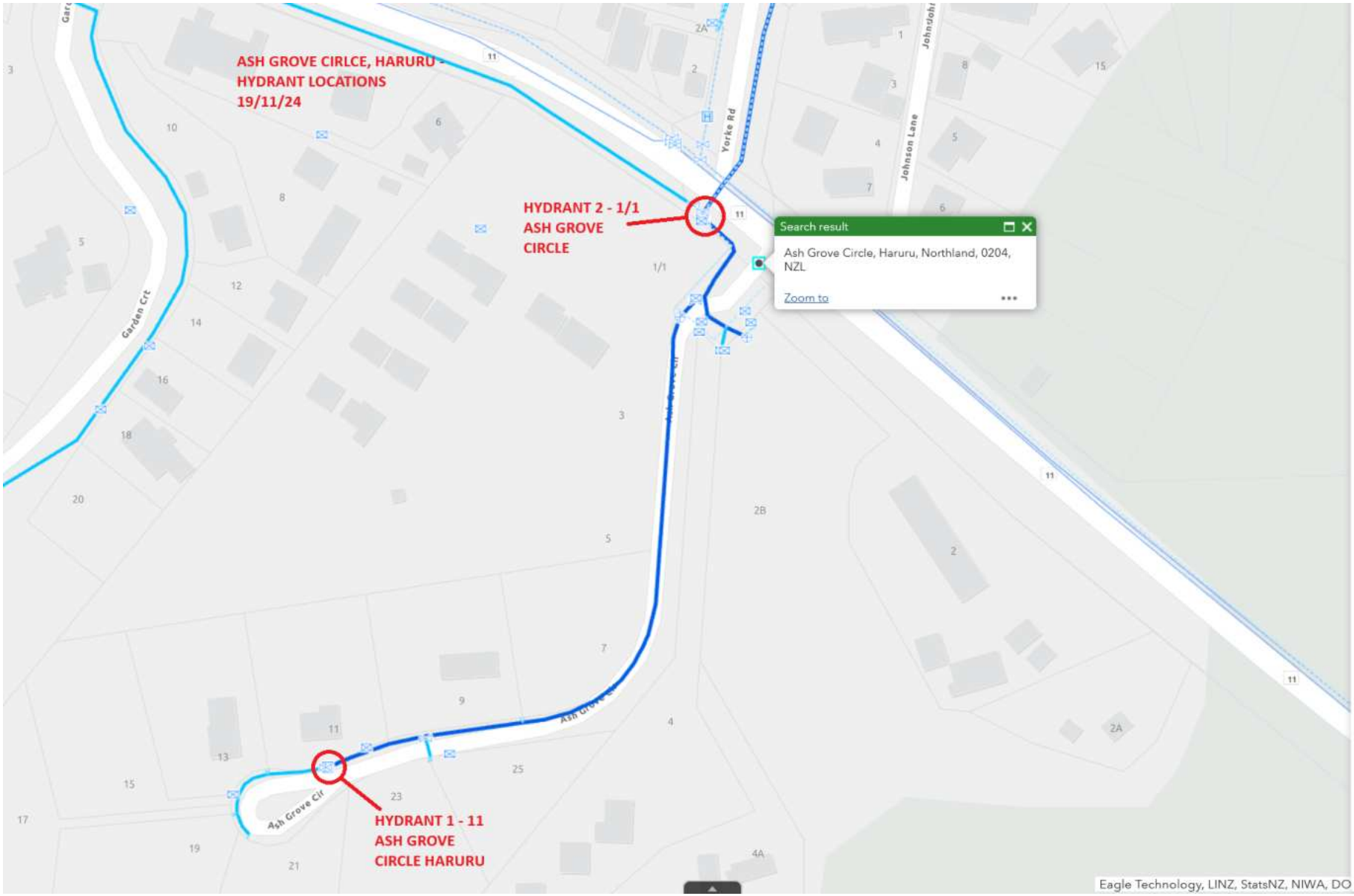
Hydrant 2 - 1/1 Ash Grove Circle - Pressure Read

FIRE & SAFETY DESIGN NZ LTD

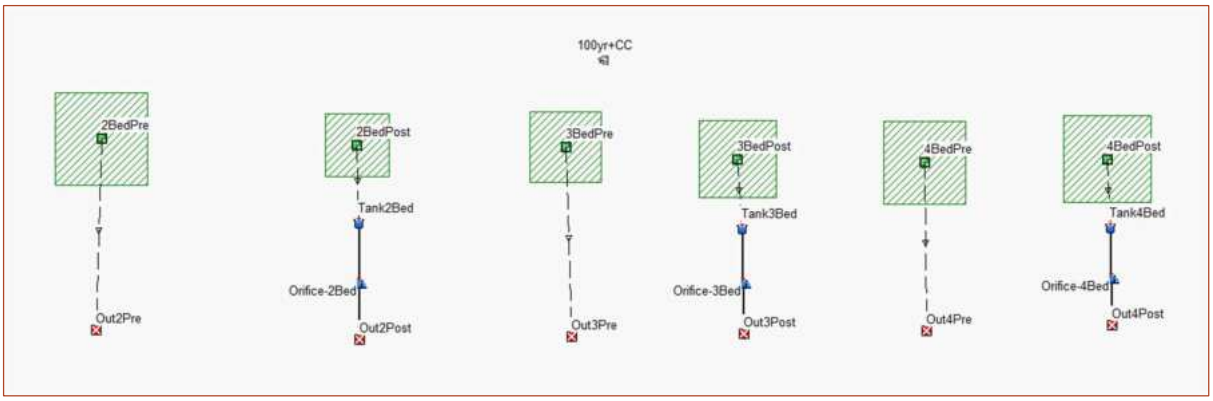


Key	
1x Hydrant Flowed	
L/Min	**KPA**
0	280
490	200
630	110
840	20

Pressures taken at 1/1 Ash Grove Circle


ASH GROVE CIRLCE, HARURU -
HYDRANT LOCATIONS
19/11/24
HYDRANT 2 - 1/1
ASH GROVE
CIRCLE
Search result
Ash Grove Circle, Haruru, Northland, 0204, NZL
Zoom to
HYDRANT 1 - 11
ASH GROVE
CIRCLE HARURU
Yorke Rd
Johnson Lane
Garden Crt
Ash Grove Cir
Eagle Technology, LINZ, StatsNZ, NIWA, DO

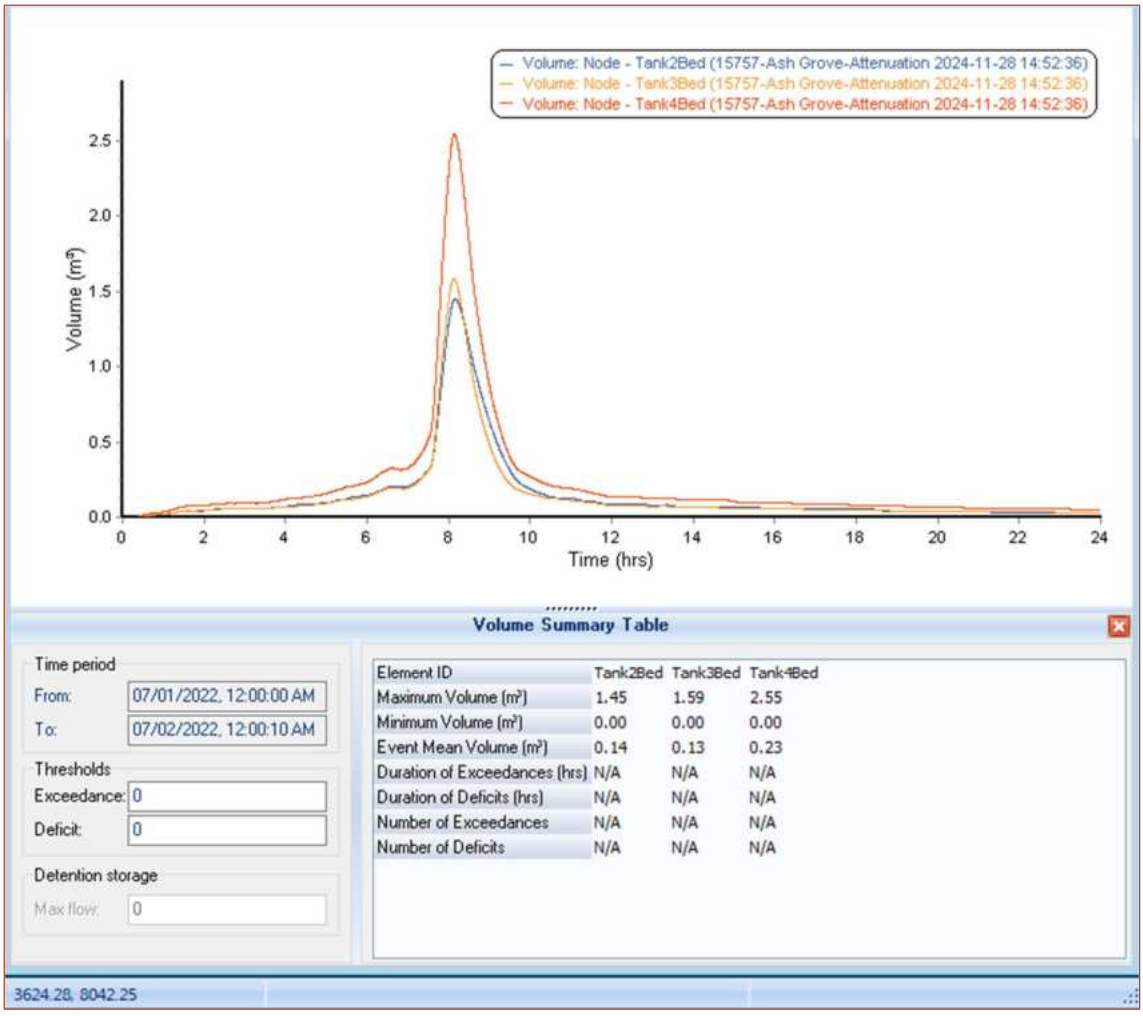
Appendix C – SSA Attenuation Model Output



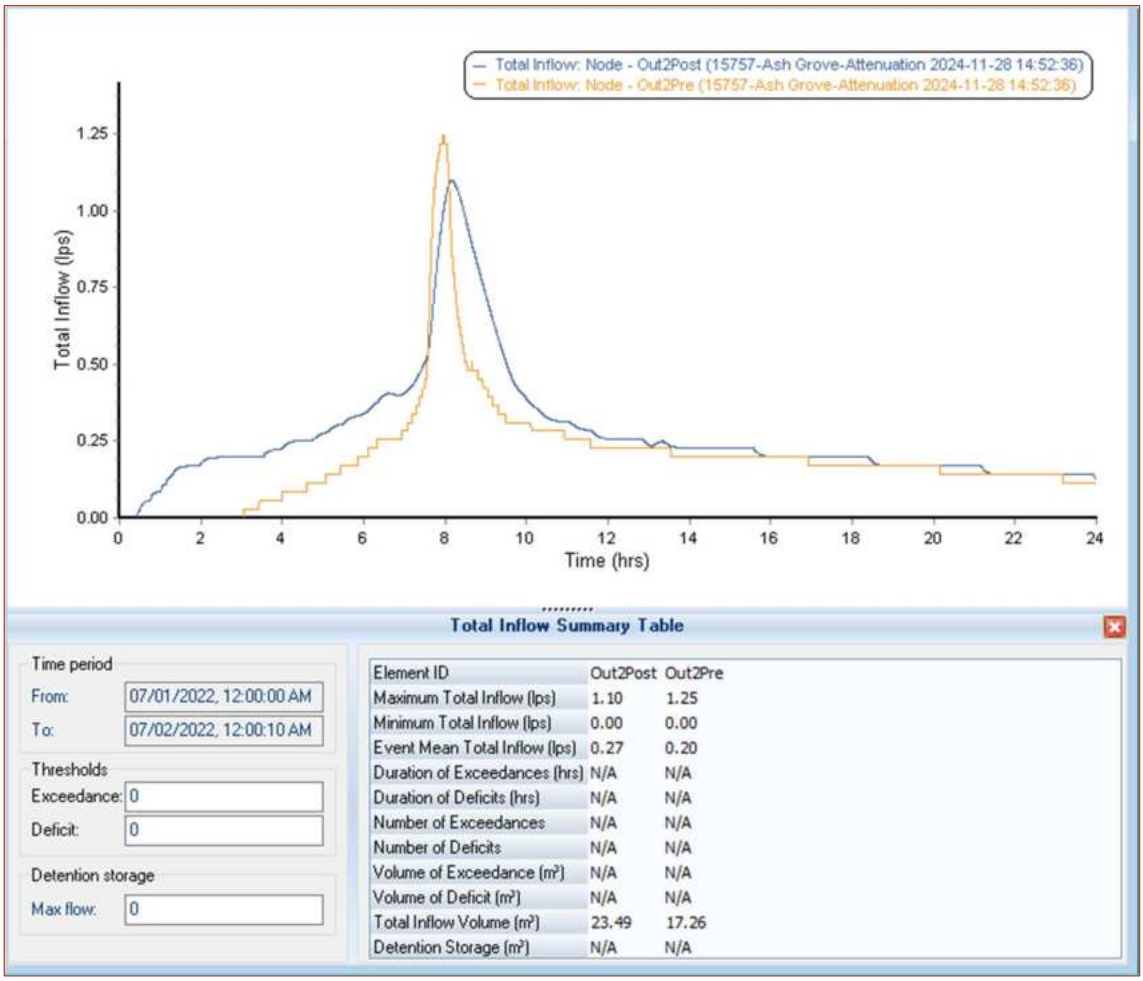
SSA Stormwater Attenuation Model

	ID	From Node	To Node	Type	Shape	Height/ Diameter	Crest Elev.	Flap Gate
1	Orifice-2Bed	Tank2B	Out2Pos	Side	Circular	22.00	0	No
2	Orifice-3Bed	Tank3B	Out3Pos	Side	Circular	26.00	0	No
3	Orifice-4Bed	Tank4B	Out4Pos	Side	Circular	30.00	0	No

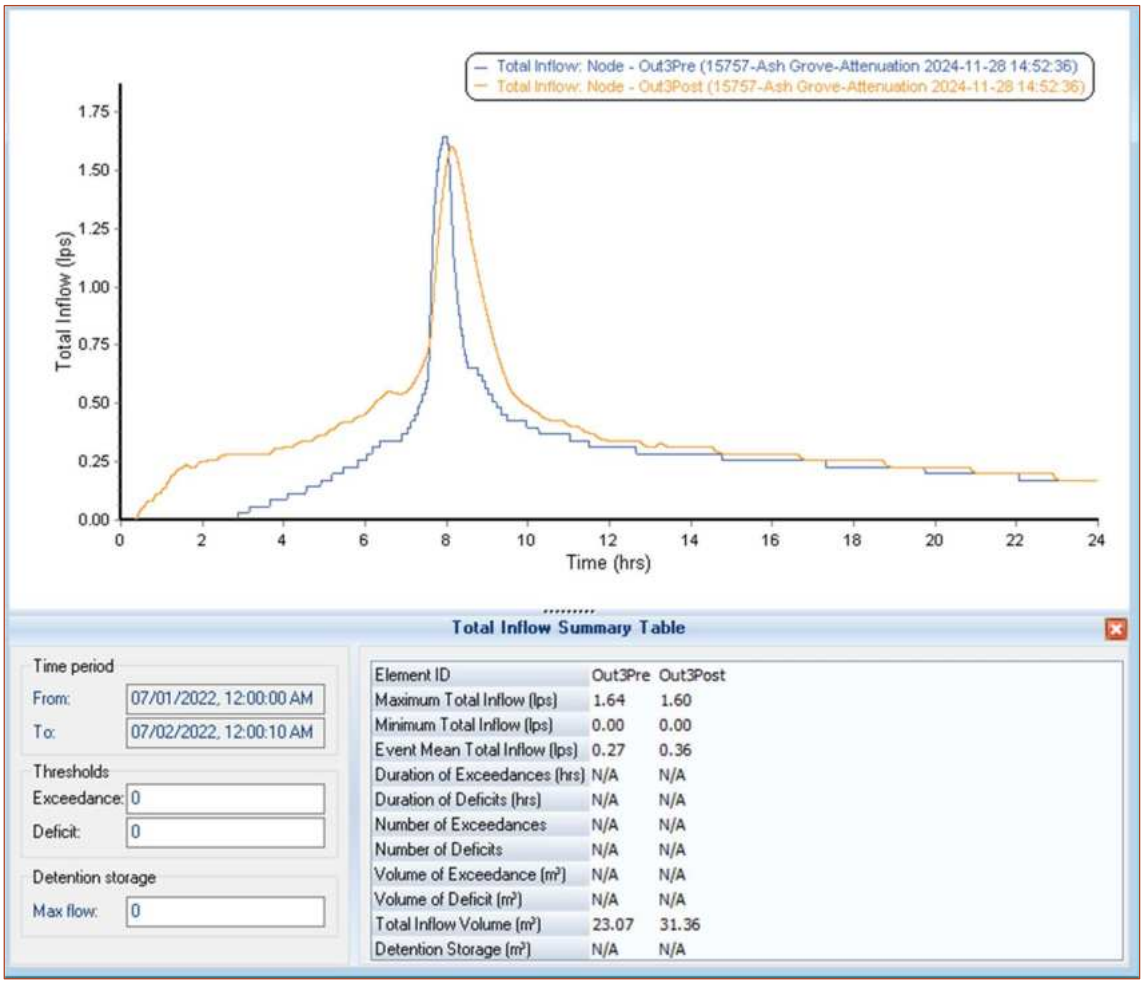
Orifice Input



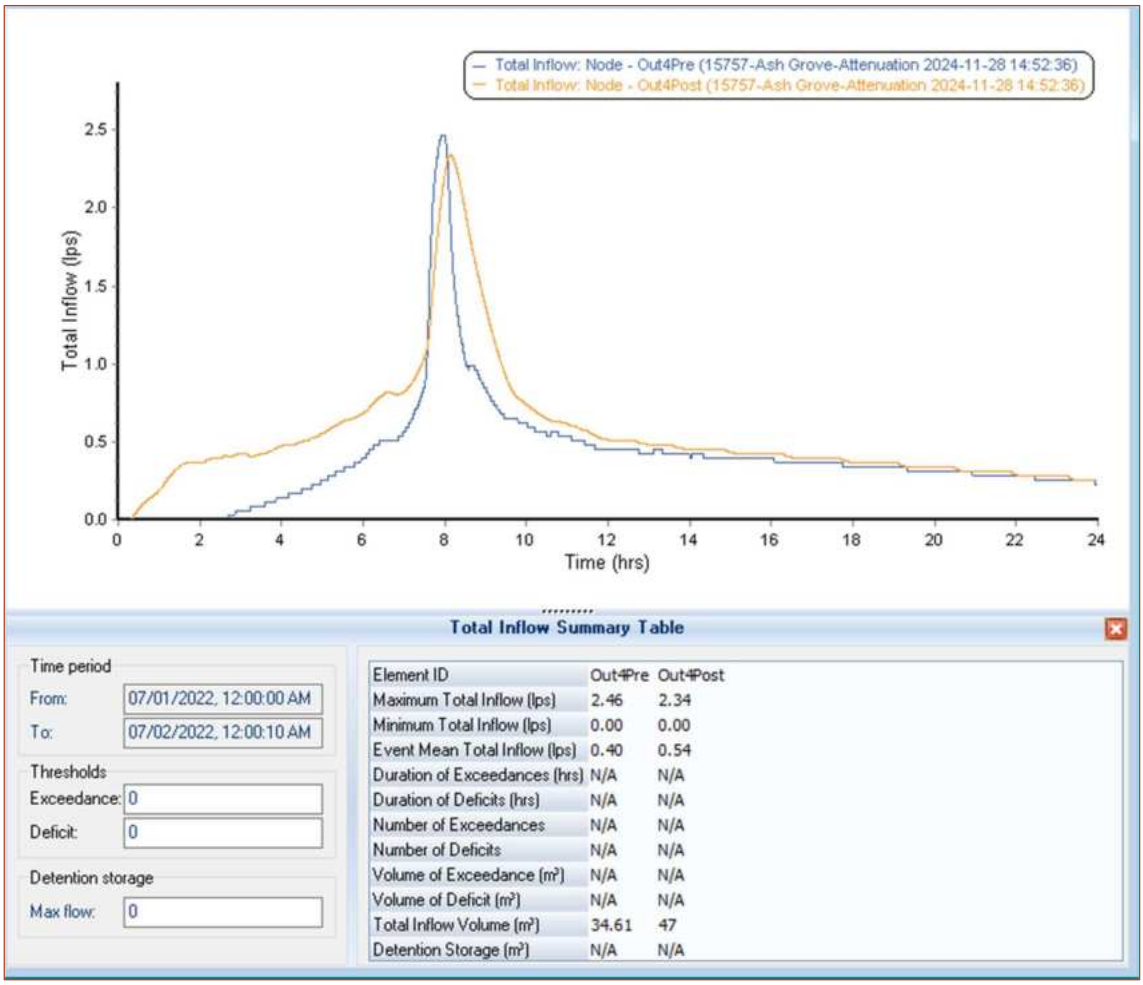
Attenuation Storage Volume Summary



2-Bedroom Peak Flow Output



3-Bedroom Peak Flow Output



4-Bedroom Peak Flow Output

Appendix D – Wastewater Capacity Assessment

SITE: 2A Ash Grove
JOB #: 15757
DATE: 28/11/2024
ENGINEER: A. Bermingham

Pre-Dev. WW Line

Upstream SSMH ID	Dowstream SSMH ID	Design Wastewater Flow Allowance (L/p/d)	Design Wastewater Peaking Factor	Design Occupancy	Number of Parcels	Catchment Population	Catchment PWWF / EPDWF (L/s)	Cumulative PWWF / EPDWF (L/s)	Pipe Diameter (mm)	Pipe Grade (%)	Pipe Manning's n	Pipe Full Flow Velocity (m/s)	Pipe Full Flow Capacity (L/s)	Pipe Reserve Capacity (L/s)	Capacity	Notes
SP1376	SP1375	200	5	4	6	**24**	**0.278**	**0.278**	100	1.0%	0.011	**0.78**	**6.10**	**5.83**	Yes	
SP1375	SP1360	200	5	1	11	**11**	**0.127**	**0.405**	150	2.3%	0.011	**1.54**	**27.30**	**26.89**	Yes	Motel occupancy
SP1375	SP1360	200	5	4	2	**8**	**0.093**	**0.498**	150	2.3%	0.011	**1.54**	**27.30**	**26.80**	Yes	

Post-Dev. WW Line

Upstream SSMH ID	Dowstream SSMH ID	Design Wastewater Flow Allowance (L/p/d)	Design Wastewater Peaking Factor	Design Occupancy	Number of Parcels	Catchment Population	Catchment PWWF / EPDWF (L/s)	Cumulative PWWF / EPDWF (L/s)	Pipe Diameter (mm)	Pipe Grade (%)	Pipe Manning's n	Pipe Full Flow Velocity (m/s)	Pipe Full Flow Capacity (L/s)	Pipe Reserve Capacity (L/s)	Capacity	Notes
SP1376	SP1375	200	5	4	21	**84**	**0.972**	**0.972**	100	1.0%	0.011	**0.78**	**6.10**	**5.13**	Yes	15 new connections
SP1375	SP1360	200	5	1	11	**11**	**0.127**	**1.100**	150	2.3%	0.011	**1.54**	**27.30**	**26.20**	Yes	Motel occupancy
SP1375	SP1360	200	5	4	6	**24**	**0.278**	**1.377**	150	2.3%	0.011	**1.54**	**27.30**	**25.92**	Yes	4 new connections

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Level 1, Chester Building, 28 The Warehouse Way, Northcote,
Auckland 0627, PO Box 34405, Auckland 0746

Appendix E – Stormwater Pipe Capacity Calculation

STORMWATER CALCULATION SHEET

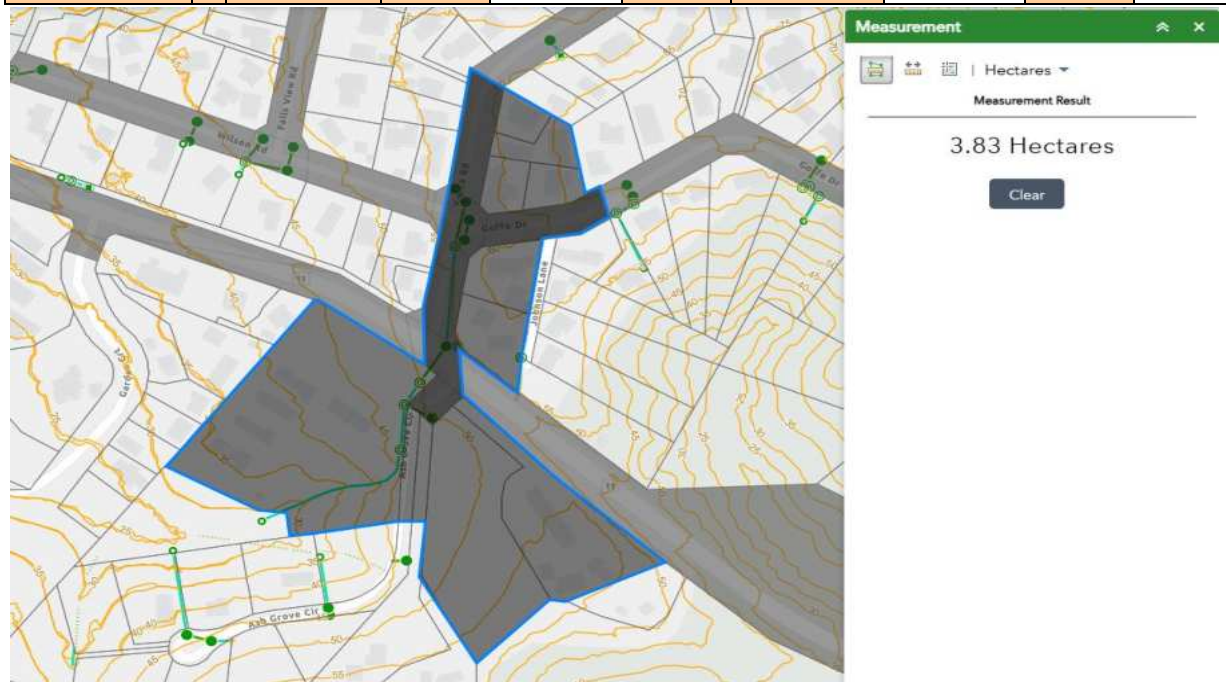
USING RATIONAL AND MANNING'S - ASSUMING FULL PIPE FLOW

SITE: Ash Grove Circle, Haruru
JOB #: 15757
DATE: 28/11/24
AUTHOR: J. CHEN

RAINFALL PROPERTIES

Return Period (ARI): 5 *year* Climate Change Adjustment Factor: 20%

Pipe Segment			*Area (ha)*	*Cumulative Area (ha)*	*C*	*Rationalised Intensity (mm/hr)*	*Design Flow (l/s)*	*Inner Pipe Diameter (mm)*	*Flow Area (m2)*	*Wetted Perimeter (m)*	*Gradient (%)*	*Pipe Manning's n*	*Velocity (m/s)*	*Pipe Capacity (l/s)*	*Pipe reserve capacity*
EX.Out	-	EX.MH1	3.8	3.83	0.85	113.4	1025.5	450	0.1590	1.4137	18.90	0.012	**8.44**	**1342.8**	**317.3**



Chester Ltd: E: admin@chester.co.nz P: +64 9 481 0024
Level 1, Chester Building, 28 The Warehouse Way, Northcote,
Auckland 0627, PO Box 34405, Auckland 0746

EXISTING FIRE HYDRANT

EXISTING 125mm OD PUBLIC WATER MAIN

EXISTING 125mm OD PUBLIC WATER MAIN

CONNECTION TO EXISTING PUBLIC WATER MAIN

ASH GROVE CIRCLE

REARRANGE EXISTING WATE
AND IF POSSIBLE RETAIN EX
METER FOR LOT 1

PROPOSED SLUICE VALVE

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

LOT 12

PUKETONA ROAD/SH11

PROPOSED 100mmØ ID WATER MAIN
DN125 PE100 SDR 11

PROPOSED 3 WAY WATER METER
BANK TO SERVICE LOTS 2-4

PROPOSED PEET VALVE

PROPOSED SLUICE VALVE

PROPOSED 50mmØ ID RIDER MAIN
DN63 PE80B SDR 11

PROPOSED FIRE HYDRANT

INDIVIDUAL WATER METER TYPICAL
TO SERVICE LOTS 5-13 AND 14-17

Fire and Emergency New Zealand
Te Tai Tokerau / Northland District

APPROVED
By GoffinJ at 7:58 am, Dec 03, 2024

Jason Goffin- Advisor Risk Reduction

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\AlexBermingham\Chester Consultants\Central Library - 15757 - Ash Grove Haruru\330 Design\322 Civil\321 ACAD\DWG Layouts\15757-C-DWG-600.dwg LAST SAVED BY: AlexBermingham 11/25/2024 3:30 pm

Rev	Date	Amendments	By

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 25/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: WATER SUPPLY PLAN 01

DRAFT
FOR COMMENT ONLY

Drawing: 601 Rev: 0
Scale: 1:750 @ A3
Project: 15757
Issue: CONSENT

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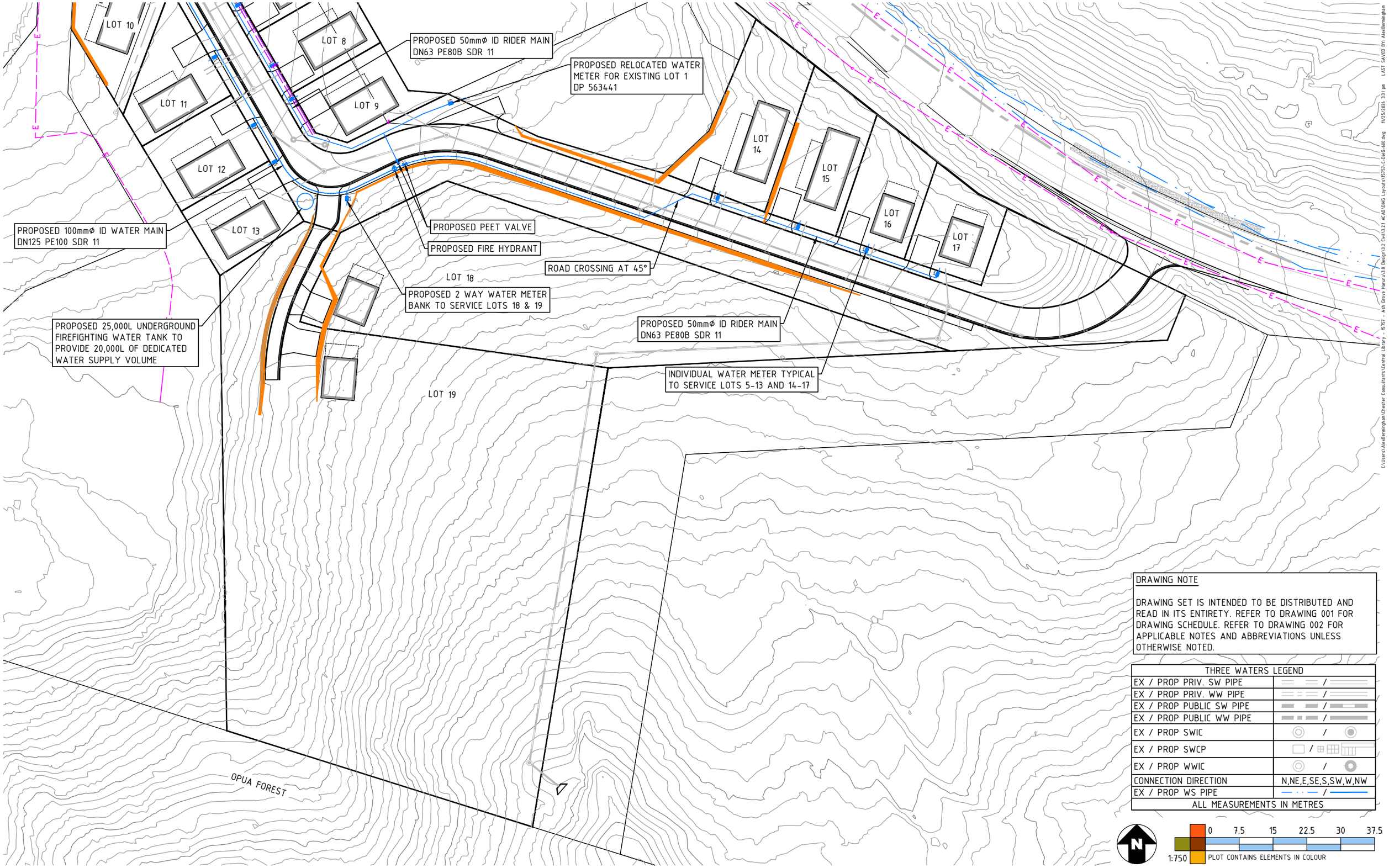

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

N

0 7.5 15 22.5 30 37.5

1:750 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By

Drafter: A BERMINGHAM
Designer: A BERMINGHAM
Checker: N JULL
Date: 25/11/2024

Job Title: CIVIL DESIGN - PROPOSED RESIDENTIAL SUBDIVISION
Client: TE RŪNANGA O WHAINGAROA C/O SCOPE
Address: 2B ASH GROVE CIRCLE, HARURU, LOT 2 DP 563441
Drawing Title: WATER SUPPLY PLAN 02

DRAFT
FOR COMMENT ONLY

Drawing: 602 Rev: 0
Scale: 1:750 @ A3
Project: 15757
Issue: CONSENT

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4 December 2024

Te Runanga o Whaingaroa
Cnr Waikare Avenue, State Highway 10
PO Box 88
Kaeo
Northland 0448

Tēnā koe Bree Davis – Tumuaki (CEO) te Rūnanga o Whaingaroa

Re: Letter of Support for 19-Lot Subdivision at 2A Ash Grove Circle, Haruru

Original RC# RC2300241.

On behalf of Ngati Rahiri, I am writing to confirm our support for the proposed 19-lot subdivision at 2A Ash Grove Circle – Original RC# RC2300241.

Based on our understanding of the site's history and the information provided, we have not immediately identified any significant areas of concern within the proposed development area. However, and as discussed with your representatives, we will require engagement to monitor the construction works to ensure the site is respected.

We appreciate the ongoing consultation and your commitment to ensuring that our iwi's values and interests are respected.

Ngā mihi nui,

Whati Rameka

Ngati Rahiri

Ngati Kawa

Te Matarahurahu

Geotechnical Site Assessment Report

2B Ash Grove Circle, Haruru (Lot 2, DP 563441)

For Te Runanga O Whaingaroa

Haigh Workman reference 24 208

December 2024

Phone: +64 9 407 8327 • Fax: +64 9 407 8378 • info@haighworkman.co.nz • www.haighworkman.co.nz

PO Box 89 • 6 Fairway Drive • Kerikeri 0245 • New Zealand

Revision History

Revision Nº	Issued By	Description	Date
A	Wayne Thorburn	Issue	4/12/2024

Prepared By

Wayne Thorburn

Senior Geotechnical Engineer
CMEngNZ, CPEng, IntPE (NZ)

Approved By

John Papesch

Senior Civil Engineer, Director
CMEngNZ, CPEng, IntPE (NZ)

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TABLES

FIGURES

Executive Summary

Haigh Workman Ltd (Haigh Workman) have been engaged by Te Runanga O Whaingaroa to prepare a geotechnical assessment report for use in support of a Subdivision and Land Use Consent application for a proposed 19 residential lot subdivision.

This report contains information required for subdivisional earthworks, as well as outlining geotechnical design issues that need to be considered for subsequent building design and construction on each residential Lot. Chester Consultants Limited have provided the scheme plans.

Subdivisional soil types are considered highly expansive (Class H) based on site observations and experience with nearby residential Lots. Due to this classification, soils lie outside the definition of good ground within NZS3604:2011. Building foundations will require either specific foundation design for expansive soils or foundation design in accordance with AS2870:2011 (with updated return periods from B1/AS1) and the New Zealand Building Code B1/AS1.

Subject to design issues outlined in Sections 5, 6 and 7, each residential Lot is considered to have a building platform area suitable for domestic residential development subject to specific geotechnical assessment and foundation design due to the presence of expansive soils and sloping ground. Refer Section 7 for summary of specific site investigation and foundation design requirements.

1 Introduction

1.1 Project Brief and Scope

Haigh Workman Ltd (Haigh Workman) have been engaged by Te Runanga O Whaingaroa to prepare a geotechnical assessment report for use in support of a Subdivision and Land Use Consent application for a proposed 19 residential lot subdivision. A scheme plan has been produced by Chester Consultants (Proposed Subdivision of Lot 2, DP 563441).

This report addresses the suitability of the site for subdivision and subsequent residential development. As part of this assessment, the following work has been undertaken:

- A walkover geotechnical inspection of the site with surface mapping of the geomorphological features.
- Reference to geological maps to assess the likely underlying geology and subsoil conditions.
- A review of available existing geotechnical reports.
- A review of aerial photographs.
- Geotechnical investigations, including 20 hand augerholes to assess near surface subsoil conditions and 11 cone penetrometer tests (CPTs) to in-situ strength data to a greater depth.

This report summarises our findings and recommendations and may be used in Civil design and to support a Subdivision Consent application to Far North District Council. The principal objectives of the investigation are to develop geotechnical models of the site so that geotechnical constraints to the proposed subdivision can be identified and to provide assurance to Council that a stable building platform is available or can be made available within each of the proposed Lots.

2 Site Description and Proposed Development

2.1 General

Site address: 2B Ash Grove Circle, Haruru

Legal description: Lot 2, DP 563441

Site area: 2.35 hectares

The site is situated along State Highway 11 in Haruru and is irregular in plan shape. The western portion of the site slopes towards the north-west and is covered with grass and some mature trees present near the northern boundary (encompassing Lots 1 to Lot 13). Lots 14 to Lot 17 are located on a gently sloping ridge spur towards the east, and currently are bush clad. The remaining lots, Lot 18 and 19, are on moderately steep land (20-25 degrees), generally sloping towards the south-east, and are bush clad. Access tracks were created to allow access for geotechnical investigation.

An existing motel is located along the northern boundary to the site. There is an existing small pond on proposed Lot 1, which receives the stormwater runoff from the motel (Lot 1, DP 419934). A recreation reserve is present adjoining the eastern and south-eastern boundary of the site (Lot 6, DP 102209). The site currently has access from Ash Grove Circle present at the northern boundary of the site. The subject site area is shown in Figure 1.

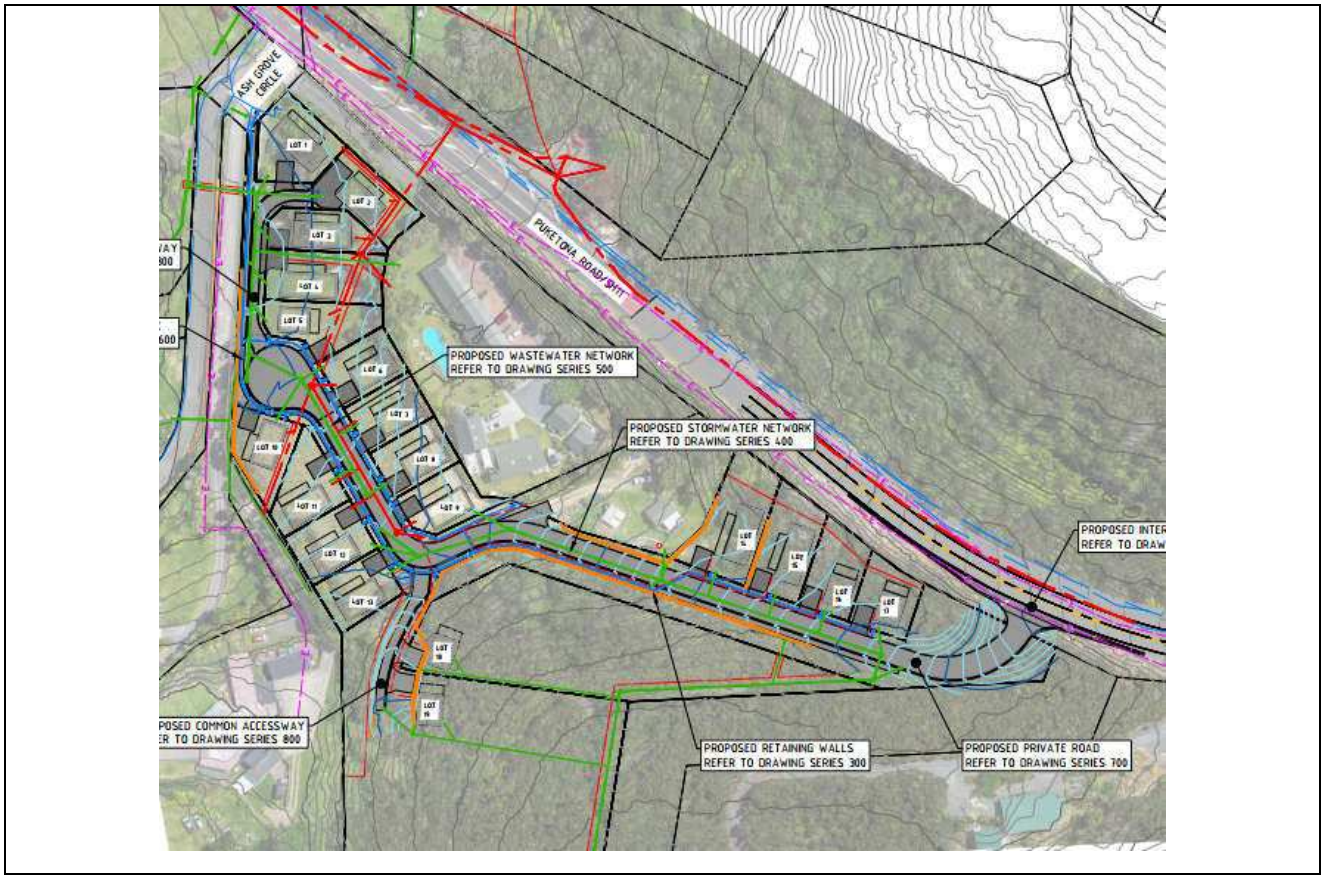

Figure 1 - Site Location

2.2 Site Walkover

A geotechnical engineer and engineering geologist undertook a site walkover to determine site features and undertake site mapping. Instability features, including shallow terracette formations and trees leaning with the slope angles were observed on the slopes exceeding 20 degrees (Lot 18 and Lot 19).

An existing pond is present onsite near the northern boundary (proposed Lot 1) which currently acts as stormwater discharge point for neighbouring property Lot 1 DP 419934. The overflow from the pond flows into the drain present on the northern boundary. Based on the existing site topography, existing overland flows from proposed Lot 1 to Lot 13 will generally be in a north-westerly direction, proposed Lots 18 Lot 19 will be towards the south-east, and proposed Lots 14 to 17 will drain towards State Highway 11 in a north-east direction.