

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 [Form 9](#)). 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):

- | | |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <input checked="" type="radio"/> Land Use | <input type="radio"/> Discharge |
| <input type="radio"/> Fast Track Land Use* | <input type="radio"/> Change of Consent Notice (s.221(3)) |
| <input checked="" type="radio"/> Subdivision | <input type="radio"/> Extension of time (s.125) |
| <input type="radio"/> Consent under National Environmental Standard
(e.g. Assessing and Managing Contaminants in Soil) | |
| <input type="radio"/> Other (please specify) _____ | |

**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?

Who else have you
consulted with?

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:

Far North Housing Limited

Email:

Phone number:

Postal address:

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

Have you been the subject of abatement notices, enforcement orders, infringement notices and/or convictions under the Resource Management Act 1991? ☐ Yes ☒ No

If yes, please provide details.

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6. Address for correspondence

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

Name/s:

Steven Sanson - Sanson & Associates Limited

Email:

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.

Yes - please send all correspondence to myself and Adrian Tonks

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:

Far North Holdings Limited

**Property address/
location:**

84 Gillies Street, Kawakawa [Old Whangae Road]

Postcode

8. Application site details

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

Name/s:

Far North Holdings Limited

Site address/
location:

84 Gillies Road [Old Whangae Road]

Postcode

Legal description:

Lot 92, 98 Deeds Plan W 46

Val Number:

Certificate of title:

NA523/225

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.

Please contact applicant and agent prior to site 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.

Combined land use and subdivision consent for a housing project comprising 30 residential units.

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

☒ Regional Council Consent (ref # if known)

☐ National Environmental Standard Consent

☐ Other (please specify)

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

☐ Disturbing, removing or sampling soil

☐ Changing the use of a piece of land

☐ 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

14. Draft conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? ☒ Yes ☐ No

If yes, please be advised that the timeframe will be suspended for 5 working days as per s107G of the RMA to enable consideration for the draft conditions.

15. 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)

Far North Housing Limited

Email:

Phone number:

Postal address:

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

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.

15. Billing details continued...

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)

Adrian Tonks

Signature:

(signature of bill payer)



Date 05-Dec-0202

MANDATORY

16. 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.


17. Declaration

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

Name (please write in full)

Adrian Tonks

Signature



Date 05-Dec-2025

Application is made by electronic means

See overleaf for a checklist of your information...

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.



SANSON & ASSOCIATES LTD

Planners & Resource Consent Specialists



Assessment of Environmental Effects

Application for Resource Consent:

A Combined Multi-Unit Development and Subdivision of Lot 92, 98 Deeds Plan W46,
Kawakawa

Prepared for: Far North Housing Limited
By: Steven Sanson | Consultant Planner
Reviewed: Andrew McPhee | Consultant Planner
Date: December 2025

1.0 APPLICANT & PROPERTY DETAILS

Applicant	Far North Housing Limited
Address for Service	Sanson & Associates Limited PO Box 318 PAIHIA 0247 C/O - Steven Sanson steve@sansons.co.nz 021-160-6035
Legal Description	Lot 92, 98 Deeds Plan W 46
Record Of Title	NA523/225
Physical Address	84 Gillies Street, Kawakawa
Site Area	7,588m ² [Topo Confirmed]
Owner of the Site	Far North Holdings Limited
District Plan Zone	Commercial / Rural Production in the operative Far North District Plan [ODP] Mixed Use Zone in the Proposed Far North District Plan [PDP]
District Plan Features	Pedestrian Frontage ; Historic Site 61 – Star Hotel
Archaeology	Nil
NRC RPS Overlays	River Flooding
Soils	Class 4 / Town
Protected Natural Area	Nil
HAIL	Grassland / Built Up Area
Wetlands	Nil (According to NRC Biodiversity Wetlands Maps)

2.0 SUMMARY OF PROPOSAL

Proposal	<p>The proposal is for a Resource Consent to construct a medium-density, multi-residential development at Old Whangae Road, including 30 residential units [18 x 1-bed and 12 x 2-bed] designed as six, two-storey blocks, with 35 car parks and open space.</p> <p>The proposal also includes an associated subdivision.</p>
Reason for Application	<p>Consent is required for the following activities in the ODP and PDP.</p> <ul style="list-style-type: none"> • 8.6.5.1.1 Residential Intensity • 8.6.5.1.2 Sunlight • 8.6.5.1.3 Stormwater Management • 8.6.5.1.4 Setback from Boundaries • 8.6.5.1.5 Transportation • 8.6.5.1.10 Building Coverage • 12.3.6.1.1 Excavation / Filling in the Rural Production Zone • 12.7.6.1.1 Setback from Rivers • 13.7.2.1 Minimum Lot Sizes • 14.6.1 Esplanade Areas • 15.1.6A.2.1 Traffic Intensity • 15.1.6B.1.1 Car Parking Spaces • 15.1.6C.1.1[c] Private Access in All Zones • SUB-R14 Subdivision [PDP] <p>Overall, the proposal is a Non Complying Activity.</p>
Appendices	<p>Appendix A – Record of Title & Instruments</p> <p>Appendix B – Architectural Drawings</p> <p>Appendix C – Scheme Plan</p> <p>Appendix D – Engineering Reports and Plans [Geotech, Three Waters, Civil Plans].</p> <p>Appendix E – Consultation</p> <p>Appendix F – NRC Application [Provided on Request]</p>
Consultation	Refer Appendix E.

3.0 INTRODUCTION & PROPOSAL

3.1 Report Requirements

This report has been prepared for Far North Housing Limited in support of a land use and subdivision consent application at Old Whangae Road, Kawakawa.

Section 88 of the Resource Management Act 1991 [RMA] requires that every resource consent application shall be made in the prescribed form and manner and includes the information relating to the activity, including an assessment of the activity's effects on the environment, as required by Schedule 4.

Schedule 4 of the RMA outlines the matters which must be included within an application for resource consent, including:

- a) a description of the activity:
- b) a description of the site at which the activity is to occur:
- c) the full name and address of each owner or occupier of the site:
- d) a description of any other activities that are part of the proposal to which the application relates:
- e) a description of any other resource consents required for the proposal to which the application relates:
- f) an assessment of the activity against the matters set out in Part 2:
- g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b).

Schedule 4 also defines additional matters to be included in an application for subdivision consent and the matters to be considered when preparing an assessment of effects on the environment.

These statutory requirements are addressed in the application.

3.2 Description of Proposal

The proposal is for 30 residential units [18 x 1-bed and 12 x 2-bed] designed as six, two-storey blocks, with 35 car parks and open space.

Footpaths and internal access are provided to Old Whangae Road, with the footpath extending across adjoining sites connecting to the wider surrounds.

Part of the site adjoins State Highway 1 where the Star Hotel is located across this frontage.

Part of the Twin Coast Cycle Trail connects through the site Old Whangae Road.

As announced by FNDC in November 2022, Kawakawa has been allocated \$25.6 million specifically for road extensions and significant water infrastructure upgrades to enable approximately 300 new homes. This proposal serves as a key component of that planned growth, utilizing the capacity enabled by this confirmed government funding.

Unit Configuration

The unit breakdown for the development is as follows:

- Total Units - 30
 - One-Bedroom Units: 18 units [Block A, Block B, and Block E]
 - These are contained within three separate, two storey blocks containing six units each. Three units are located on the ground floor, and three units are located on the first floor per Block.
 - The units on the ground floor [Type A1] are proposed to be 57.5m² in size.
 - The first-floor units [Type A2] are proposed to be 60.5m².
 - Two-Bedroom Units: 12 units [Block C, Block D, and Block F]

- These are contained within three separate, two storey blocks containing three, four and five units each. These units take up both the ground and first floor.
- The Type B2 units are proposed to be 43.5m² on the ground flood and 46.11m² on the first floor.



Figure 1 – Proposal Site Plan [Source: Eclipse Architecture]

The proposal also includes a stage subdivision of the sites involved as follows:

Stage 1:

Lot 1: 0.6055ha

Lot 3: 0.1655ha [0.1503ha Net].

Stage 2:

Lot 1: 0.3593ha [0.3104ha Net]

Lot 2: 0.2462ha

The subdivision rationale allows for the allotment containing the Star Hotel to be separated from the allotment where development is proposed via Stage 1.

Stage 2 further separates the development site into two lots to allow for the development to be owned by different entities. Easements are provided to facilitate this.

With respect to the subdivision of the sites this results in:

- Block A, Block B and Block C being located in Lot 1 of Stage 2. This includes 19 car parks, three of which are accessible and 8 x bike parks.
- Block D, Block E and Block F being located in Lot 2 of Stage 2. This includes 16 car parks, three of which are accessible, and 8 x bike parks. The rubbish collection area is located in this allotment.

It is understood that the general cadence of the development would be to undertake Stage 1 on the assumption that minimal physical works are required. The crossings for Lot 3 are proposed to be undertaken with the development in Stage 2.

Following completion of Stage 1, the land use development would take place across Lot 1 of Stage 1, and on completion of the land use development, the site would be subdivided in accordance with the Stage 2 scheme plan.



Figure 2 – Proposal Scheme Plan [Source: Survey Worx]

Site Earthworks & Retaining

The project requires earthworks over an area of 4,790m². The planned earthworks volumes are:

- Cut: 0m³
- Fill: 8,965m³

The volume of earthworks requires both FNDC and NRC consents. Various retaining walls are required with heights of 1.1m, 1.2m, 1.9m and 2m. An earth wall that is 2.5m in height is promoted around the boundary of the site.

To address the underlying alluvial soils and flood plain location, the proposal involves specific engineering methodologies:

- Foundation - Construction of a geogrid-reinforced engineered gravel raft to mitigate differential settlement risks.
- Stormwater - Installation of a 525mm diameter negative-grade pipe beneath the building platform to replicate pre-development overflow paths.
- Levels - Raising the finished ground level to RL 6.75m to achieve freeboard above the 1% AEP flood level with 7.0m finished floor levels [FFL].

Access & Carparking

A new commercial double vehicle crossing will be constructed on Old Whangae Road to provide access to the development site. This will be provided in accordance with Council Engineering Standards.

Similarly, two new commercial double crossings are proposed to Lot 3 that contains the Star Hotel.

For the 30 units, 35 car parks are proposed to be provided, six of which are proposed to be accessible. 16 bike parks are provided across two separate areas.

A 1.8m footpath and kerbing is proposed from the development along Old Whangae Road to Gillies Street.

Various road marking is proposed to tie into the road arrangements along Whangae Road / Gillies Street.

Impervious Surfaces

The development site [i.e exclusive of Lot 3] has existing pavement areas of 1,100m². The existing pervious area is 4,811m².

This is proposed to be changed by having a roof area of 1,187m², access of 1,172m², path area of 510m² and pervious areas of 3,042m². This results in 49% coverage of the site.

Landscaping and Outdoor Amenity Areas

The development incorporates both private and outdoor communal amenity areas, with significant landscaping proposed throughout the site.

- Each Type A1 dwelling has at least 20m² of private outdoor areas. Type A2 dwellings have a balcony and deck which is ~5.92m² in size.
- The Type B2 dwellings have dual outdoor areas with ~27m² provided outdoors on the ground floor.
- As above, the development contains up to 3,552m² of open space / landscaping overall. This includes considerable communal open space and internal footpaths which connect to the surrounds.

Infrastructure

In terms of water supply , the proposal involves extending the existing 50 mm diameter rider main along the eastern side of Old Whangae Road. Blocks A & B will connect to the new extended 50 mm rider main. Blocks C, D, E & F will connect to the existing 50 mm rider main on the western boundary.

Reports confirm the network has sufficient pressure to handle the development's peak hourly demand and meet firefighting requirements [to FW2] without compromising minimum service levels.

In terms of wastewater, a new private 150 mm PVC gravity network will be constructed within the site to service all residential blocks [A–F]. This internal network will discharge directly into the existing 300 mm concrete gravity main that runs through the southern portion of the site.

While there are no constraints at the connection point, known downstream capacity issues are currently being addressed by a separate Council upgrade project funded by the Infrastructure Acceleration Fund.

In terms of stormwater, a new stormwater network will collect runoff from all blocks and discharge it to the northern side of the existing diversion bank. A new 525mm diameter pipe will be installed beneath the building platform at a negative grade.

The pipe only takes stormwater in moderate to extreme flood events, i.e. rarely ever has any flow in it. It would work as an inverted syphon (i.e. two MH with a connection pipe between them) so that pipe fully drains between events. It also means the inlet is fully submerged before it starts flowing reducing the risk of blockages.

This is designed to replicate the pre-development overflow path, conveying floodwaters from the eastern unlined channel to a scruffy dome outlet west of Old Whangae Road. No onsite detention [attenuation] is required because the site is located at the bottom of the catchment.

Supporting Documents

The proposal is supported by numerous plans and reports.

Appendix A contains the Record of Title and Instruments for each site subject to development.

Appendix B contains the development plans for the proposal. This includes a site location plan, visuals, 3D overview, site plan, floor plans, elevations and sections.

Appendix C contains the proposed stage subdivision associated with the proposal including easements.

Appendix D includes a Geotechnical Report, a Three Waters Report which considers the flooding implications of the development and engineering plans.

Appendix E contains consultation with FNDC via CDM notes, Top Energy, Chorus and NZTA.

Appendix F can be provided on request which is an application to the Northland Regional Council for authorisations associated with earthworks and structures within the Waiomio Stream.

Activity Status: The proposal is a Non-Complying Activity.

4.0 SITE & SURROUNDING ENVIRONMENT

4.1 Zoning & Resource Features

The site is located Old Whangae Road, Kawakawa. The site is 7,588m² and is legally described as Lot 92, 98 Deeds Plan W 46. The site is limited to parcels, however a topo survey has been undertaken and confirms the site size and boundaries.

The property has a mixed zoning under the ODP, being Commercial and Rural Production. Under the PDP, the site is in the Mixed Use Zone.

The site is subject to a pedestrian frontage overlay and the Star Hotel located along the State Highway 1 frontage is considered to be a Historic Building [#61]. These features also apply under the PDP.



Figure 3 – Site Location [Source: Prover]

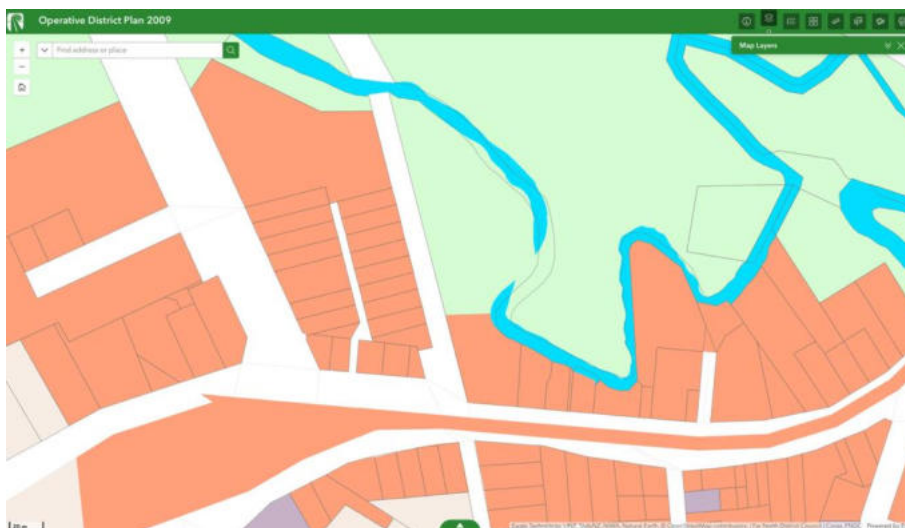


Figure 4 - FNDC Zone Map [Source: Far North Maps]

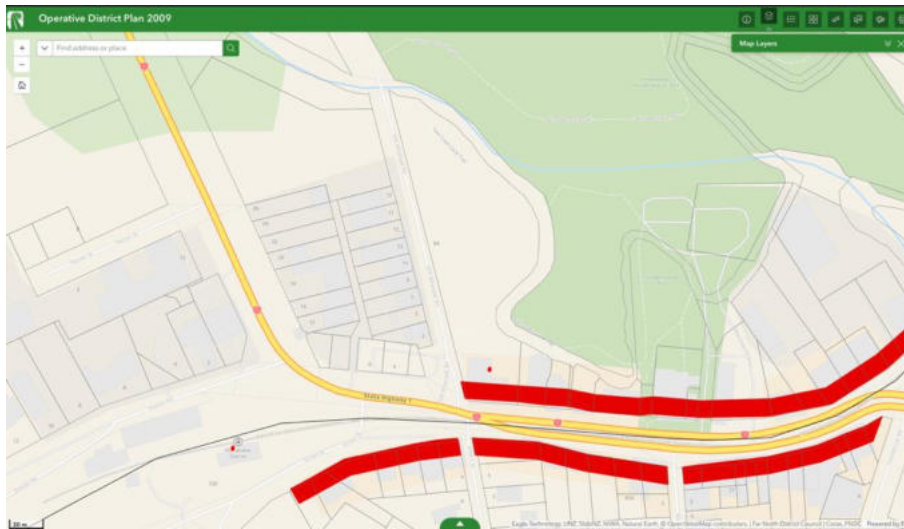


Figure 5 - FNDC ODP Features Map [Source: Far North Maps]

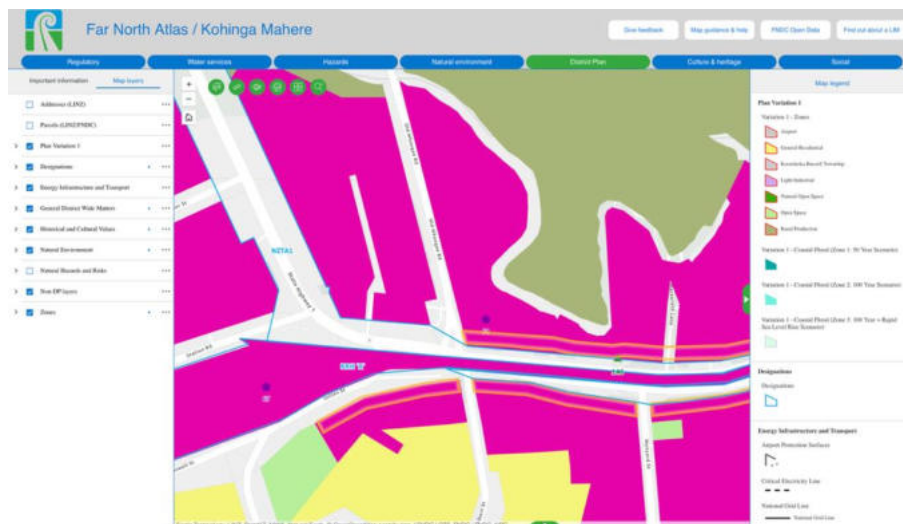


Figure 6 - FNDC PDP Zone & Features Map [Source: Far North Maps]

4.2 Record of Title & Instruments

The Record of Title and relevant instruments are provided in [Appendix A](#). These are not considered to be of concern to the proposed development.

4.4 Topography & Natural Features

The site is reasonably flat and is located next to a stream and existing flowpaths. The site is subject to flooding as outlined by Far North District Council maps.

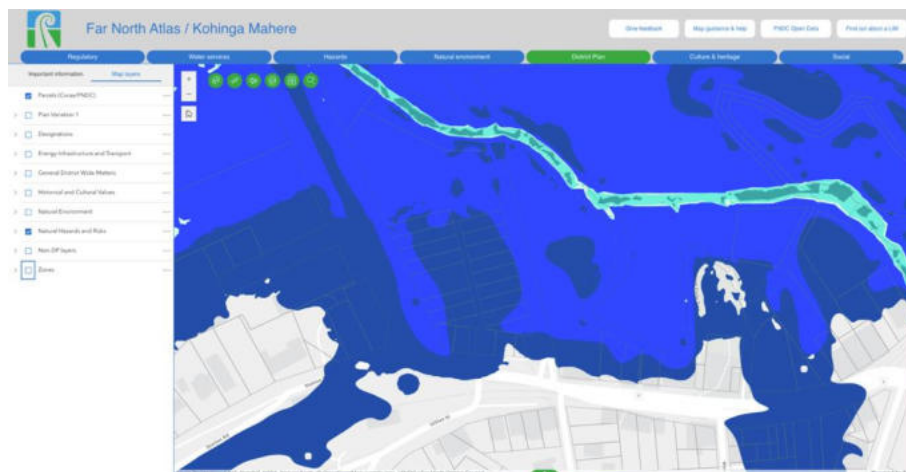


Figure 7 - Flooding [Source: Far North Maps]

4.5 Built Form & Access

The area where developed is proposed has been recently cleared and subject to works associated with the Waiomio Stream. The site also contains the Star Hotel and associated car parking. The site has access from State Highway 1 and Old Whangae Road. The site has access to services as outlined below.

The land cover of the site has been pasture and built up settlement as per [Figure 9](#).

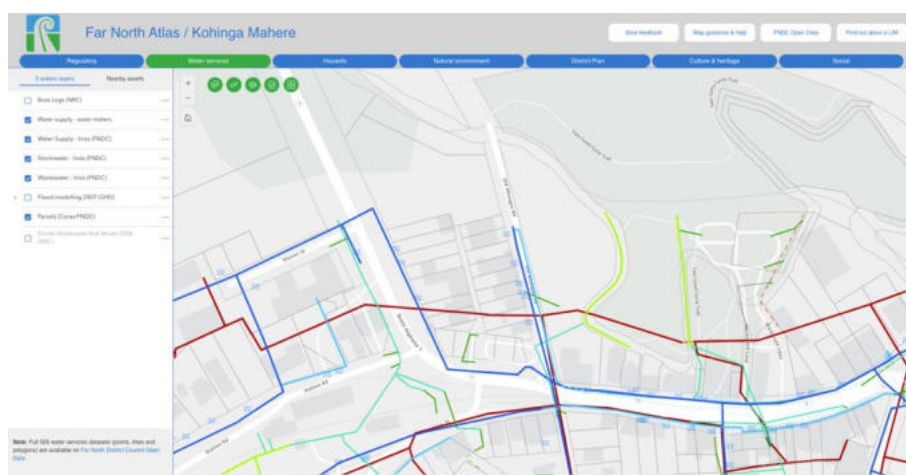


Figure 8 - Services [Source: Far North Maps]

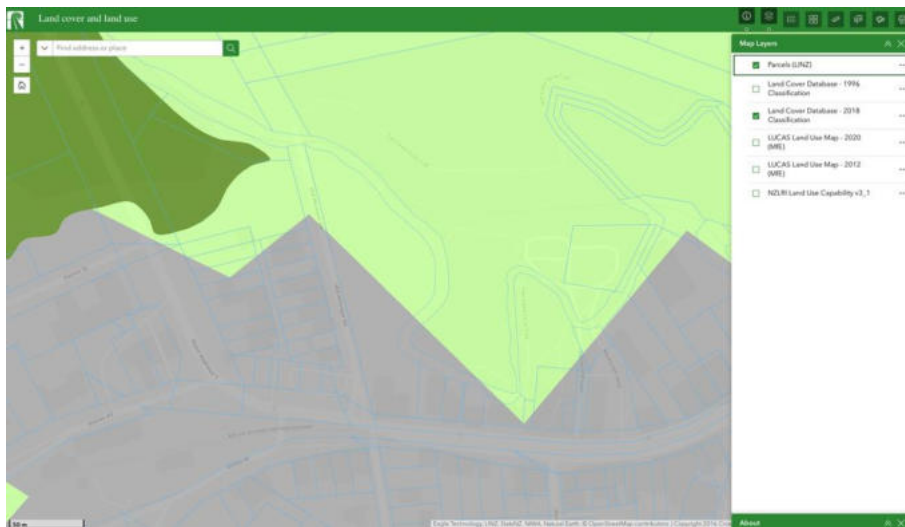


Figure 9 - Landcover [Source: Far North Maps]

4.6 Surrounding Environment

The site is located in an area with a variety of uses that are established along the State Highway and along Old Whangae Road. Along the State Highway, this includes usual activities such as a liquor store, laundromats, grocers, NZ Post, food shops, gas stations and Te Hononga – Kawakawa Library. Along Old Whangae Road, this includes areas for parking, and light industrial activities such as panel beaters, engineering firms, and funeral services.

The variety of uses are commensurate with the Mixed Use zone proposed for the area and wider surrounds.

5.0 ASSESSMENT OF RELEVANT RULES

5.1 Assessment

An assessment of the relevant rules of the ODP Plan is provided in the Tables below.

Note: An assessment of the Commercial Zone rules has not been undertaken as all development is located in the Rural Production Zone.

Table 1 – Rural Production Zone Rule Assessment

Rule	Assessment	Status
8.6.5.1.1 Residential Intensity	30 dwellings are well outside the permitted number of dwellings allowed.	Non-Complying
8.6.5.1.2 Sunlight	It is likely that there are sunlight breaches along Old Whangae Road.	Restricted Discretionary
8.6.5.1.3 Stormwater Management	The proposal includes an additional 2,869m ² of impervious surfaces. This results in 49% coverage.	Discretionary
8.6.5.1.4 Setback	Buildings are within 10m setbacks.	Restricted Discretionary
8.6.5.1.5 Transportation	Traffic Intensity breach for 30 dwellings [300 movements] which is above the 60 permitted. Parking breach as current plan requires 2 per dwellings. Access breaches as 30 dwellings requires a vested road standard.	Discretionary
8.6.5.1.6 Keeping of Animals	Not relevant	Complies
8.6.5.1.7 Noise	Residential type noise anticipated	Complies
8.6.5.1.8 Building Height	All buildings are less than 12m in height	Complies
8.6.5.1.9 Helicopter Landing Area	Not relevant	Complies
8.6.5.1.10 Building Coverage	The proposal contains 1,187m ² of buildings. This results in 20.08% coverage.	Discretionary
8.6.5.1.11 Scale of Activities	Not relevant as residential use proposed.	Complies

8.6.5.1.12 Temporary Events	Not relevant	Complies
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Table 2 – District Wide Matters

Rule	Assessment	Status
12.1 Landscapes & Natural Features	Not relevant.	Complies
12.2 Indigenous Flora & Fauna	Not relevant.	Complies
12.3 Soils & Minerals	The proposal includes more than 5,000m ³ of works and retaining walls above 1.5m in height.	Discretionary.
12.4 Natural Hazards	Not relevant.	Complies
12.5 Heritage	The proposal does not seek to alter, undertake maintenance, remove or destroy the existing heritage building.	Complies
12.7 Lakes, Rivers and Wetlands	Development is within 30m of the Waiomio Stream	Discretionary
12.8 Hazardous Substances	Not relevant.	
12.9 Renewable Energy & Energy Efficiency	Not relevant.	Complies
13 Subdivision	The Commercial Zone subdivision of Lot 3 is Controlled. The Rural Production Zone	Non-Complying

	subdivision is Non-Complying.	
14 Financial Contributions	At this stage the proposal does not provide an esplanade reserve along the Waiomio Stream	Discretionary
15 Transportation	<p>The proposal generates 300 traffic movements in the Rural Production Zone [Rule 15.1.6A.2.1].</p> <p>35 car parks are provided whereas 60 car parks are required [Rule 15.1.6B.1.1].</p> <p>The proposal should be accessed from a vested road due to servicing more than 8 household equivalents [Rule 15.1.6C.1.1].</p>	Discretionary
16 Signs and Lighting	Not relevant	Complies
17 Designation	Not relevant.	Complies
18 Special Areas	Not relevant.	Complies
19 GMO's	Not relevant.	Complies

Overall, the proposal is a **Non Complying Activity**.

In terms of Regional Council matters, various consents are required, and resource consent is being sought concurrently. A copy of this application is available upon request.

Table 3 – PDP Rules with Legal Effect

Rule	Assessment
Hazardous Substances	Not relevant as no such substances proposed. Complies
Heritage Area Overlays	Not indicated on PDP. Complies
Historic Heritage	Rules HH-R1 to HH-R10 are not relevant as no works are proposed to the existing Star Hotel. Complies
Notable Trees	Not indicated on PDP. Complies
Sites and Areas of Significance to Māori	There are no activities proposed within the SASM. Complies
Ecosystems and Indigenous Biodiversity	Not relevant as no clearance proposed.
Activities on the Surface of Water	Not indicated on PDP. Complies
Earthworks	Proposed earthworks will be undertaken in accordance with the relevant standards including GD-05 and will have an ADP applied. Complies
Signs	Not indicated on PDP. Complies
Orongo Bay Zone	Not indicated on PDP. Complies
Subdivision	A Restricted Discretionary consent is required under the PDP in terms of SUB-R14 –

	Subdivision of a site that contains a scheduled heritage resource.
	Restricted Discretionary

Resource consent is also required under the PDP.

This report provides a considered assessment of relevant NPS's and NES's and in summary, no further consents are required under these higher order documents.

6.0 NOTIFICATION ASSESSMENT

6.1 Public Notification

The table below outlines the steps associated with public notification insofar as it relates to s95 of the RMA.

Table 4 – s95 Adverse Effects Assessment

<u>Step 1</u>	Mandatory public notification in certain circumstances	
S95A(3)(a)	Has the applicant requested that the application be publicly notified?	No
S95A(3)(b)	Is public notification required under section 95C?(after a request for further information)	TBC
S95A(3)(c)	Has the application been made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.	No
<u>Step 2</u>	if not required by step 1, public notification precluded in certain circumstances	
S95A(5)(a)	Is the application for a resource consent for 1 or more activities and each activity is subject to a rule or national environmental standard that precludes public notification?	No
S95A(5)(b)	Is the application for a resource consent for 1 or more of the following, but no other, activities; (i) a controlled activity; (i) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity;	No

7.0 EFFECTS ON THE ENVIRONMENT

Effects on persons who are owners and occupiers of the land in, on, or over which the application relates, or of adjacent land must be disregarded when considering effects on the environment (s 95D(a)). Adjacent persons are shown and listed in [Figure 5](#) and [6](#) below.

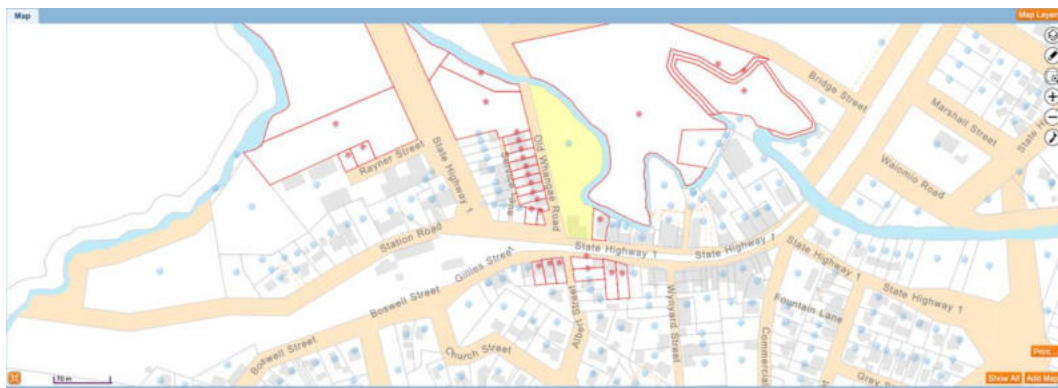


Figure 10 - Site & Surrounds [Source: Prover]

Address	Capital Value	Last Sale Date	Last Sale Price	Land Area	Floor Area	Cat
3 Old Whangae Road Kawakawa Far North	64000			287 m²		IVP Industrial Vacant
4 State Highway 1 Kawakawa Far North						null Undefined
5 Old Whangae Road Kawakawa Far North	80000	11 Jul 2002	50000	343 m²		IVP Industrial Vacant
7 Old Whangae Road Kawakawa Far North	79000	23 Mar 2023	170000	336 m²	140 m²	ILP Industrial Light manufacturing
9 Old Whangae Road Kawakawa Far North	150000	01 Jan 1900	81000	329 m²	210 m²	ISP Industrial Service
11 Old Whangae Road Kawakawa Far North	106000			329 m²	170 m²	ISP Industrial Service
13 Old Whangae Road Kawakawa Far North	117000	31 Jul 2017	120000	329 m²	200 m²	ISP Industrial Service
80 Gillies Street Kawakawa Far North	195000	04 Jun 2014	200000	559 m²	454 m²	CRPB Commercial Retail
15 Old Whangae Road Kawakawa Far North	78000	27 Jun 2004	9857	336 m²		IVP Industrial Vacant
17 Old Whangae Road Kawakawa Far North	300000	27 Jun 2004	220143	658 m²	480 m²	ILP Industrial Light manufacturing
53 Gillies Street Kawakawa Far North	650000	01 Mar 2016	650000	1,872 m²	596 m²	CXP Commercial Multiple/unknown
71 Gillies Street Kawakawa Far North	550000	23 Dec 1996	245000	1,067 m²	1,100 m²	CXP Commercial Multiple/unknown
0 Bridge Street Kawakawa Far North	560000	01 Jan 1900	25000	3.3656 ha		OP Other Passive
0 State Highway 1 Kawakawa Far North	165000	06 Jun 2008	36000	6,081 m²		IVP Industrial Vacant
8 Rayner Street Kawakawa Far North	1860000			5.6664 ha	458 m²	CKP Commercial Education

Figure 11 – Adjacent / Adjoining Persons [Source: Prover]

7.1 Effects that May be Disregarded

The permitted baseline may be taken into account should the Council deem it relevant. In relation to the proposal, the permitted baseline is not considered overly relevant as only a small amount of legitimate permitted development could take place on this split zoned site.

7.2 Effects Assessment

The following assessment has been prepared in accordance with Section 88 and Schedule 4 of the RMA which specifies that the assessment of effects provided

should correspond with the scale and significance of the proposal. The effects of the proposal are considered in [Table 5](#) below.

[Table 5 – Effects Assessment](#)

Item	Assessment Criteria	Assessment
Positive Effects	Nil	<p>Cultural Wellbeing</p> <ul style="list-style-type: none"> • <u>Expression of Kaitiakitanga and Identity</u> The architectural plans explicitly incorporate a Pou Whenua within the central communal courtyard. This physical marker serves as a cultural anchor, reinforcing the connection to the land and the identity of Ngāti Hine within the development. • <u>Housing for Mana Whenua</u> In partnership with the Ngāti Hine Health Trust, the development provides secure housing within the rohe, allowing whānau to remain connected to their ancestral lands and community support networks rather than being displaced due to a lack of housing stock. <p>Social Wellbeing</p> <ul style="list-style-type: none"> • <u>Addressing Housing Need</u> The proposal delivers 30 new residential units [18 one-bedroom and 12 two-bedroom units]. This medium-density approach significantly increases the local housing stock, directly addressing housing deprivation in the area. • <u>Accessibility and Universal Design</u> The architectural drawings confirm compliance with Universal Design Standards. Features include level entry thresholds, wider doors [810mm+], and ground-floor bathrooms. This ensures the housing caters to kaumātua and

		<p>whānau with mobility issues, promoting social inclusion and aging in place.</p> <ul style="list-style-type: none"> • <u>Walkability and Connectivity</u> The site is highly connected, located within walking distance of essential social infrastructure: <ul style="list-style-type: none"> ○ Local Town Centre: 1-10 minutes. ○ Primary School: 8 minutes. ○ High School: 20 minutes. • <u>Community Design</u> The Master Plan emphasizes social interaction through the inclusion of shared courtyards, a pergola, and pedestrian-friendly pathways connecting the blocks internally and externally. <p>Economic Wellbeing</p> <ul style="list-style-type: none"> • <u>Construction Employment</u> The project involves significant civil works, including 8,965m³ of fill for earthworks, construction of retaining walls, and 30 residential units. This will generate immediate employment and economic activity for local contractors and tradespeople. • <u>Support for Local Economy</u> By placing 30 households within 500m of the Kawakawa town center, the development increases foot traffic and customer base for local businesses and services, contributing to the town's economic vitality. • <u>Efficient Land Use</u> The proposal converts underutilized land into high-value medium-density housing, maximizing the economic utility of the land resource within the existing urban limit. <p>Environmental Wellbeing</p>
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		<ul style="list-style-type: none"> • <u>Flood Resilience and Climate Adaptation</u> A major environmental benefit is the remediation of flood hazards. The proposal raises the FFL of the units to 7.0m, placing building platforms 500mm above the 1% AEP flood level [including climate change allowance]. • <u>Improved Drainage Infrastructure</u> The project includes the installation of a new 525mm diameter negative-grade stormwater pipe beneath the site. This infrastructure replicates pre-development overflow paths, conveying floodwaters from the unlined channel to a discharge point, ensuring no adverse flooding effects on upstream or downstream properties. • <u>Land Remediation</u> The geotechnical strategy involves stabilizing weak alluvium soils through preloading and the construction of engineered gravel rafts. This improves the stability and safety of the land, making it suitable for long-term habitation. • <u>Landscape and Permeability</u> Despite the density, the site plan maintains 50% landscape area across the development, which assists with onsite amenity and permeable surface area for surface water management.
Residential Intensity, Setbacks and Sunlight	Chapter 11 and Chapter 12	<p>Residential Intensity [Chapter 11.1]</p> <ul style="list-style-type: none"> • <u>Scale and Character</u> The design breaks the massing into six distinct blocks [A–F] separated by courtyards and parking to reduce visual dominance. It is acknowledged that the design of the proposal does not address Old Whangae Road and proposes to instead front the Waiomio Stream. This is largely due to the nature of Old Whangae Road being a no exit road with minimal pedestrian interaction. However, some units do address Old Whangae Road with their outdoor living space. The design is

		<p>considered to meet the right balance of being appropriately separated from the Stream, take advantage of its amenity, and contextualising the built development against the nature and purpose of Old Whangae Road.</p> <ul style="list-style-type: none"> • <u>Heights</u> The scale of the buildings are within the height limits for the zone. • <u>Visual Dominance</u> The use of varied cladding materials [fibre cement, profiled metal] and articulated rooflines breaks up the building bulk, reducing visual domination. • <u>Setback and Sunlight</u> The development has numerous interfaces where it is not setback at least 10m from site boundaries. At the Old Whangae Road interface, the effects here are limited to pedestrians and road users which is currently limited due to it be a no – exit road. The placement of the buildings close to this boundary is unlikely to impact any future roading decisions. Setback and sunlight at the other interface is limited by the existence of stormwater infrastructure which provides additional separation to other activities and in effect acting as an addition boundary / setback buffer for the development. The internal setback and sunlight breaches are appropriate as the main access road has been positioned here to ensure access to sunlight is maximised and that impact to privacy are minimised. <p>Lakes, Rivers, Wetlands [Chapter 12.7.7]</p> <ul style="list-style-type: none"> • <u>Cultural Values [Criterion a]</u> The development notes the importance of the Waiomio Stream and has sought to position buildings to allow for its amenity to be a positive effect for the development. Development
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		<p>impacts from earthworks and ongoing servicing are considered to be appropriately mitigated. The site is not considered as a site of significance. There are no known archaeological sites present.</p> <ul style="list-style-type: none"> • <u>Natural Hazards [Criterion c]</u> The proposal actively mitigates flood hazards by raising the FFL of units to 7.0m, which is 500mm above the 1% AEP flood level. The Geotech report also recommends a Reinforced Earth Wall to withstand erosion forces from flood waters. • <u>Amenity and Natural Character [Criterion d & e]</u> Having at least a 50% landscape area helps soften the built environment's impact on the stream margin. The setback is well below what is envisaged, however ensures the buildings do not visually crowd the stream edge. The site is developed in terms of stream protection works and the existing connecting footpath through the site. • <u>Water Quality [Criterion f, g, & h]</u> The design includes a new stormwater outlet with a concrete headwall and riprap protection down to the water level to prevent scour and erosion, thereby protecting water quality. The development connects to reticulated sewerage, avoiding on-site disposal risks to the stream. The stormwater features are compatible with fish passage and appropriately mitigate effects to fauna and flora. • <u>Functional Need [Criterion k]</u> The site is adjacent to the water body and is proposed to be rezoned to Mixed Use through the PDP. The proposed activity is consistent with that future use proposed by Council. • <u>Public Access [Criterion k]</u> The Civil Plans identify an existing Foot Bridge and Existing Path near the stream margin, which
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		are integrated into the site layout, maintaining connectivity.
Stormwater & Building Coverage	Chapter 11	<p>Stormwater Management [Chapter 11.3]</p> <p>The Three Waters Report confirms that stormwater neutrality is not required because the site is located at the bottom of the catchment. Runoff discharges directly to the northern side of the diversion bank, meaning peak flows do not compound upstream flood peaks.</p> <p>To manage the alteration in natural drainage, the proposal includes a specific engineering solution, being a new 525 mm diameter negative-grade pipe. This infrastructure is designed to replicate the pre-development overflow behaviour of the existing unlined channel, ensuring that the raising of the land does not dam or divert overland flows onto neighbouring properties.</p> <p>The proposal actively provides for climate change by setting FFL at RL 7.00m [500mm freeboard above the 1% AEP + CC level]. This demonstrates a robust response to future climate risks.</p> <p>The Three Waters report details a scruffy dome intake and a new outlet with a concrete headwall and riprap protection. These engineering solutions prevent scour and erosion at the discharge point. The hydraulic modelling confirms that these measures result in a negligible difference in flood depths between the pre- and post-development scenarios, satisfying the requirement to mitigate adverse effects.</p> <p>Building Coverage [Chapter 11.24]</p> <p>The development site remains with 50% open space following completion of the development. This is</p>

		<p>considered appropriate in context of the site and the stormwater environment it is located.</p> <p>The buildings are proposed to be modern dwellings and are not in keeping with the surrounding buildings but are not out of place in this environment. Private open space is appropriately provided for, as is communal open space on the site for residents.</p> <p>The scale and bulk of buildings are addressed above. The design approach has been to develop the site into a series of blocks as opposed to a monolithic structure. Heights are in keeping with the permitted standard. The closeness of the buildings to public places has been considered to result in minimal effects along Old Whangae Road, with stormwater infrastructure providing an additional buffer to those adjacent properties.</p> <p>The building coverage of ~20% is not considered to result in adverse effects that are more than minor.</p>
Traffic, Parking and Access	Chapter 11 & Chapter 15	<p>From a traffic perspective, no adverse effects are considered to arise from the increase in traffic movements from the residential development. Old Whangae road has sufficient capacity for the development and the intersection with Gillies Street provides ample sight distances. Minor road marking changes are proposed in this respect.</p> <p>In terms of parking, whilst there is a parking breach, the proposal includes largely one bedroom dwellings and it is typical to allocate 1 car park for these units. On the whole, the proposal provides for 1 car park per unit, and 5 additional car parks for visitors. This is considered appropriate in an urban environment which is close to local amenities, goods and services.</p> <p>In terms of access effects, the proposal accords with engineering standards in terms of providing appropriate vehicle crossings and the layout and</p>

		design of the internal access although not of a road to vest standards, is appropriate for the development. No major upgrades are proposed along Old Whangae Road.
Development Servicing	Chapter 13 / Engineering Standards	As outlined in the engineering reports provided in Appendix D, the site can be appropriately serviced and conditions of consent can ensure that the proposal meets relevant standards.
Natural Hazards	Chapter 12	The Three Waters Report appropriately considers the potential flooding effect of the proposal and considers that this results in a less than 5mm impact. This is a marginal effect and considered to be less than minor. There are no other hazards known to impact the development.
Subdivision	Chapter 13	<p>The sites created can be appropriately serviced by infrastructure, have appropriate easements, and will be developed with a land use activity that is anticipated by the PDP. There are no effects resulting from the subdivision that are not assessed via the substantive land use proposal.</p> <p>The effects of the subdivision with respect to the PDP breach of the Star Hotel is not considered to result in any effects. This is a simple subdivision to ensure that the Star Hotel has its own title that is separate from the housing development.</p> <p>Only the building is considered to have heritage value, not the site. This is confirmed by the ODP and PDP mapping and description of the heritage resource.</p>
Earthworks & Geotech	Chapter 12	The proposal includes appropriate erosion and sediment controls, and this aspect will also be considered by the Northland Regional Council. Subject to appropriate conditions being imposed in terms of this matter, effects will be no more than minor.

		The Geotech Report confirms that subject to recommendations being adhered to, development can proceed accordingly.
Reserve Matters	Chapter 14	At this stage, the scheme plan does not show a reserve to vest or any provision for the existing footpath. This is not to suggest that this is not negotiable through the consent process.
Concluding Statement:		Having considered the above, the effects of the proposal are considered to be no more than minor.

8.0 EFFECTS TO PEOPLE

The table below outlines the steps associated with limited notification insofar as it relates to s95 of the RMA.

Table 6 – s95 Affected Persons Assessment

Step 1	<u>certain affected groups and affected persons must be notified</u>	
S95B(2)(a)	Are there any affected protected customary rights groups?	No
S95B(2)(b)	Are there any affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity)?	No
S95B(3)(a)	Is the proposed activity on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11?	No
S95B(3)(b)	Is the person to whom the statutory acknowledgement is made is an affected person under section 95E?	No
Step 2	<u>if not required by step 1, limited notification precluded in certain circumstances</u>	
S95B(6)(a)	the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:	No
S95B(6)(b)	the application is for a controlled activity (but no other activities) that requires a resource consent under a district plan (other than a subdivision of land)	No

8.1 Affected Person Determination

As the proposed activity does not trigger mandatory limited notification, nor is it precluded, an assessment of potentially affected persons must be undertaken.

The consent authority has discretion to determine whether a person is an affected person. A person is affected if an activity's adverse effects are minor or more than minor to them. The effects of the proposal on adjacent landowners have been undertaken in section 8.3 below.

8.2 Written Approvals Received & Consultation

No written approvals have been sought or provided. However, consultation has been undertaken with Top Energy, Chorus and NZTA. A CDM has been undertaken with FNDC. A response to the matters raised in the CDM is as follows:

Table 7 – CDM Response

CDM Item	Council Query / Comment	Design Response & Reference
Planning [Zoning]	Residential vs. Commercial: Council requested justification for a purely residential development in the PDP "Mixed Use Zone" which prioritizes commercial activity.	Response: The site is located on a cul-de-sac [Old Whangae Rd] physically separated from the main commercial strip. Commercial frontage is not viable here. Residential intensity supports the nearby town center vitality without competing with it.
Urban Design	Active Frontage & Retaining: Concern that the 2m retaining wall creates a barrier and fails to provide "active street frontage" or connectivity to the cycle trail.	Response: The retaining wall is a functional necessity for flood mitigation [raising FFL to 7.0m]. This earth wall is only 2.5m in height and different from that shown on the CDM plans.

		<p>Its visual dominance is softened by landscaping and architectural fencing, details of which can be provided as a condition of consent.</p> <p>Connectivity is direct to the cycle trail footpath internally to the site. Other users can go via Old Whangae Road.</p>
Urban Design	Safety (CPTED): Council queried lighting for car parks and pedestrian safety/surveillance.	Response: The layout promotes passive surveillance over the central courtyard and carparking areas. Lighting will be provided for, details of which can form part of the overall developed design package.
Engineering [Flooding]	Emergency Access: Can fire/ambulance vehicles access the site during a 100-year flood? Are carparks underwater?	Response: FFL are raised to RL 7.0m [500mm freeboard]. The Three Waters Report confirms the driveway and parking areas are designed to manage floodwaters, and the site is located at the bottom of the catchment, requiring no attenuation.
Engineering [Geotech]	Site Stability: Council noted the site is "potentially medium hazard" and requested cut/fill balance and retaining design.	Response: The Geotech Report identifies a "weak alluvium layer". The proposal utilizes an Engineered Gravel Raft foundation with geogrid reinforcement and preloading to mitigate settlement risks.
Engineering [Services]	Capacity: Capacity assessment required for water and wastewater.	Response: A new private 150mm wastewater network will discharge to the existing 300mm main. Water supply utilizes an extended 50mm rider main. Engineering reports confirm sufficient capacity.

Engineering [Stormwater]	Discharge Strategy: How is stormwater managed to prevent downstream risk?	Response: A new 525mm negative-grade pipe is proposed to replicate the pre-development overflow path. This conveys floodwaters from the eastern channel to the outlet without worsening downstream effects.
Reserves	Esplanade: An esplanade waiver or reserve may be required along the stream.	Response: The development is set back from the stream. No formal esplanade reserve to vest is proposed, but public access is maintained via the existing footpath network.

8.3 Localised Effects Assessment [Effects to Persons]

Section 7 of this report provides a graphic and table of the relevant adjacent persons that this assessment relates.

Based on the separation distances and the nature of the proposed activity, the neighbours at Old Whangae Road are unlikely to be adversely affected by the development.

The physical buffer provided by the road width itself, combined with the natural boundary of the Waiomio Stream and the adjacent Council-owned land, ensures significant spatial separation between the new residential units and the existing uses.

The proposed residential activity is inherently compatible with the surrounding environment as it generates lower levels of noise, dust, and vibration than the existing activities, thereby avoiding nuisance effects.

Furthermore, potential infrastructure impacts have been engineered out. Specifically, the installation of the new 525mm negative-grade stormwater pipe ensures that the raising of the site levels will not displace floodwaters onto neighbouring properties , and the upgraded commercial vehicle crossing is designed to safely accommodate the increased traffic without disrupting the flow of traffic on Old Whangae Road.

8.4 Effect to Persons Conclusion

No persons are considered potentially affected by the proposal.

9.0 STATUTORY CONTEXT

9.1 Far North District Plan – Operative [ODP]

An assessment of the relevant objectives and policies associated with the ODP has been undertaken and is found in tables below.

While the site is zoned Rural Production under the ODP, it is physically severed from any functional rural unit, being located within the urban limit and surrounded by commercial/industrial uses.

The assessment below demonstrates that strictly applying Rural Production objectives would effectively sterilize the land.

The proposal aligns more closely with the PDP's Mixed Use Zone, which Council notified the site to be and recognizes the site's suitability for urban intensification.

Table 8 – Rural Environment Assessment

Objective / Policy	Assessment
Objectives	
8.3.1 To promote the sustainable management of natural and physical resources of the rural environment while enabling activities to establish in the rural environment.	The proposal enables the sustainable management of physical resources by utilizing an isolated, underutilized land parcel for essential housing, rather than encroaching on productive rural land elsewhere.
8.3.2 To ensure that the life supporting capacity of soils is not compromised by inappropriate subdivision, use or development.	The site's soils are already compromised by historic fill and urban proximity. The Geotech report confirms the land requires significant remediation [gravel raft] to be stable, indicating it has low utility for rural production.
8.3.3 To avoid, remedy or mitigate adverse effects of activities on the rural environment.	Effects on the rural environment are negligible as the site is functionally part of the urban environment, disconnected from the wider rural hinterland.

Objective / Policy	Assessment
8.3.4 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.	No significant indigenous vegetation or habitats are present on the site; the site is pasture and built-up area.
8.3.5 To protect outstanding natural features and landscapes.	The site does not contain outstanding natural features or landscapes.
8.3.6 To avoid actual and potential conflicts between land use activities in the rural environment.	The site is separated from rural activities. Reverse sensitivity regarding the adjacent industrial zone is mitigated by the physical separation of the road and Steam and the nature of the proposed residential use.
8.3.7 To promote the amenity values of the rural environment.	The proposal enhances amenity by replacing a vacant, flood-prone lot with a high-quality, architecturally designed housing development with appropriate open space [50% coverage].
8.3.8 To facilitate the sustainable management of natural and physical resources in an integrated way to achieve superior outcomes to more traditional forms of subdivision, use and development through management plans and integrated development.	The proposal utilizes a comprehensive master plan approach, integrating engineering, flood management, and architectural design to achieve a superior outcome to ad-hoc development.
Policies	
8.4.1 That activities which will contribute to the sustainable management of the natural and physical resources of the rural environment are enabled to locate in that environment.	Housing is a critical resource. Locating high-density housing near existing infrastructure contributes to sustainable urban growth management.

Objective / Policy	Assessment
8.4.2 That activities be allowed to establish within the rural environment to the extent that any adverse effects of these activities are able to be avoided, remedied or mitigated and as a result the life supporting capacity of soils and ecosystems is safeguarded.	Adverse effects [flooding, stability] are technically resolved via engineering solutions [gravel raft, stormwater outlet], safeguarding the surrounding ecosystem.
8.4.3 That any new infrastructure for development in rural areas be designed and operated in a way that safeguards the life supporting capacity of air, water, soil and ecosystems while protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna, outstanding natural features and landscapes.	New infrastructure [wastewater / stormwater] connects to reticulated networks where possible or is designed to mitigate effects [e.g. scour protection in the Stream].
8.4.4 That development which will maintain or enhance the amenity value of the rural environment and outstanding natural features and outstanding landscapes be enabled to locate in the rural environment.	The development introduces a structured, landscaped urban form that improves the visual amenity of a currently underutilized site.
8.4.5 That plan provisions encourage the avoidance of adverse effects from incompatible land uses, particularly new developments adversely affecting existing land-uses (including by constraining the existing land-uses on account of sensitivity by the new use to adverse effects from the existing use – i.e., reverse sensitivity).	The proposed residential use acts as a transition buffer between the town centre and the Stream / cycle trail, compatible with the mixed-use trajectory of the area.

Objective / Policy	Assessment
8.4.6 That areas of significant indigenous vegetation and significant habitats of indigenous fauna habitat be protected as an integral part of managing the use, development and protection of the natural and physical resources of the rural environment.	Not applicable; no significant vegetation exists on the site.
8.4.7 That Plan provisions encourage the efficient use and development of natural and physical resources.	This is a highly efficient use of land, delivering 30 units in close proximity to town services, maximizing the utility of the physical resource.
8.4.8 That, when considering subdivision, use and development in the rural environment, the Council will have particular regard to ensuring that its intensity, scale and type is controlled to ensure that adverse effects on habitats (including freshwater habitats), outstanding natural features and landscapes, on the amenity value of the rural environment, and where appropriate on natural character of the coastal environment, are avoided, remedied or mitigated.	While the intensity is higher than the rural zone anticipates, it is appropriate for the site's physical context and the PDP's urban zoning direction.

Table 9 – Rural Production Zone Assessment

Objective Or Policy	Performance Of Proposal
Objectives	
8.6.3.1 To promote the sustainable management of natural and physical resources in the Rural Production Zone.	The proposal manages the land resource sustainably by repurposing non-productive land for high-demand housing.

Objective Or Policy	Performance Of Proposal
8.6.3.2 To enable the efficient use and development of the Rural Production Zone in a way that enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety.	The proposal provides for social and economic well-being by delivering 30 units to the community.
8.6.3.3 To promote the maintenance and enhancement of the amenity values of the Rural Production Zone.	The design includes significant landscaping and architectural articulation to enhance the visual amenity of the site and surrounds.
8.6.3.4 To promote the protection of significant natural values of the Rural Production Zone.	The Waiomio Stream margin is respected through setback and rip-rap protection works, ensuring natural values are not degraded.
8.6.3.5 To protect and enhance the special amenity values of the frontage to Kerikeri Road between its intersection with SH10 and the urban edge of Kerikeri	Not relevant to this location.
8.6.3.6 To avoid, remedy or mitigate the actual and potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the Rural Production Zone and on land use activities in neighbouring zones.	The residential use is compatible with the surrounding mixed-use environment. The adjacent uses are mixed in nature and compatible with an urban fringe setting.
8.6.3.7 To avoided, remedy or mitigate the adverse effects of incompatible use or development on natural or physical resources.	The proposal is compatible with the urban-edge context and the future Mixed Use zoning promoted by Council.

Objective Or Policy	Performance Of Proposal
8.6.3.8 To enable the efficient establishment and operation of activities and services that have a functional need to be located in the rural environments.	While not a rural activity, the development has a functional need to locate here to utilize the specific land holding of the applicant for housing needs.
8.6.3.9 To enable rural production activities to be undertaken in the zone	The site is too small and isolated for viable rural production; its conversion does not undermine the district's overall rural productivity.
Policies	
8.6.4.1 That a wide range of activities be allowed in the Rural Production Zone, subject to the need to ensure that any adverse effects, including any reverse sensitivity effects, on the environment resulting from these activities are avoided, remedied or mitigated.	The policy allows a range of activities. Residential is appropriate given the specific site constraints preventing rural production.
8.6.4.2 That standards be imposed to ensure that the off-site effects of activities in the Rural Production Zone are avoided, remedied or mitigated.	Engineering reports confirm off-site effects [stormwater, traffic] are mitigated to acceptable standards.
8.6.4.3 That land management practices that avoid, remedy or mitigate adverse effects on natural and physical resources be encouraged.	Sediment and erosion control plans [Appendix D] ensure land management best practices are followed during earthworks.
8.6.4.4 That the intensity of development allowed shall have regard to the maintenance and enhancement of the amenity values of the Rural Production Zone.	The density is high but designed with internal courtyards and landscaping to ensure high on-site amenity for residents.

Objective Or Policy	Performance Of Proposal
8.6.4.5 That the efficient use and development of physical and natural resources be taken into account in the implementation of the Plan.	Developing 30 units on this site is a more efficient use of the land resource than leaving it as a remnant, unproductive rural lot.
8.6.4.6 That the built form of development allowed on sites with frontage to Kerikeri Road between its intersection with SH10 and Cannon Drive be maintained as small in scale, set back from the road, relatively inconspicuous and in harmony with landscape plantings and shelter belts	Not relevant.
8.6.4.7 That although a wide range of activities that promote rural productivity are appropriate in the Rural Production Zone, an underlying goal is to avoid the actual and potential adverse effects of conflicting land use activities.	See 8.6.3.6 above. Conflicts are minimized through design and separation.
8.6.4.8 That activities whose adverse effects, including reverse sensitivity effects, cannot be avoided remedied or mitigated are given separation from other activities.	The development is separated from the road by retaining and landscaping, and from the Stream by the bund/esplanade area.
8.6.4.9 That activities be discouraged from locating where they are sensitive to the effects of or may compromise the continued operation of lawfully established existing activities in the Rural Production zone and in neighbouring zones.	While residential is sensitive, the surrounding environment is transitioning to mixed-use, making this activity less sensitive than it would be in a purely working rural environment.

Table 10 – Subdivision Chapter Assessment

Objective Or Policy	Performance Of Proposal
Objectives	
13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan and will promote the sustainable management of the natural and physical resources of the District, including airports and the social, economic and cultural wellbeing of people and communities.	The subdivision facilitates a land use [housing] that directly promotes well-being while managing adverse effects.
13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly or indirectly from subdivision, including reverse sensitivity effects, are avoided, remedied or mitigated.	The subdivision layout is designed specifically to accommodate the multi-unit development, ensuring all lots are serviced and accessible.
13.3.3 To ensure that the subdivision of land does not jeopardise the protection of outstanding landscapes or natural features in the coastal environment.	Not applicable.
13.3.4 To ensure that subdivision does not adversely affect scheduled heritage resources through alienation of the resource from its immediate setting/context.	The subdivision separates the Historic Star Hotel onto its own title [Lot 3], ensuring its protection and distinct management from the new residential lots.

Objective Or Policy	Performance Of Proposal
13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage sufficient to meet the needs of the activities that will establish all year round.	The development connects to the reticulated council water supply via an extended rider main.
13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices.	The simple subdivision structure supports an innovative medium-density housing model that is new to this locality.
13.3.7 To ensure the relationship between Maori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for.	The proposal has been developed in partnership to provide housing for Mana Whenua, directly recognizing this relationship.
Policies	

Objective Or Policy	Performance Of Proposal
<p>13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:</p> <ul style="list-style-type: none"> (a) natural character, particularly of the coastal environment; (b) ecological values; (c) landscape values; (d) amenity values; (e) cultural values; (f) heritage values; and (g) existing land uses. 	<p>The allotment sizes are dictated by the comprehensive land use proposal, ensuring they are sized for the intended housing typology.</p>
<p>13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.</p>	<p>Access is provided via new commercial vehicle crossings designed to Council standards, ensuring safety.</p>
<p>13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.</p>	<p>Flooding is the primary hazard. The subdivision supports a land use that raises the FFL to 7.0m, mitigating this risk.</p>
<p>13.4.4 That in any subdivision where provision is made for connection to utility services, the potential adverse visual impacts of these services are avoided.</p>	<p>Services are underground, avoiding visual clutter.</p>

Objective Or Policy	Performance Of Proposal
13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads, and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.	A comprehensive Erosion and Sediment Control Plan [RC210] is provided to manage earthworks effects.
13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.	The subdivision boundary respects the curtilage of the Star Hotel.
13.4.7 That the need for a financial contribution be considered only where the subdivision would: (a) result in increased demands on car parking associated with non-residential activities; or (b) result in increased demand for esplanade areas; or (c) involve adverse effects on riparian areas; or (d) depend on the assimilative capacity of the environment external to the site.	The applicant acknowledges financial contributions will be assessed in accordance with the Plan.
13.4.8 That the provision of water storage be taken into account in the design of any subdivision.	Reticulated supply is available; onsite storage is not required.

Objective Or Policy	Performance Of Proposal
13.4.9 That bonus development donor and recipient areas be provided for so as to minimise the adverse effects of subdivision on Outstanding Landscapes and areas of significant indigenous flora and significant habitats of fauna.	Not applicable.
13.4.10 The Council will recognise that subdivision within the Conservation Zone that results in a net conservation gain is generally appropriate.	Not applicable.
13.4.11 That subdivision recognises and provides for the relationship of Maori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.	See 13.3.7. The development creates housing on land for local whānau.
13.4.12 That more intensive, innovative development and subdivision which recognises specific site characteristics is provided for through the management plan rule where this will result in superior environmental outcomes.	The subdivision enables a higher density than standard rural/residential, resulting in superior social outcomes for the district.
13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regard to s6 matters, and shall avoid adverse effects as far as practicable by using techniques including: (a) clustering or grouping development within areas where there is the least	The subdivision creates a structured, landscaped urban edge that improves upon the current vacant/scrub appearance.

Objective Or Policy	Performance Of Proposal
<p>impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;</p> <p>(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;</p> <p>(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;</p> <p>(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2 and in particular Section 2.5 and Council's <i>"Tangata Whenua Values and Perspectives"</i> (2004);</p> <p>(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;</p>	

Objective Or Policy	Performance Of Proposal
(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.	
13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of Part 3 of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.	The design considers the Mixed Use zone objectives of the PDP, aligning the subdivision with the future character of the area promoted by Council upon its notification.

Table 11 – Mixed Use Zone PDP Assessment

Objectives	Assessment
MUZ-O1 The Mixed Use zone is the focal point for the district's commercial, community and civic activities, and provides for residential development where it complements and is not incompatible with these activities.	The proposal provides the residential critical mass necessary to support the commercial and civic activities of the nearby Kawakawa centre.
MUZ-O2 Development in the Mixed Use zone is of a form, scale, density and design quality that contributes positively to the vibrancy, safety and amenity of the zone.	The 2-storey scale and medium density are consistent with the urban form anticipated in a Mixed Use zone, contributing to vibrancy.
MUZ-O3 Enable land use and subdivision in the Light Industrial zone where there is adequacy and capacity of available or programmed development infrastructure to support it.	Infrastructure reports confirm the development can be serviced, supporting the enabling of this land use.
MUZ-O4 The adverse environmental effects generated by activities within the zone are managed, in particular at zone boundaries.	Effects at boundaries are managed through setbacks, landscaping, and acoustic privacy considerations.

MUZ-O5 Residential activity in the Mixed Use zone is located above commercial activities to ensure active street frontages, except where the interface is with the Open Space zone.	While not above commercial, the residential use is appropriate given the site's location on a secondary road where commercial frontage is not viable and would detract from the Kawakawa main street.
Policies	Assessment
<p>MUZ-P1 Enable a range of commercial, community, civic and residential activities in the Mixed Use zone where:</p> <ul style="list-style-type: none"> a. it supports the function, role, sense of place and amenity of the existing environment; and b. there is: <ul style="list-style-type: none"> i. existing infrastructure to support development and intensification, or ii. additional infrastructure capacity can be provided to service the development and intensification. 	The proposal supports the 'sense of place' by providing housing near the town centre. Existing infrastructure is being utilized and extended to support this intensification.
<p>MUZ-P2 Require all subdivision in the Mixed Use zone to provide the following reticulated services to the boundary of each lot:</p> <ul style="list-style-type: none"> a. telecommunications: <ul style="list-style-type: none"> i. fibre where it is available; ii. copper where fibre is not available; iii. copper where the area is identified for future fibre deployment. b. local electricity distribution network; and 	The development connects to reticulated water, wastewater, and power/telecommunications as required.

<ul style="list-style-type: none"> c. wastewater, potable water supply and stormwater where they are available. 	
<p>MUZ-P3 Require development in the Mixed Use zone to contribute positively to:</p> <ul style="list-style-type: none"> a. high quality streetscapes; b. pedestrian amenity; c. safe movement of people of all ages and abilities; d. community well-being, health and safety; and e. traffic, parking and access needs. 	<p>The development contributes to community well-being [housing], safe movement [new footpaths], and pedestrian amenity [connection to cycle trail].</p>
<p>MUZ-P4 Require development in the Mixed Use zone that is adjacent to Residential and Open Space zones to maintain the amenity values of those areas, having specific regard to:</p> <ul style="list-style-type: none"> a. visual dominance; b. privacy; c. shadowing; d. ambient noise; and e. light spill. 	<p>The site adjoins open space [Stream and council owned land] and roading. Visual dominance is managed through building articulation and material selection.</p>
<p>MUZ-P5 Restrict activities that are likely to have an adverse effect on the function, role, sense of place and amenity of the Mixed Use zone, including:</p> <ul style="list-style-type: none"> a. residential activity, retirement facilities and visitor accommodation on the ground floor of buildings, except where a site adjoins an Open Space zone; b. light or heavy industrial activity; c. storage and warehousing; 	<p>Residential on the ground floor is restricted in this zone generally to protect commercial streets. However, Old Whangae Road is not a primary commercial street and if used in this capacity would likely detract from the Kawakawa main street.</p>

<ul style="list-style-type: none"> d. large format retail activity over 400 m²; and e. waste management activity. 	
MUZ-P6 Promote energy efficient design and the use of renewable electricity generation in the construction of mixed use development.	The units are designed to modern building code standards for energy efficiency.
<p>MUZ-P7 Consider the following effects when assessing applications to establish residential, early childhood, retirement and education facilities:</p> <ul style="list-style-type: none"> a. the level of ambient noise; b. reduced privacy; c. shadowing and visual domination; and d. light spill. 	Privacy and shadowing have been assessed. The layout maximizes internal amenity while minimizing effects on the streetscape.
<p>MUZ-P8 Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:</p> <ul style="list-style-type: none"> a. consistency with the scale, density, design, amenity and character of the mixed use environment; b. the location, scale and design of buildings or structures, outdoor storage areas, parking and internal roading; c. at zone interfaces: <ul style="list-style-type: none"> i. any setbacks, fencing, screening or landscaping required to address potential conflicts; 	The proposal is consistent with the scale of the mixed-use environment. Natural hazards [flooding] are managed via engineering design [raised floor levels].

<ul style="list-style-type: none"> ii. any adverse effects on the character and amenity of adjacent zones; d. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; including: <ul style="list-style-type: none"> i. opportunities for low impact design principles; ii. management of three waters infrastructure and trade waste; e. managing natural hazards; f. the adequacy of roading infrastructure to service the proposed activity; g. any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity, and h. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6. 	
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9.2 Regional Policy Statement for Northland [RPS]

An assessment of the relevant objectives and policies associated with the RPS for Northland has been undertaken and is also found in tables below. The RPS sets region wide objectives and policies for the environment.

Table 12 – RPS Assessment

Objective / Policy	Assessment
--------------------	------------

Integrated Catchment Management	Not relevant
Region Wide Water Quality	Not relevant
Ecological Flows and Water Quality	Not relevant
Indigenous Ecosystems & Biodiversity	There are no SNA's on the site.
Enabling Economic Wellbeing	There is economic benefit and job growth through the construction aspects of the project.
Economic Activities – Reverse Sensitivity And Sterilization	The proposal does not result in any more than minor reverse sensitivity or sterilization effects.
Regionally Significant Infrastructure	The proposal does not impact any regionally significant infrastructure and contains consultation with NZTA.
Efficient and Effective Infrastructure	The proposal seeks to use existing infrastructure within the urban context.
Security of Energy Supply	Power is already provided to the site to and will service the proposed dwellings.
Use and Allocation of Common Resources	Not relevant.
Regional Form	The proposal does not result in any more than minor reverse sensitivity effects, or a change in character or sense of place.
Tangata Whenua Role in Decision Making	Council may send this application to relevant hapū or iwi if considered appropriate to do so to fulfil their obligations.
Natural Hazard Risk	All natural hazard risks have been considered and appropriately mitigated.
Natural Character, Outstanding Natural Features, Outstanding Natural Landscapes And Historic Heritage	Not relevant.

Having considered the relevant components of the RPS, it is concluded that the proposal is not inconsistent with the relevant objectives and policies.

9.4 National Policy Statements and Environmental Standards

With respect to the National Environmental Standard – Soil Contamination, this is not considered relevant as no such uses have been associated with the site that is on the HAIL.

In terms of the National Environmental Standard for Freshwater, there are no known natural wetland areas on the site or the surrounds that are subject to assessment under it.

The site is not subject to the National Policy Statement for Highly Productive Land due to its existing soil class.

The Far North District is classified as Tier 3 under the National Policy Statement on Urban Development. It is considered that this development is an efficient use of land proposed to be zoned Mixed Use under the PDP, contributing towards a well-functioning urban environment.

There are no other relevant National Policy Statements or Environmental Standards.

9.5 Conclusion

The above assessment finds that the proposal is not inconsistent with relevant statutory and higher order objectives and policies.

10.0 S104D ASSESSMENT

As a Non-Complying Activity, the application must pass at least one of the ‘gateway tests’ set out in Section 104D of the RMA before Council can consider granting consent. The two tests are:

- The adverse effects of the activity on the environment will be minor (or less than minor); or
- The application is for an activity that will not be contrary to the objectives and policies of the relevant plan.

Adverse Effects Assessment

The assessment of effects in Section 7.0 of this report demonstrates that the adverse effects of the proposal will be no more than minor. The receiving environment is an urban-fringe location characterized by light industrial and commercial activities, physically severed from the wider rural hinterland by the Waiomio Stream and roading infrastructure.

Detailed modelling confirms the proposal achieves hydraulic neutrality. The use of a 525mm negative-grade pipe and raised floor levels (RL 7.00m) ensures that flood risk is mitigated for residents and not transferred to third parties.

The addition of 30 residential units is supported by available infrastructure capacity. Traffic generation is compatible with the capacity of Old Whangae Road, and the site has access to reticulated services which will be upgraded as part of the works.

The design utilises a layout with significant landscaping (50% coverage) to soften visual dominance, ensuring the built form is compatible with the mixed-use character of the immediate area.

The adverse effects are effectively mitigated by the engineering design and site layout.

Objectives and Policies Assessment

Case law has established that for an activity to be ‘contrary’ to objectives and policies, it must be ‘repugnant to’ or ‘directly opposed to’ the policy framework, rather than simply non-complying.

The site is split zoned, and the area of the proposed development is technically Rural Production in the ODP. The literal application of the zone’s objectives must be balanced against the physical reality of the site. Council promotion of the site through the PDP signals a clear shift in the planning direction for this specific site, rezoning it to Mixed Use. Hearings are now complete and the site has not been subject to a rezoning request, establishing that its promoted rezoning is not challenged.

The PDP explicitly identifies this zone as a focal point for activity. The proposal directly supports these objectives by providing the residential density necessary to support the vitality of the nearby Kawakawa town center.

Given the advanced stage of the PDP and the clear anomaly of the current ODP zoning, more weight should be placed on the PDP direction. The proposal is entirely consistent with the Mixed Use objectives.

The proposal is not repugnant to the relevant objectives and policies. It aligns with the future direction Council promotes through the PDP and does not offend the underlying intent of the ODP's rural protection provisions given the site's specific non-productive characteristics.

It is considered that the proposal passes both the adverse effects test (s104D(1)(a)) and the objectives and policies test (s104D(1)(b)). Accordingly, the Council has the jurisdiction to consider and grant the application under Section 104B of the RMA.

11.0 PART 2 ASSESSMENT

11.1 Section 5 - Purpose of the RMA

Section 5 in Part 2 of the RMA identifies the purpose as being the sustainable management of natural and physical resources. This means managing the use of natural and physical resources in a way that enables people and communities to provide for their social, cultural and economic well-being which sustain those resources for future generations, protecting the life supporting capacity of ecosystems, and avoiding remedying or mitigating adverse effects on the environment.

It is considered that proposal represents Part 2, Section 5 of the RMA.

11.2 Section 6 - Matters of National Importance

In achieving the purpose of the RMA, a range of matters are required to be recognised and provided for. This includes:

- a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:
- b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:
- c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:
- d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

-
- e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:
 - f) the protection of historic heritage from inappropriate subdivision, use, and development:
 - g) the protection of protected customary rights:
 - h) the management of significant risks from natural hazards.

In context, the relevant items to the proposal have been recognised and provided for.

11.3 Section 7 - Other Matters

In achieving the purpose of the RMA, a range of matters are to be given particular regard. This includes:

- (a) kaitiakitanga:
- (aa) the ethic of stewardship:
- (b) the efficient use and development of natural and physical resources:
 - (ba) the efficiency of the end use of energy:
- (c) the maintenance and enhancement of amenity values:
- (d) intrinsic values of ecosystems:
- (e) [Repealed]
- (f) maintenance and enhancement of the quality of the environment:
- (g) any finite characteristics of natural and physical resources:
- (h) the protection of the habitat of trout and salmon:
- (i) the effects of climate change:
- (j) the benefits to be derived from the use and development of renewable energy.

These matters have been given particular regard through the design of the proposal.

11.4 Section 8 - Treaty of Waitangi

The Far North District Council is required to take into account the principles of the Treaty of Waitangi when processing this consent. This consent application may be sent to local Iwi and hapū who may have an interest in this application.

11.5 Part 2 Conclusion

Given the above, it is considered that the proposal meets the purpose of the RMA.

12.0 CONCLUSION

A Non Complying resource consent is sought from the Far North District Council to carry out a multi unit development including subdivision in the Rural Production Zone of the ODP and Mixed Use Zone of the PDP.

The proposal is considered to result in less than minor effects on the environment and through assessment, there are no more than minor effects to persons.

The proposal is not considered contrary to the objectives and policies of both District Plans, and clearly aligns with Councils intent and promotion of this site as Mixed Use zone through the PDP.

The proposal is consistent with the Regional Policy Statement for Northland and achieves the purpose of the RMA.

Relevant NPS' and NES' have been considered with the proposal finding consistency with their general aims and intent.

Regards,

Steven Sanson

Consultant Planner



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

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




R. W. Muir
Registrar-General
of Land

Identifier **NA523/225** **Part-Cancelled**

Land Registration District **North Auckland**

Date Issued 12 June 1930

Prior References

DI 1E 505 DI 1E 516 NA417/224

Estate Fee Simple
Area 7537 square metres more or less
Legal Description Lot 92, 98 Deeds Plan W 46

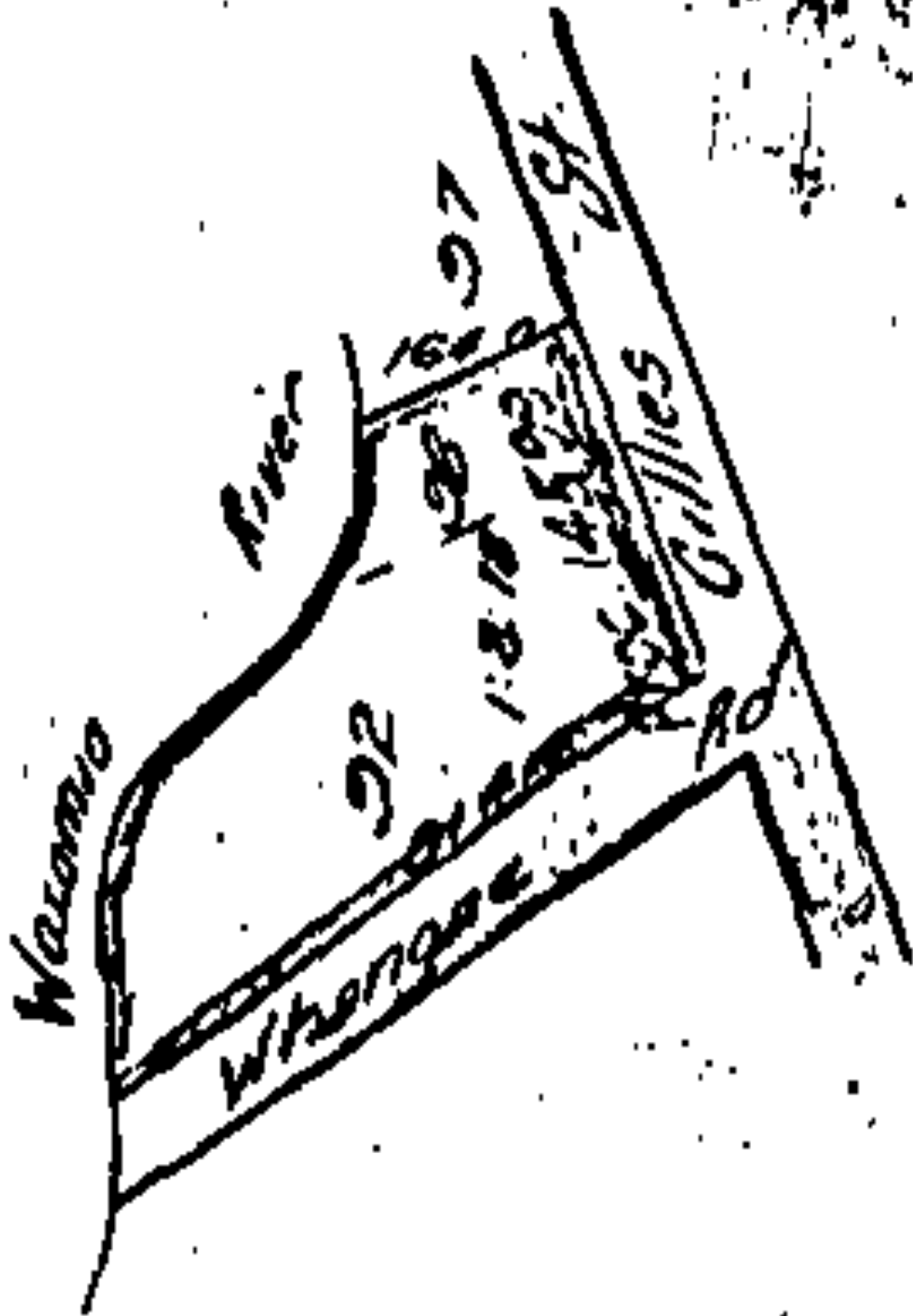
Registered Owners

Far North Holdings Limited

Interests

14599 Proclamation taking part for road - 18.7.1955 at 2.00 pm

Subject to a drainage right (in gross) over part in favour of Kawakawa Town District Council created by Transfer A290841
- 31.5.1968 at 10.00 am



A290841TE

\$1.00

COPIES 0780 -00100

FILED IN THE DISTRICT

(Approved by the District Land Registrar, Auckland, No. 3360)

(New Zealand)

(C)

Under the Land Transfer Act, 1962

Memorandum of Transfer

WHEREAS HANCOCK & CO. LIMITED a duly incorporated company having its registered office at Auckland (hereinafter together with its successors and assigns referred to and included in the term / "the Grantor") being registered as proprietor of an estate in fee simple

subject however to such encumbrances, liens and interests as are notified by memoranda underwritten or endorsed hereon in that piece of land situated in the Land District of North Auckland containing ONE ACRE THREE RODS EIGHTEEN PERCHES (1a. 3r. 18p.)

more or less being Lot 92 and 98 on Deeds Plan M.46 being part Te Wharau Block and described in Certificate of Title Volume 523 Folio 225 (North Auckland Registry)

AND WHEREAS the grantor in consideration of the Corporation hereinafter mentioned improving the disposal of stormwater in the vicinity of the grantor's land has agreed to transfer and grant to the Body Corporate called THE CHAIRMAN COUNCILLORS AND CITIZENS OF THE TOWN DISTRICT OF KAWAIAWA (hereinafter with its successors and assigns referred to to as and included in the term "the Corporation") an easement in and over that portion of the land above described coloured yellow on the plan annexed hereto and thereon marked ^{"Drainage"} ~~Drainage~~ easement 6 ft. wide" (hereinafter called "the said land") for the conveyance of water whether rain tempest spring soakage or seepage water for the disposal thereof in such manner as the Corporation shall determine NOW THIS MEMORANDUM OF TRANSFER WITNESSETH that in pursuance of the said agreement and for the consideration aforesaid the Grantor DOTH HEREBY TRANSFER AND GRANT unto the Corporation as an easement in gross full, free and uninterrupted right, liberty and privilege for all times hereafter to take convey lead drain, and discharge water whether rain tempest spring soakage or seepage water in any quantities through in and under the said land and for such purposes and from time to time to construct lay place extend maintain alter repair and renew a drain or drains with a line or lines of pipes and conduits with or without manholes of such internal and external dimensions and with such valves surface boxes and cesspits as the Corporation shall think fit through or under the said land at such a depth as the Corporation shall think fit with power and authority for the Corporation its surveyors engineers employees contractors workmen agents servants and all persons authorised by it with or without horses carts and other vehicles and machinery implements tools pipes and materials of any kind from time to time and at all times to enter and remain upon the said land for the purposes aforesaid including opening up the soil for inspection or cleaning the said drains pipes and cesspits and

generally to do and perform such acts and things in and upon the said land as may be necessary or proper for or in relation to any of the purposes aforesaid AND the grantor and the Corporation HEREBY COVENANT AND AGREE the one with the other of them as follows :-

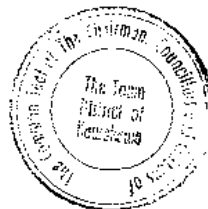
1. THAT all works authorised to be carried out hereunder shall be carried out as expeditiously as possible and with as little disturbance to the surface of the said land as possible and immediately upon the completion of any such work the surface of the land shall be restored as nearly as possible to its original condition.
2. THAT the Corporation will from time to time repair and make good all damage to fences gates drains paths or driveways upon the said land caused by the carrying out by the Corporation of any of the works hereinbefore mentioned.
3. THAT the grantor will not place any buildings erections or fences on the said land or any part thereof and will not at any time hereafter do or permit or suffer any act whereby the rights powers licences and privileges hereby granted to the Corporation may be interfered with or affected or whereby the passage of water through the said pipes and conduits as aforesaid may be in any way interrupted or restricted PROVIDED ALWAYS this provision shall not affect any boundary fence between the land of the Grantor and any adjoining land.
4. THAT nothing herein contained or implied shall be deemed to compel the Corporation to conduct water through the said open drains pipes or conduits and the Corporation may discontinue such drainage and recommence such drainage at will.
5. THAT nothing herein contained shall be deemed to abrogate limit restrict or abridge any of the rights powers and remedies vested in the Corporation by any statute and in particular by "The Municipal Corporations Act 1954" and "The Public Works Act 1928" or any of them or any amendment thereof, or any act or acts passed in substitution therefor.
6. THAT the Corporation in addition to the right privileges and liberties herein contained shall also have the rights created by the Seventh Schedule to the Land Transfer Act 1952.

IN WITNESS WHEREOF these presents have been executed this 8th day of April 1968.

THE COMMON SEAL of HANCOCK & CO. LIMITED was hereunto affixed in the presence of:-

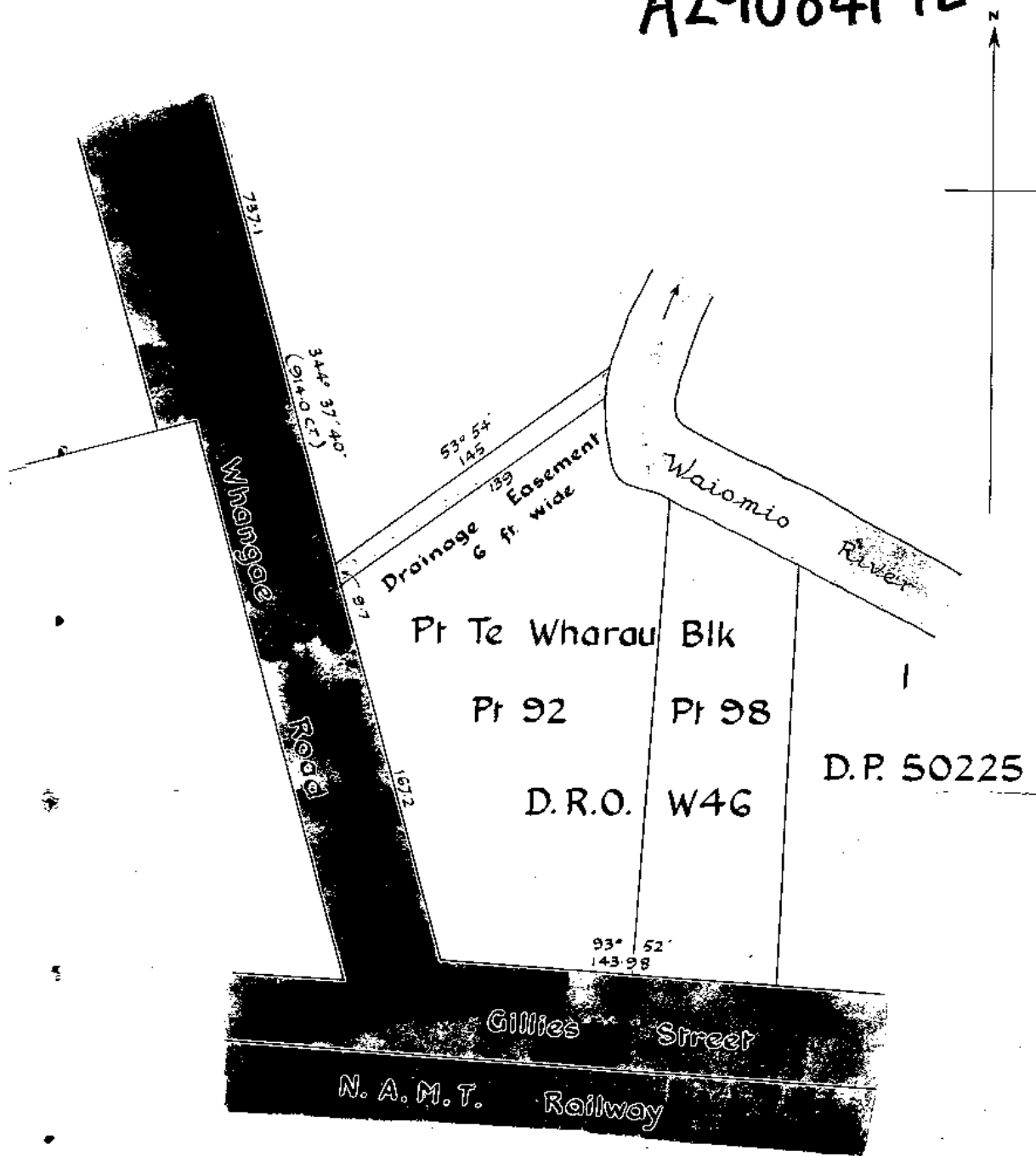
[Signature] Director
[Signature] Director
[Signature] Secretary

THE COMMON SEAL of THE BODY CORPORATE called THE CHAIRMAN COUNCILLORS AND CITIZENS OF THE TOWN DISTRICT OF HAWAKAWA was pursuant to a resolution of the Hawakawa Town Council passed on the 8th day of April, 1968 hereunto affixed in the presence of :-



[Signature] CHAIRMAN
[Signature] TOWN CLERK

A290841 TE



Drainage Easement over Pt Te Wharau Blk
Blk XII Kawakawa S.D.
Kawakawa Town Dist.

Scale : 50 links to an inch

[Handwritten signature]

P. J. Hill
Registered Surveyor
3/12/57

In Consideration of

(the receipt of which sum is hereby acknowledged)

Do hereby Transfer to the said

all estate and interest in the
said piece of land above described

In witness whereof have hereunto subscribed name this
day of one thousand nine hundred and

Signed by the above named

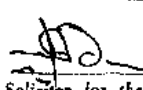
in the presence of

A290841

No.

TRANSFER OF
GRANT OF EASEMENT

145
Correct for the purposes of the Land Transfer Act.


Solicitor for the Transferee.

MANCOK & CO. LIMITED

Grantor
~~Transferor~~

MAKARA TOWN COUNCIL

Grantee
~~Transferee~~

Particulars entered in the Register-Book Vol.

Folio

the

at


30 MAY 1968

523/225

19

o'clock




Assistant Land Registrar
of the District of Auckland
ad.

LAND & DEEDS

Notes:

Firm:

3 J MAY 1968

Time:

Fee:

Abstract No.

3109

RISEWICK
SOLICITORS,
MANGERE.

Solicitors for the Transferee

THE LAW SOCIETY OF THE DISTRICT OF AUCKLAND

P.P.Co.Ltd.(5)-5383

CT 523/225 prod





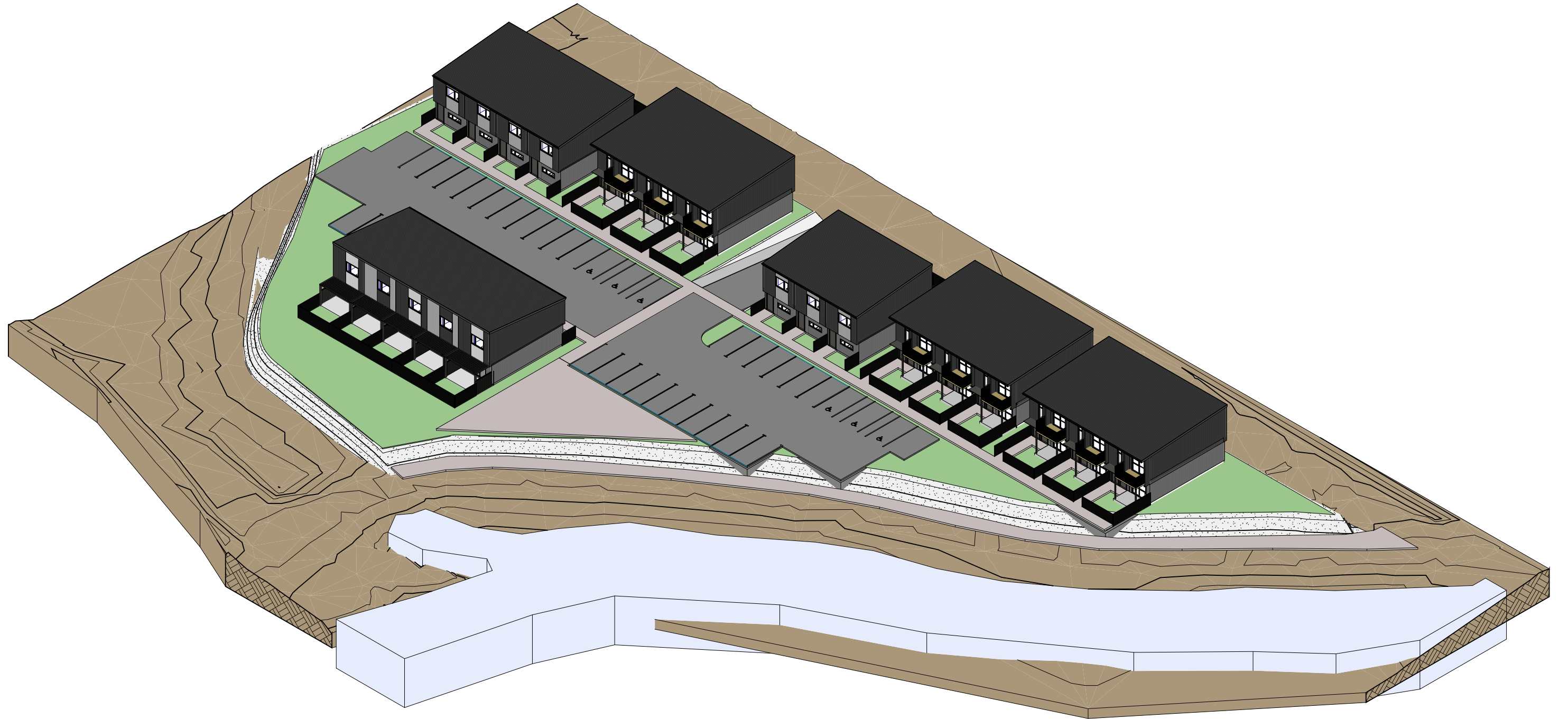
LOCALITY MAP - LARGE SCALE
NTS@A1 HALF-SCALE@A3

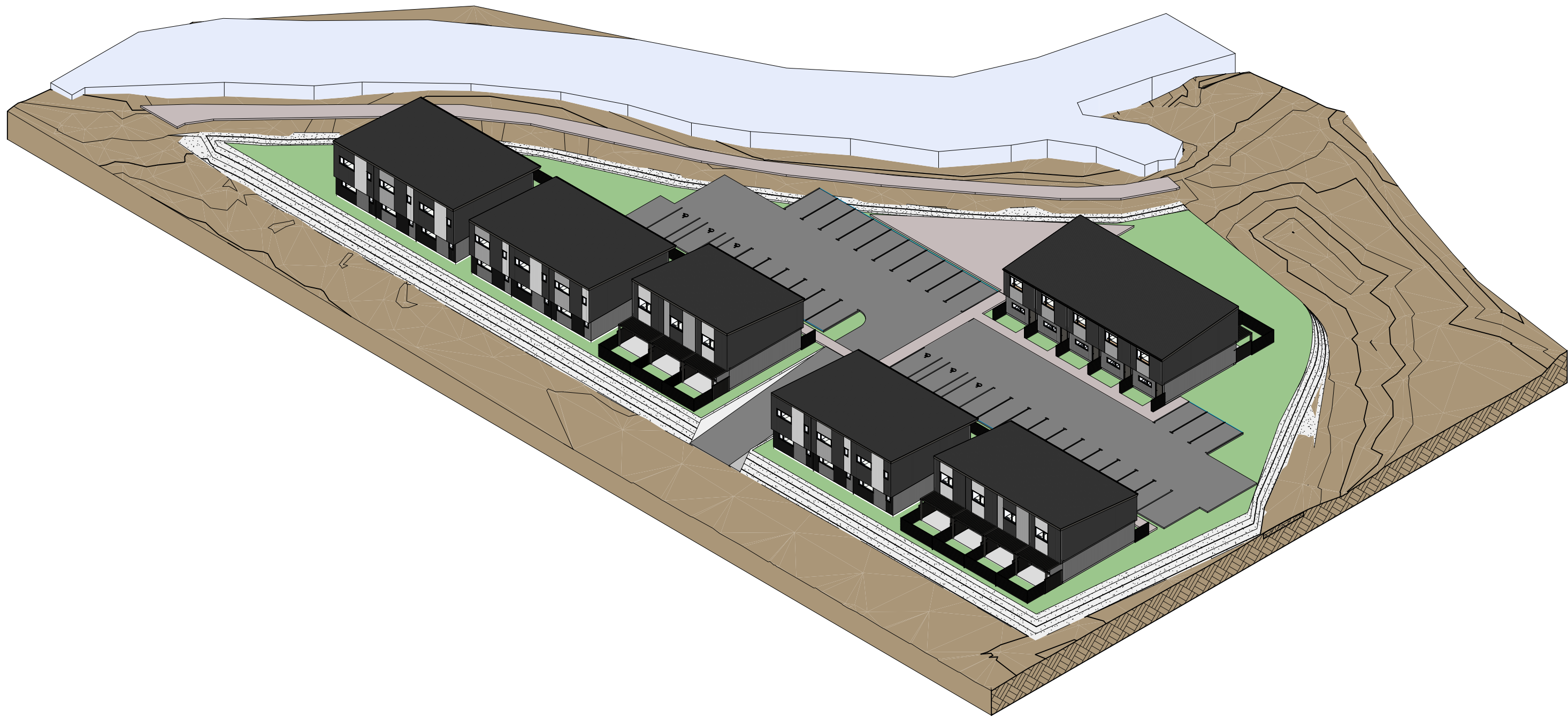
DESTINATION	DISTANCE	TIME BY WALK
LOCAL TOWN CENTER	100M-500M	1-10 MIN
CULTURAL CENTER	300M	5 MIN
SPORTS / RECREATION	650M	10 MIN
CHURCH	400M	7 MIN
PRIMARY SCHOOL	450M	8 MIN
HIGH SCHOOL	1.4KM	20 MIN



SITE LOCATION
NTS@A1 HALF-SCALE@A3









KAWAKAWA HOUSING DEVELOPMENT
ADDRESS: 84 GILLIES STREET KAWAKAWA
LEGAL DESCRIPTION: LOT 1 DP 63674

ZONE: MIXED USE

TOTAL UNIT NUMBERS: 30
TYPE A: 18
TYPE B: 12
TOTAL CARPARKS: 35
PARKING RATIO: 35/30 = 116%

TYPOLOGY

TYPE A: 1 BED UNIT PER FLOOR
A1: 1 BED UNIT GROUND FLOOR
FLOOR AREA = 57.75 m²
+
A2: 1 BED UNIT FIRST FLOOR
FLOOR AREA = 60.5 m²

TYPE B: 2 BED UNIT
GROUND FLOOR
FLOOR AREA = 43.5 m²
+
FIRST FLOOR
FLOOR AREA = 46.11 m²

RETAINING WALL/RETAINED BATTER
REFER CIVIL ENGINEER DRAWINGS



eclipse) architecture



24 GUNDRY STREET
NEWTON
PO BOX 7539,
AUCKLAND 1142

P. +64 9 303 4759
www.eclipsearchitecture.co.nz

rev	date	details
A	28/11/2025	RC

job no.	FNH0769.03
cad file	
design	
drawn	TH
checked	TH
date	

job title

MEDIUM DENSITY HOUSING
OLD WHANGAE RD, KAWAKAWA

dwg title

**PROPOSED SITE
PLAN**

status

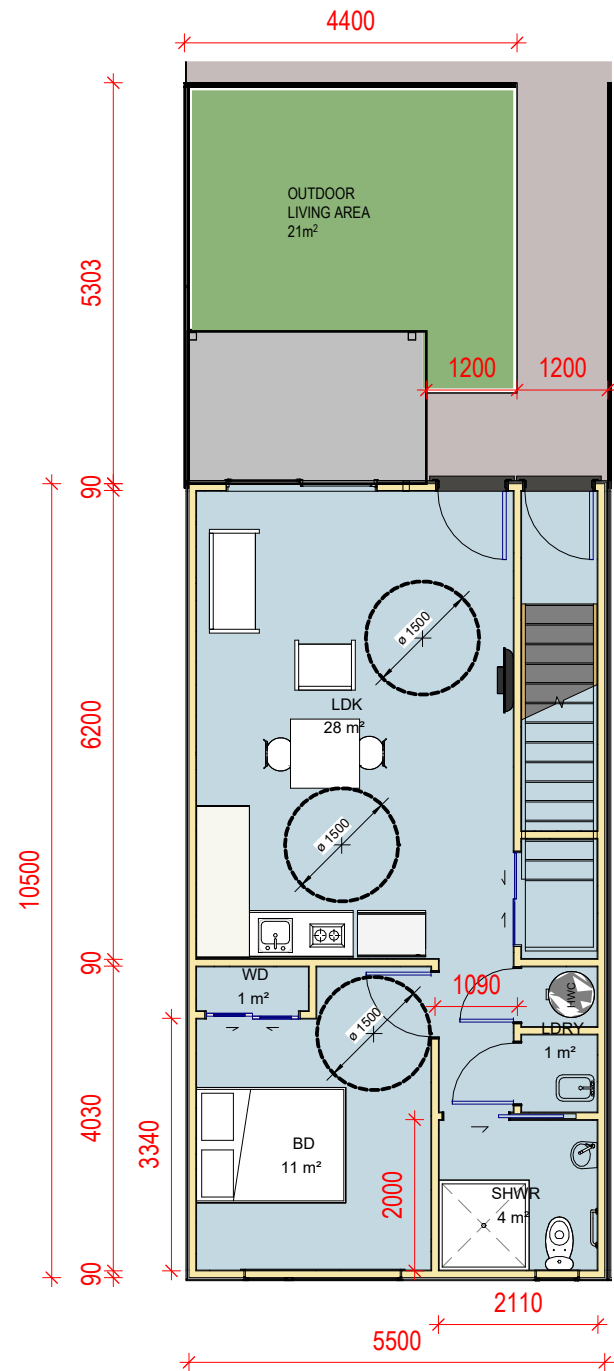
scale

RESOURCE CONSENT

AS SHOWN@A1
HALF-SCALE@A3

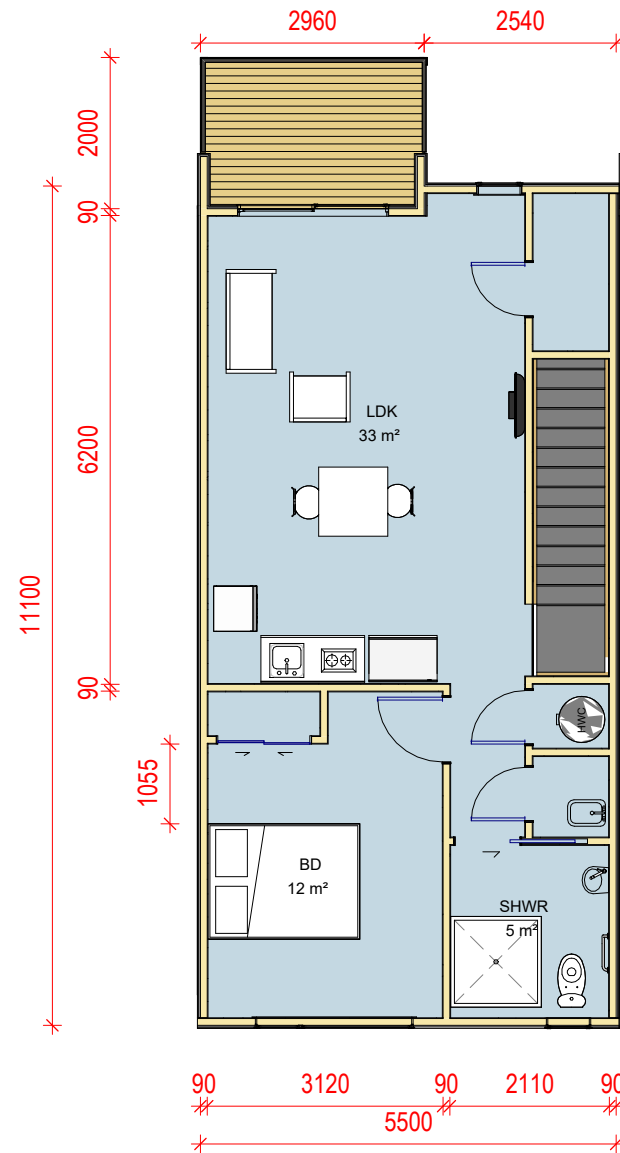
rev	dwg No
A	A100

[illegible]



1 GROUND FLOOR PLAN - TYPE A1
1 : 50@A1 HALF-SCALE@A3

FLOOR AREA
GROUND FLOOR: 53M²
FIRST FLOOR: 60M²

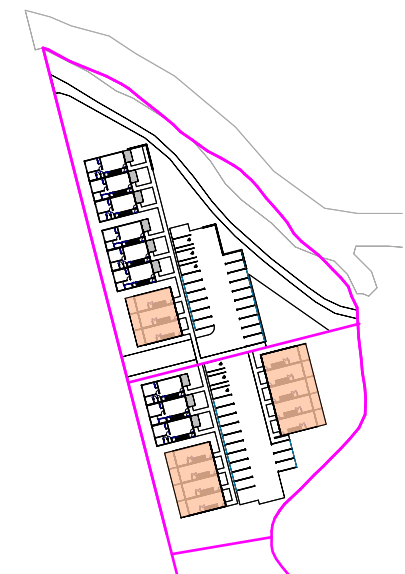
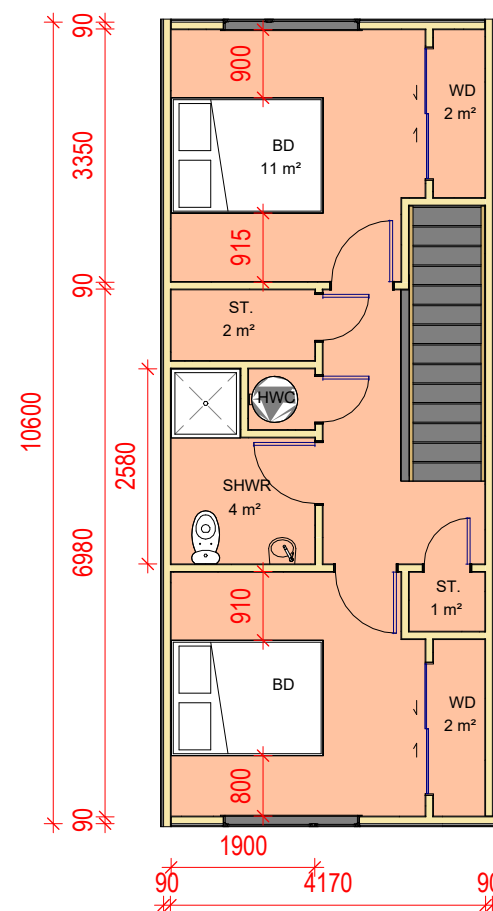


2 FIRST FLOOR PLAN - TYPE A1
1 : 50@A1 HALF-SCALE@A3

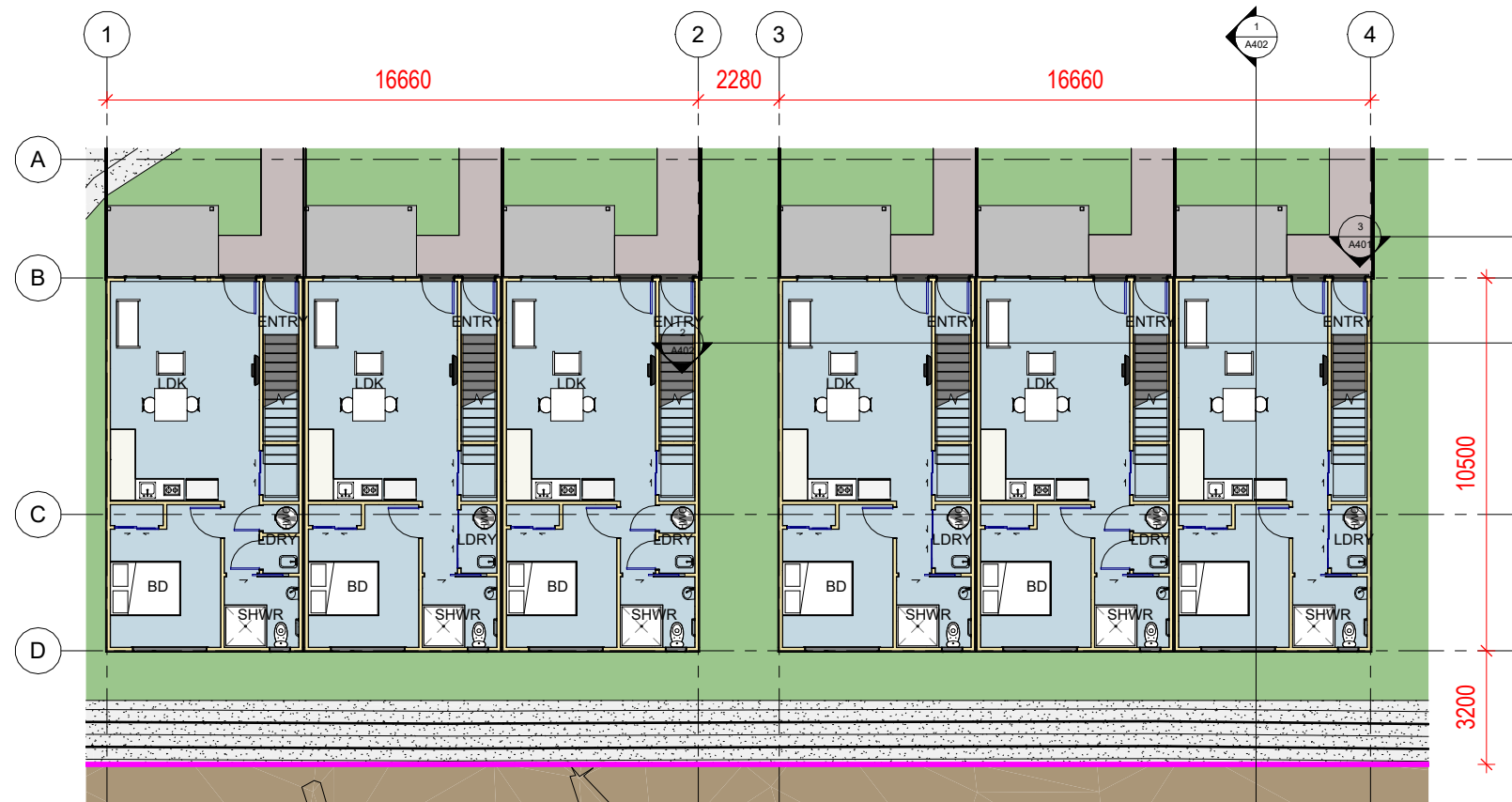


5 KEY PLAN - TYPE A
1 : 1000@A1 HALF-SCALE@A3

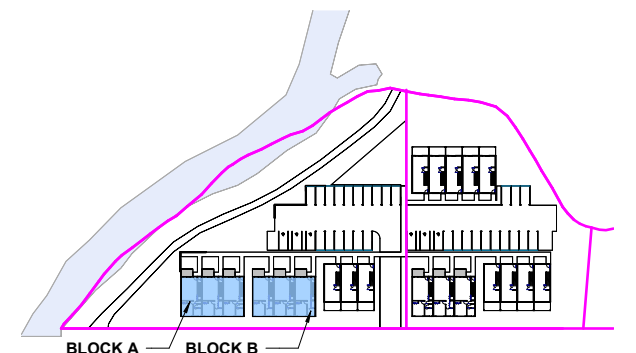
STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	YES
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	YES
	The main entry pathway is at least 1m wide from the street and/or parking area.	YES
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	YES
	One path is at least 600mm wide between the dwelling and the clothesline	YES
	Where Timber landings and decks are provided, they are level entry.	YES
	All exterior doors have a clear opening width of at least 810mm.	YES
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	YES
	There is step-free access from the main-entry to the main living-area.	YES
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	YES
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	YES
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	YES
Bathroom	All bathrooms on the main living level are at least 2120mm x 1920mm (measured between framing) with clearances of at 800mm between fixtures. Do not install a wet area-shower. No floor rebate required. Door swing inwards.	YES
Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	YES
Fixtures and Fittings	To be compliant during BC Stage	YES
Finishes	To be compliant during BC Stage	YES



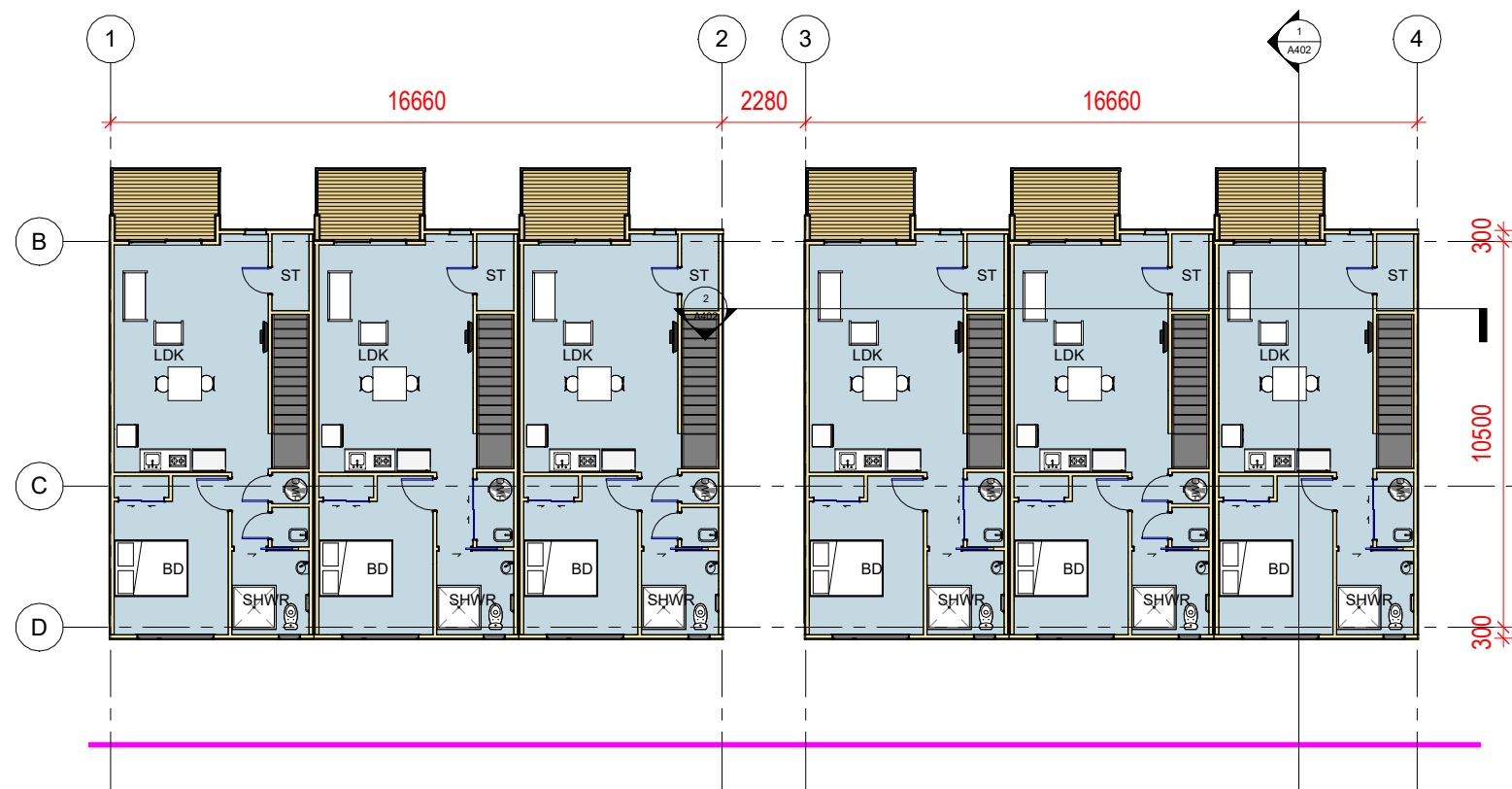
STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	<u>YES</u>
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	<u>YES</u>
	The main entry pathway is at least 1m wide from the street and/or parking area.	<u>YES</u>
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	<u>YES</u>
	One path is at least 600mm wide between the dwelling and the clothesline	<u>YES</u>
	Where Timber landings and decks are provided, they are level entry.	<u>YES</u>
	All exterior doors have a clear opening width of at least 810mm.	<u>YES</u>
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	<u>YES</u>
	There is step-free access from the main-entry to the main living-area.	<u>YES</u>
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	<u>YES</u>
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	<u>YES</u>
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	<u>YES</u>
Bathroom	All bathrooms on the main living level are at least 2120mm x 1920mm (measured between framing) with clearances of at 800mm between fixtures. Do not install a wet area-shower. No floor rebate required. Door swing inwards.	<u>YES</u>
Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	<u>YES</u>
Fixtures and Fittings	To be compliant during BC Stage	<u>YES</u>
Finishes	To be compliant during BC Stage	<u>YES</u>



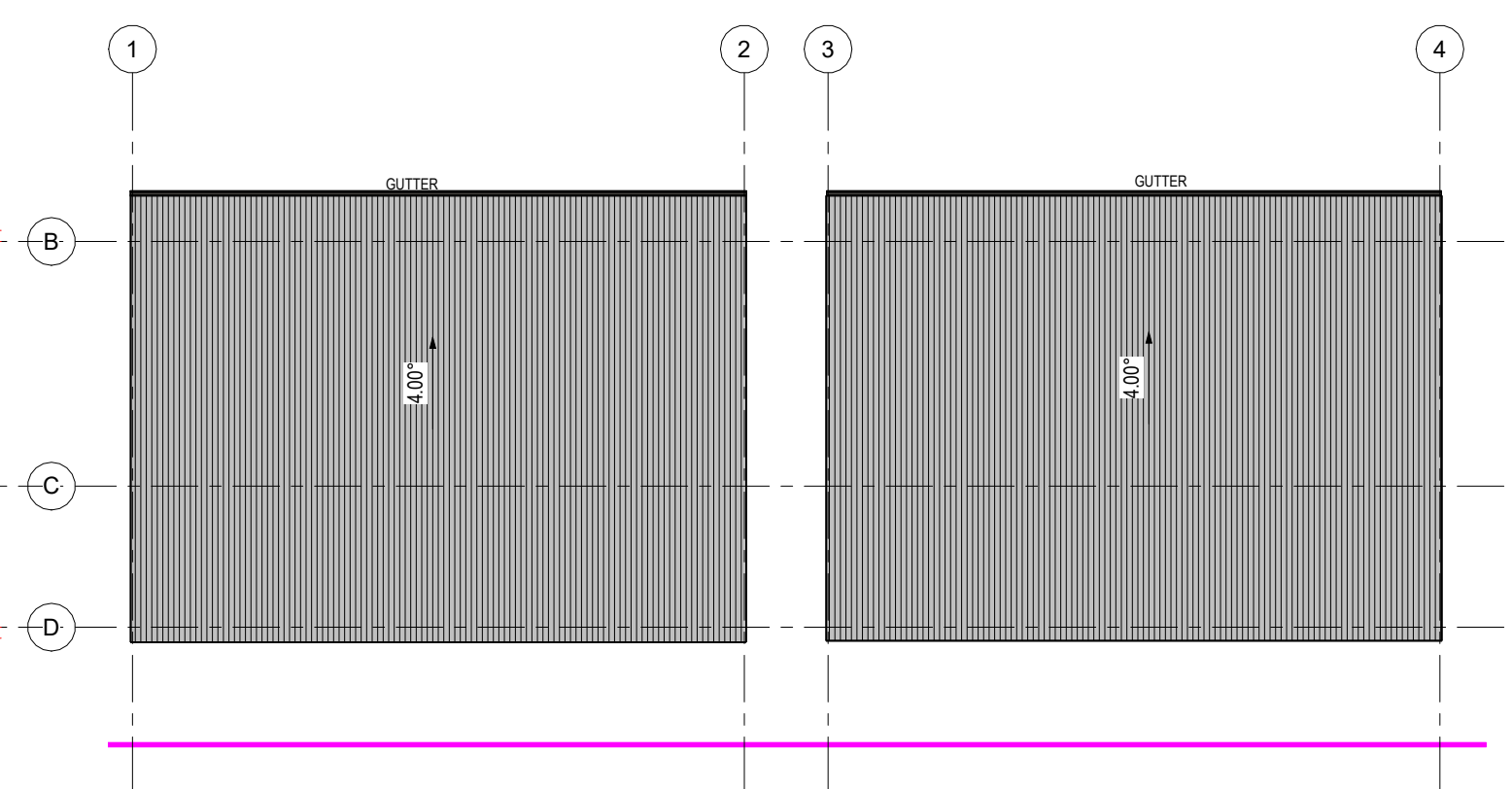
1 GROUND FLOOR PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



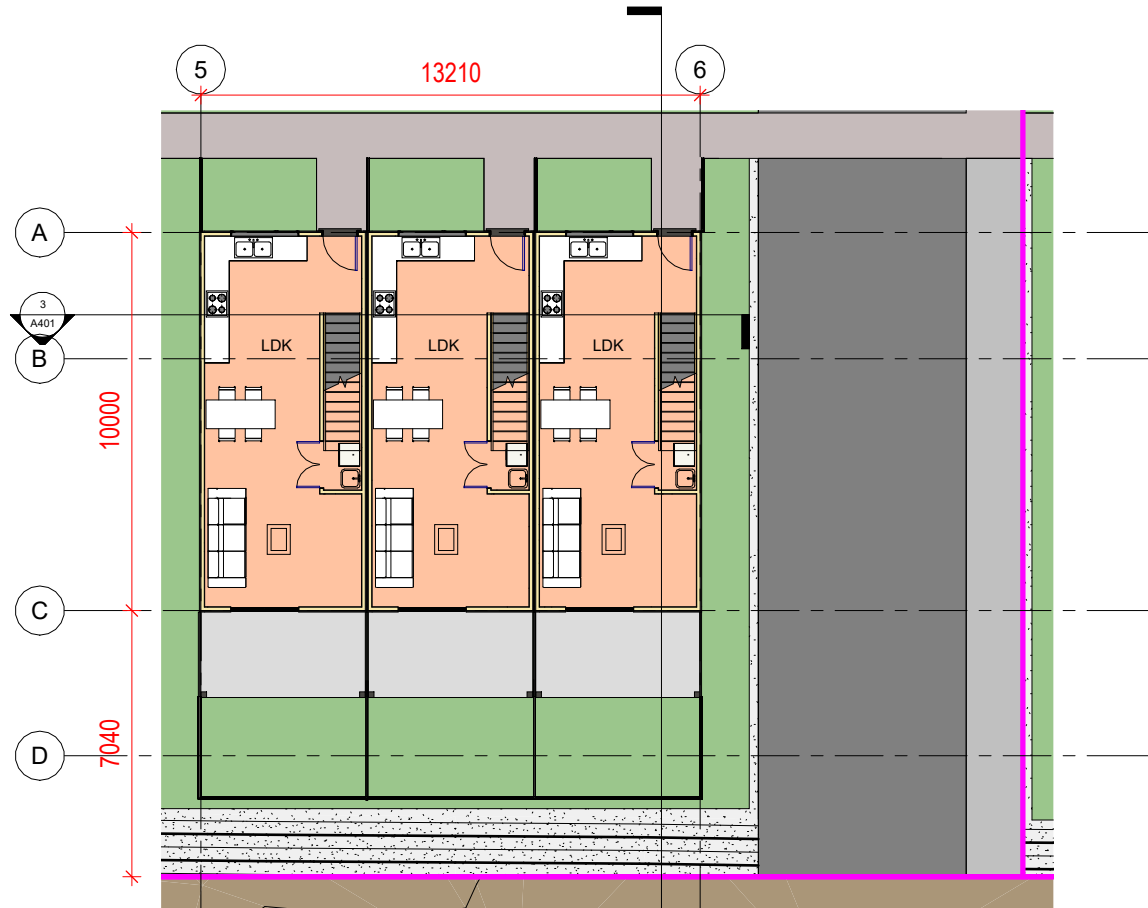
4 KEY PLAN - BLOCK A-B
1 : 1000@A1 HALF-SCALE@A3



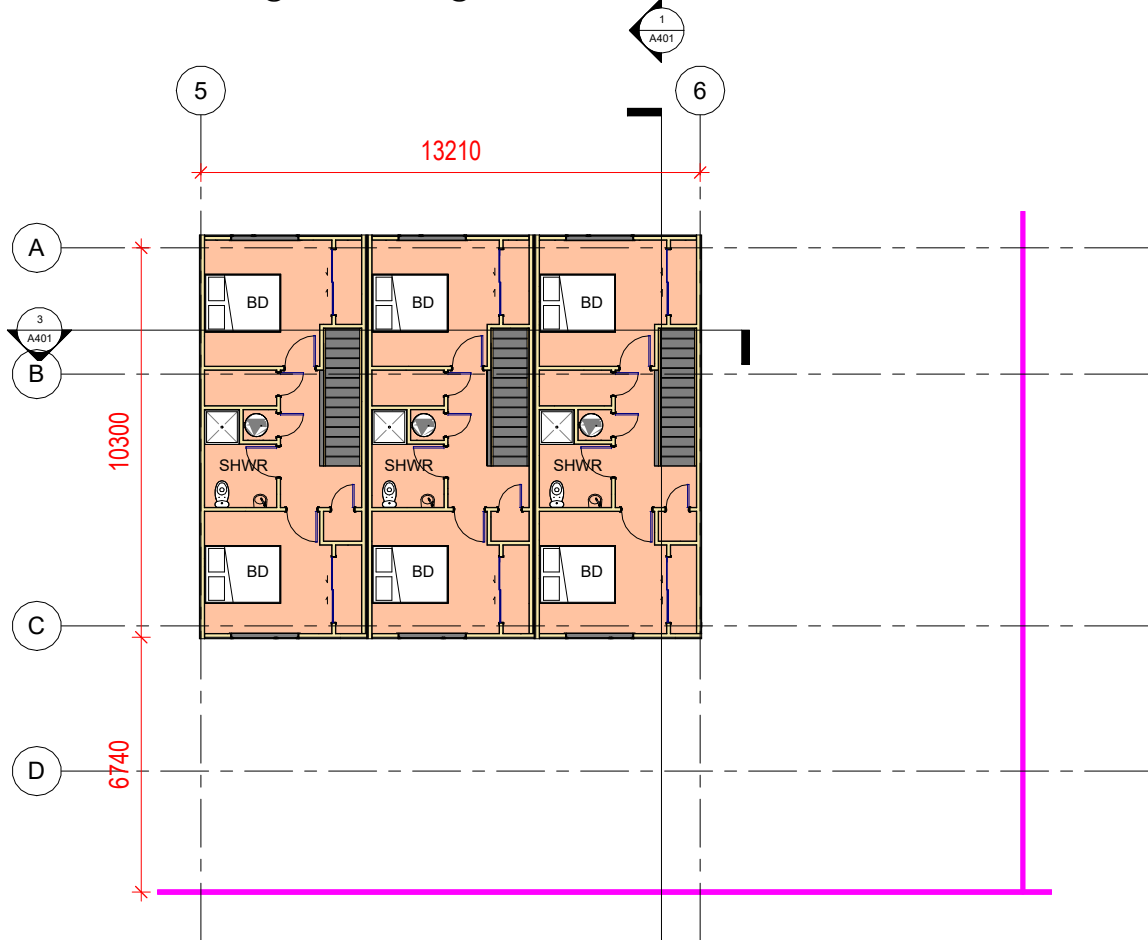
2 FIRST FLOOR PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



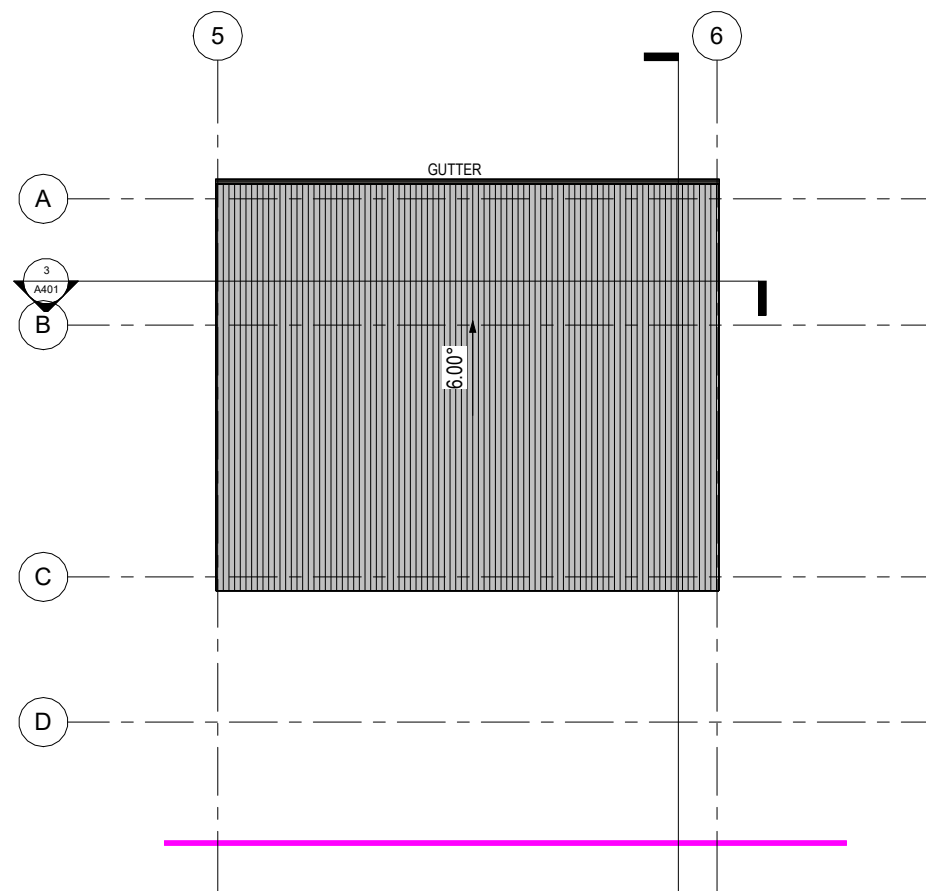
3 ROOF PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



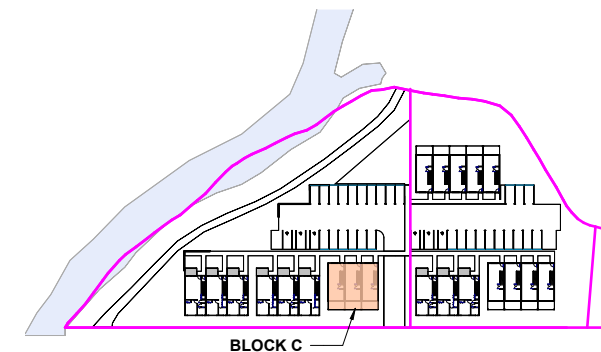
1 GROUND FLOOR PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



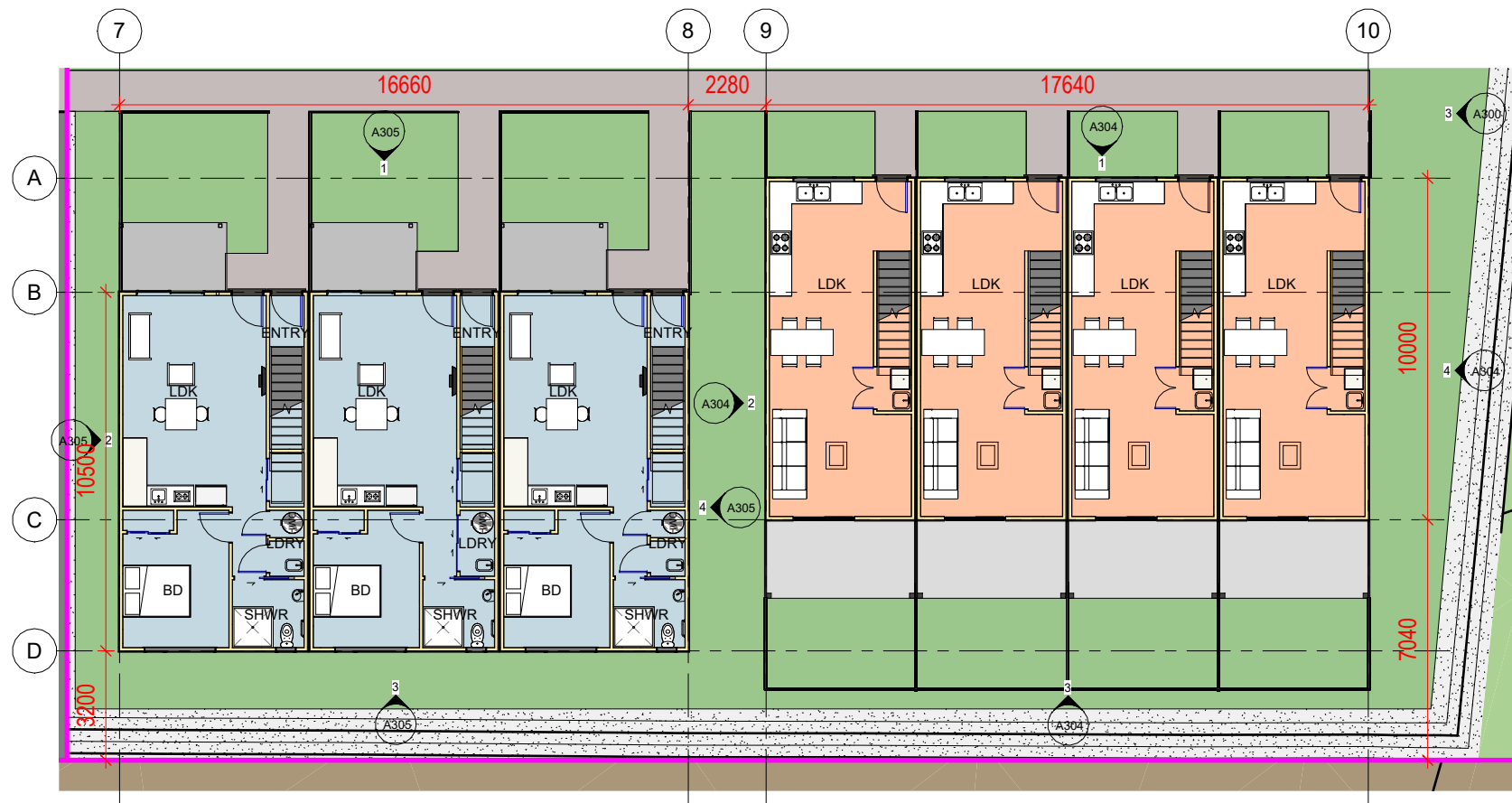
2 FIRST FLOOR PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



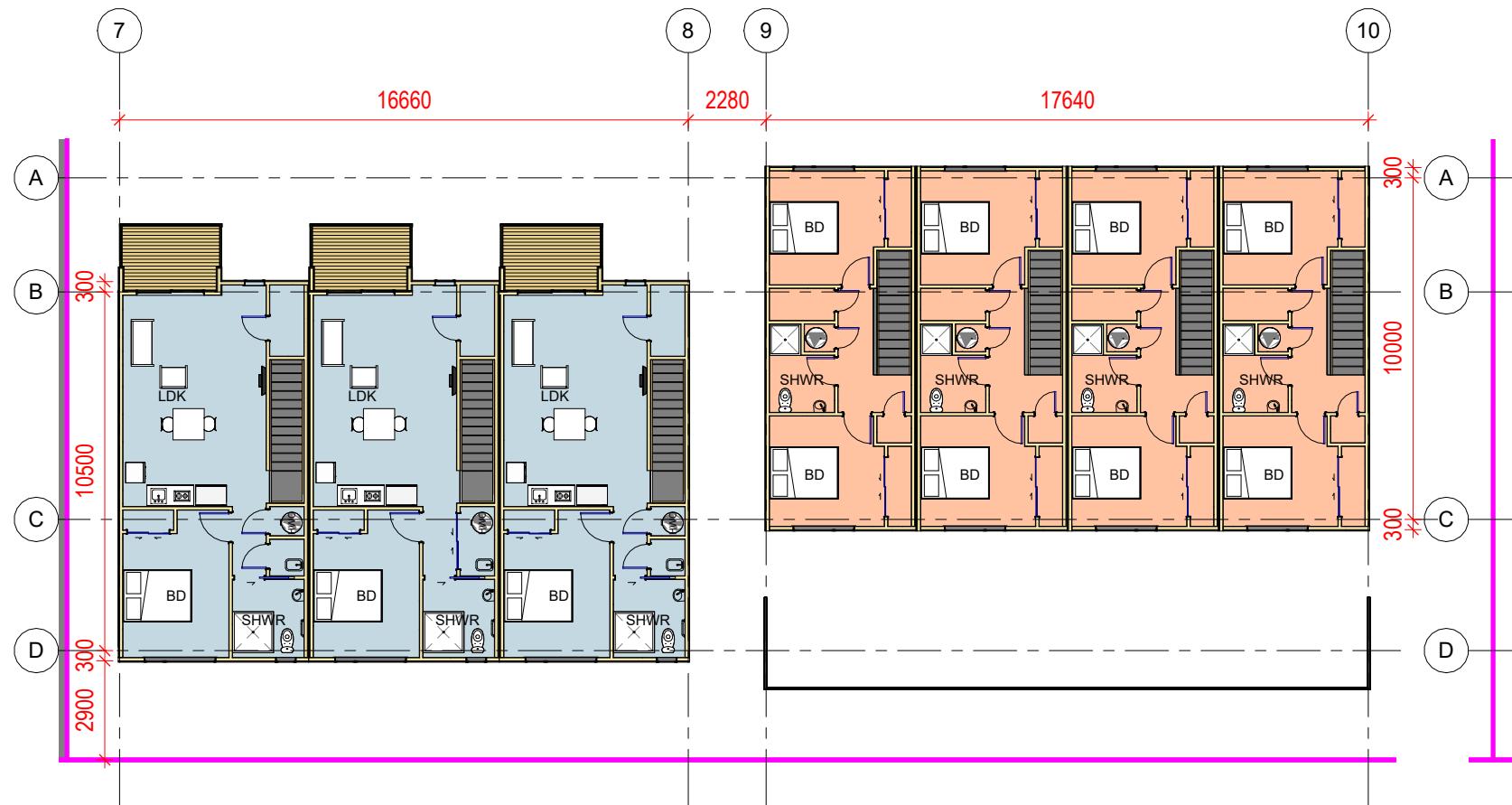
3 ROOF PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



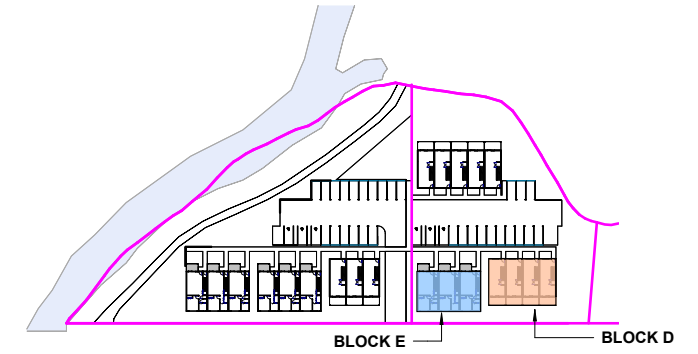
4 KEY PLAN - BLOCK C
1 : 1000@A1 HALF-SCALE@A3



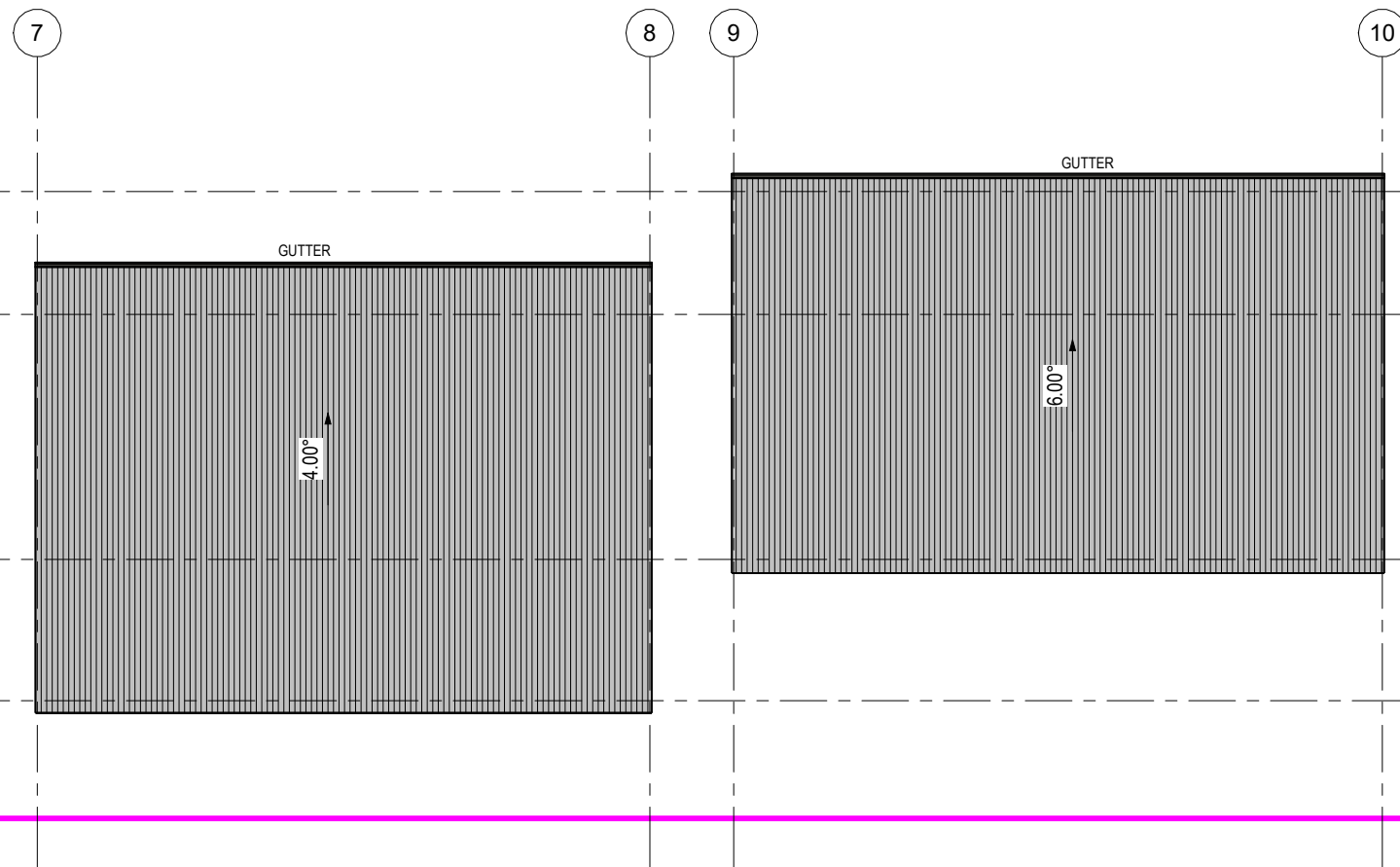
1 GROUND FLOOR PLAN - BLOCK D-E
1 : 100@A1 HALF-SCALE@A3



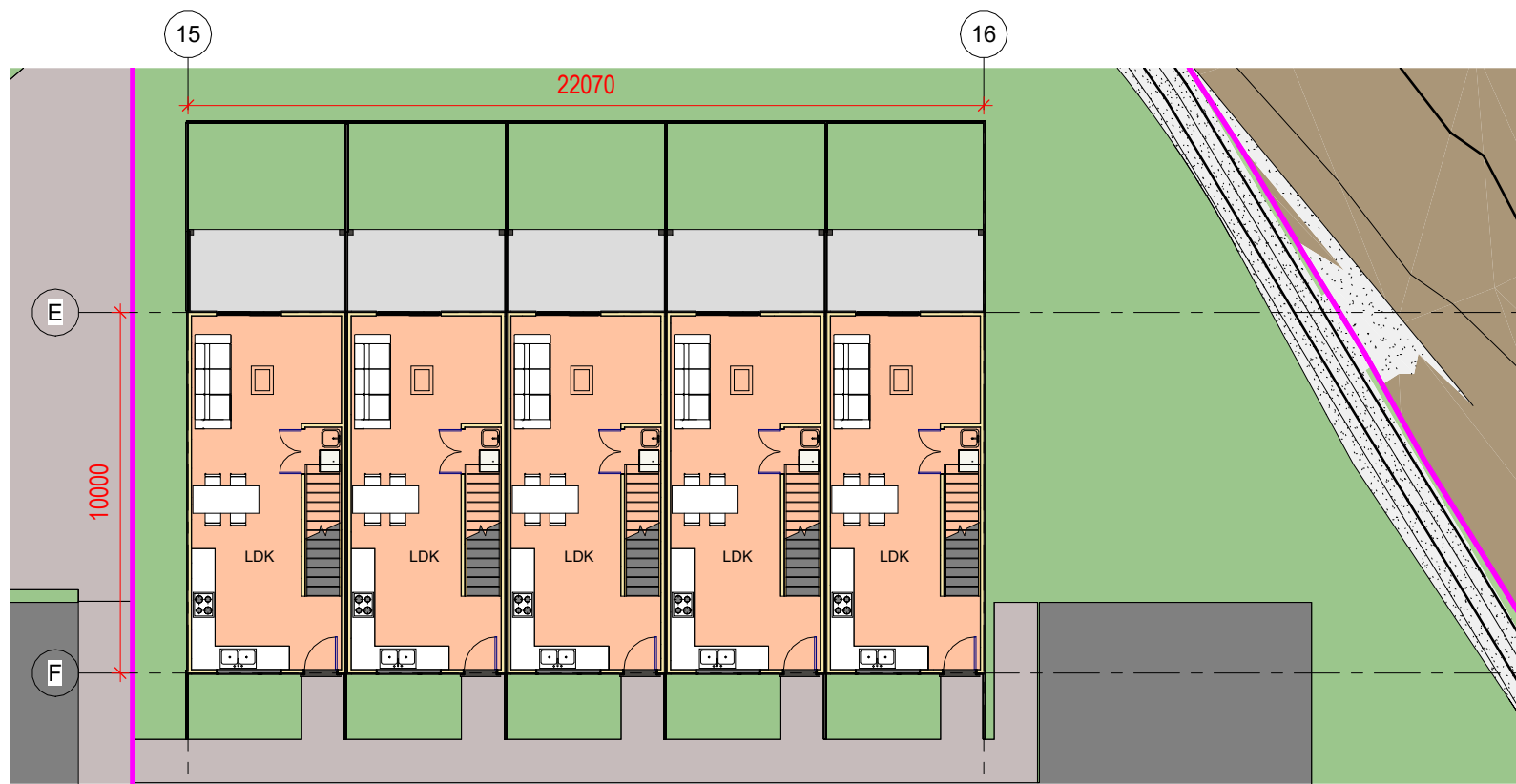
2 FIRST FLOOR PLAN - BLOCK D-E
1 : 100@A1 HALF-SCALE@A3



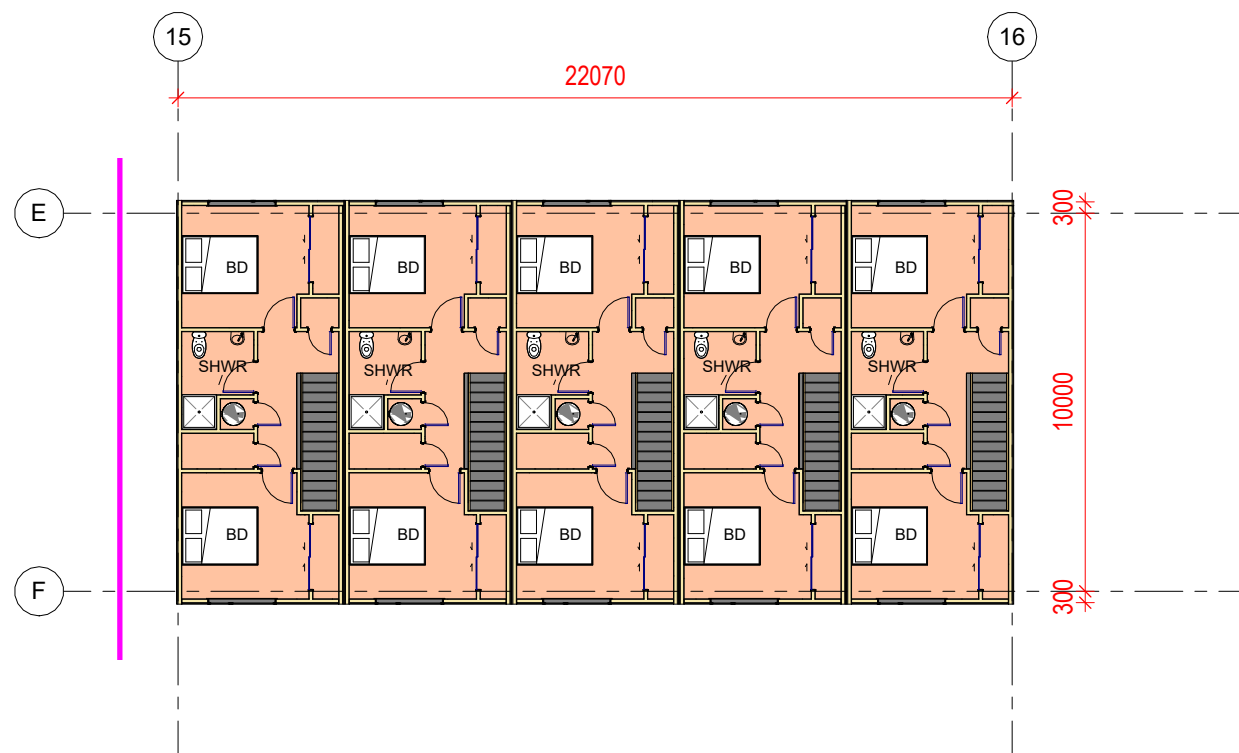
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1 : 1000@A1 HALF-SCALE@A3



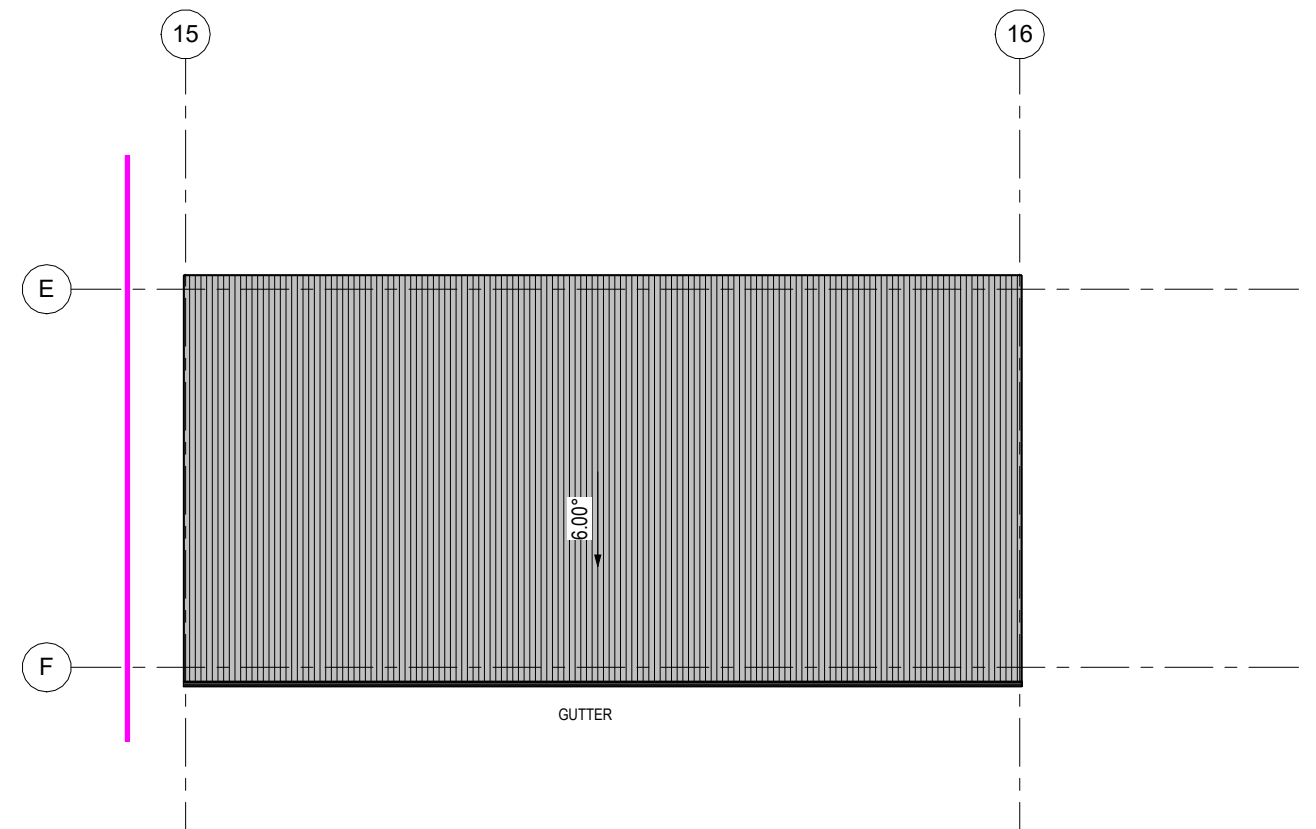
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1 : 100@A1 HALF-SCALE@A3



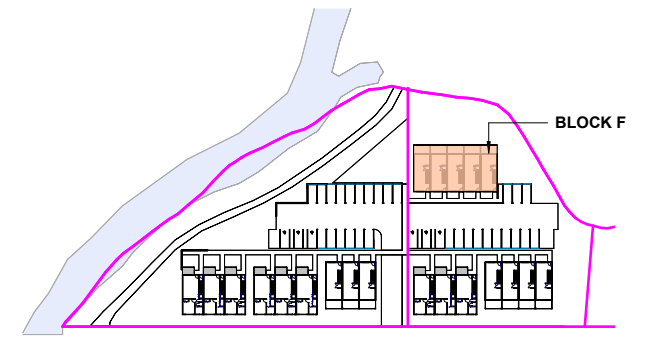
1 GROUND FLOOR PLAN - BLOCK F
1 : 100@A1 HALF-SCALE@A3



2 FIRST FLOOR PLAN - BLOCK F
1 : 100@A1 HALF-SCALE@A3

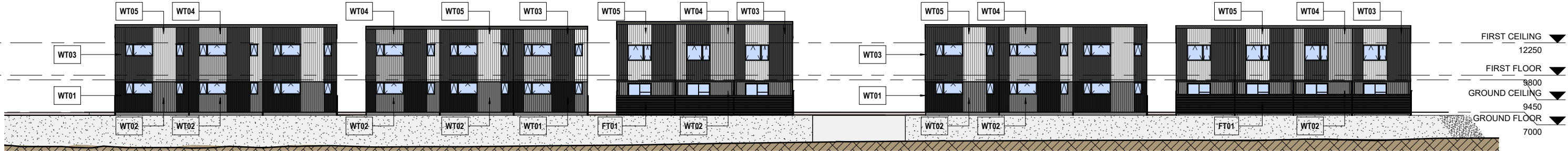


4 ROOF PLAN - BLOCK F
1 : 100@A1 HALF-SCALE@A3



3 KEY PLAN - BLOCK F
1 : 1000@A1 HALF-SCALE@A3

12m Height Boundary



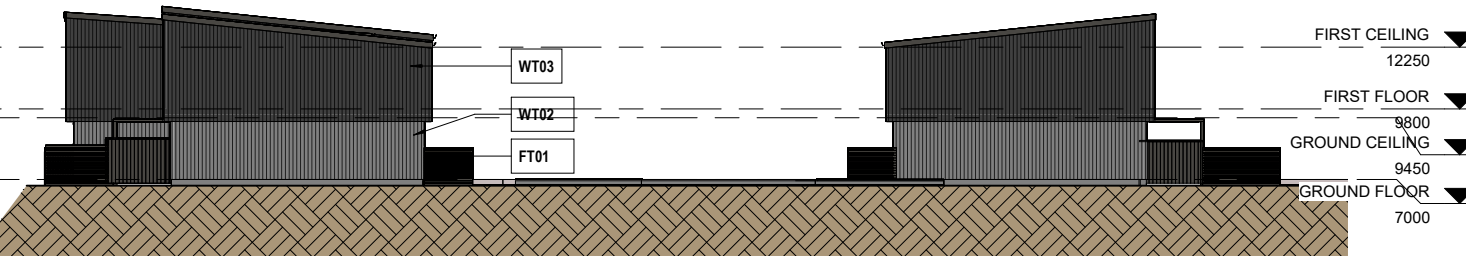
1 West Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary



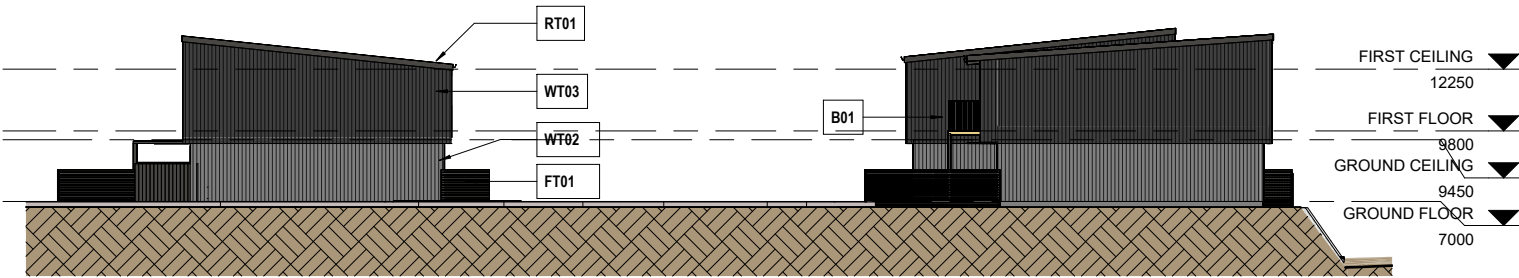
2 East Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary

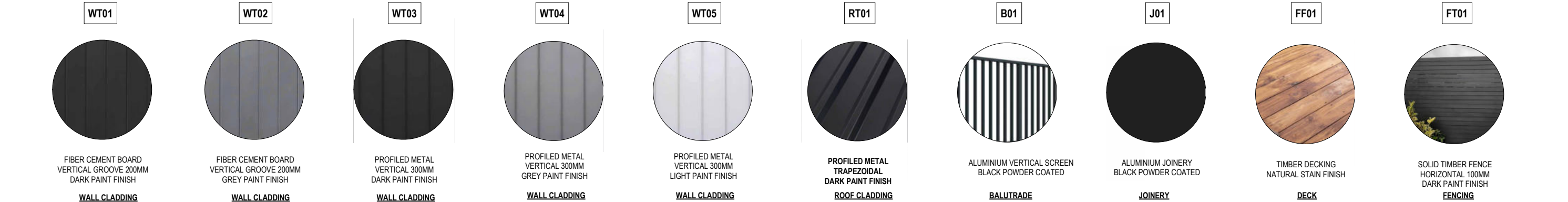


3 South Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary



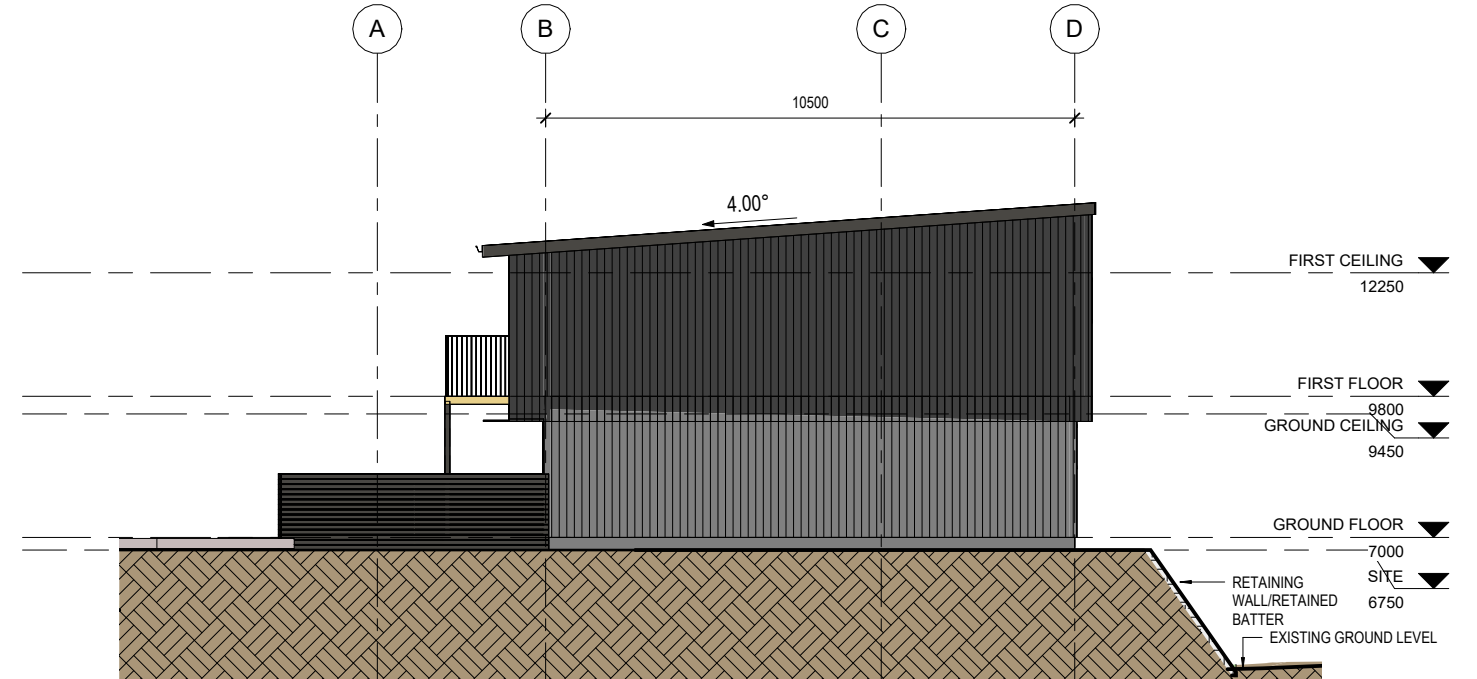
4 North Elevation
1 : 150@A1 HALF-SCALE@A3



BUILDING MATERIAL PALETTE



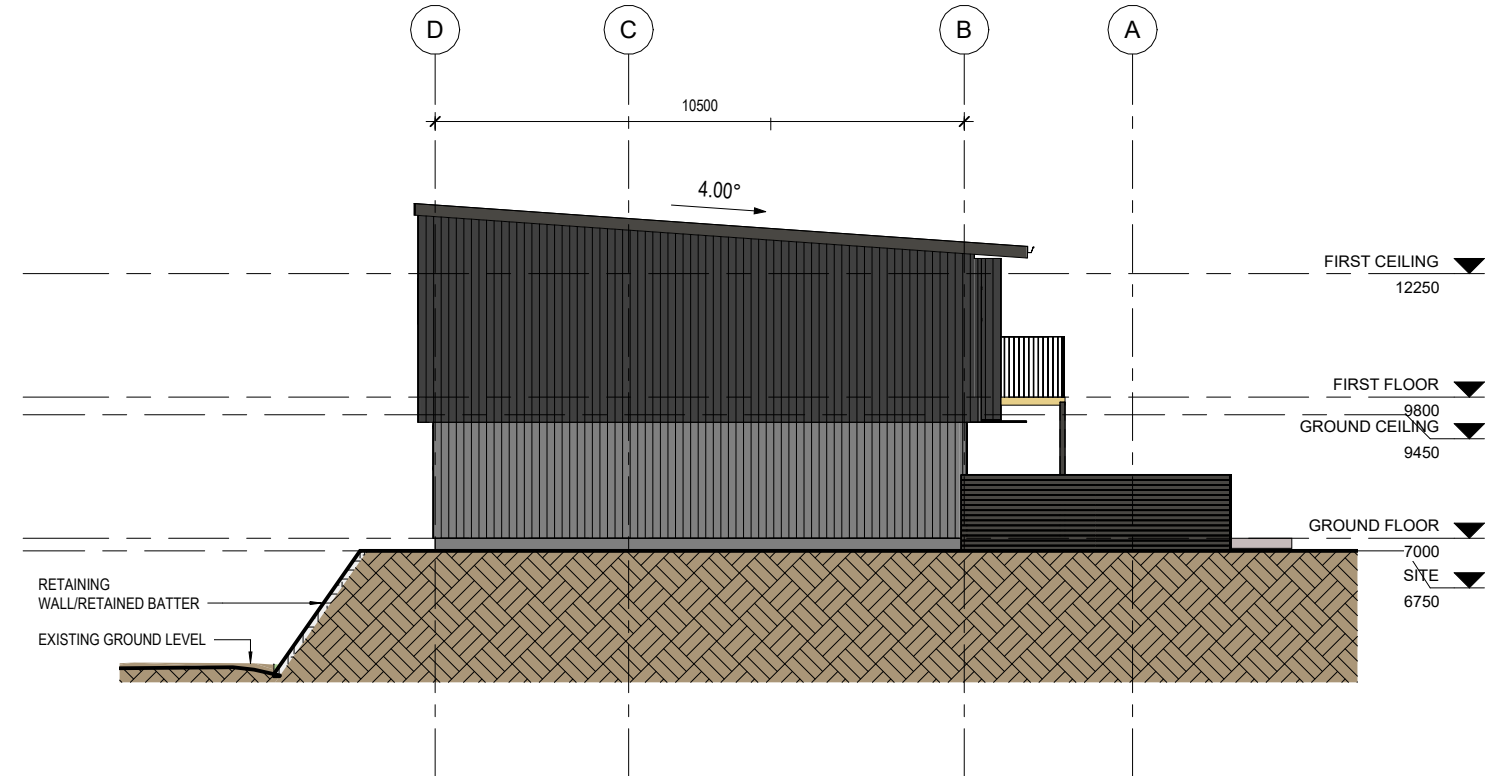
1 East Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



2 North Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



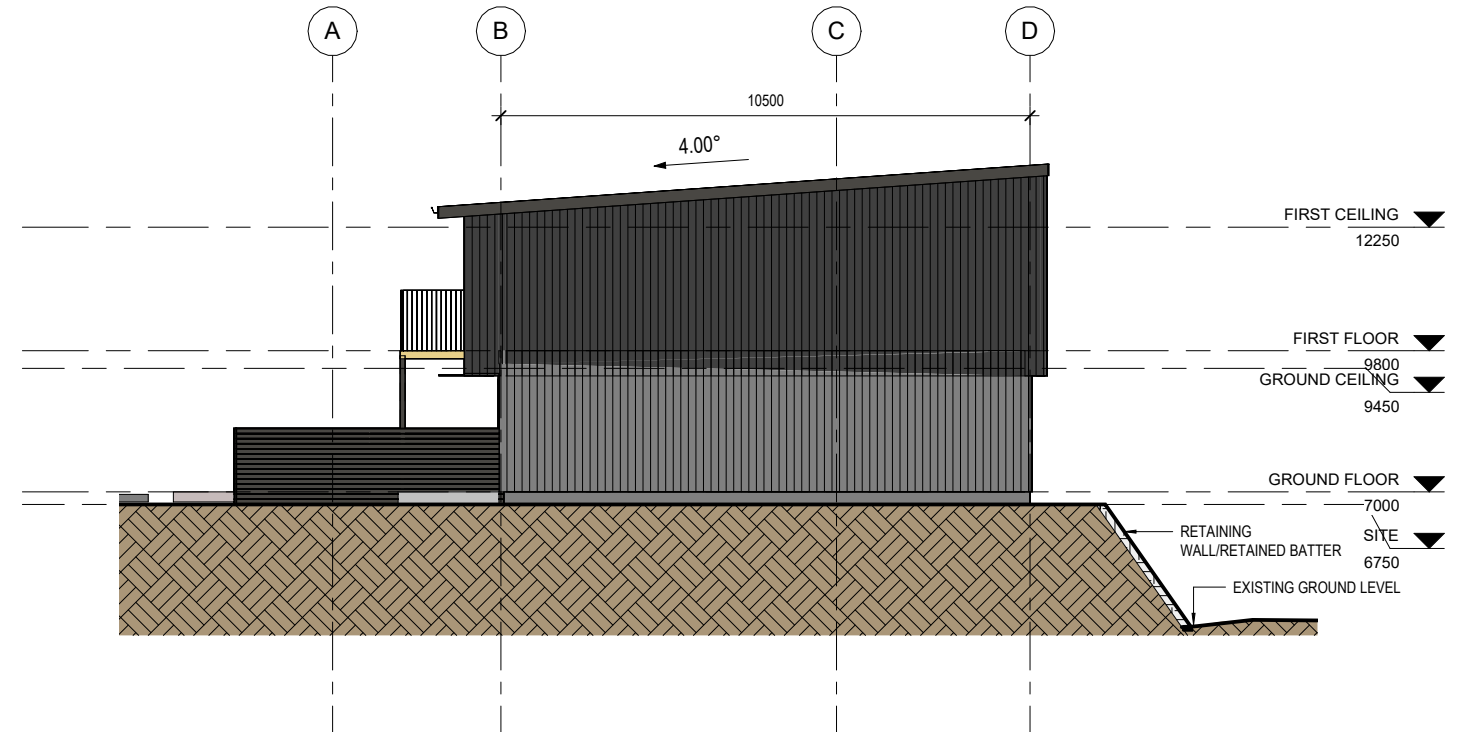
3 West Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



4 South Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



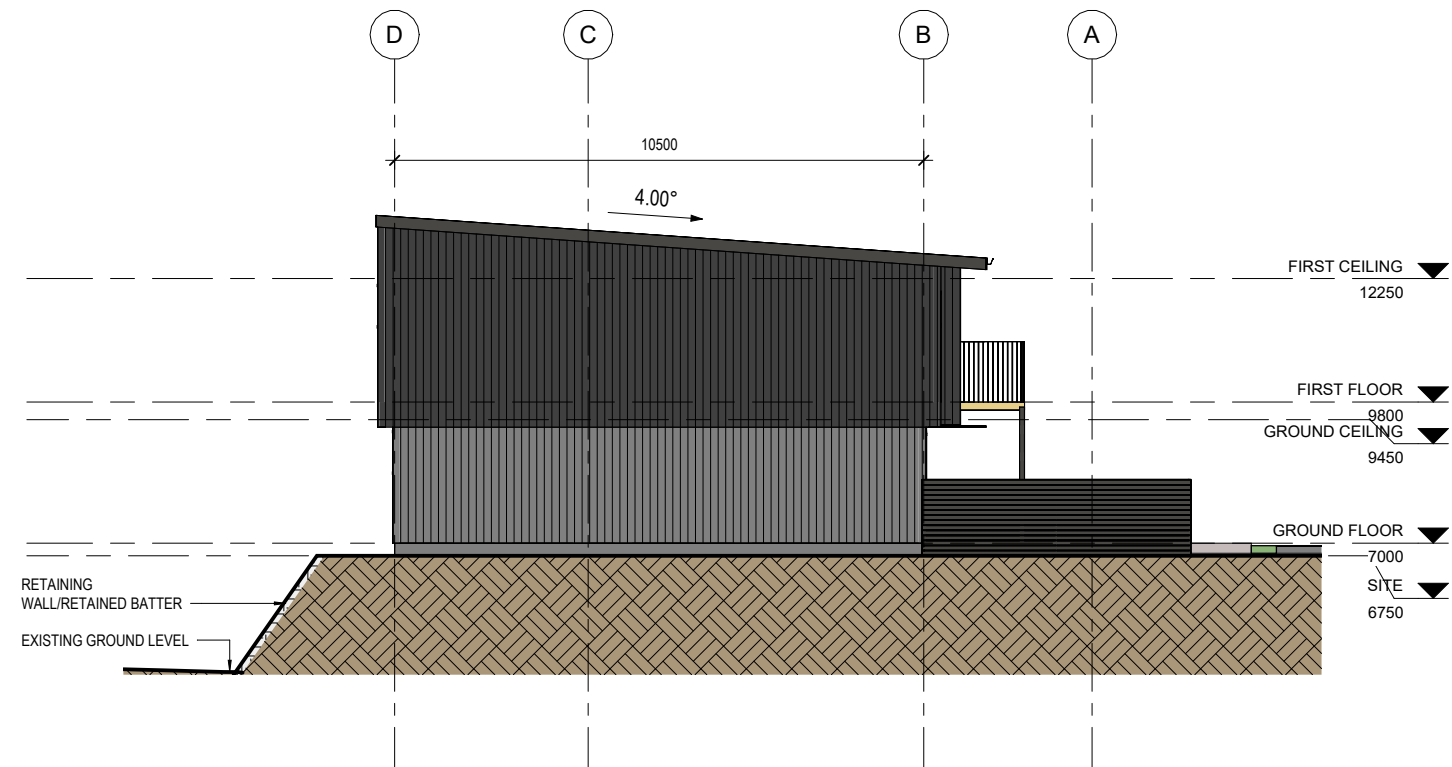
1 East Elevation - Block B
1 : 75@A1 HALF-SCALE@A3



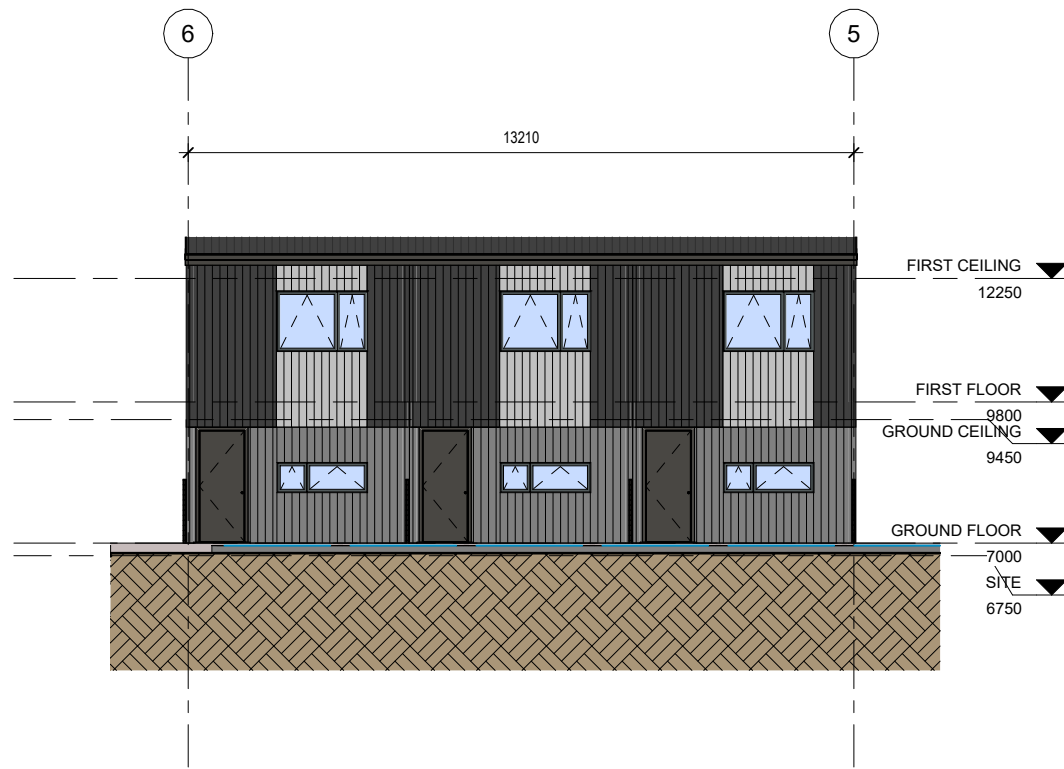
2 North Elevation - Block B
1 : 75@A1 HALF-SCALE@A3



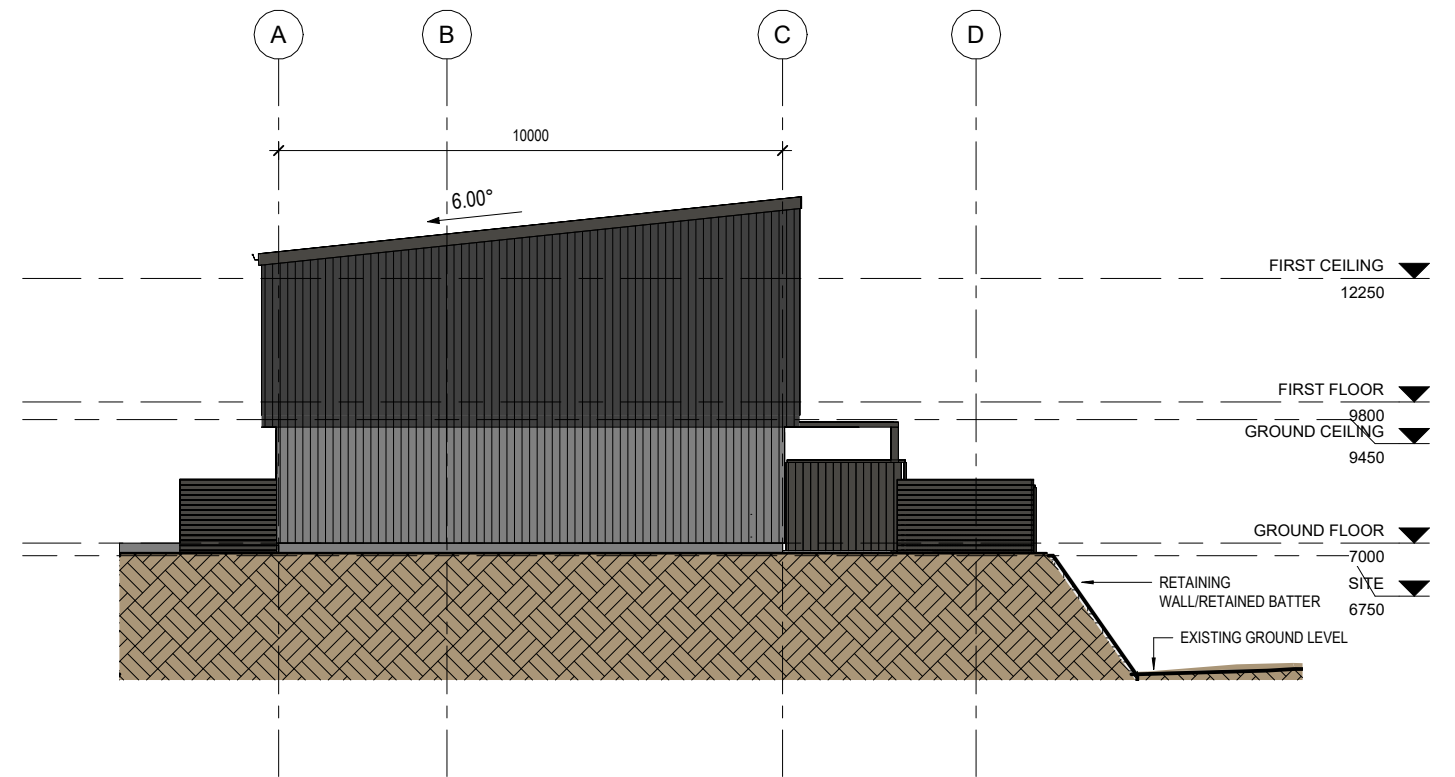
3 West Elevation - Block B
1 : 75@A1 HALF-SCALE@A3



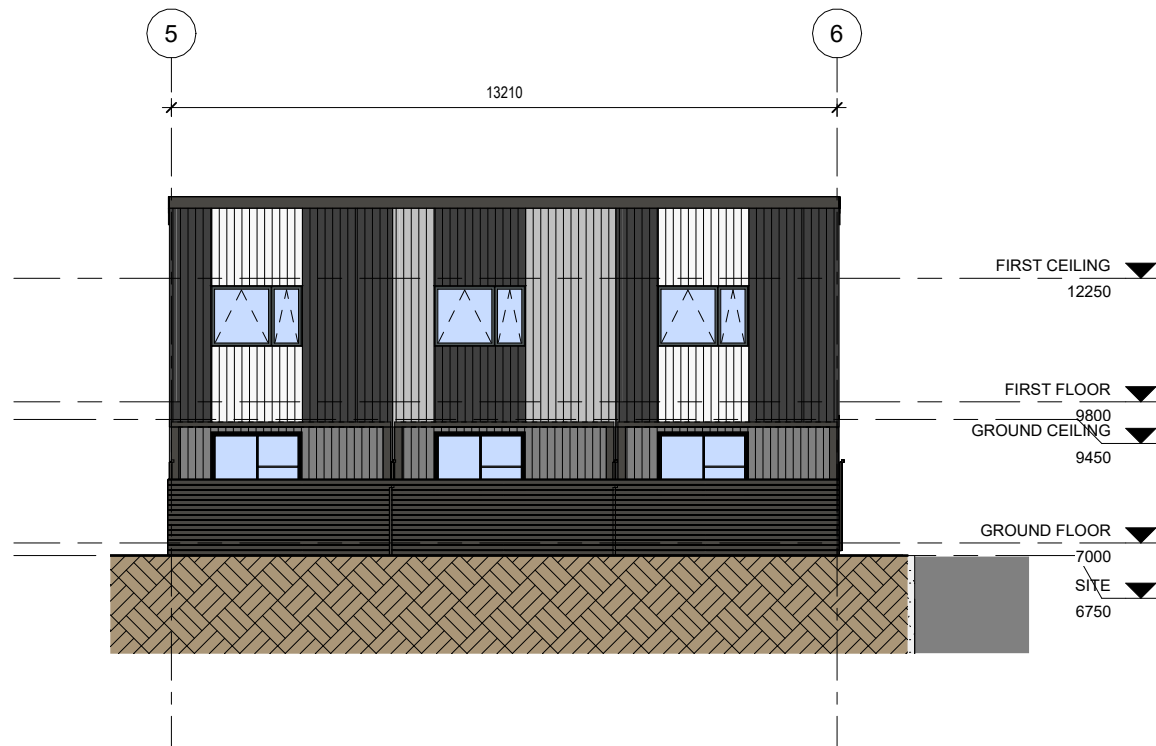
4 South Elevation - Block B
1 : 75@A1 HALF-SCALE@A3



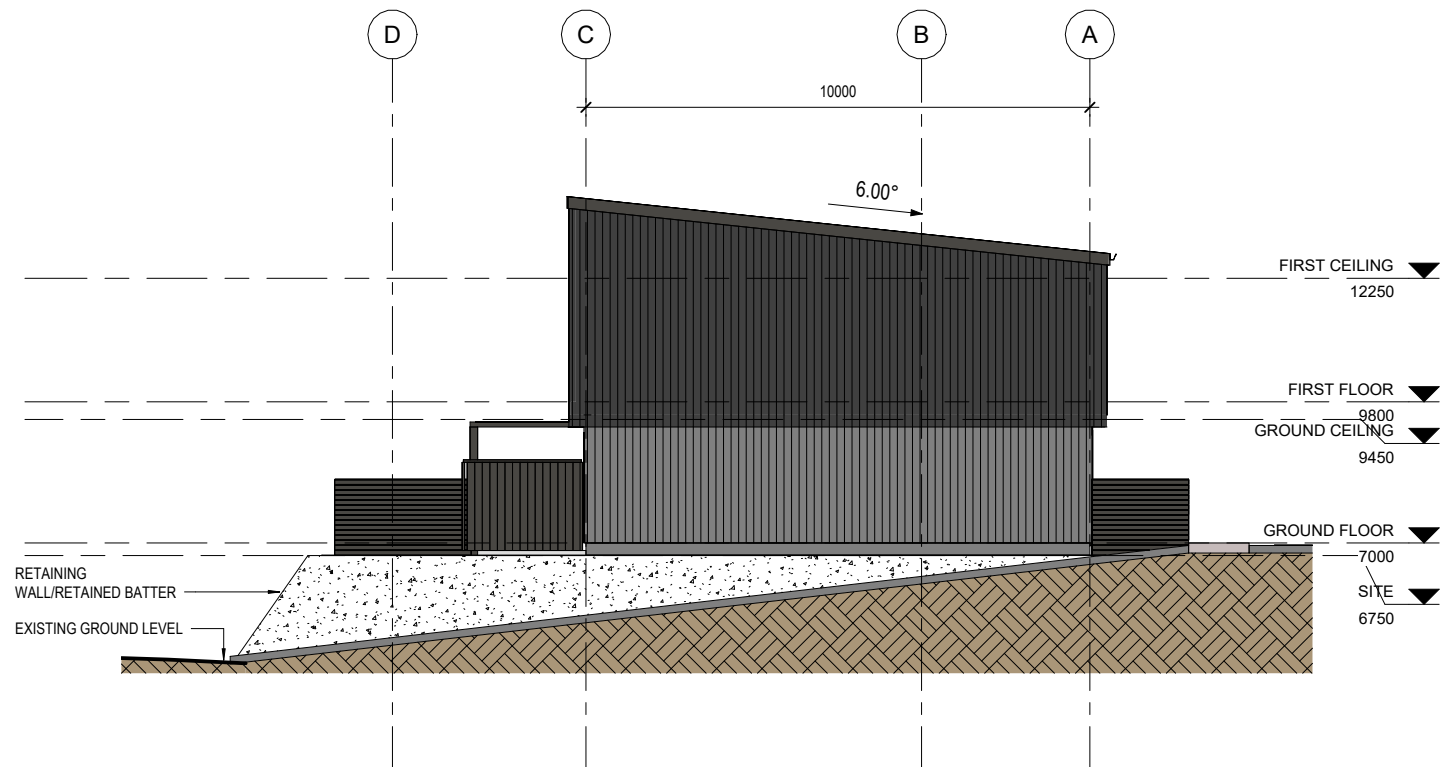
1 East Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



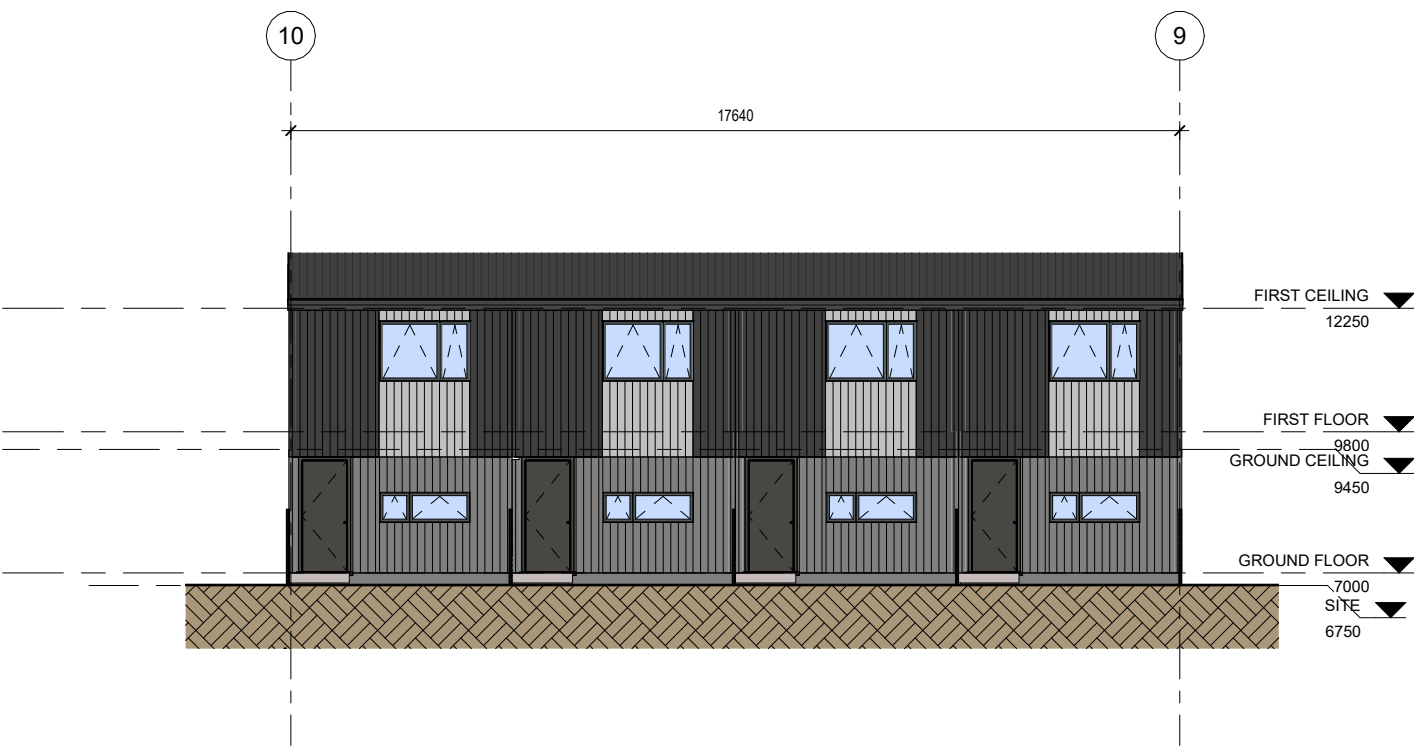
2 North Elevation - Block C
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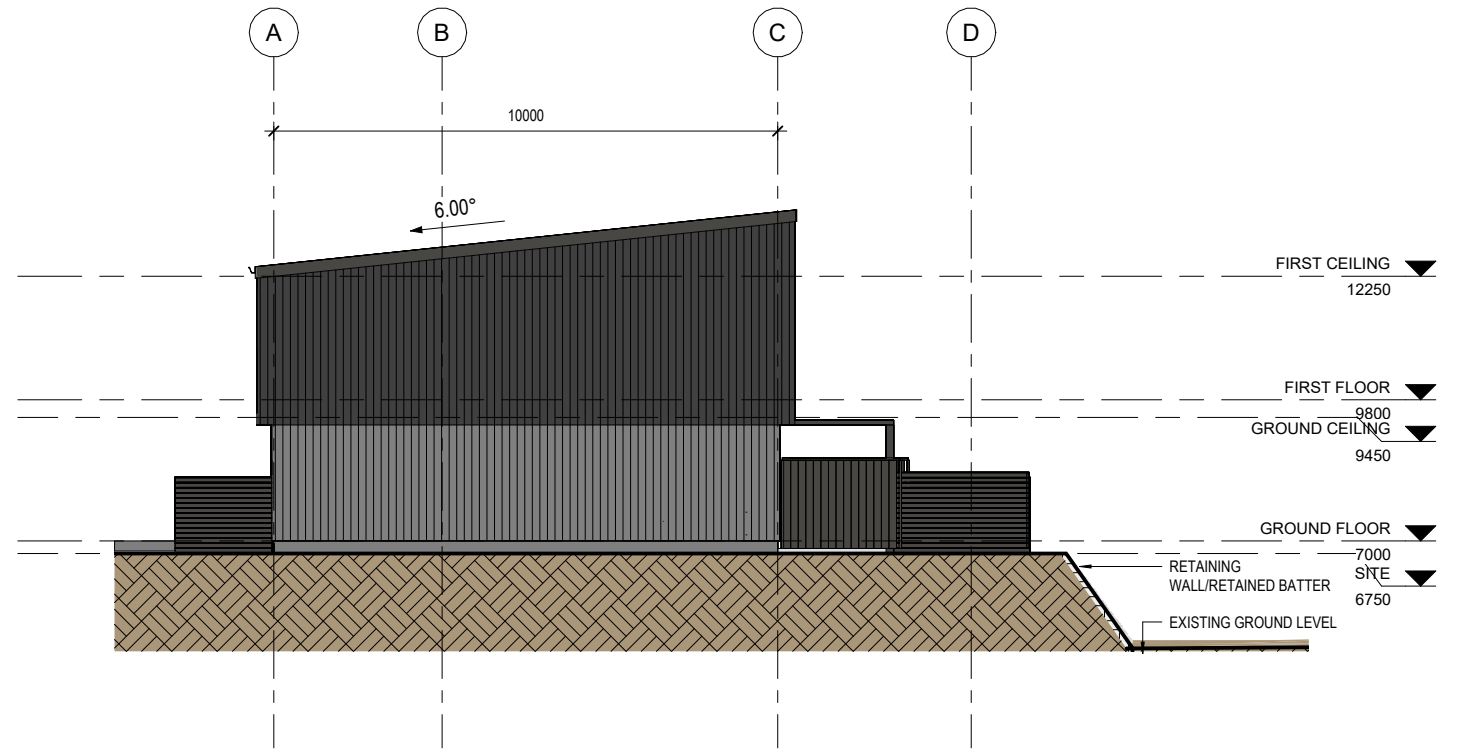
3 West Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



4 South Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



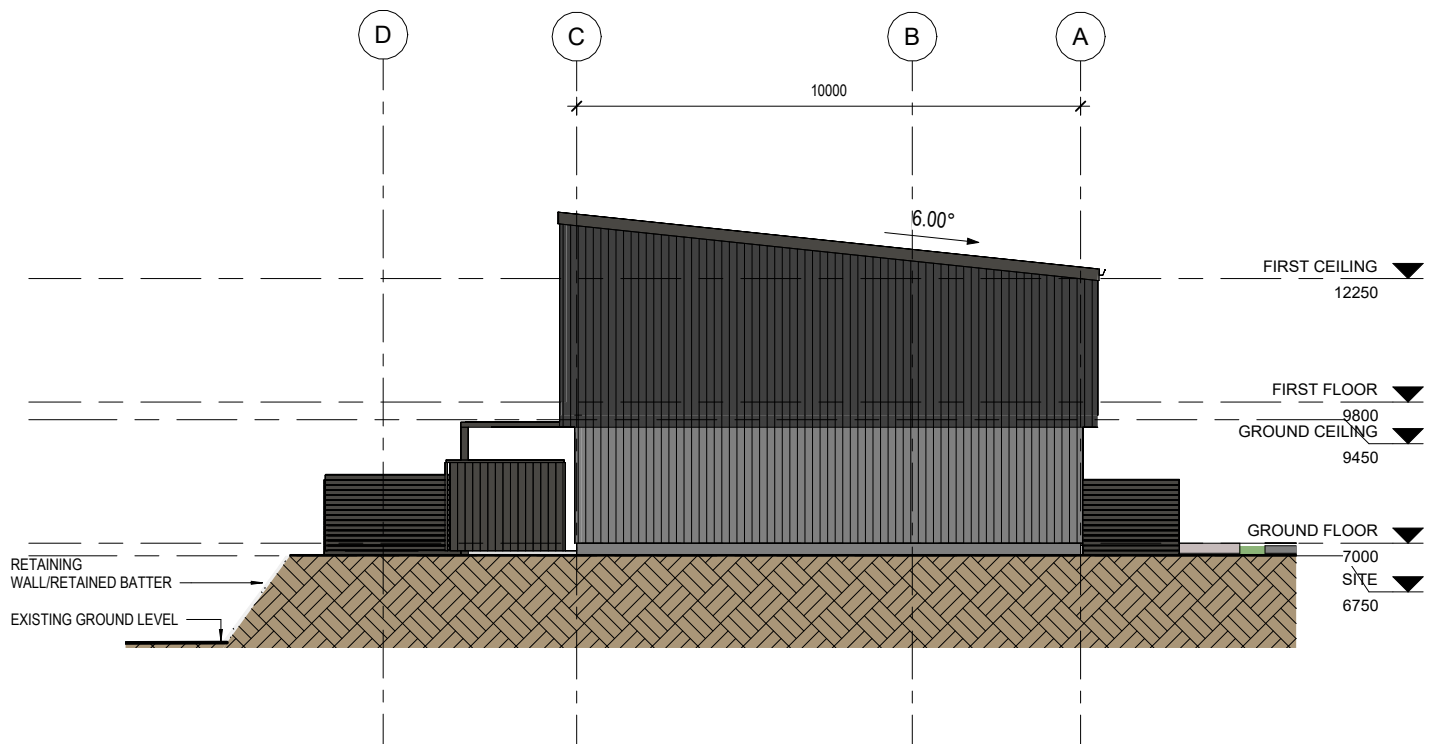
1 East Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



2 North Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



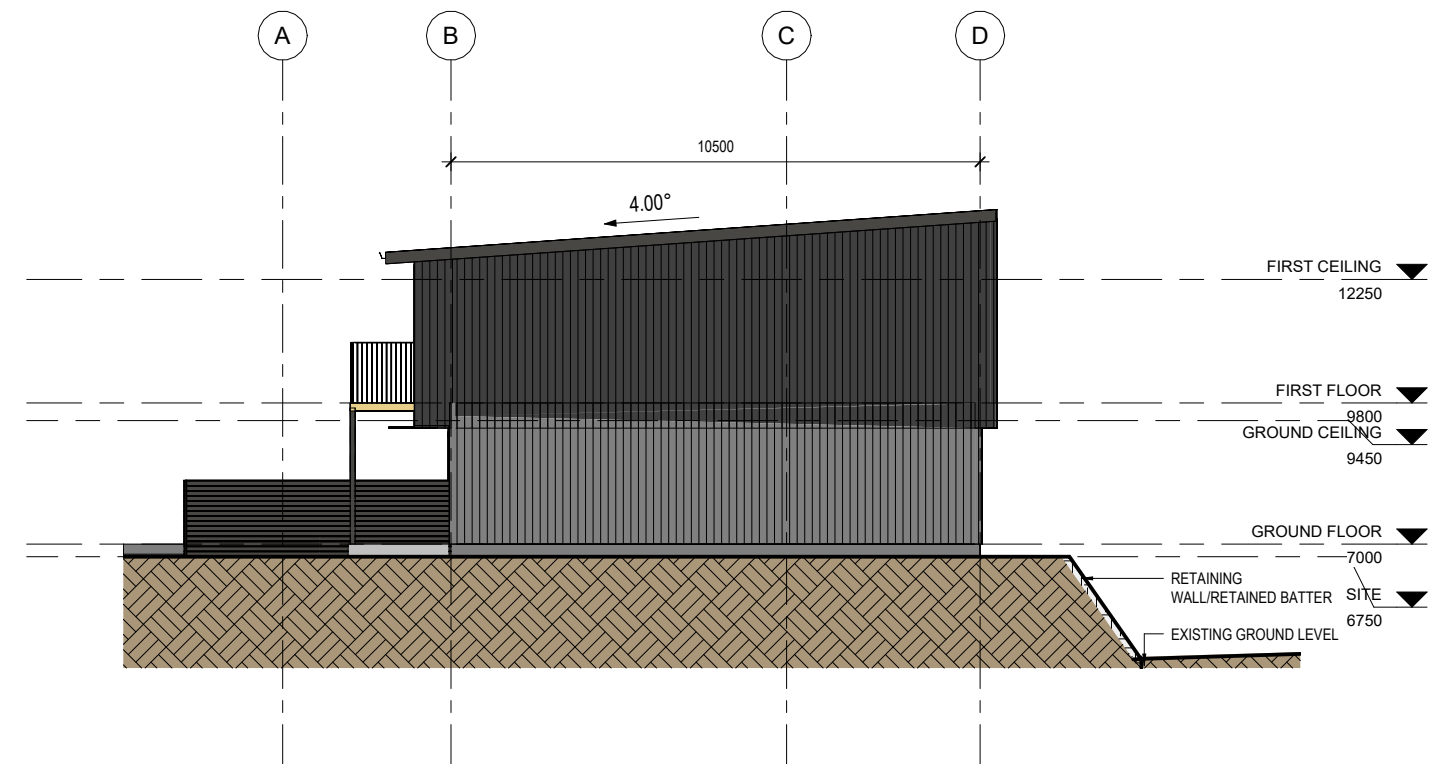
3 West Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



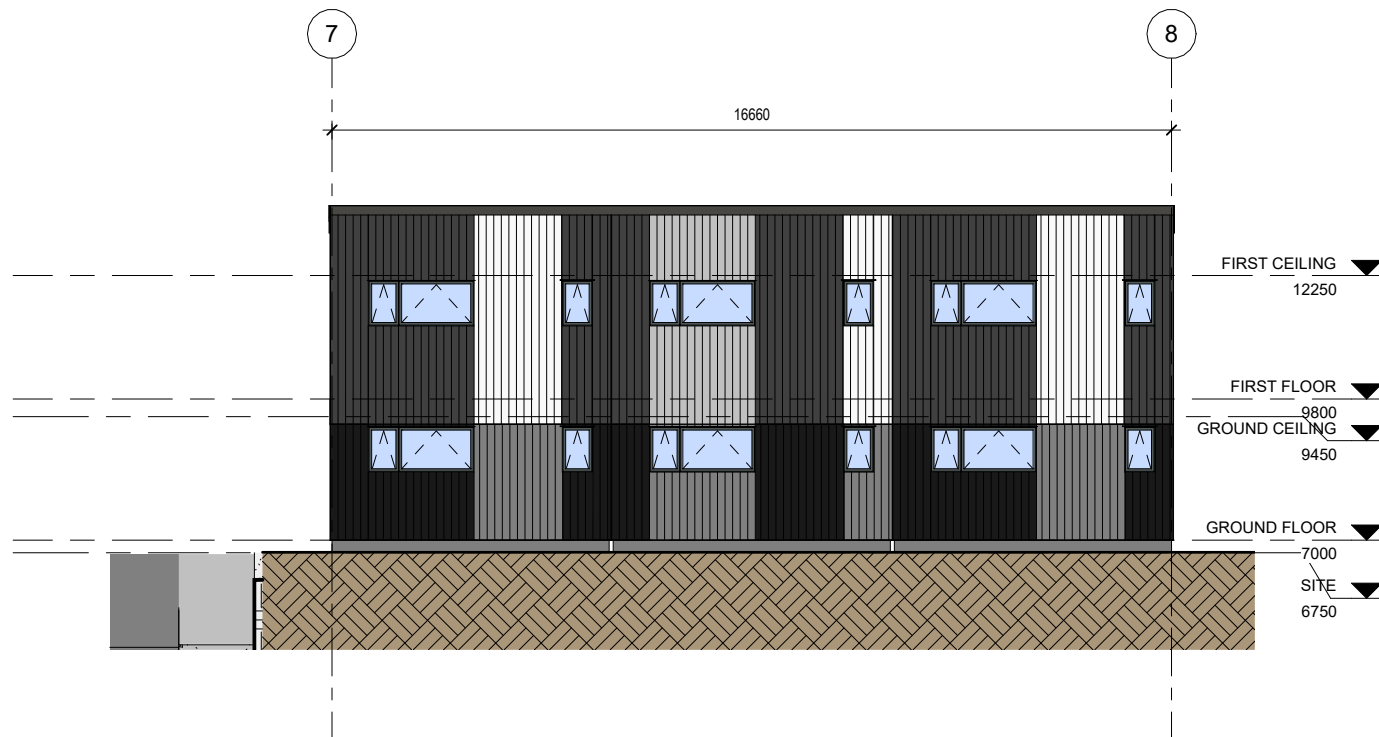
4 South Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



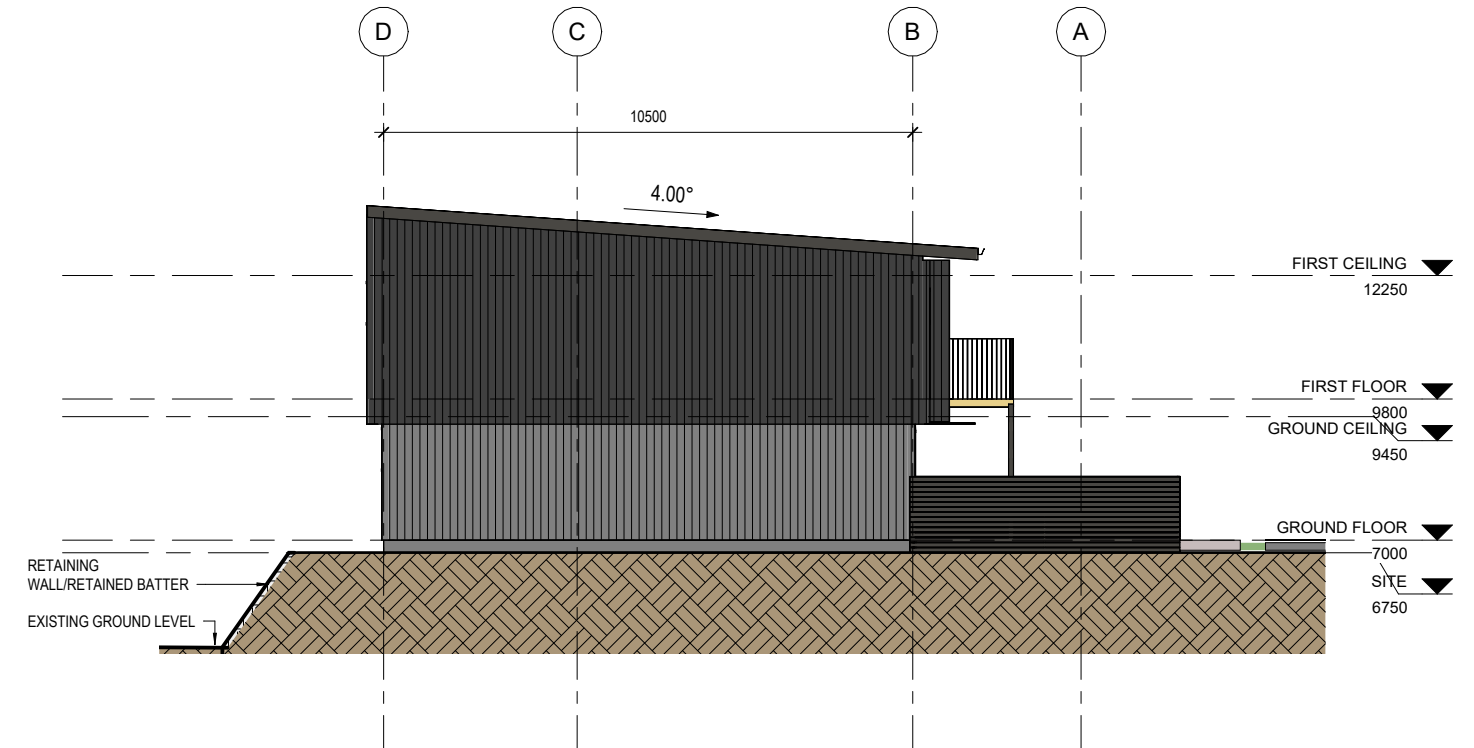
1 East Elevation - Block E
1 : 75@A1 HALF-SCALE@A3



2 North Elevation - Block E
1 : 75@A1 HALF-SCALE@A3



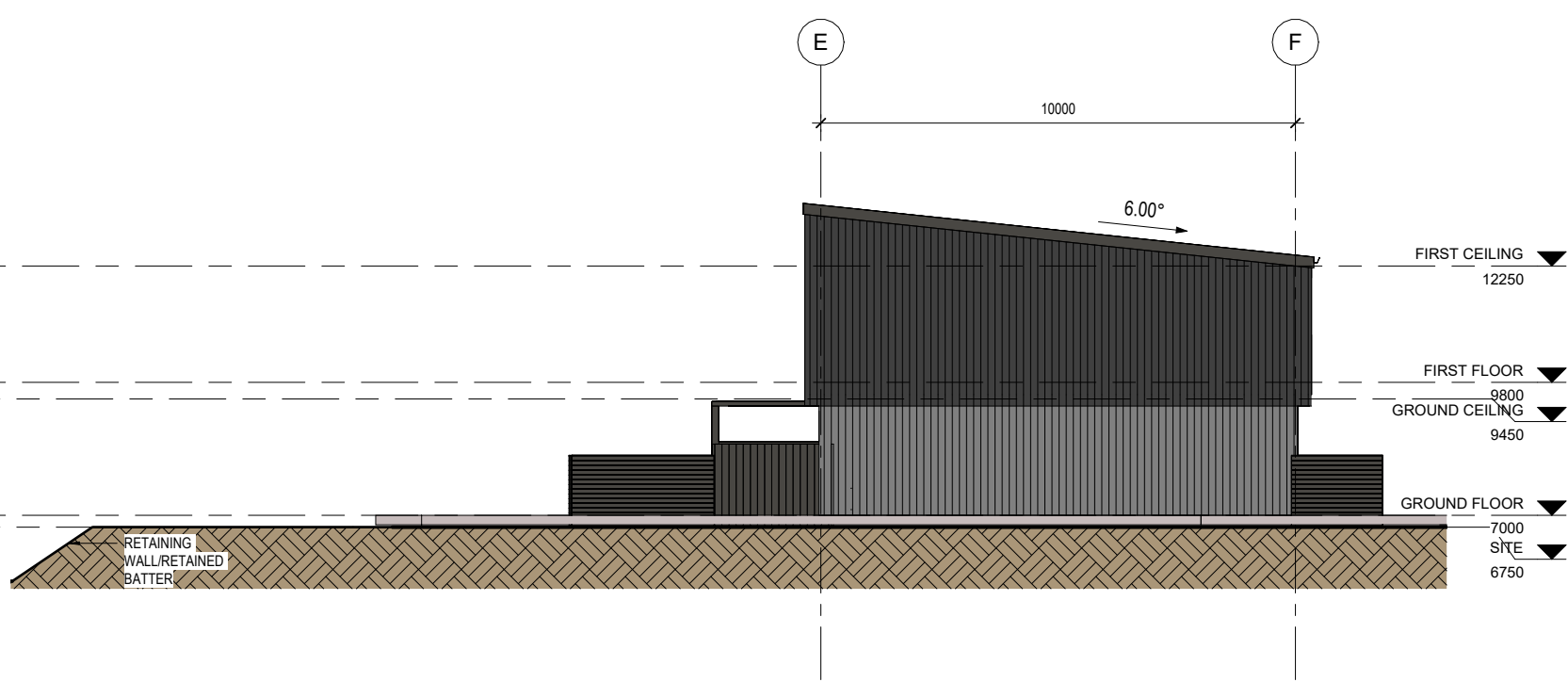
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1 : 75@A1 HALF-SCALE@A3



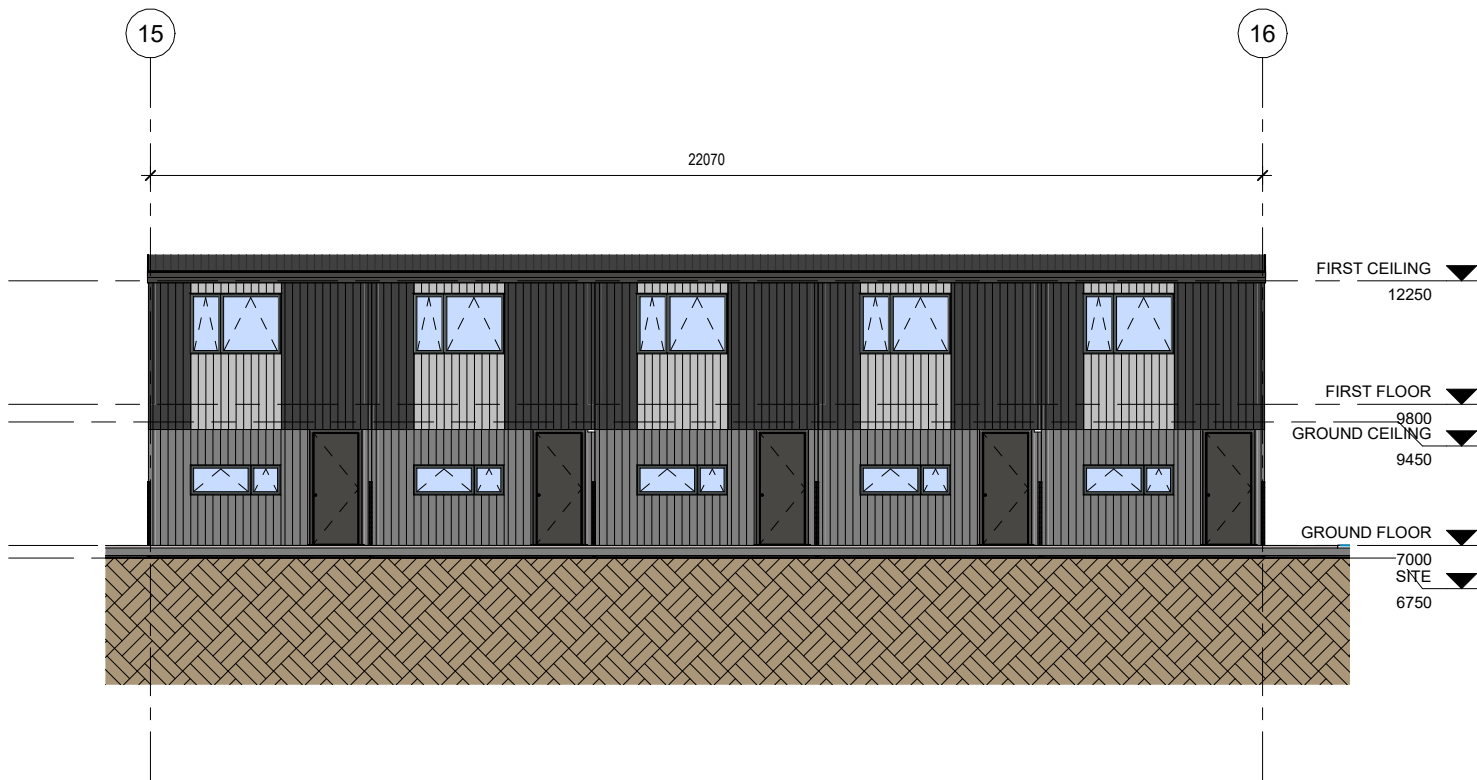
4 South Elevation - Block E
1 : 75@A1 HALF-SCALE@A3



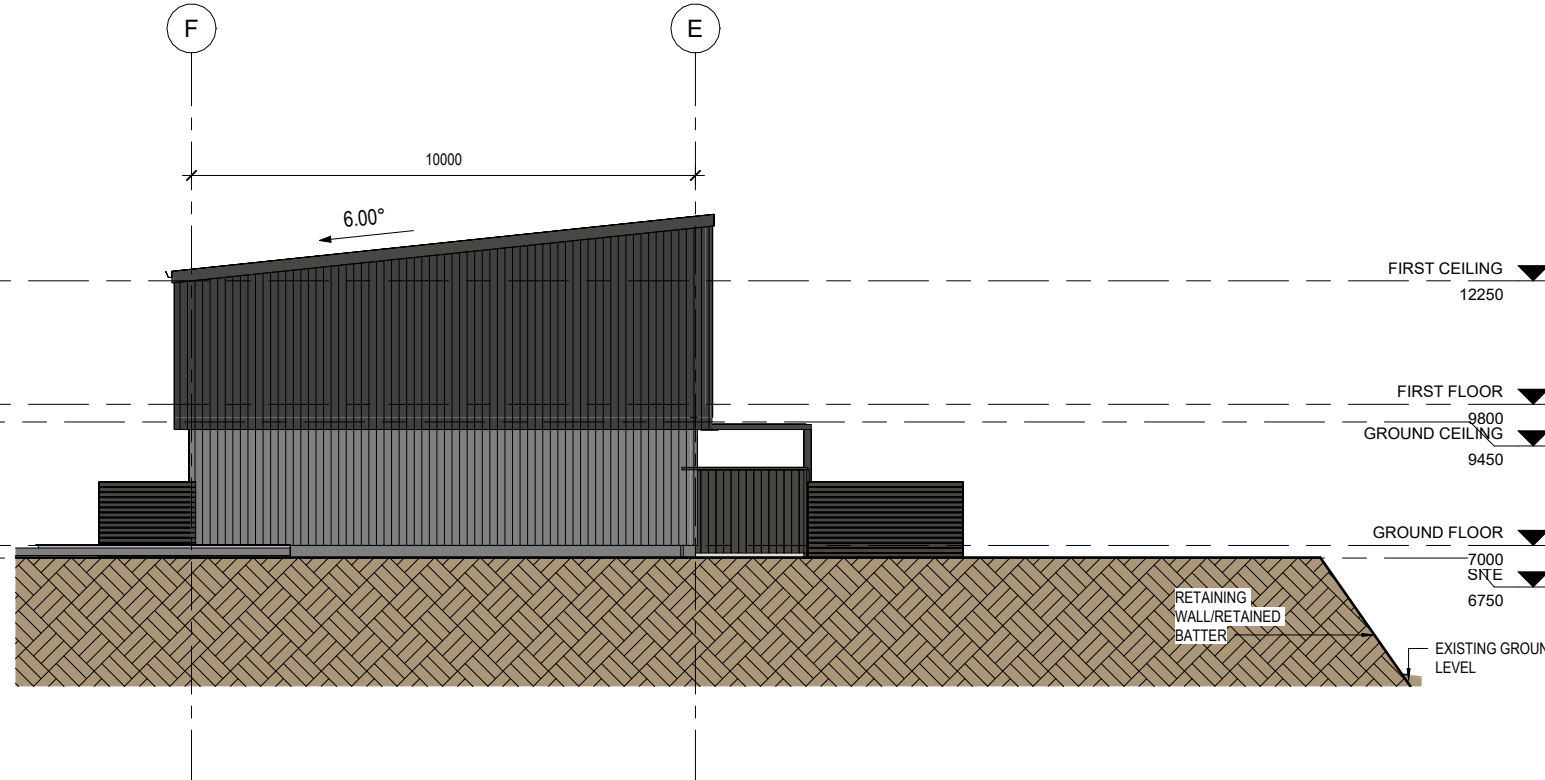
1 East Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



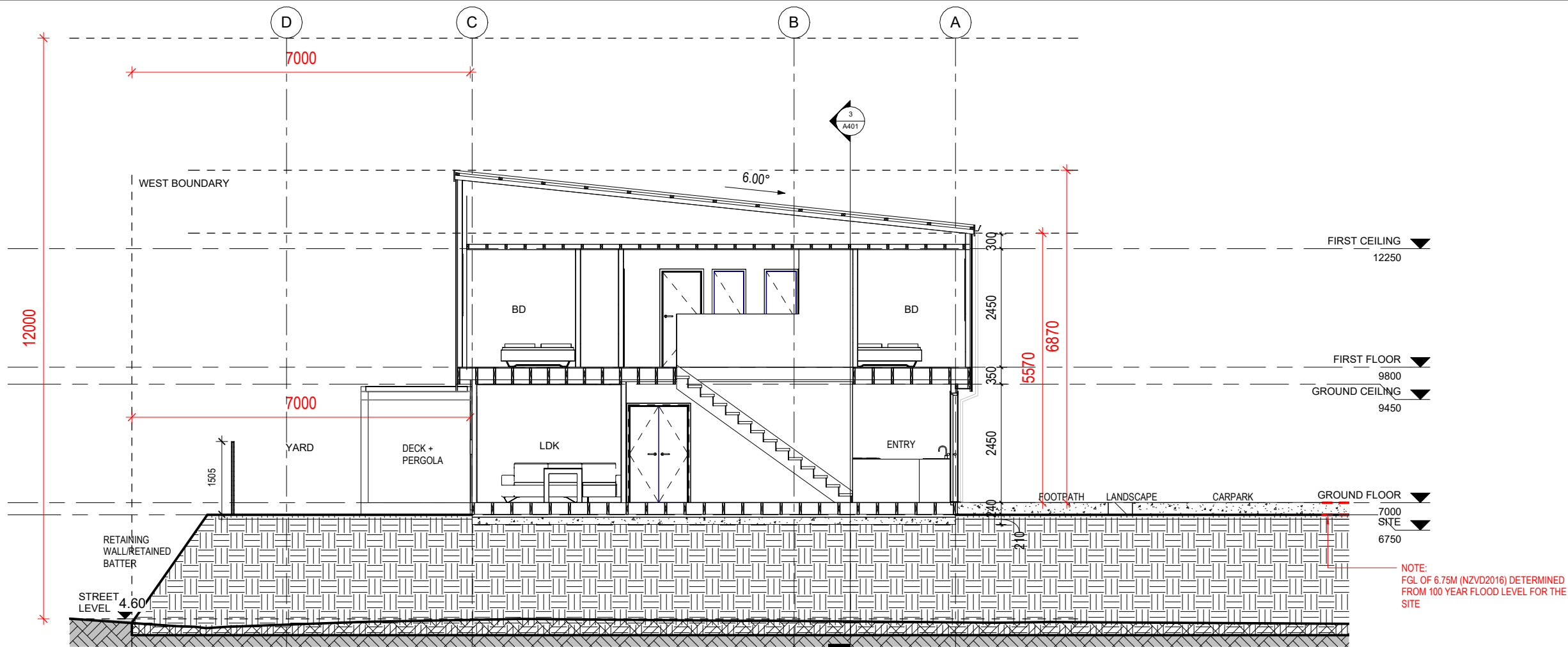
2 North Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



3 West Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



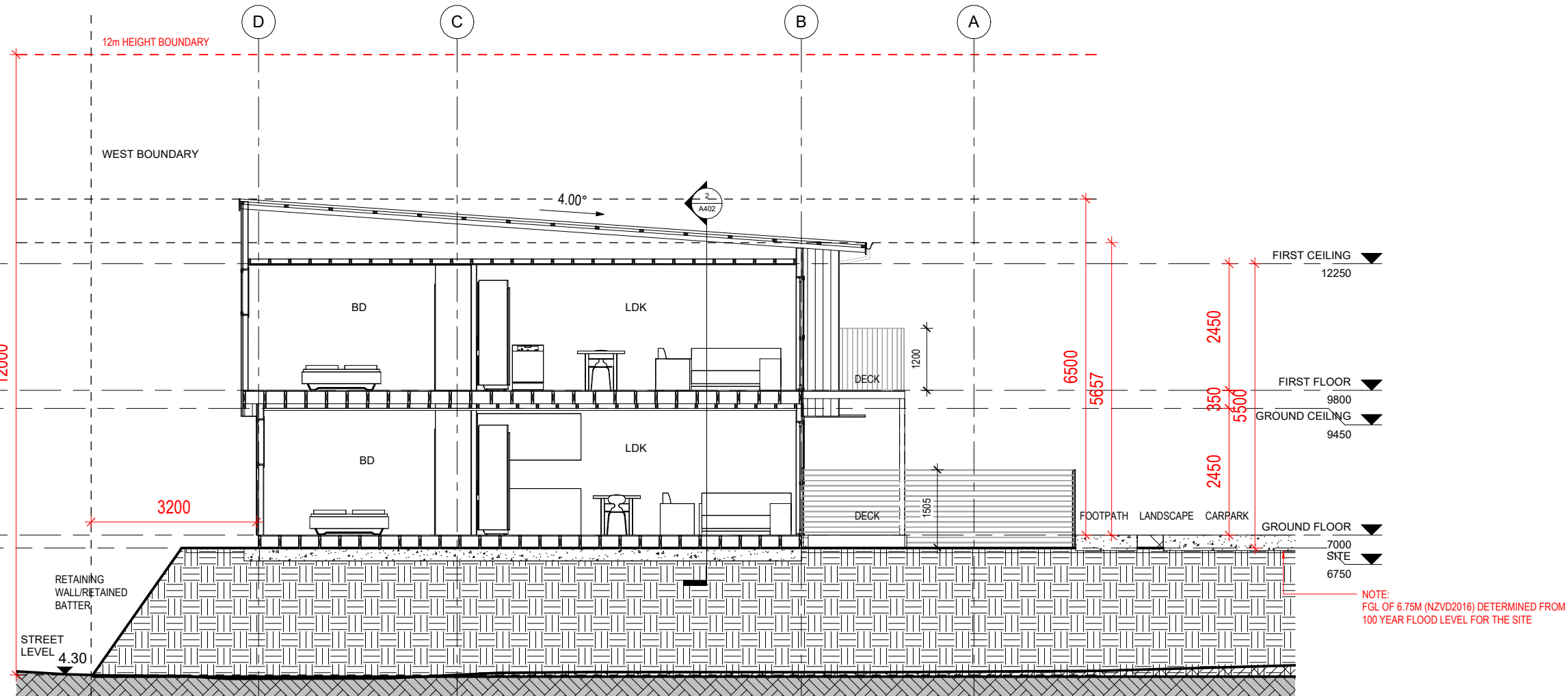
4 South Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



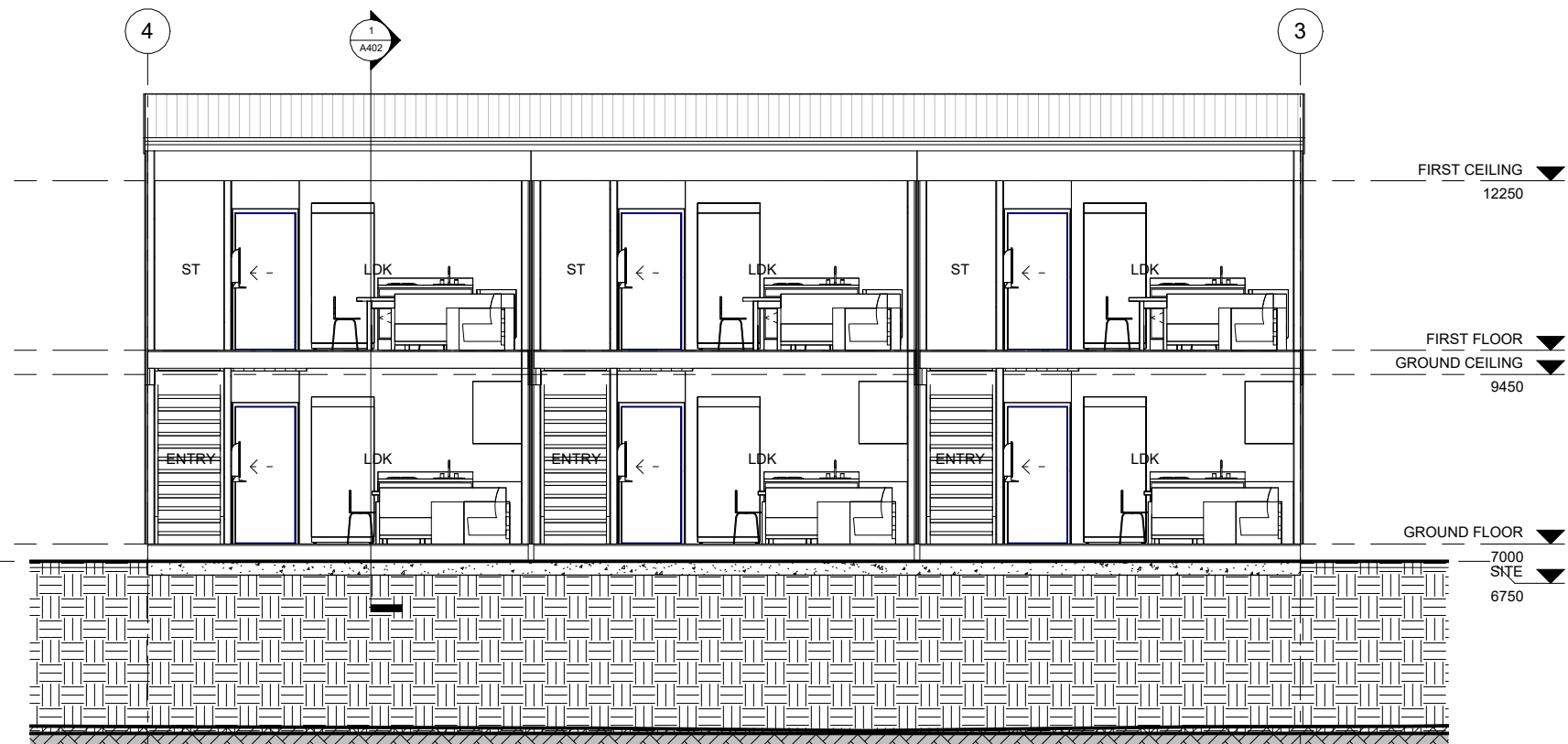
1 BLOCK C - CROSS SECTION
1 : 50@A1 HALF-SCALE@A3



3 BLOCK C - LONG SECTION
1 : 50@A1 HALF-SCALE@A3

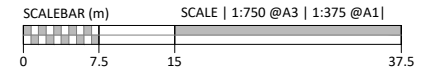


1 BLOCK B - CROSS SECTION
1 : 50@A1 HALF-SCALE@A3

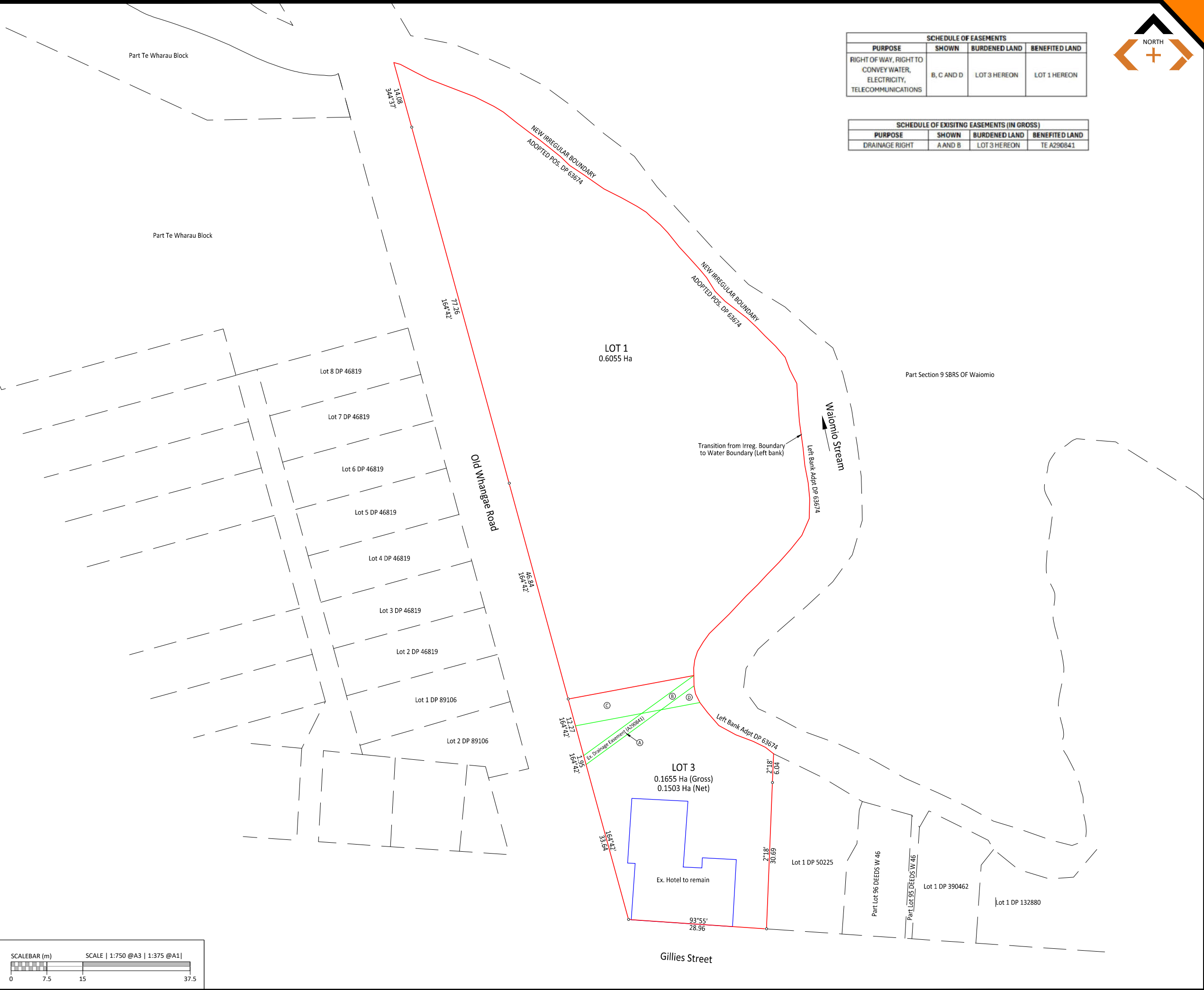


2 BLOCK B - LONG SECTION
1 : 50@A1 HALF-SCALE@A3

PLOT DATE: 8/12/2025



FILE PATH: C:\ONEDRIVE\ONEDRIVE - SURVEY WORX LIMITED\SHARED DOCUMENTS - LAND DEVELOPMENT\11489 - 84 GILLIES STREET, KAWAKAWA - LT\SURVEY\1105_LT\11489-1105-01 - 84 GILLIES - SCHEME PLAN - STAGE 1.DWG



SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY, RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS	B, C AND D	LOT 3 HEREON	LOT 1 HEREON

SCHEDULE OF EXISTING EASEMENTS (IN GROSS)			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
DRAINAGE RIGHT	A AND B	LOT 3 HEREON	TE A290841



SURVEYED	DATE	DRAWN	DATE	CHECKED	DATE
		MS	18.11.2025	JF	21.11.2025
1	MINOR DRAFTING AMENDMENTS				08.12.2025
0	ORIGINAL ISSUE				21.11.2025
REV	AMENDMENTS				DATE

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- SURVEY NOTES:**
- BEARING AND COORDINATE DATUM IS NZGD2000
 - MT EDEN 2000 CIRCUIT
 - LEVELS ARE IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016.
 - ORIGIN OF SURVEY IT II DP 168475 GD CODE: EHPQ
966053.648 mN 336457.052mE
RL 20.45m
 - BOUNDARIES ARE SUBJECT TO SURVEY.

GENERAL NOTES:

SURVEY
WORX +
CONSTRUCTION & LAND SURVEYORS
PHONE: 0800 NZ WORX
www.surveyyorx.co.nz

CLIENT

FAR NORTH HOLDINGS
LIMITED

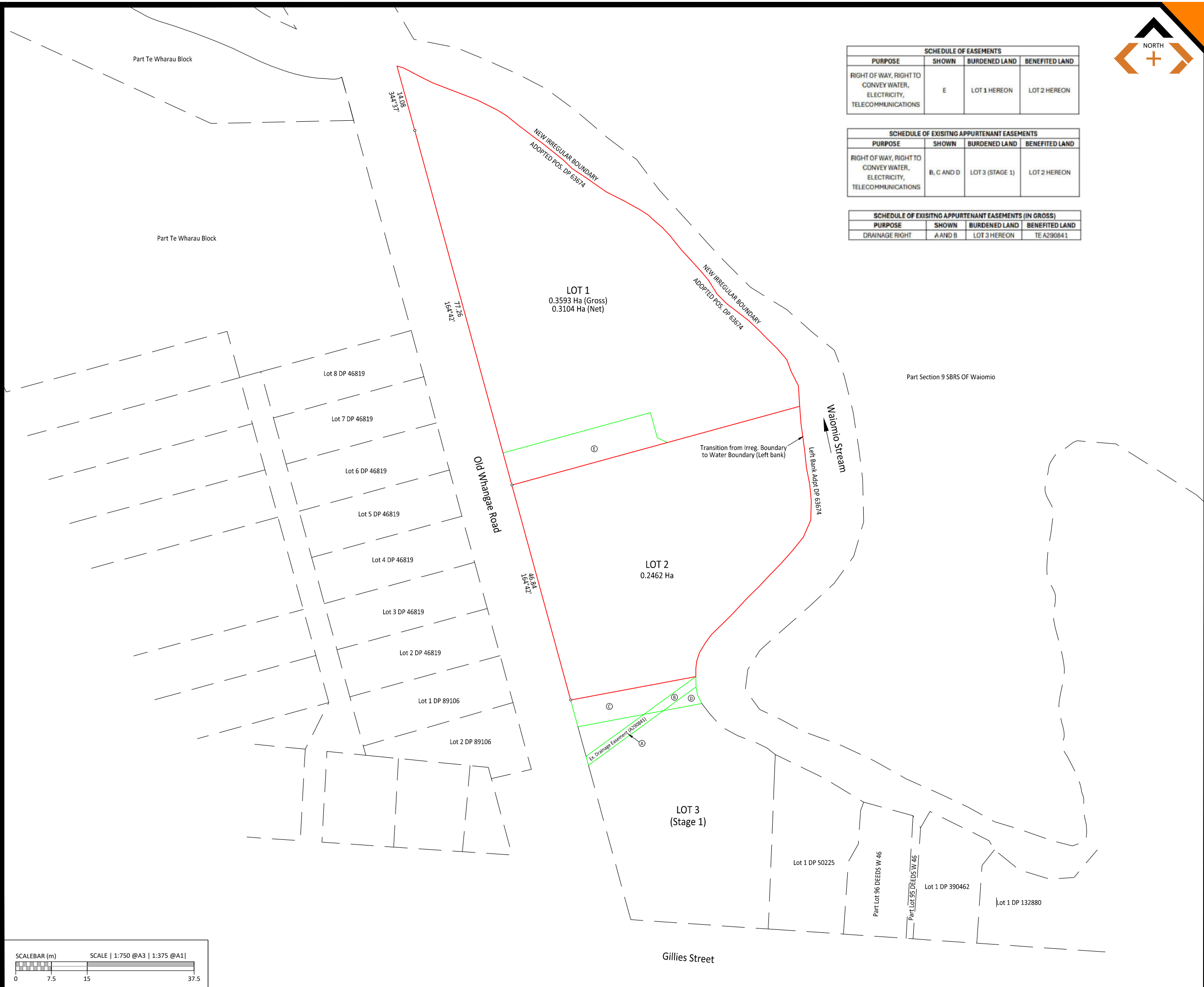
PROJECT

84 GILLIES STREET,
KAWAKAWA

TITLE

SCHEME PLAN - STAGE 1
LOTS 1 & 3 BEING A
PROPOSED SUBDIVISION OF
LOT 92, 98 DEEDS PLAN W 46

SCALE 1:375 (A1) 1:750 (A3)	SHEET 1 of 1	REVISION 1
DRAWING No 11489-1105-01		



SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY, RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS	E	LOT 1 HEREON	LOT 2 HEREON

SCHEDULE OF EXISTING APPURTENANT EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
RIGHT OF WAY, RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS	B, C AND D	LOT 3 (STAGE 1)	LOT 2 HEREON

SCHEDULE OF EXISTING APPURTENANT EASEMENTS (IN GROSS)			
PURPOSE	SHOWN	BURDENED LAND	BENEFITED LAND
DRAINAGE RIGHT	A AND B	LOT 3 HEREON	TE A290841

SURVEYED	DATE	DRAWN	DATE	CHECKED	DATE
		MS	18.11.2025	JF	21.11.2025
1	MINOR DRAFTING AMENDMENTS				08.12.2025
0	ORIGINAL ISSUE				21.11.2025
REV	AMENDMENTS				DATE

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 - MT EDEN 2000 CIRCUIT
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 - ORIGIN OF SURVEY IT II DP 168475 GD CODE: EHPQ
966053.648 mN 336457.052mE
RL 20.45m
 - BOUNDARIES ARE SUBJECT TO SURVEY.

GENERAL NOTES:

SURVEY
WORX +
CONSTRUCTION & LAND SURVEYORS
PHONE: 0800 NZ WORX
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FAR NORTH HOUSING LIMITED

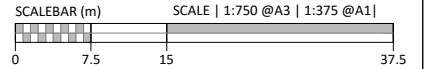
PROJECT

84 GILLIES STREET, KAWAKAWA

TITLE

SCHEME PLAN - STAGE 2
LOTS 1 & 2 BEING A
PROPOSED SUBDIVISION OF
LOT 1 (STAGE 1)

SCALE	1:375 (A1)	1:750 (A3)
DRAWING No	SHEET	REVISION
11489-1105-02	1 of 1	1




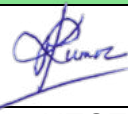
GEOTECHNICAL REPORT

FOR
PROPOSED DEVELOPMENT
AT
LOT 1 DP 64674
OLD WHANGAE RD
FOR
FAR NORTH HOUSING LTD



Job No:	25-058
Date: Rev0	9/12/2025

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1. EXECUTIVE SUMMARY

This report was requested by Far North Housing Ltd and has been prepared to assess the geotechnical aspects of LOT 1 DP 63674, Old Whangae Rd, Kawakawa for the proposed development.

This report assesses the site regarding, land stability, foundation requirements, earthworks, drainage and serviceability, and can be used to support resource and building consent applications to the local territorial authority. It has been prepared for the sole use of our client. It shall not be used, reproduced or copied in any manner or form without the permission of PK Engineering Ltd.

The subsoils on the site have been determined at discrete locations. It should be understood that soils away from those locations may vary from this report. We have construction monitoring and ground bearing capacity checks at the base of foundations to ensure the soil conditions are as per our geotechnical report.

It should be noted that if there is a change in the location of any of the buildings we should be given the chance to determine if further testing is required to prove the ground conditions and better recommend foundation design parameters.

We should be engaged during building consent stage to ensure that the foundations and stormwater/wastewater services for the developed designs are consistent with this report. Should there be any variation in the plans from what was stated in this report then would need to be engaged accordingly.

From our site investigations the subsoils on the site can be described as a stiff upper crust 1.5-3.0 metres deep with undrained shear strengths averaging 70kPa, overlying a 5.60-18.0-metre-thick layer of poorly consolidated saturated silty CLAY, with varying Peat quantities and undrained shear strengths generally less than 50kPa and often lower than 30kPa. At the base of the weak layer is solid rock formation of the Waipapa group. This above mentioned is typical of such landforms within this locality.

The client has provided us with conceptual plans which indicate the development of the relatively flat portion of the site adjacent to the local river, and within the flood plain. The concept plans are part of a stage of conceptual information co-ordinated over the past few years in order to develop the site sustainably with respect to the geotechnical hazards that are present. The plans indicate the client wishes to provide moderate density 2-storey apartment style buildings with carparking for residential housing, to meet the needs of the local residents.

The client has requested that we provide geotechnical recommendations to help them develop the site, which given the complexity of the geotechnical hazards present is crucial to obtaining a sustainable long-term design that is fit for purpose.

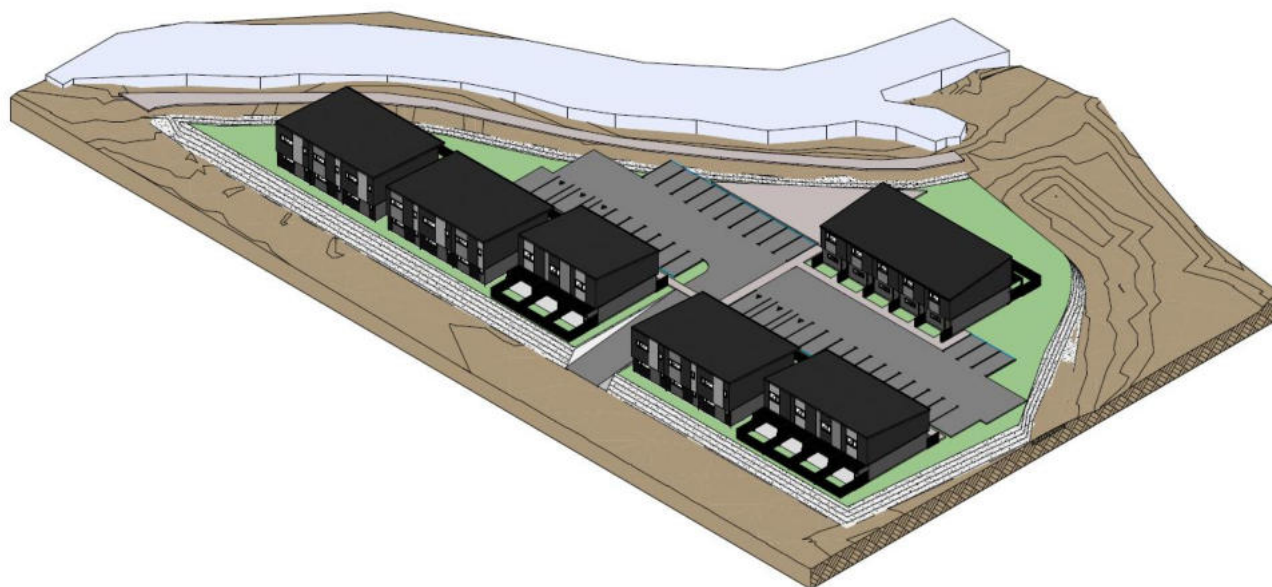


Figure 1: Site overview concept design by Far North Holdings Ltd.

A summary of the site classifications from our investigations and knowledge of the geotechnical requirements of the site have been provided in Table 1 below and described in more detail within this report.

Table 1: Executive Summary

Natural hazards maps	<i>Flood Hazards identified</i>
Geological mapping	<i>Tauranga Group and Waipapa Group (Greywacke/argillite)</i>
Seismic subsoil class	<i>Class C – NZS 1170.5 (2004)</i>
Earthquakes and tsunamis	<i>Earthquake low risk & Tsunami no risk</i>
Liquefaction	<i>Low Risk</i>
Settlement	<i>High Risk (Not good Ground NZS3604:2011)</i>
Expansivity	<i>Moderately Expansive (upper crust)</i>
Slope Stability	<i>F.O.S within tolerable limits.</i>
Foundation type	<i>Rib raft is recommended</i>
Engineered Fill	<i>Requires specific design to account for differential settlements</i>
Retaining walls	<i>Required to be designed by suitably chartered professional engineer.</i>
Drainage measures	<i>Required for short term and long term</i>
Stormwater design	<i>Flood modelling is critical to the finished levels.</i>

2. INTRODUCTION

This report was requested by Far North Housing Ltd and has been prepared to assess the geotechnical aspects of LOT 1 DP 63674, Old Whangae Rd, Kawakawa for the proposed development.

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3. DESKTOP STUDY

3.1 GENERAL SITE DESCRIPTION

The lot encompasses a land area of approximately 0.7588 hectares and is located in the low-lying portion of Kawakawa river reserve accessed via Old Whangae rd. The lot is irregular in shape, with the southern third consisting of an existing commercial building adjacent to Gillies Street, and paved carpark areas at the north end. The remainder of the site is covered in grass and is relatively flat, apart from a 20m strip which straddles the river and consists of bunded slopes that form man-made flood protection. The proposed development plans to locate two storey lightweight buildings and carparks within two thirds of the lot along the central portion of flat land, grassed and paved. Reference should be made to the topographical plans and concept plans shown in figures 2 & 3 and

Site topographic survey has been conducted by a registered surveyor and the locations and dimensions of all features as shown on the accompanying plans and discussed in this report are from the survey.

The subsurface conditions discussed in this report have been determined at very specific locations and will not identify any variations in ground strength or composition at other locations on this site. During construction should ground conditions be found to vary significantly from those described in this report PK Engineering Ltd. is to be notified immediately.



Figure 2. Site Topo by Survey Worx



Figure 3. Concept Plans

3.2 COUNCIL NATURAL HAZARDS

The flood hazard extents as modelled by Northland regional council are depicted in figure 4 below and pose a hazard to the development if not managed properly. The flood modelling is not covered in detail in this report. Reference should be made to flood controls in a special report prepared by Hoskin Civil – “Old Whangae Road, Development, Kawakawa Three Waters Report” - 078-3wr-01-RevP1.

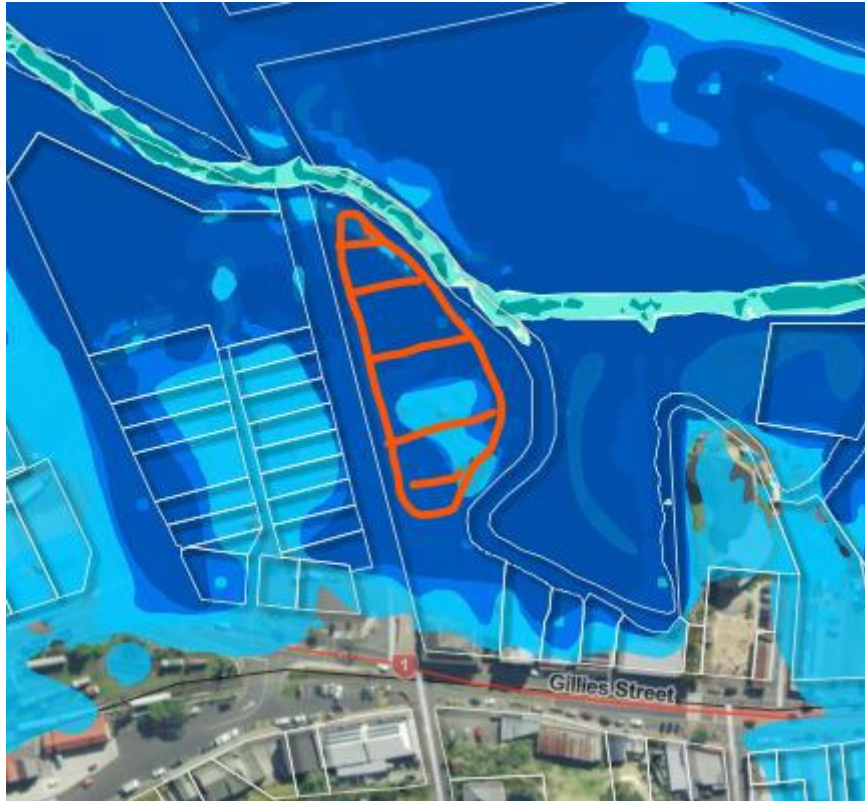


Figure 4. NRC Coastal and River flood hazard maps.

3.3 GEOLOGICAL MAPPING

The site geology according to GNS sciences (figure 1 below) is mapped as the Tauranga group Holocene deposits, of unconsolidated-poorly consolidated mud, sand, gravel and peat of alluvial, colluvial and lacustrine origins. This description is consistent with what we encountered in our intrusive investigation. The mapped geology also indicates the contact between Tauranga group and Waipapa group geology, is consistent with the rock mass found in our deep boreholes, underlying the Tauranga group between 8.60 metres to 21.0 metres deep, the rock has a slope of approximately 16 degrees towards the north.

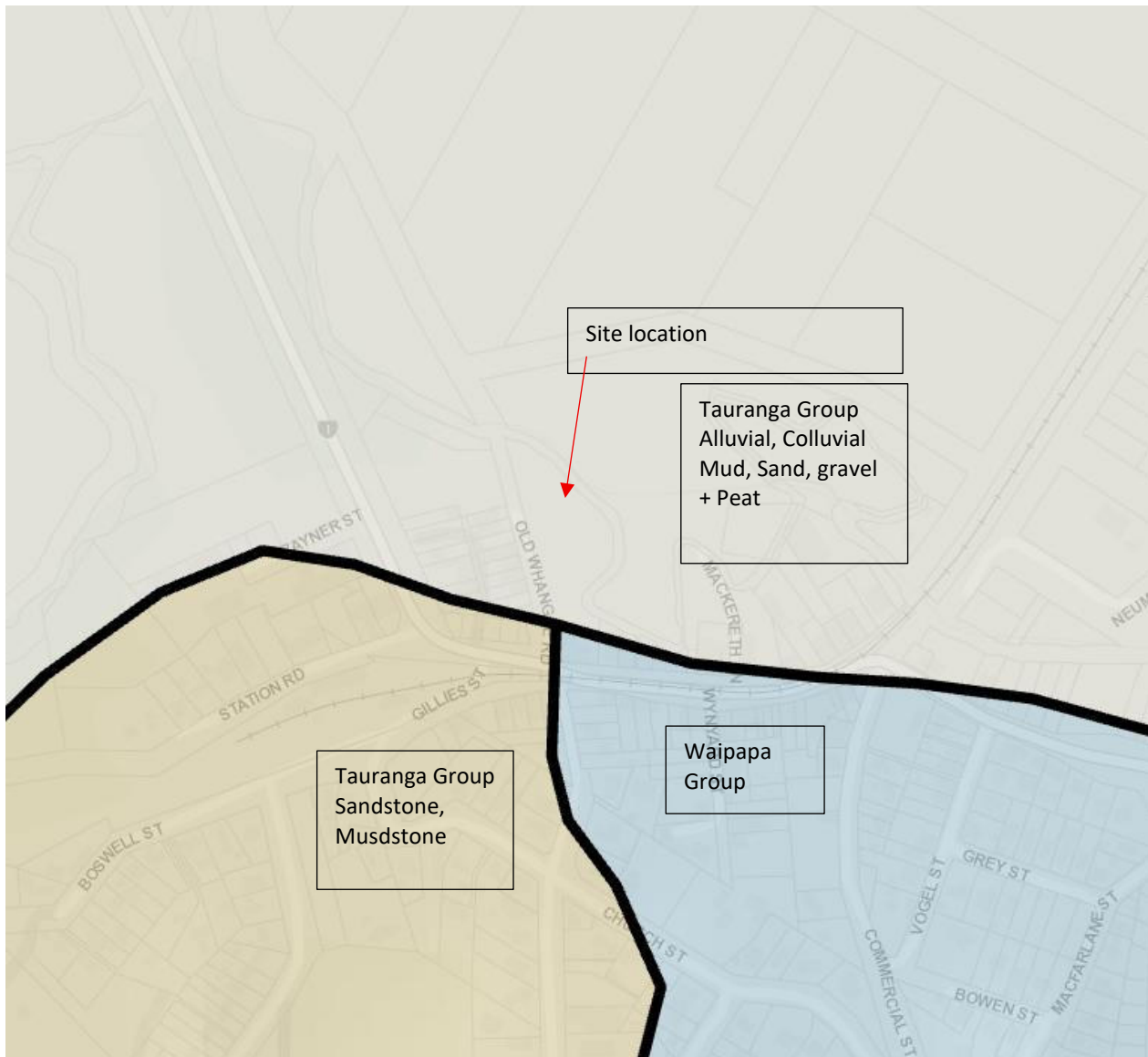


Figure 5: Extract from GNS WEB MAPS

3.4 PREVIOUS REPORTING

No previous reporting has been identified for this site.

4. SITE INVESTIGATIONS AND SOIL CLASSIFICATION

4.1 VISUAL INVESTIGATION

A thorough walkover of the site was undertaken, and geotechnical features related to site stability and drainage will be required.

4.2 SUBSURFACE INVESTIGATIONS.

4.2.1 HAND AUGERHOLE TESTING.

Six subsurface exploratory auger holes have been drilled on the site shown on the attached site plan as AH1-AH6. In situ undrained shear strength readings were taken at 300mm intervals in each hole. These holes were drilled with a 50mm hand auger to different depths based on subsurface requirements or until was in practicable. Scala penetrometer tests were carried out in the base of some of the auger holes and readings were taken as blows per/50mm increment until enough information was gathered.

A summary table of the subsurface data has been provided below (Table 2)

Table 2: Subsurface data

Item	Depth (m)	Rock Intercept (m)	Scala Depth (m)	GWL (m)
AH1/PT1	3.0	-	6.4	1.35 (6/10/2025)
AH2/PT2	4.5	-	7.45	0.9 (6/10/2025)
AH3/PT3	3.9	-	5.9	1.36 (6/10/2025)
AH4	3.3	-	-	3.0 (4/11/2025)
AH5	4.0	-	-	2.4 (4/11/2025)
AH6	3.0	-	-	2.6 (4/11/2025)
MB01	24.0	21.0	-	-
MB02	10.25	8.60	-	-

*AH = (AUGERHOLE), PT= (SCALA PENETROMTER) & MB=MACHINE BOREHOLE)

Auger holes AH1 – AH6 all intercepted stiff to very stiff silty clays with undrained shear strengths generally exceeding 75kPa, before intercepting a weaker layer of fine-grained silty Clay, with undrained shear strengths less than 50kPa, and with saturation beyond the plastic limit of the soil, making it prone to creep. Scala penetrometer tests were undertaken at the base of AH1-AH3 into the soft layers, with a generally increasing readings with depth, which may be due to a combination of skin friction and greater compaction. PT1, encountered anomalous stronger readings around 5.7-6.40 metres below ground level.

The auger hole inferred subsoil profiles have been illustrated on cross sections A-A and B-B. Reference should be made to sheets SG2 and SG3 in Appendix A and the auger hole logs and scala penetrometer sheets in appendix A.



Figure 1: Hand auger samples taken from AH3 down to 3.90m bgl



Figure 2: Hand auger samples taken from AH4 down to 3.30m bgl

4.2.3 MACHINE BOREHOLE TESTING

Two subsurface exploratory machine boreholes were undertaken by Brown Bros Ltd with observation by us. The machine boreholes have been located as shown on sheet SG1 (appendix A) and summary of the results have been shown in Table 2 above.

The machine boreholes were carried out with a fully hydraulic percussion drilling machine, taking mostly intact samples for the entire depth, with SPT readings at regular intervals and sample push tubes at specified locations.

A summary of the results has been provided in appendix A,

MB01 encountered the stiff clayey silt crust to approximately 3.0 meters below ground level, before encountering weakly consolidated alluvium down to a depth of 21.0 meters before encountering intact rock mass (greywacke). MB02 encountered a similar profile of clayey silt crust, however the weak alluvium layer was 8.60metres deep before intact rock mass (greywacke) was encountered.

A table 3 below indicates the summary of subsurface layers.

Table 3: Subsurface data summary

Unit description	Depth to layer (m)	Thickness (m)	Shear value (kpa)	Scala (blow per 50mm)
Topsoil/Fill	0	200-250	-	-
Stiff – very stiff alluvium crust	0.20 (av)	1.6-3.6m	57-170	-
Very soft to Stiff alluvium (plastic, cohesive)	1.6-3.6	5.6 – 18m	27-50 (as tested)	-
Highly- Moderately weathered bedrock of the Waipapa Group	8.6-21.0	2m +	-	-



Photo 3: MB02 SAMPLE BOX.



Photo 4: MB02 Sample Box.

4.3 GROUND WATER AND MOISTURE CONDITIONS

At the time of the investigation the winter weather had produced significant amounts of rainfall in the locality. The soils we encountered were predominantly moist, for the upper couple of metres, before a sharp transition to a wet saturated state under the groundwater table. The ground water table ranged from 0.9m deep to 3.0 metres deep below existing ground level. The ground water table was found to vary based on the depth of the overlying moderately compacted crustal layer of stiff to very stiff clayey SILTS< (brownish orange in colour). Generally, the ground water table was found just above the base of this layer. The reason for the variability of groundwater based on the soil conditions is likely due to the overburden pressure of the upper crust on the weaker saturated alluvium below creating a hydrostatic pressure variation.

4.4 LABORATORY TESTING

Laboratory testing was conducted on soils collected in push tubes at variable depths within the upper stiffer crustal layer and the weaker alluvium soils underlying this layer in order to obtain soil parameters for calculating the short term and long-term behaviour of the soils under static loads imposed by the proposed development, as well as dynamic load conditions. These have been described in further detail in the sections below.

A summary of the lab test for each push tubes are shown below, and the results are provided in appendix C.

Table 4: Lab sample summary

Item	(Layer)	Depth bgl (m)	Lab Test types
MB01 (Push tube)	Upper crust (silty Clay)	2.2-2.95	NZS4402 & AS 1289.7.1.1 Tests -Water content
MB01 (Push tube)	Weaker Silty Clay Alluvium (Saturated)	4-20-4.95	- Atterberg Limits (liquid/plastic/plasticity index) - Linear shrinkage
MB02 (Push Tube)	Upper crust (silty Clay)	2.2-2.95	-Shrinkage index -Solid density
MB02 (Push Tube)	Weaker Silty Clay Alluvium (Saturated)	5.20-5.95	- Consolidation (various load cycles)

4.5 SEISMIC SUBSOIL CLASS

This site is considered Subsoil Class C – Shallow soil site as defined by NZS 1170.5 (2004) “Structural Design Actions) Part 5: Earthquake actions – New Zealand “. The soft soil was not deep enough to classify the site in the Class D category.

5. SITE STABILITY

5.1 DEFINITION AND LEGISLATION

This section provides information that relates to section 71 (3) of the Building Act (2004), which in purpose is set out to assess the geotechnical hazards and their limitations and restrictions on buildings on land subject to natural hazards. Those hazards are:

- Erosion (including coastal erosion, bank erosion, and sheet erosion)
- Falling debris (including soil, rock, snow and ice)
- Subsidence
- Inundation (including flooding, overland flow, storm surge, tidal effects, and ponding).
- Slippage.

The relevant hazards and their relationship to the site and buildings are outlined in the remainder of this section below.

5.2 EARTHQUAKE AND TSUNAMI HAZARDS

This site is located in the low-risk zone for earthquakes due to its distance from known active faults and the Hikurangi subduction zone. The design of the foundations of the buildings should be rigid enough not to fail under dynamic loading, such that the serviceability limit state of the buildings is compromised.

Likewise, the risk of inundation is negligible on this site due to its horizontal distance from the coastline and the shape of the landmass which effectively creates an obstruction to the direct impacts of a tsunami. However, in a large tsunami event there is likely to be some tidal/surge behaviour alongside the site, which is considered low in terms of overall risk to the development. The Northland regional council has mapped the site as the safe area during a tsunami warning.

5.3 LIQUEFACTION

The site investigation has allowed us to determine that the upper 1.6-3.0 metres is non-liquefiable in nature due to the high cohesion and low porewater content of the soils, being well above the water table.

However, the behaviour of the soils under this stiff crust from our investigations suggest the added porewater pressure from dynamic shaking under seismic conditions would effectively displace the water content and cause consolidation and liquefaction may form as a result of this behaviour. However, in general the soils were fine grained enough that the liquefaction risk is considered to be very low.

A description of the Liquefaction process is described Below:

Normal state: Soil grains are in contact with each other, and the soil can support structures because of the friction between grains. The water in the pores helps balance pressure but doesn't carry the load.

During shaking or rapid loading: The soil is shaken, and grains try to compact. However, since the soil is saturated and water cannot drain away quickly, **pore water pressure increases**.

Result: As pore water pressure rises, it reduces the **effective stress** (the actual contact force between soil grains). When effective stress drops to near zero, the soil behaves like a liquid rather than a solid.

Effects of liquefaction:

- Ground loses its ability to support loads (buildings may tilt or sink).
- Lateral spreading (ground moves sideways, often towards rivers or slopes).
- Sand boils or ejecta (water and sand erupt to the surface).
- Instability of slopes, embankments, and retaining structures.

Vibration of the soil is often the main cause of liquefaction. The two most common modes of vibration are earthquakes and the use of heavy machinery on-site or neighbouring sites. This site is low risk for earthquakes as described in section 5.2 above.

Vibration from machinery is usually correspondent with commercial excavations and drilling or use of heavy machinery. Size and impact from such machinery should be carefully considered and monitored during any construction upon this site.

It is recommended that no dynamic construction methods such as driven piles, are utilized on this site due to the risk of lateral spreading and the building platform is stiff enough to resist differential settlement in the rare chance of a seismic event.

All foundations must be carefully designed to ensure long-term performance and based upon the soil's parameters depicted in this report.

5.4 GROUND DEFORMATION OR SETTLEMENT

The soils on this site generally exhibit low to moderate strength and moderate to high compressibility. The deeper alluvium soils have a low degree of consolidation and are prone to creep type behaviour. The loads imposed on these soils, from the development can lead to uneven settlements if the gravel raft and foundation are not designed properly. Special care and analysis should be done to verify this when designing the foundations of any structure.

5.5 SOIL EXPANSIVITY.

The soils on this site can be classified as “**moderately expansive**” based on tactile descriptions made on site and experience in the locality. It is recommended to limit the exposure of any cut surfaces to excessive wetting and drying over the seasons. This can lead to desiccation cracking and instability. Any cut faces should be vegetated with plants such as vetiver grass or any locally hard-wearing deep-rooted plant known to provide erosion control. A suitable geomesh such as CIRTEX BIOCOIR Coconut Matting (0800 247 839) may also be used to prevent excessive drying of exposed cut faces.

5.6 SLOPE STABILITY

We carried out a numerical stability analysis across a critical soil profile along the edge of the proposed building platform and riverbank to check for the factors of safety against slippage from the additional loads imposed by the proposed building platform and surcharge loads. Figures 6 & 7 below indicate the static and dynamic slope stability models.

The factors of safety for the static model are above 2.0 indicating the risk of circular type slip failure behaviour along the riverbank is low, and the development isn't adding significant risk to the failure of the riverbank soils.

The factors of safety for the dynamic model indicate a factor of safety approaching 1.5, which is suitable from an ultimate limit state perspective (1/500-year return period), also considering the low risk of earthquakes in the locality.

The Horizontal coefficient for ULS within the dynamic slope stability model was derived from the formulas within NZS 1170.5:2004. Based off a design working life of 50 years for importance level 2 structures according to NZS 1170.0-2002.

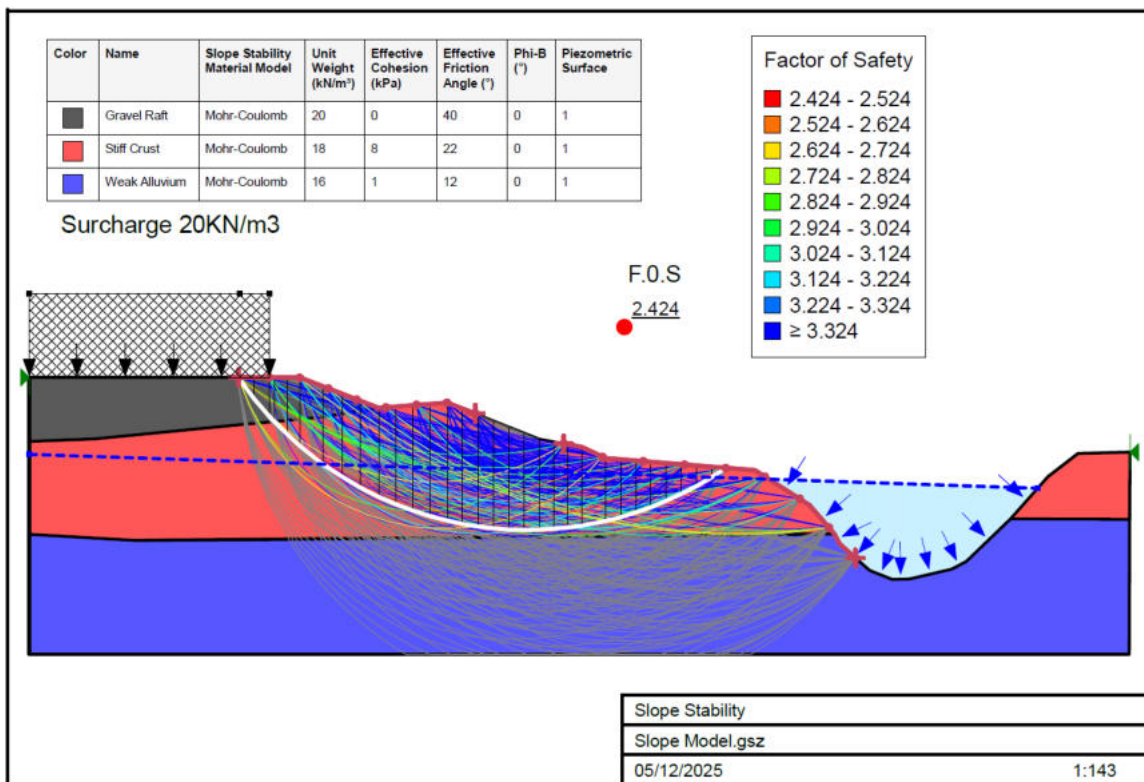


Figure 6: Geo-studio, slope/w static stability model.

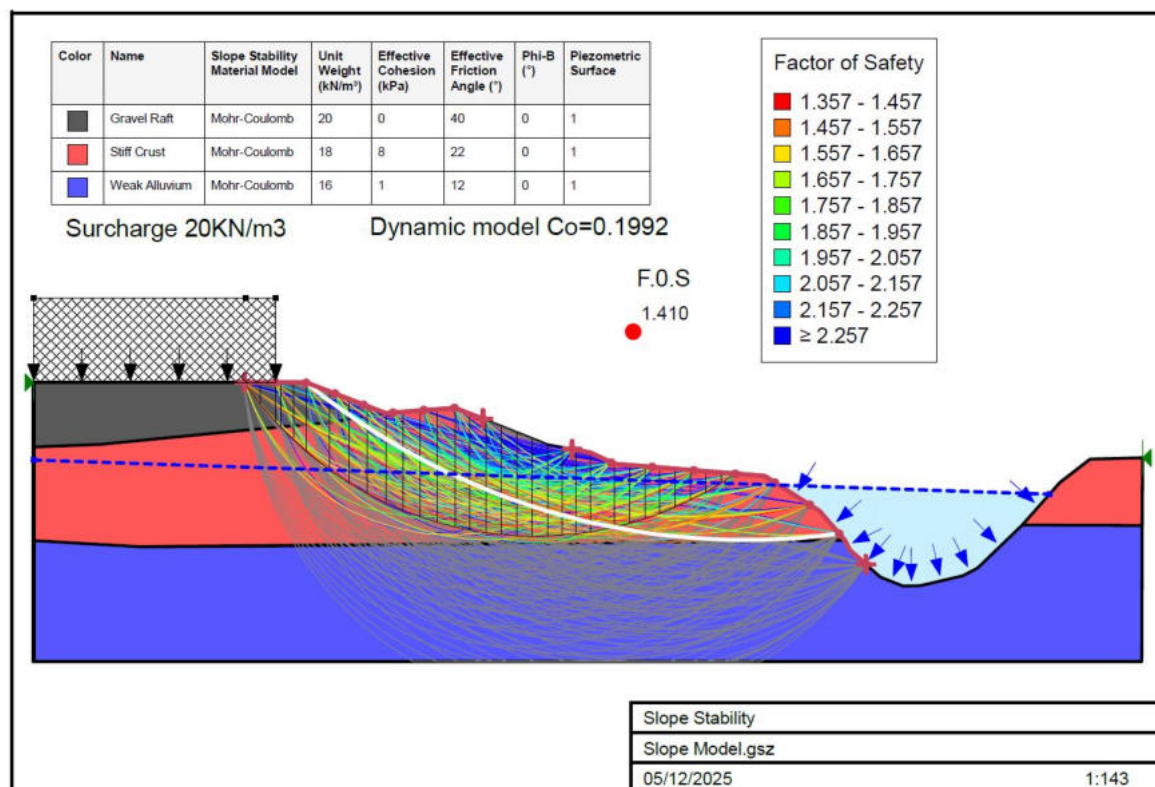


Figure 7: Geo-studio, slope/w Dynamic stability model.

6. ENGINEERING DISCUSSION

The site has a complex underlying subsoil structure, which needs to be understood and to be able to develop the site in a sustainable manner. The site is underlain by a weak alluvium layer of varying thickness, between 5.30- 18.0m thick. The weak layer is considered to be moderately compressive and prone to differential settlements due to the variable thickness of the weak layer. Due to this fact, the site requires specific engineering design by a suitably experienced chartered professional engineer in order to develop the site sustainably.

The results of our lab testing have determined that this alluvium layer is at or beyond the liquid limit, in the depths tested below the crustal layer (4.20-5.95m). Therefore, the alluvium layer is behaving more like a viscous liquid than a soil. The weak alluvium within the machine boreholes was mostly homogenous, with a generally fine-grained texture, the major fraction of the soil being of clay particle size (<0.002mm diameter). Organic inclusions were found throughout the soils.

It is considered uneconomical to pile through the weak alluvium layer onto the rock strata. Therefore, the most feasible solution considering the site constraints from flooding and soil conditions is to float the buildings on an engineered raft, with enough rigidity built in to limit differential settlement.

PK engineering Ltd has designed the gravel raft and foundations for the Te Hononga Project (cultural centre) in Kawakawa on the neighbouring site, adjacent to this one under comparative conditions. It would be possible to adapt a similar technique to provide a sustainable solution to the proposed development on this site.

Most of the same engineering design principles apply to this development, and construction procedures such as preloading the site to accelerate short-term settlement before placement of the buildings, will help make this development a sustainable one. An outline of the engineering requirements and recommendations are outlined in the section 7 below.

7. ENGINEERING RECOMMENDATIONS

7.1 ENGINEERED RAFT (BUILDING PLATFORM)

The development of the site requires an engineered raft to lift the buildings out of the flood plain, as determined by specific flood modelling not included in this report. That flood modelling has established a finished ground level of RL 6.75, 1.5 metres above the average existing ground level is RL4.5. There are various engineering elements and recommendations described in the sections below in order to construct the engineered raft, which would be fit for purpose.

7.1.1 ENGINEERED FILL

The engineered fill needs to be constructed as a gravel raft acting like a large beam, which has enough tensile strength to limit differential settlement across the site. In order to create this beam effect, a layered compacted hardfill raft with geo mesh between the layers is required. The design of this engineered raft should be undertaken by a suitably experienced chartered professional engineer.

A conceptual cross section has been shown in appendix A of the principal design of the gravel raft.

7.1.2 RETAINING WALLS

The outer extents of the engineered raft require specific retaining wall design in order to ensure structural integrity of the raft from failure. The retaining walls need to be able to withstand the forces of nature, most notably erosion from flood waters, and vibrations from traffic along Old Whangae road. Due to the height of retaining it will be necessary to consider the pedestrian activity and surcharge loads from buildings and traffic when designing these walls. These retaining walls should be designed by a suitably experienced chartered professional engineer.

We have provided conceptual drawings in appendix A of a reinforced earth retaining wall option along the outside of the gravel raft, which is considered suitable for this site if done properly. Again, this should be designed by a suitably experienced chartered professional engineer.

7.1.2 SERVICES

It should be considered within the civil design of all pipe networks under the buildings, that services need to be protected from damage from the gravel raft undergoing differential settlement. This can be achieved by aligning the services within individual or shared trenches in parallel with each other, with flexible joints that allow the pipes to cope with some acceptable levels of differential settlements. When the gravel raft undergoes the initial phase of short-term settlement, it should mostly act like one big beam. However medium- and long-term consolidation may result in some differential settlement, and this must not compromise any of the services.

From information received by the client, it is proposed to place a Ø525 RCRRJ Class 4 Pipe under the building platform beneath the gravel raft. We recommend that specific design be carried out for the

foundation of this pipe and flexible rubber ringed joints be utilized to allow the pipe to tolerate a reasonable amount of differential settlement along its length.

The design of the foundation for the concrete pipe would likely consist of a 1.8m wide x 0.5m deep gravel raft geotextile wrapped with tensile support from geogrids, to allow it to act more like a beam. Specific engineering design for this is required to be provided by a suitably chartered professional engineer.

It is envisaged that the support mechanism of this pipe will be coupled to the gravel raft to reduce the risk of differential settlements affecting its long-term performance.

7.2 BUILDING FOUNDATIONS

It is recommended that a rib-raft type foundation be utilised to support the 2-storey timber framed buildings. The rib-raft should be designed such that any point loads must be built into the rafts and not taken into the fill beneath. The rib-rafts need to be stiff enough to cope with any differential settlement that may occur over the long-term and should be designed by a suitably experienced chartered professional engineer.

The aspect ratios of these rafts must be limited to no more than 3. Control joints must be provided if the aspect ratio is exceeded.

For both rib-raft and slab on grade foundations the following consideration must be followed:

- Trees that grow in large sizes should not be planted in close proximity to any foundation.
- No stormwater discharge should be allowed to occur close to any foundation
- Proper control joints must be provided in the slab if the aspect ratio breaches 1 in 3 and the length of any slab exceeds 18 metres.
- A chartered professional engineer must be engaged to design any such rib raft or slab on grade
- PK Engineering Ltd must review and approve of the foundation design prior to any construction.

7.3 FOUNDATION PARAMETERS

The following parameters should be utilized for the design of the rib raft foundations and retaining walls:

COMPACTED HARDFILL:

Bulk Density	= 20kN/m ³
Ultimate Bearing Capacity	= 950kPa
Allowable Bearing Capacity (F.O.S = 3)	= 300kPa
Dependable Bearing Capacity ($\phi = 0.5$)	= 475kPa
Internal angle of friction (ϕ)	= 40°
Subgrade Modulus	= 18,000 KN/m ³

STIFF CRUSTAL LAYER:

Bulk Density	= 17kN/m ³
Ultimate Bearing Capacity	= 225kPa
Allowable Bearing Capacity (F.O.S = 3)	= 75kPa
Dependable Bearing Capacity ($\phi = 0.5$)	= 150kPa
Internal angle of friction (ϕ)	= 22°

POORLY CONSOLIDATED ALLUVIUM:

Bulk Density	= 16kN/m ³
Ultimate Bearing Capacity	= 105kPa
Allowable Bearing Capacity (F.O.S = 3)	= 35kPa
Dependable Bearing Capacity ($\phi = 0.5$)	= 52.5kPa
Internal angle of friction (ϕ)	= 12°

MODERATELY WEATHERED ROCK:

Bulk Density	= 24kN/m ³
Ultimate Bearing Capacity	= 6mPa
Allowable Bearing Capacity (F.O.S = 3)	= 2mPa
Dependable Bearing Capacity ($\phi = 0.5$)	= 3mPa

7.4 ACCESS AND PARKING

The development proposes to provide an 8.0m wide access ramp to the site for traffic and pedestrians. The sides of the ramp will require retaining walls to support the engineered fill (gravel raft), these should be designed by a suitably chartered professional engineer. The development concept plans also indicate the design of carpark and turning areas. This should be designed as a flexible pavement to allow for any differential settlement that may occur.

The engineering aspects required to provide a stable access ramp and parking area are listed below:

- The driveway should be formed such that there is minimum 2% crossfall to cesspits and adequate drainage facility built to direct water away from the gravel raft and into the stormwater reticulation.
- The engineered fill under the pavements be specifically designed and incorporated in the gravel raft design described in the sections above.
- Retaining walls along the edges of the ramp must be designed by a suitably experienced chartered professional engineer to support the engineered fill.
- No concentration of stormwater shall be discharged in an uncontrolled manner near the building platforms or around the edges and slopes of the gravel raft.

8. EARTHWORKS RECOMMENDATIONS

8.1 SITE PREPARATION AND EARTHWORKS

All topsoil or fill must be removed, and subgrade should be approved by a suitably qualified engineer prior to placement of any fill. These surfaces are also recommended to be proof rolled prior to placement of hardfill or clay fill.

It is the responsibility of the designer, project manager and contractor to read this report and ensure that the following recommendations are adhered to prior to any construction. Undertaking earthworks carefully and as per recommendations is critical to the short term and long-term stability of the site. Failure to comply with the following recommendations could undermine either of those aspects.

PK Engineering Ltd is of the view that any earthworks undertaken in winter months is not recommended. If the project manager requires a winter construction, they should submit a construction methodology for review prior to the start of any work. The person or persons in charge of this methodology should be familiar with documents such as GD05 - "Erosion and sediment control for land disturbing activities in the Auckland region"

8.1.3 CUT BATTER SLOPES

No cut batter slopes are required as part of this development.

8.1.4 ENGINEERED FILL

The engineered fill is required to be specifically engineered and constructed as per the specifications by the chartered professional engineers responsible for its design.

8.1.5 SITE DRAINAGE

Drainage measures should be in place so that no pooling or concentrated water is on or around the building platform, this includes short term and long-term drainage measures.

Due to the presence of the flood plane in close proximity to the edges of the proposed gravel raft, the exit points and gradients of all stormwater pipes must be carefully defined. Backwater infiltration into the drainage system should be avoided - especially around the structures.

Care must be taken to prevent excessive de-watering beneath the site as this may result in unintended settlements of the structure neighbouring the site being developed. Existing natural groundwater table and its historical fluctuation should be maintained as much as is possible and practicable.

9. STORMWATER

Stormwater system designed must be done using correct best practice and it is desirable to keep the infrastructure within the gravel raft. This will eliminate some of the risk from breakage due to potential differential settlements. It is recommended that all such infrastructure have all flexi joints at regular intervals to mitigate effects of uneven settlements. An allowance of 10mm/10m of pipe lengths should be factored into these pipe design.

10. WASTEWATER

Not part of this report

11. RECOMMENDATIONS

After careful study of this site and the proposed development, I make the following recommendations:

- A geogrid reinforced gravel raft should be utilized to provide suitable stability to any foundation on this site.
- A rib-raft type of foundation should be considered to support any structure onto the above-mentioned gravel raft.
- The aspect ratio for any rib-raft should be limited to 3.
- All infrastructure servicing the new structures should be placed within the depth of the gravel raft.
- All pipes embedded within the raft or under the raft must have flexible joints at regular centres.
- All foundation and gravel rafts must be designed by a suitably qualified and experienced chartered engineer.
- All foundation and gravel raft design must be checked and approved by PK Engineering Ltd.
- All foundation elements including gravel raft must be inspected and certified by a chartered professional engineer during construction.

12. CONCLUSION

After carrying out our geotechnical study, we conclude that this site can be developed in a sustainable manner without compromising the stability of the proposed structures. Carefully designed gravel raft and floating rib-raft type of foundation would ideally suit this site.

3. LIMITATIONS

This report should be read and produced in its entirety including the limitations to understand the context of the opinions and recommendations given.

This report has been prepared exclusively for Far North Housing Ltd in accordance with the brief given to us and the agreed scope and will be deemed exclusive to the owner. Information, opinions, and recommendations contained in this report can only be used for the purposes with which it was intended. PK Engineering Ltd accepts no liability or responsibility for any use or reliance on this report by any party other than the owner or parties working for or on behalf of the owner, such as local authorities. This report is not to be used for purposes beyond those for which it was intended for. This report was prepared in general accordance with current standards, codes and best practice at the time of this report. These may be subject to change.

The description of soils and analysis is based upon soil mapping in set locations on the site. It has been assumed that soil conditions are consistent with the discoveries in their location - there may be unforeseen variation in between. If any variation is found during the construction phase, then PK Engineering Ltd must be notified as soon as possible to advise on any changes to foundations that may be necessary.

APPENDIX A

CONTENTS

APPENDIX A

A.1 AUGERHOLE LOGS

A.2 SCALA PENETROMETER LOGS

A.3 MACHINE BOREHOLE LOGS

A.4 PHOTOS OF SOIL SAMPLES

A.5 GEOTECHNICAL DRAWINGS

SITE PLAN

CROSS SECTION AA

CROSS SECTION BB

BOREHOLE LOG NO - AH1

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



Graphic Symbol	@@@	.....	####	000	----	||||	DDDD	In situ shear vane reading
	FILL	CLAY	SILT	SAND	HARDFIL	TOP SOIL	Organic Soil	Remoulded shear vane reading
								Scale Penetrometer

Depth (mm)	Soil /Rock Graphic al Log	Soil/Roc k type	GWL	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/50mm)
				Silty TOPSOIL, gravel & bark inclusions, moist	0 50 100 150	0 5 10 15 20
300	@@@			SILT, brown, minor clay & gravel inclusions, stiff (FILL)	22 118	
600	@@@				99	
900	####			SILT, light brown, some clay & fine sand, stiff, moist. (NATURAL CRUST) Low - moderate plasticity	96	
1200	####				85	
1500	####			GWL @ 1.35	71	
1800			Silty CLAY, bluish grey, firm, saturated, low plasticity, beyond plastic limit	27 74	
2100			Poor recovery Low shear strength	53	
2400					
2700					
3000				10	
3300				EOH @ 3.0m		
3600						
3900						
4200						
4500						
4800						
5100						

Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	6/10/2025	2. UTP - Unable to penetrate.
Inspector	RD JW	

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand

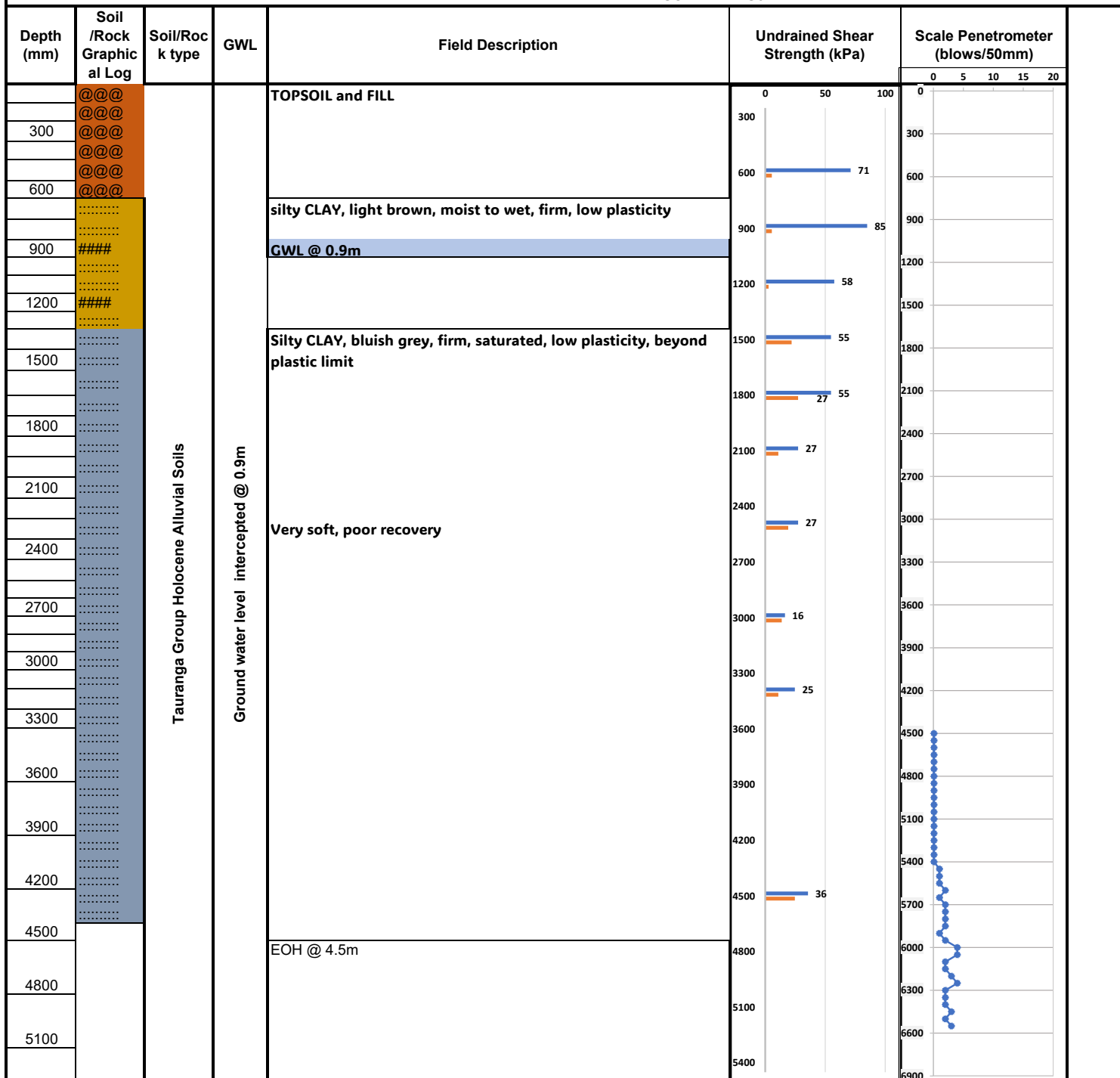
Telephone: 09 407 3255 Fax: 09 407 3256 Email: TeamPK@pkengin.co.nz

BOREHOLE LOG NO - AH2

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



Graphic Symbol	@@@	.....	####	000	----	||||	DDDD	In situ shear vane reading
	FILL	CLAY	SILT	SAND	HARDFIL	TOP SOIL	Organic Soil	Remoulded shear vane reading
								Scale Penetrometer



Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	6/10/2025	
Inspector	RD JW	2. UTP - Unable to penetrate.

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Telephone: 09 407 3255 Fax: 09 407 3256 Email: TeamPK@pkengin.co.nz

BOREHOLE LOG NO - AH3

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



Graphic Symbol	@@@	.....	####	000	----	||||	DDDD	In situ shear vane reading
	FILL	CLAY	SILT	SAND	HARDFIL	TOP SOIL	Organic Soil	Remoulded shear vane reading
								Scale Penetrometer

Depth (mm)	Soil /Rock Graphic al Log	Soil/Roc k type	GWL	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/50mm)
	@@@			TOPSOIL and FILL	0 50 100 150	0 5 10 15 20
300	@@@				11 62	
600	####			clayey SILT moderately stiff, moist, low plasticity	130	
900	####				110	
1200	####			clayey SILT, crumbly, moist, minor moderately weathered rock inclusions <5mm	110	
1500	####			GWL @ 1.36m	137	
1800	####			Clayey SILT, stiff, moist, moderate plasticity	55 110	
2100			CLAY , soft, bluish grey, plastic, moist to wet. Saturated at 2.	62	
2400				41	
2700				27	
3000				41	
3300				38	
3600				55	
3900				0	
4200			EOH @ 3.9m		
4500					
4800					
5100					

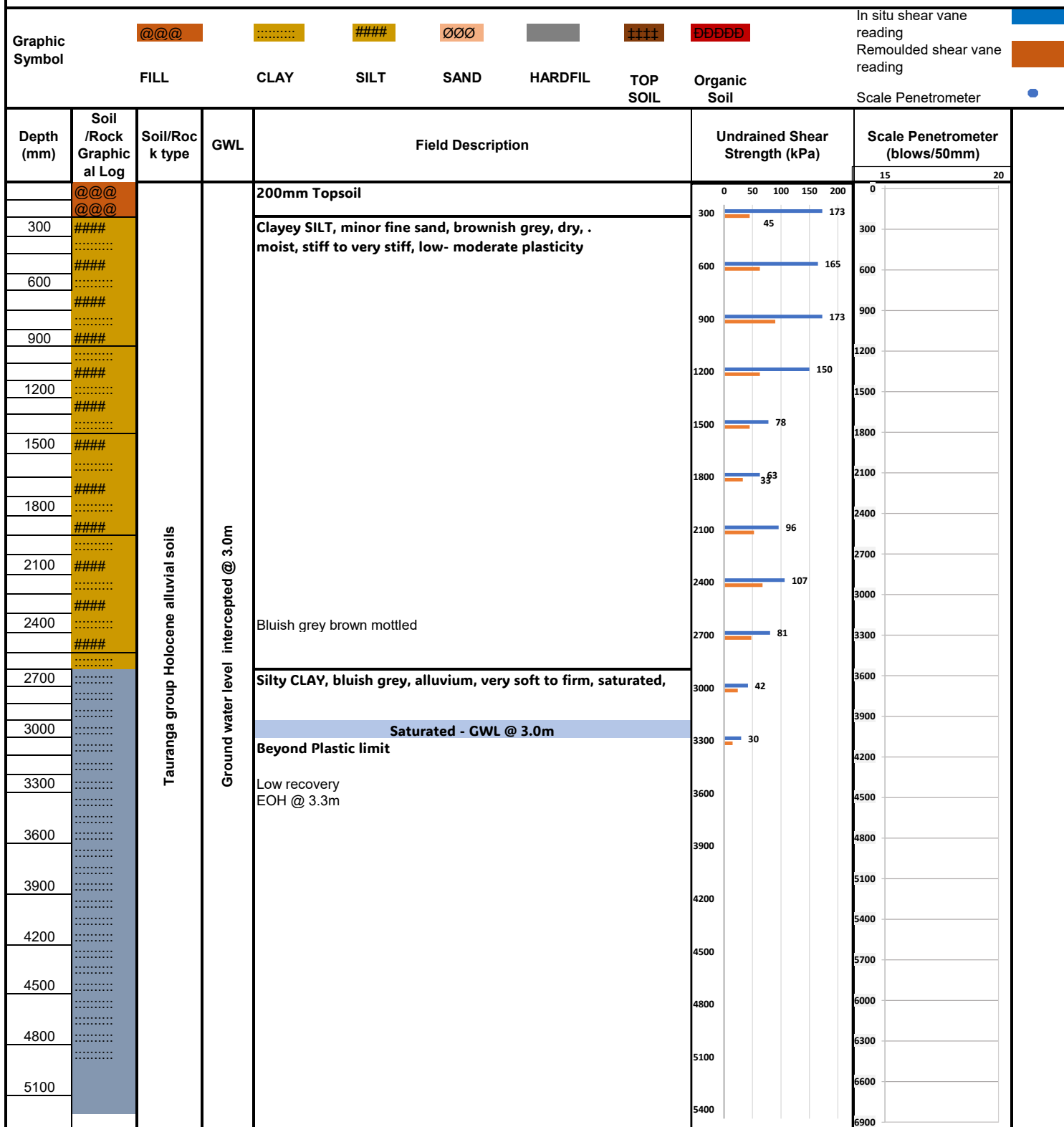
Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	6/10/2025	
Inspector	RD JW	2. UTP - Unable to penetrate.

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BOREHOLE LOG NO - AH4

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



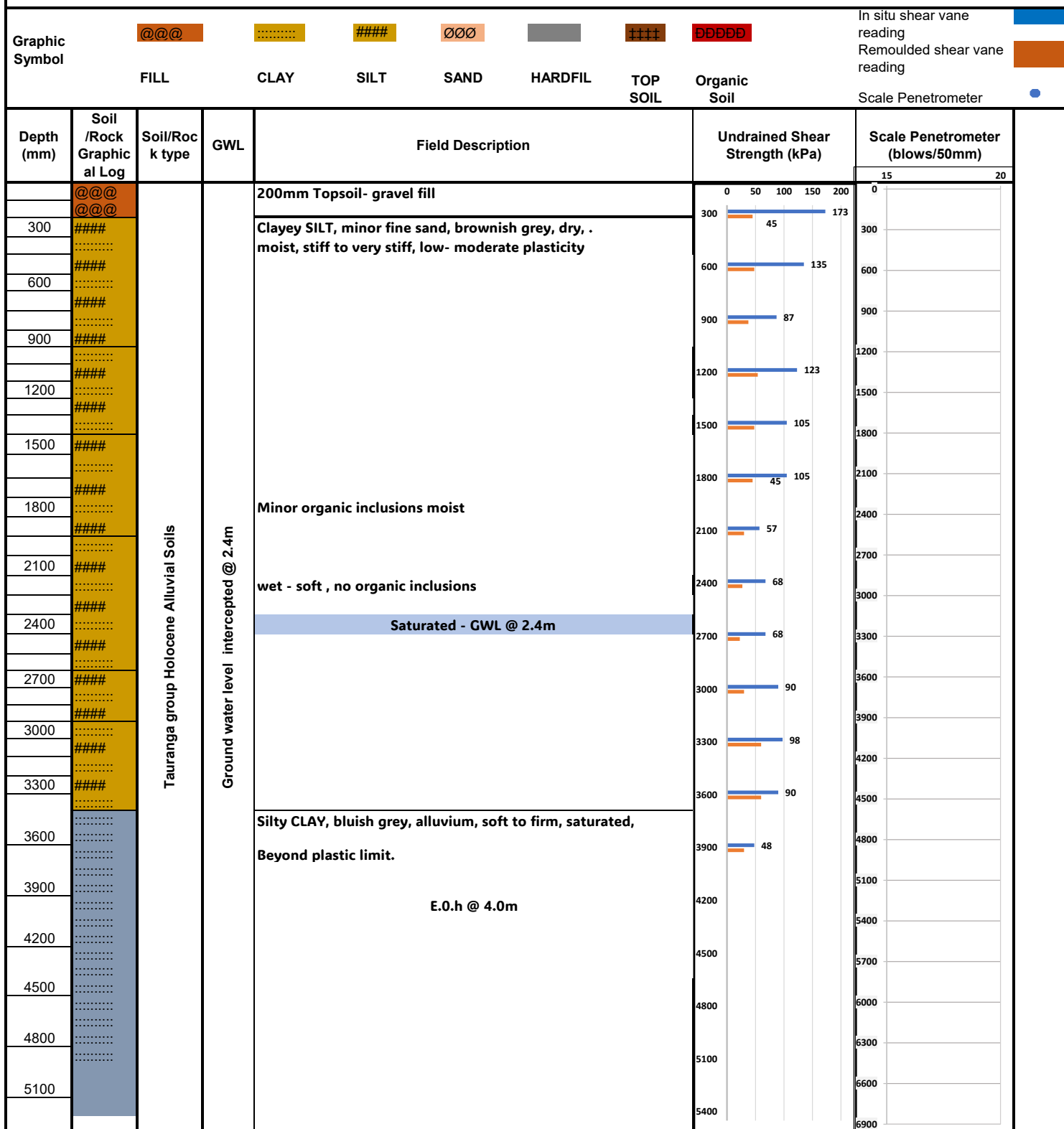
Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	4/11/2025	
Inspector	JW	2. UTP - Unable to penetrate.

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BOREHOLE LOG NO - AH5

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



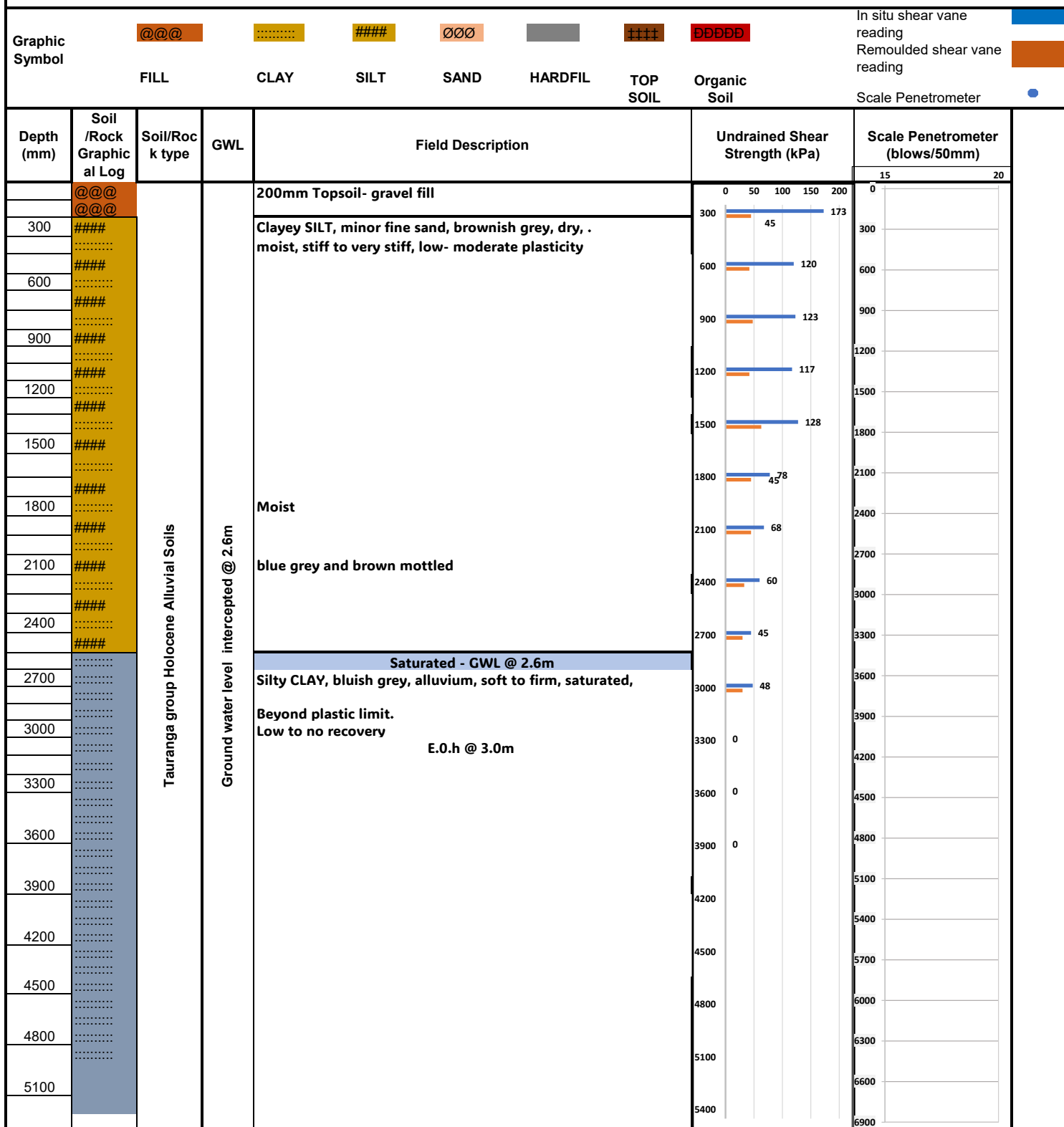
Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	4/11/2025	
Inspector	JW	2. UTP - Unable to penetrate.

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BOREHOLE LOG NO - AH6

Project: Old Whangae Road
 Client: Far North Housing Ltd.
 Job No: 25-058



Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.
Test Date	4/11/2025	
Inspector	JW	2. UTP - Unable to penetrate.

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Telephone: 09 407 3255 Fax: 09 407 3256 Email: TeamPK@pkengin.co.nz

P K ENGINEERING LIMITED												PENETROMETER HOLE No.							
90 KERIKERI RD Phone (09) 4073255 EMAIL pk.engin@pkengin.co.nz												SHT. 1 of 1							
Location: Old Whangae Rd												Job No. 25-058							
Driven by: JW/RD												Date: 6/10/2							
R.L at Ground Level: n/a																			
Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4
50					2550	1 pushed down by hand				5050	2	1 pushed down by hand	2		7550				
100					2600					5100	2		2		7600				
150					2650					5150	2		2		7650				
200					2700					5200	2		2		7700				
250					2750					5250	3		2		7750				
300					2800					5300	2		3		7800				
350					2850					5350	3		2		7850				
400					2900					5400	2		3		7900				
450					2950					5450	2		1	2	7950				
500					3000					5500	3		1	3	8000				
550					3050					5550	3		1	2	8050				
600					3100					5600	3		2	3	8100				
650					3150					5650	2		1	2	8150				
700					3200					5700	5		2	2	8200				
750					3250					5750	7		2	3	8250				
800					3300					5800	4		2	3	8300				
850					3350					5850	4		2	2	8350				
900					3400					5900	4		1	2	8400				
950					3450					5950	5		2		8450				
1000					3500					6000	4		4		8500				
1050					3550					6050	5		4		8550				
1100					3600					6100	5		2		8600				
1150					3650	2				6150	4		2		8650				
1200					3700	2				6200	5		3		8700				
1250					3750	2				6250	5		4		8750				
1300					3800	2				6300	4		2		8800				
1350					3850	3				6350	4		2		8850				
1400					3900	2				6400	5		2		8900				
1450					3950	3				6450			3		8950				
1500					4000	2		1		6500			2		9000				
1550					4050	2		1		6550			3		9050				
1600					4100	3		1		6600			2		9100				
1650					4150	3		1		6650			2		9150				
1700					4200	3		1		6700			2		9200				
1750					4250	2		2		6750			2		9250				
1800					4300	5		1		6800			4		9300				
1850					4350	7		2		6850			4		9350				
1900					4400	4		2		6900			4		9400				
1950					4450	4		1		6950			4		9450				
2000					4500	4		1		7000			4		9500				
2050					4550	5		1		7050			5		9550				
2100					4600	4		1		7100			4		9600				
2150					4650	5		2		7150			6		9650				
2200					4700	5		2		7200			5		9700				
2250					4750	4		2		7250			3		9750				
2300					4800	5		1		7300			3		9800				
2350					4850	5		2		7350			3		9850				
2400					4900	4		2		7400			3		9900				
2450					4950	4		2		7450			4		9950				
2500					5000	5		2		7500					10000				

Graphic Symbol

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DDDD

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

FILL

CLAY

SILT

SAND

ROCK

TOP SOIL

Organic Soil

Depth (mm)	Soil /Rock Graphical Log	GEOLOGY	LAYERS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)
	####	Tauranga Group Holocene alluvium. (0-0.014ma)	Natural Crustal Layer	(0.00-4.95) SILT, some clay, minor to some sand, firm, moist, low to moderate plasticity. (Natural crustal Layer)	GROUND WATER ENCOUNTERED @ 3.0M		SPT 1.50-1.9m (1-0-1-1-1-0)
300	####						
						
600	####						
	####						
900	####						
	####						
1200	####						
	####						
1500	####						
	####						
1800	####						
	####						
2100	####						
	####						
2400	####						
	####						
2700	####						
	####						
3000	####						
	####						
3300	####						
						
3600	####						
	####						
3900	####						
						
4200	####						
	####						
4500	####						
						
4800	####						
	####						
5100	####						
	####						
			Weker Alluvium	(3.00- 21.00M) SILT, some clay, varying sand inclusions, light bluish grey, soft, saturated, beyond plastic limit. (Organic inclusions) (WEAK ALLUVIUM DEPOSITS)			SPT 4.95-5.40m (2-1-1-0-1-2)

Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	
Test Date	7/10/2025	
Drilled By	Brown Bros Drilling	

Project: Old Whangae Road
Client: Far North Housing Ltd
Job No: 25-058



Graphic Symbol

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DDDDD

FILL

CLAY

SILT

SAND

ROCK

TOP SOIL

Organic Soil

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

Depth (mm)	Soil /Rock Graphi cal Log	GEOLO GY	LAYE RS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)
	####	Tauraunga Group Holocene alluvium. (0-0.014ma)	WEAK ALLUVIUM LAYER	(3.0- 21.00M) SILT, some clay, varying sand inclusions, light bluish grey, soft, saturated, beyond plastic limit. (Organic inclusions) (WEAK ALLUVIUM DEPOSITS)	GROUND WATER ENCOUNTERED @ 3.0M		SPT 6.0-6.45m (1-0-1-1-1-0)
	####						
5100	####						
						
	####						
5400	####						
						
5700	####						
						
	####						
6000						
	####						
	####						
6300	####						
						
	####						
6700	####						
						
	####						
7000	####						
						
	####						
7300	####						
						
	####						
7600						
	####						
	####						
7900						
	####						
	####						
8200						
	####						
	####						
8500						
	####						
	####						
8800						
	####						
	####						
9100						
	####						
	####						
10400						
	####						
	####						
10700						
	####						
	####						
11000						
	####						

Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions" 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	7/10/2025	
Drilled By	Brown Bros Drilling	

BOREHOLE LOG NO - BH01 (C)

Project: Old Whangae Road

Client: Far North Housing Ltd

Job No: 25-058

PKENGINEERING

CHARTERED PROFESSIONAL ENGINEERS

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

Graphic Symbol

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DDDD

FILL

CLAY

SILT

SAND

ROCK

TOP SOIL

Organic Soil

Blue

Orange

Depth (mm)	Soil /Rock Graphical Log	GEOLOGY	LAYERS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)
	####	Tauranga Group Holocene alluvium. (0-0.014ma)	WEAK ALLUVIUM LAYER	(3.0- 21.00M) SILT, some clay, varying sand inclusions, light bluish grey, soft, saturated, beyond plastic limit. (Organic inclusions) (WEAK ALLUVIUM DEPOSITS)	GROUND WATER ENCOUNTERED @ 3,0M		
	####						
11300	####						
						
	####						
11600	####						
	####						
						
11900	####						
	####						
	####						
12200						
	####						
	####						
12500	####						
						
	####						
12800	####						
	####						
						
13100	####						
	####						
	####						
13400						
	####						
	####						
13700	####						
						
	####						
14000	####						
	####						
						
14300	####						
	####						
	####						
14700	####						
						
	####						
15000	####						
	####						
						
15300	####						
	####						
	####						
15600						
	####						
	####						
15900	####						
						
	####						
16200	####						
	####						
Drill Methods		50 mm hand auger		Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"			
Test Location		Refer to site plan		1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.			
Test Date		7/10/2025					
Drilled By		Brown Bros Drilling		2. UTP - Unable to penetrate.			

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BOREHOLE LOG NO - BH01 (D)				<div><div>PK</div><div>ENGINEERING</div><div>CHARTERED PROFESSIONAL ENGINEERS</div></div>			
Project: Old Whangae Road Client: Far North Housing Ltd Job No: 25-058							
Graphic Symbol				<div><div>@@@</div><div>.....</div><div>####</div><div>000</div><div></div><div>+++</div><div>DDDD</div><div>In situ shear vane reading</div><div>Remoulded shear vane reading</div><div>Scale Penetrometer</div></div>			
FILL				CLAY			
				SILT			
				SAND			
				ROCK			
				TOP SOIL			
				Organic Soil			

BOREHOLE LOG NO - BH01 (E)

Project: Old Whangae Road

Client: Far North Housing Ltd

Job No: 25-058

PKENGINEERING

CHARTERED PROFESSIONAL ENGINEERS

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

Graphic Symbol

@@@

FILL

.....

CLAY

####

SILT

000

SAND

ROCK

||||

TOP SOIL

DDDD

Organic Soil

Depth (mm)	Soil /Rock Graphical Log	GEOLOGY	LAYERS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)
	####	Waipapa Group (Greywacke) Siltstone and Sandstone 154-270ma	WEAK ALLUVIUM LAYER	(21.00- 24.00M)Highly weathered to Moderately weathered greywacke rock. (BASEMENT ROCK)	GROUND WATER ENCOUNTERED @ 3,0M		
	####						
21000							
21400							
21700							
22000							
22300							
22600							
22900							
23100							
23400							
23700							
24000							
24300							
24600							
24900							
25200							
25500							
25800							
Drill Methods		50 mm hand auger		Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"			
Test Location		Refer to site plan		1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location.			
Test Date		7/10/2025					
Drilled By		Brown Bros Drilling		2. UTP - Unable to penetrate.			
Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand, Telephone: 09 4073255 Email: TeamPK@pkengin.co.nz							

Graphic Symbol

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DDDD

FILL

CLAY

SILT

SAND

ROCK

TOP SOIL

Organic Soil

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

Depth (mm)	Soil /Rock Graphical Log	GEOLOGY	LAYERS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)		
	####	Tauranga Group Holocene alluvium. (0-0.014ma)	FIRM UPPER CRUST	(0.00-3.0) SILT, some clay, minor to some sand, firm, moist, low to moderate plasticity. (Natural crustal Layer)	GROUND WATER ENCOUNTERED @ 3.0M				
	####								
300								
	####								
								
600								
	####								
								
900								
	####								
								
1200								
	####								
								
1500	####		WEAK ALLUVIUM				(1.5- 8.60M) SILT/CLAY, varying sand inclusions, light blue saturated, soft-very soft beyond plastic limit. (Organic inclusions) (WEAK ALLUVIUM DEPOSITS)		SPT 1.50-1.95m (1-1-1-1-1)
								
1800								
	####								
								
2100								
	####								
								
2400								
	####								
								
2700								
	####								
								
3000								
	####								
								
3300								
	####								
								
3600								
	####								
								
3900					SPT 3.7-4.15m (1-1-0-0-0-0)			
								
	####								
4200								
								
	####								
4500								
								
	####								
4800								
								
	####								
5100								
	####								

Drill Methods	50 mm hand auger	Note: All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	
Test Date	7/10/2025	
Drilled By	Brown Bros Drilling	

Graphic Symbol

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DDDD

FILL

CLAY

SILT

SAND

ROCK

TOP SOIL

Organic Soil

In situ shear vane reading

Remoulded shear vane reading

Scale Penetrometer

Depth (mm)	Soil /Rock Graphical Log	GEOLOGY	LAYERS	Field Description	GWL	Undrained Shear Strength (kPa)	Scala Penetrometer (blows/70mm)
	####	Tauraunga Group Holocene alluvium. (0-0.014ma)	WEAK ALLUVIUM LAYER	(3.0- 8.60M) SILT/CLAY, varying sand inclusions, light blue saturated, soft-very soft beyond plastic limit. (Organic inclusions) (WEAK ALLUVIUM DEPOSITS)	GROUND WATER ENCOUNTERED @ 3.0M		<div>SPT 6.7-7.15m (1-1-1-0-0-0)</div>
5100	####						
	####						
5400	####						
	####						
5700	####						
	####						
6000	####						
	####						
6300	####						
	####						
6700	####						
	####						
7000	####						
	####						
7300	####						
	####						
7600	####						
	####						
7900	####						
	####						
8200	####						
	####						
8500	####						
		Waipapa Group (Greywacke) Siltstone and Sandstone 154-270ma)	Bedrock	(8.60- 10.25M) Highly to moderately weathered sandstone and siltstone Green and grey (Basement Rock)			
8800							
9100							
10400					(10.25m) Unable to drill with tungsten tip		
10700					End of Borehole @ 10.25m)		
11000							

SITE PHOTOGRAPHS



Photo 1: Hand Auger Samples from AH1



Photo 2: Hand Auger Samples from AH2



Photo 3: Hand Auger Samples from AH3



Photo 4: Hand Auger Samples from AH4



Photo 5: Hand Auger Samples from AH5



Photo 6: Hand Auger Samples from AH6



Photo 7: Machine Bore hole Samples from MB01(a)



Photo 8: Machine Bore hole Samples from MB01(b)



Photo 9: Machine Bore hole Samples from MB01(b) - Zoomed



Photo 10: Machine Bore hole Samples from MB01(c)



Photo 11: Machine Bore hole Samples from MB02(a)



Photo 12: Machine Bore hole Samples from MB02(b)



Photo 13: Machine Bore hole Samples from MB02(c)



Photo 14: Push tube samples



Photo 15: Flood mitigation outflow



Photo 16: Northeast Corner of the site to be developed



Photo 17: Standing in the position where buildings are to be located.



Photo 18: Walkway along the edge of the sites northern flank looking south east with the riverbank to the north



Photo 19: Looking to the west with the site on the left



Photo 20: Looking at a portion of the building site back up towards Gillies street.



Photo 21: Standing in the middle of the site looking north west.



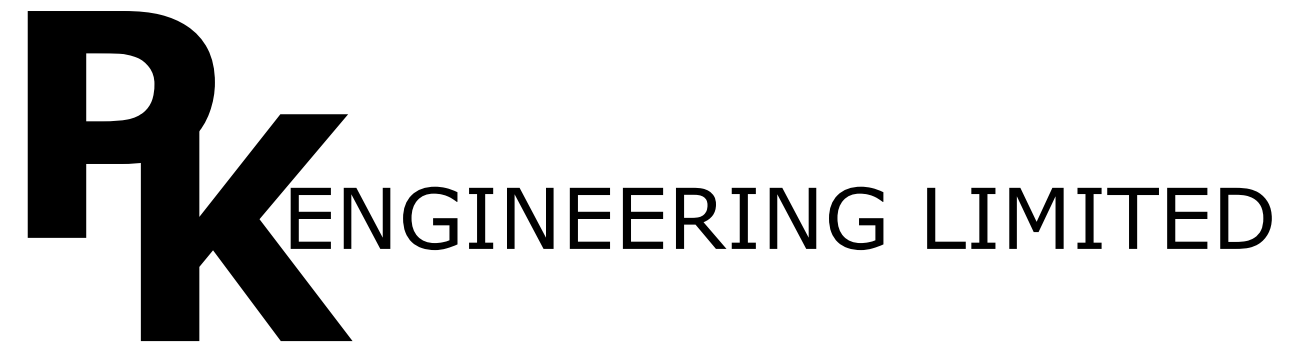
Photo 22: At river level, adjacent to the site.



Photo 23: Looking onto the centre of the building platform from the river bank bund



Photo 24: The existing stormwater swale along the east flank of the proposed site.



CHARTERED PROFESSIONAL ENGINEERS

PROJECT:

**CONCEPTUAL DRAWINGS FOR PROPOSED
DEVELOPMENT AT OLD WHANGAE RD FOR
FAR NORTH HOUSING LTD**

PROJECT ADDRESS:

**OLD WHANGAE ROAD
KAWAKAWA**

LEGAL DESCRIPTION

Lot 1 DP 63674

JOB NO:

25-058

DATE:

DECEMBER 2025

FIRST ISSUE
(ISSUED FOR
CONSENT)

DRAWING INDEX:

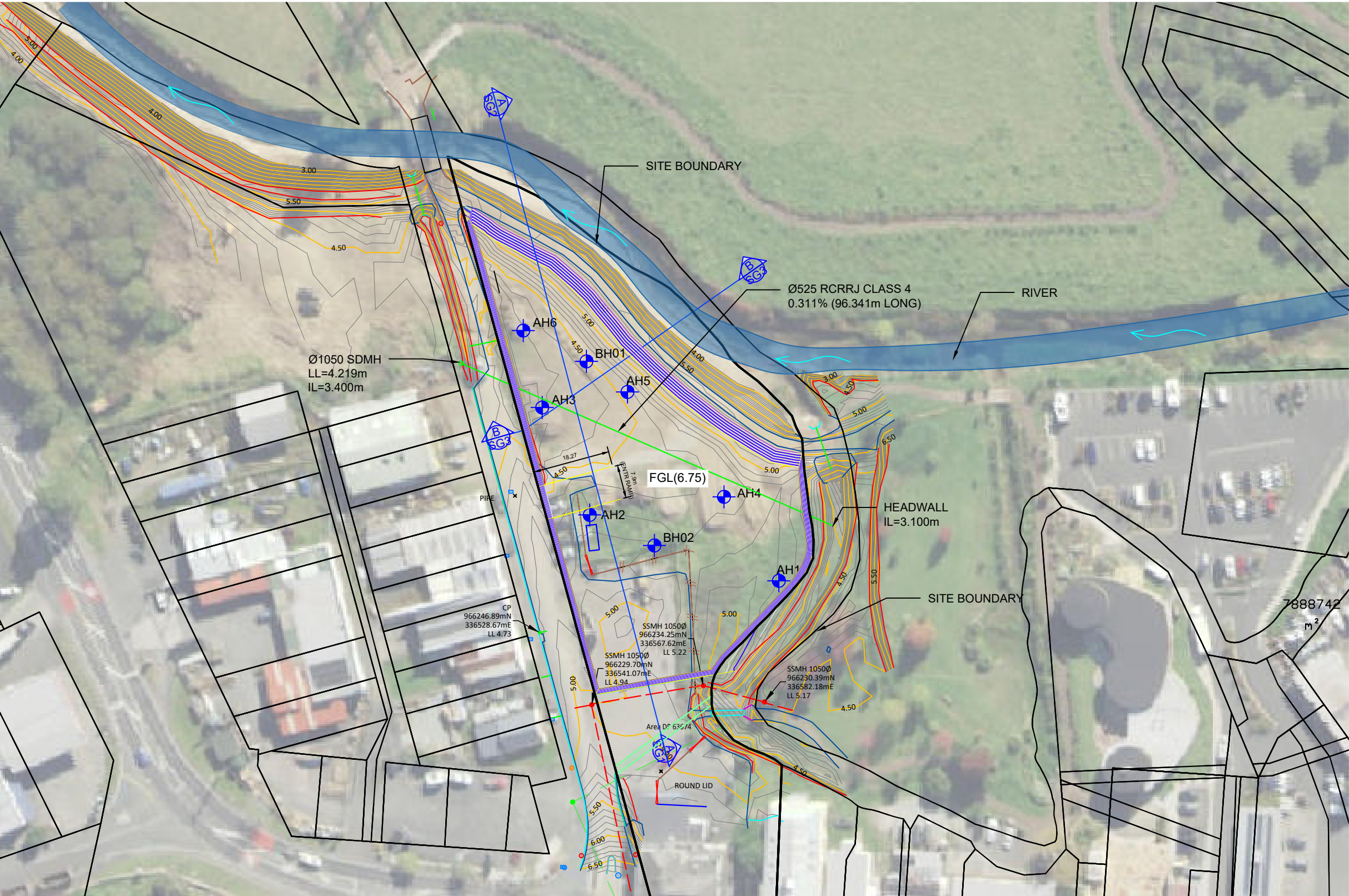
SG1	SITE PLAN
SG2	CROSS-SECTION - AA
SG3	CROSS-SECTION - BB
SG4	CONCEPTUAL CROSS SECTION
SG5	CONCEPTUAL DETAIL

**ISSUED FOR
CONSENT
RO**

LEVEL 2
ANZ Bank Building
90 Kerikeri road,
P.O.Box 464
KERIKERI

Tel. (09) 4073255

E-mail. teampk@pkengin.co.nz



LEGEND

- AH2

HAND AUGER LOCATION
- BH02

MACHINE BOREHOLE LOCATION
- PROPOSED OUTER EXTEND OF
RAISED BUILDING PLATFORM



THIS PLAN IS ADAPTED FROM
SURVEY WORK TOPOGRAPHIC SURVEY
AND INFORMATION PROVIDED
BY THE CLIENT FAR NORTH HOLDINGS LTD.

Notes:

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DRAWINGS.

PK

ENGINEERING LIMITED

DATE: 9 12 2025

CHECKED BY:

PRADEEP KUMAR

CHARTERED PROFESSIONAL ENGINEER

(STRUCTURAL, GEOTECHNICAL)

IntPE, CPEng, MIPENZ No. 203058

CLIENT: FAR NORTH HOUSING LTD			
SITE: OLD WHANGAE RD, KAWAKAWA LOT 1 DP 63674			
TITLE: OLD WHANGAE ROAD SITE PLAN			
SCALE AT A3: 1:1000	DATE: DEC 25	DRAWN: JW	CHECKED: PK
PROJECT NO: 25-058	DRAWING NO: A3/SG1	REVISION: R0	

REV: DESCRIPTION: BY: DATE:

STATUS: ISSUED FOR CONSENT

PK

ENGINEERING

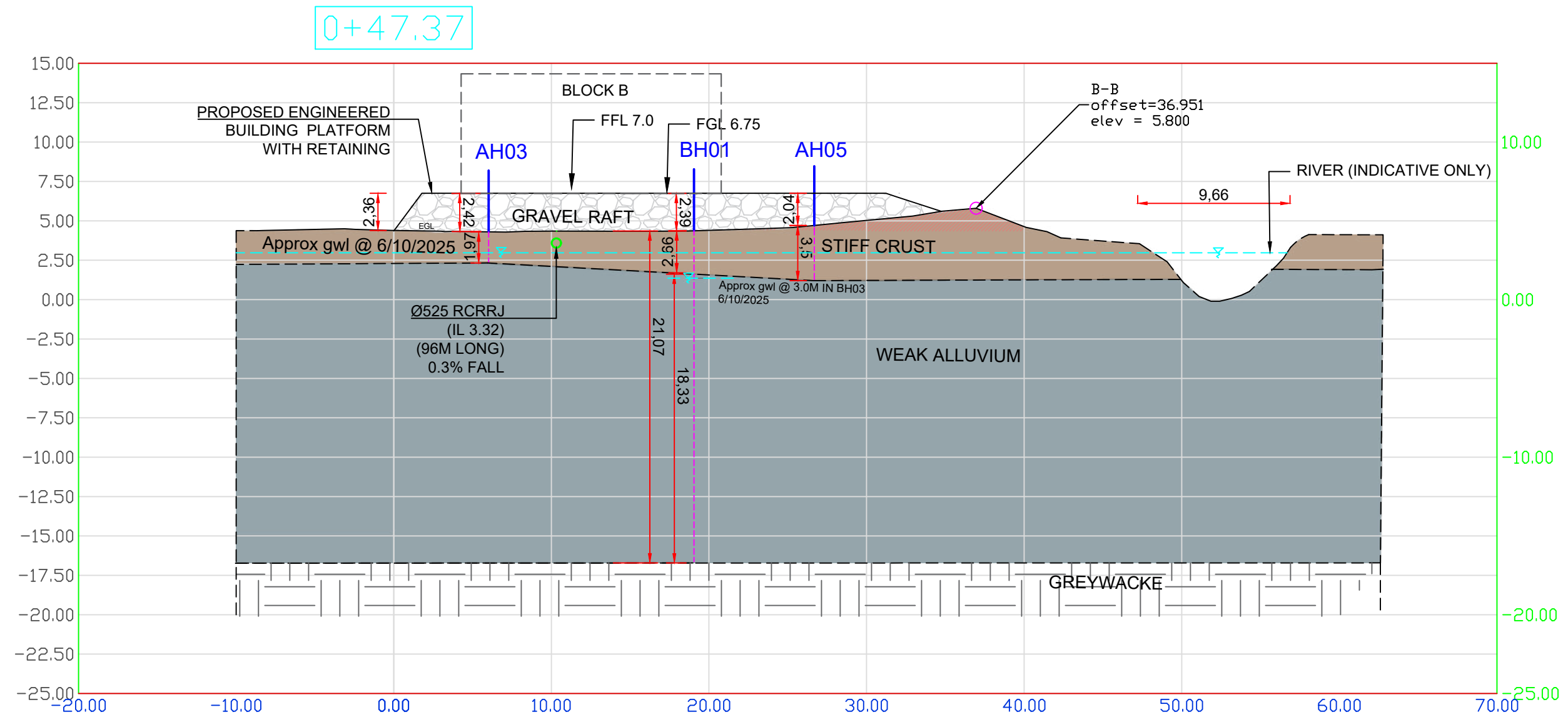
LEVEL 1, ANZ BANK

90 KERIKERI ROAD, KERIKERI

PO BOX 464, KERIKERI

Phone Number: 09 407 3255

Email: teampk@pkengin.co.nz

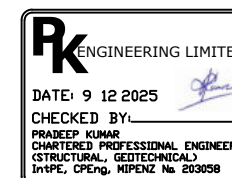


CROSS SECTION B-B
SCALE 1:300

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BY THE CLIENT FAR NORTH HOLDINGS LTD.

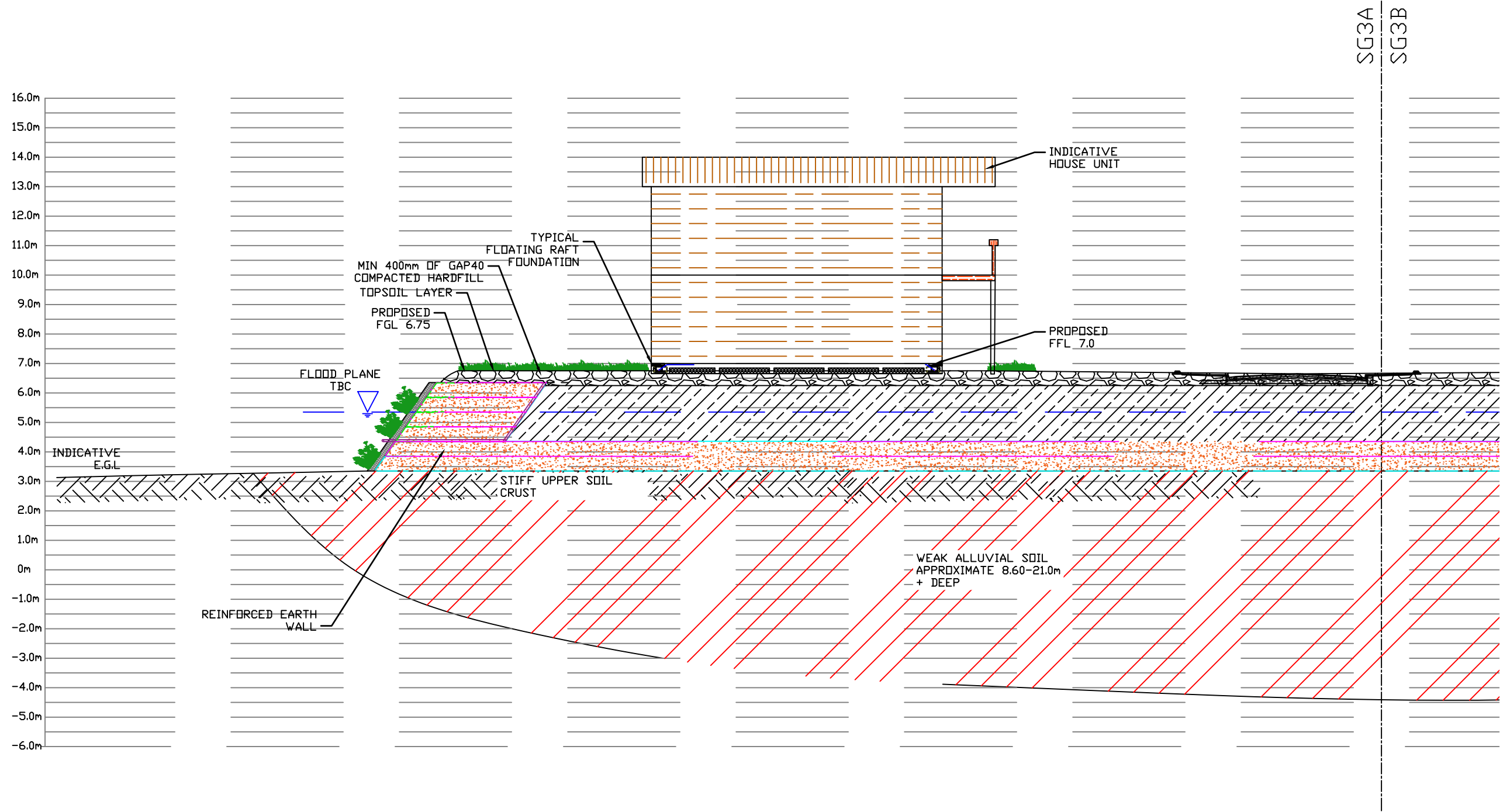
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CLIENT: FAR NORTH HOUSING LTD			
SITE: OLD WHANGAE RD KAWAKAWA LOT 1 DP 63674			
TITLE: OLD WHANGAE ROAD CROSS SECTION B-B			
SCALE AT A3: 1:300	DATE: SEPT 25	DRAWN: JW	CHECKED: PK
PROJECT NO: 25-058	DRAWING NO: A3/SG3	REVISION: R0	

REV:	DESCRIPTION:	BY:	DATE:
STATUS: ISSUED FOR CONSENT			
LEVEL 1, ANZ BANK 90 KERIKERI ROAD, KERIKERI PO BOX 464, KERIKERI Phone Number: 09 407 3255 Email: teampk@pkengin.co.nz			

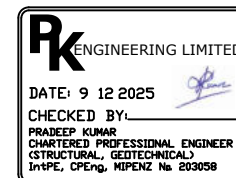


CONCEPTUAL CROSS SECTION
1:150

THIS PLAN IS ADAPTED FROM
SURVEY WORX TOPOGRAPHIC SURVEY
AND INFORMATION PROVIDED
BY THE CLIENT FAR NORTH HOLDINGS LTD.

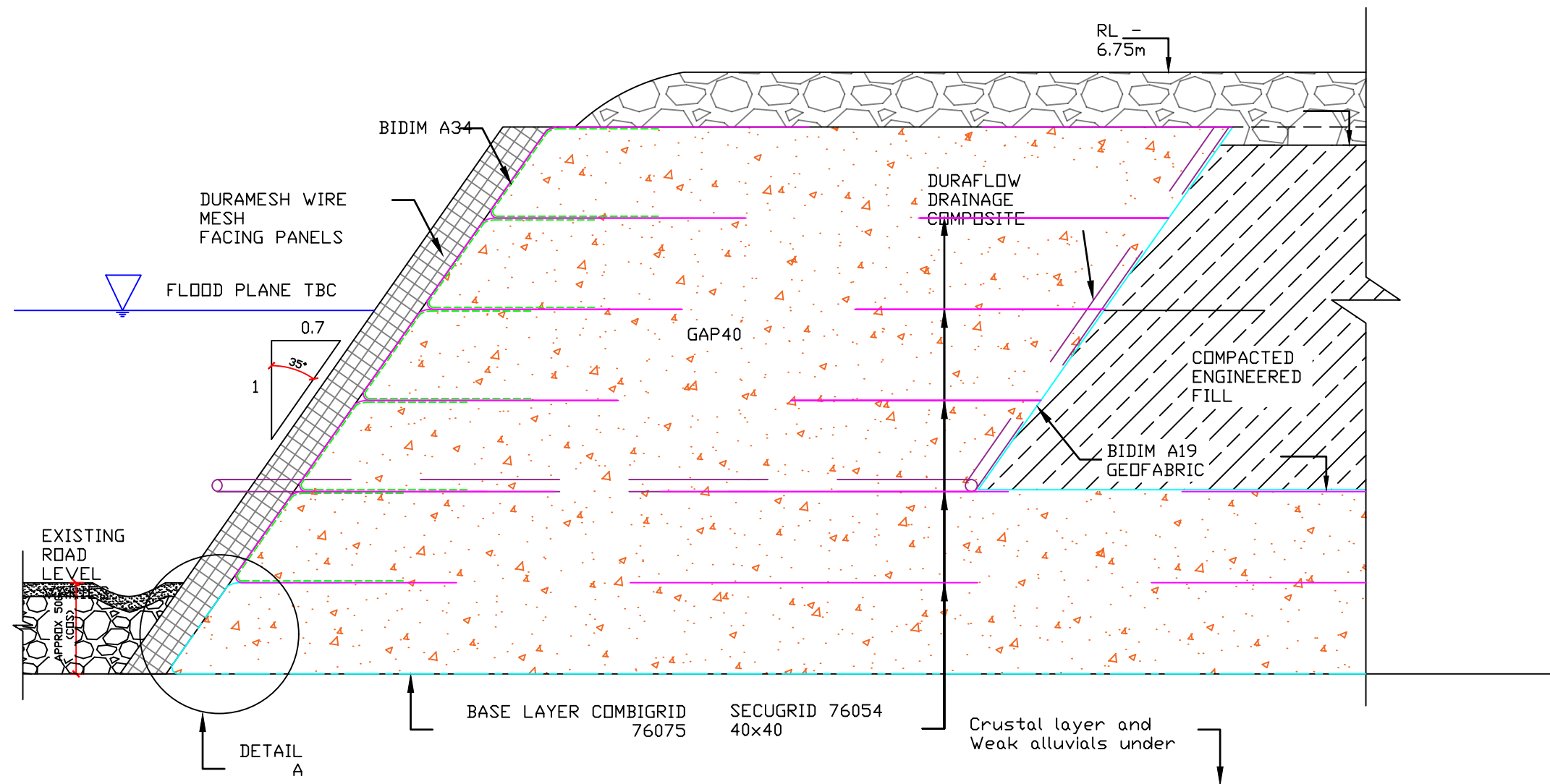
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2. VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING WORK. USE WRITTEN DIMENSIONS IN PREFERENCE TO SCALING THESE DRAWINGS.



CLIENT: FAR NORTH HOUSING LTD			
SITE: OLD WHANGAE RD KAWAKAWA LOT 1 DP 63674			
TITLE: OLD WHANGAE ROAD CONCEPTUAL CROSS SECTION			
SCALE AT A3: 1:150	DATE: DEC 25	DRAWN: JW	CHECKED: PK
PROJECT NO: 25-058	DRAWING NO: A3/SG4	REVISION: R0	

REV:	DESCRIPTION:	BY:	DATE:
STATUS: ISSUED FOR CONSENT			
LEVEL 1, ANZ BANK 90 KERIKERI ROAD, KERIKERI PO BOX 464, KERIKERI Phone Number: 09 407 3255 Email: teampk@pkengin.co.nz			



**CONCEPTUAL REINFORCED EARTH WALL
CROSS-SECTION DETAIL**


THIS PLAN IS ADAPTED FROM
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CLIENT: FAR NORTH HOUSING LTD			
SITE: OLD WHANGAE RD KAWAKAWA LOT 1 DP 63674			
TITLE: OLD WHANGAE ROAD REINFORCED EARTH WALL DETAIL			
SCALE AT A3:	DATE: DEC 25	DRAWN: JW	CHECKED: PK
PROJECT NO: 25-058	DRAWING NO: A3/SG5	REVISION: R0	

REV:	DESCRIPTION:	BY:	DATE:
STATUS:	ISSUED FOR CONSENT		
			
LEVEL 1, ANZ BANK 90 KERIKERI ROAD, KERIKERI PO BOX 464, KERIKERI Phone Number: 09 407 3255 Email: teampk@pkengin.co.nz			

APPENDIX B

CONTENTS

APPENDIX B

B.1 LAB RESULTS

B.2 SLOPE STABILITY MODELS

TEST REPORT

Lab Job No: 8441-005

Your ref.: AT010024

Date of Issue: 4/12/2025

Date of Re-Issue: -

Test Report No.
WRE8441-005-R001

PROJECT: Old Whangae - Soil Classification

CLIENT: Far North Holdings Ltd
9 Baffin Street, Opua 0200

ATTENTION: C/O PK Engineering Ltd Jonty White

TEST METHODS: Determination of the Water Content of soils
NZS 4402:1986 Test 2.1
Determination of the liquid & plastic limits, plasticity index and water content
NZS 4402:1986 Tests 2.1,2.2,2.3,2.4
Determination of the Linear Shrinkage
NZS 4402:1986 Test 2.6
Determination of the Shrinkage Index of a Soil
AS 1289.7.1.1 - 2003
Determination of the Solid Density of fine materials
NZS 4402:1986 Test 2.7.2

SAMPLING METHOD: Sampled by client – Sampling not accredited

TEST RESULTS: As per attached sheets



A. Agnew
Laboratory Technician



D. Krissansen
Approved Signatory

All results obtained in accordance with the test methods listed above.

Any material descriptions included in this report are excluded from IANZ endorsement.

Test results relate only to the sample tested.



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

DETERMINATION OF WATER CONTENT

NZS 4402:1986 Test 2.1

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project/Site: Old Whangae

Tested By: N.K
Date: 3/11/2025
Checked By: A.A
Date: 11/11/2025

Date Received: 13/10/2025
Date Sampled: 7/10/2025
Sampler: Client
Sampling Method: Sampled by client – Sampling not accredited

Report No: WRE8441-005-R001

Sample Number	Location	Sample Description	Water Content (%)
WRE8441-005-S001	MB01 2.20m - 2.95m	Silty CLAY, minor fine sands, traces of organic matter, grey mottled orange, wet.	34.2
WRE8441-005-S002	MB01 4.20m - 4.95m	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.	61.5
WRE8441-005-S003	MB02 2.20m - 2.95m	Silty CLAY, traces of fine sands, grey mottled orange, wet.	39.2
WRE8441-005-S004	MB02 5.20m - 5.95m	Silty CLAY, traces of shell fragments to 15mm and organic matter, grey, wet.	49.5

**DETERMINATION OF THE LIQUID & PLASTIC LIMITS,
PLASTICITY INDEX & WATER CONTENT**

NZS 4402:1986 Test 2.2,2.3,2.4

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project/Site: Old Whangae
Sample Location: MB01 2.20m - 2.95m
Date Received: 13/10/2025
Date Sampled: 7/10/2025
Sampler: Client
Sampling Method: Sampled by client – Sampling not accredited
Sample Description: Silty CLAY, minor fine sands, traces of organic matter, grey mottled orange, wet.

Sample No.: WRE8441-005-S001
Tested By: N.K
Date: 21/10/2025
Checked By: A.A
Date: 11/11/2025
Report No: WRE8441-005-R001
REF: AT010024

Test Details:

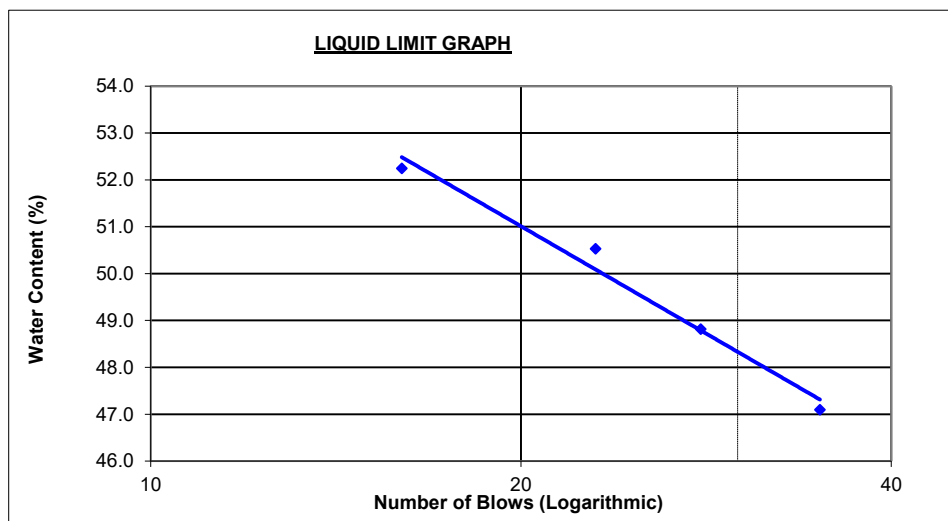
Test performed on: Fraction passing 425µm sieve

Sample history: As received

	Liquid Limit			
No. of blows	16	23	28	35
Water content (%)	52.2	50.5	48.8	47.1

Plastic Limit	
25.6	25.6

NWC	34.2
Liquid Limit	50
Plastic Limit	26
Plasticity Index	24



DETERMINATION OF THE LIQUID & PLASTIC LIMITS, PLASTICITY INDEX & WATER CONTENT

NZS 4402:1986 Test 2.2,2.3,2.4

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S002
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	21/10/2025
Sample Location:	MB01 4.20mm - 4.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.		

Test Details:

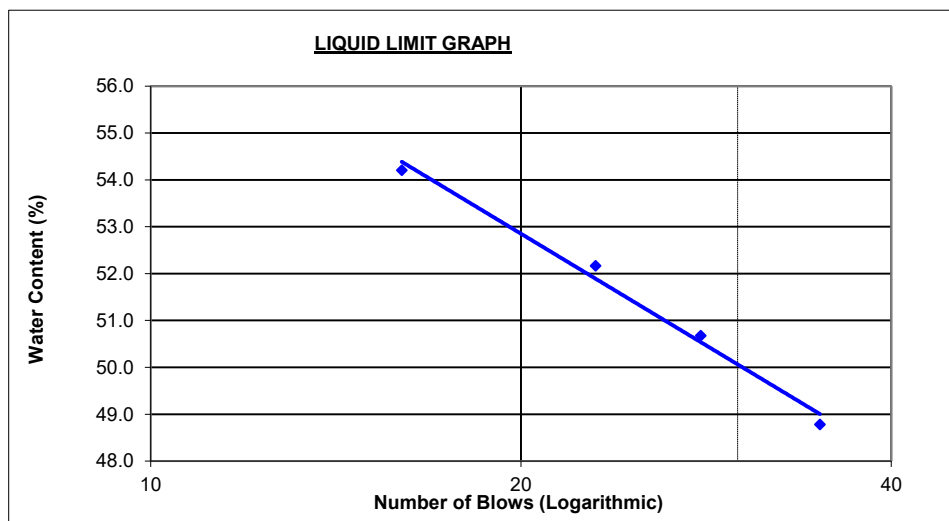
Test performed on: Fraction passing 425µm sieve

Sample history: As received

	Liquid Limit			
No. of blows	16	23	28	35
Water content (%)	54.2	52.2	50.7	48.8

Plastic Limit	
25.8	25.7

NWC	61.5
Liquid Limit	51
Plastic Limit	26
Plasticity Index	25



**DETERMINATION OF THE LIQUID & PLASTIC LIMITS,
PLASTICITY INDEX & WATER CONTENT**

NZS 4402:1986 Test 2.2,2.3,2.4

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project/Site: Old Whangae
Sample Location: MB02 2.20m - 2.95m
Date Received: 13/10/2025
Date Sampled: 7/10/2025
Sampler: Client
Sampling Method: Sampled by client – Sampling not accredited
Sample Description: Silty CLAY, traces of fine sands, grey mottled orange, wet.

Sample No.: WRE8441-005-S003
Tested By: N.K
Date: 21/10/2025
Checked By: A.A
Date: 11/11/2025
Report No: WRE8441-005-R001
REF: AT010024

Test Details:

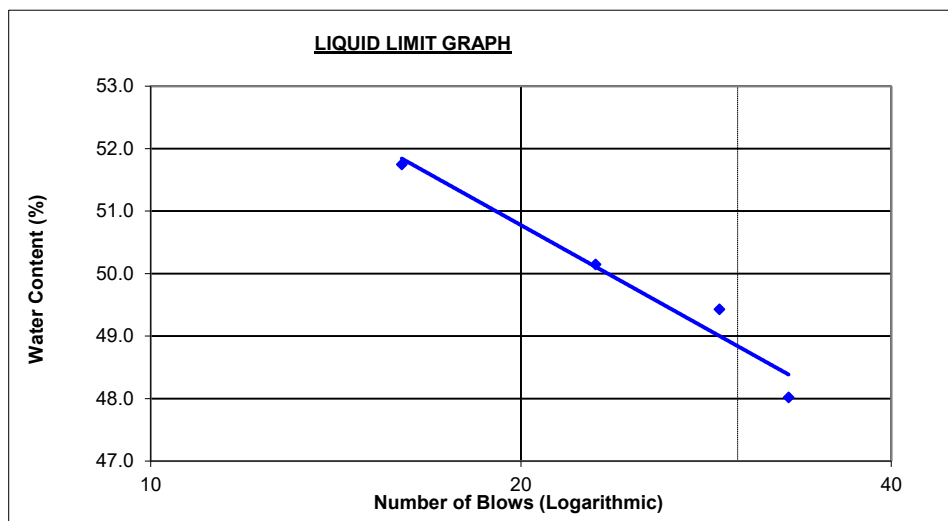
Test performed on: Fraction passing 425µm sieve

Sample history: As received

Liquid Limit				
No. of blows	16	23	29	33
Water content (%)	51.7	50.1	49.4	48.0

Plastic Limit	
26.2	26.1

NWC	39.2
Liquid Limit	50
Plastic Limit	26
Plasticity Index	24



**DETERMINATION OF THE LIQUID & PLASTIC LIMITS,
PLASTICITY INDEX & WATER CONTENT**
NZS 4402:1986 Test 2.2,2.3,2.4

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S004
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	31/10/2025
Sample Location:	MB02 5.20m - 5.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of shell fragments to 15mm and organic matter, grey, wet.		

Test Details:

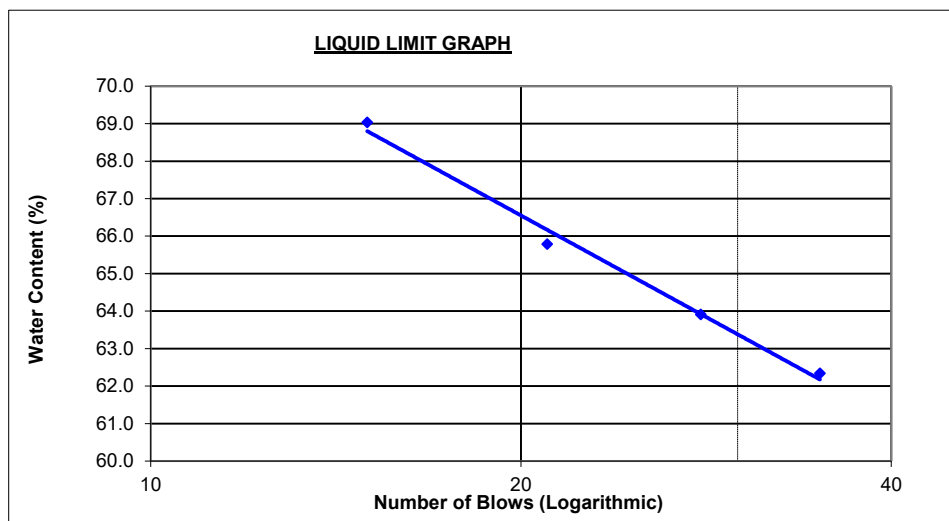
Test performed on: Fraction passing 425µm sieve

Sample history: As received

	Liquid Limit			
No. of blows	15	21	28	35
Water content (%)	69.0	65.8	63.9	62.3

Plastic Limit	
25.7	25.7

NWC	49.5
Liquid Limit	65
Plastic Limit	26
Plasticity Index	39



DETERMINATION OF THE LINEAR SHRINKAGE

NZS 4402:1986 Test 2.6

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S001
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	21/10/2025
Sample Location:	MB01 2.20m - 2.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, minor fine sands, traces of organic matter, grey mottled orange, wet.		
Test performed on:	Fraction passing 425mm sieve		
History:	As received		

Linear shrinkage	14
------------------	----

DETERMINATION OF THE LINEAR SHRINKAGE

NZS 4402:1986 Test 2.6

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S002
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	21/10/2025
Sample Location:	MB01 4.20mm - 4.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.		
Test performed on:	Fraction passing 425mm sieve		
History:	As received		

Linear shrinkage	13
------------------	----

DETERMINATION OF THE LINEAR SHRINKAGE

NZS 4402:1986 Test 2.6

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S003
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	21/10/2025
Sample Location:	MB02 2.20m - 2.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, grey mottled orange, wet.		
Test performed on:	Fraction passing 425mm sieve		
History:	As received		

Linear shrinkage	13
------------------	----

DETERMINATION OF THE LINEAR SHRINKAGE

NZS 4402:1986 Test 2.6

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S004
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	31/10/2025
Sample Location:	MB02 5.20m - 5.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of shell fragments to 15mm and organic matter, grey, wet.		
Test performed on:	Fraction passing 425mm sieve		
History:	As received		

Linear shrinkage	16
------------------	----

DETERMINATION OF THE SHRINKAGE INDEX OF A SOIL

AS 1289.7.1.1 - 2003

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S001
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	15/10/2025
Sample Location:	MB01 2.20m - 2.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, minor fine sands, traces of organic matter, grey mottled orange, wet.		

Test Details:

Test performed on:	Undisturbed sample - from core
Sample condition on receipt:	At natural water content

Moisture Content (%): as received	Swell Test Moisture Content @ test completion (%)	Total Swell Strain (%)	Total Shrinkage Strain (%)	Shrink - Swell Index (%)
34.2	41.3	-0.4	8.5	4.7

Sample condition during shrinkage:
No cracking, 0 % Inert Particles.

DETERMINATION OF THE SHRINKAGE INDEX OF A SOIL

AS 1289.7.1.1 - 2003

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S002
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	16/10/2025
Sample Location:	MB01 4.20mm - 4.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.		

Test Details:

Test performed on:	Undisturbed sample - from core
Sample condition on receipt:	At natural water content

Moisture Content (%): as received	Swell Test Moisture Content @ test completion (%)	Total Swell Strain (%)	Total Shrinkage Strain (%)	Shrink - Swell Index (%)
61.5	62.6	-0.3	9.9	5.5

Sample condition during shrinkage:
Some transverse cracking, 0 % Inert Particles.

DETERMINATION OF THE SHRINKAGE INDEX OF A SOIL

AS 1289.7.1.1 - 2003

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S002
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	16/10/2025
Sample Location:	MB01 4.20mm - 4.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.		

Test Details:

Test performed on:	Undisturbed sample - from core
Sample condition on receipt:	At natural water content

Moisture Content (%): as received	Swell Test Moisture Content @ test completion (%)	Total Swell Strain (%)	Total Shrinkage Strain (%)	Shrink - Swell Index (%)
39.2	39.0	-0.6	8.9	5.0

Sample condition during shrinkage:
 No cracking, 0 % Inert Particles.

DETERMINATION OF THE SHRINKAGE INDEX OF A SOIL

AS 1289.7.1.1 - 2003

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S004
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	28/10/2025
Sample Location:	MB02 5.20m - 5.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of shell fragments to 15mm and organic matter, grey, wet.		

Test Details:

Test performed on:	Undisturbed sample - from core
Sample condition on receipt:	At natural water content

Moisture Content (%): as received	Swell Test Moisture Content @ test completion (%)	Total Swell Strain (%)	Total Shrinkage Strain (%)	Shrink - Swell Index (%)
49.5	51.4	-0.1	8.0	4.4

Sample condition during shrinkage:
Some transverse Cracking, 2.2% Inert Particles (shell fragments).

DETERMINATION OF THE SOLID DENSITY OF FINE MATERIALS

NZS 4402:1986 Test 2.7.2

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S001
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	5/11/2025
Sample Location:	MB01 2.20m - 2.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, minor fine sands, traces of organic matter, grey mottled orange, wet.		

Test performed on: Whole soil
History: As received

Temperature: 20 °C $\rho_w =$ 0.9982 t/m³

Bottle No.	S9	S10
Solid density of soil particles (ρ_s) t/m ³	2.705	2.701
Average solid density (ρ_s) t/m ³	2.70	

DETERMINATION OF THE SOLID DENSITY OF FINE MATERIALS

NZS 4402:1986 Test 2.7.2

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S002
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	22/10/2025
Sample Location:	MB01 4.20mm - 4.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, minor organic matter, dark grey, wet.		

Test performed on: Whole soil
History: As received

Temperature: 20 °C $\rho_w =$ 0.9982 t/m³

Bottle No.	S9	S10
Solid density of soil particles (ρ_s) t/m ³	2.667	2.670
Average solid density (ρ_s) t/m ³	2.67	

DETERMINATION OF THE SOLID DENSITY OF FINE MATERIALS

NZS 4402:1986 Test 2.7.2

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S003
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	23/10/2025
Sample Location:	MB02 2.20m - 2.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025		
Date Sampled:	7/10/2025	Report No:	WRE8441-005-R001
Sampler:	Client	REF:	AT010024
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of fine sands, grey mottled orange, wet.		

Test performed on: Whole soil
History: As received

Temperature: 20 °C $\rho_w =$ 0.9982 t/m³

Bottle No.	M2	M17
Solid density of soil particles (ρ_s) t/m ³	2.696	2.708
Average solid density (ρ_s) t/m ³	2.70	

DETERMINATION OF THE SOLID DENSITY OF FINE MATERIALS

NZS 4402:1986 Test 2.7.2

Lab Job No:	8441-005	Sample No.:	WRE8441-005-S004
Client:	Far North Holdings Ltd	Tested By:	N.K
Project/Site:	Old Whangae	Date:	4/11/2025
Sample Location:	MB02 5.20m - 5.95m	Checked By:	A.A
		Date:	11/11/2025
Date Received:	13/10/2025	Report No:	WRE8441-005-R001
Date Sampled:	7/10/2025	REF:	AT010024
Sampler:	Client		
Sampling Method:	Sampled by client – Sampling not accredited		
Sample Description:	Silty CLAY, traces of shell fragments to 15mm and organic matter, grey, wet.		

Test performed on: Whole soil
History: As received

Temperature: 19 °C $\rho_w =$ 0.9984 t/m³

Bottle No.	S100	S101
Solid density of soil particles (ρ_s) t/m ³	2.688	2.688
Average solid density (ρ_s) t/m ³	2.69	

TEST REPORT

Lab Job No: 8441-005
Your ref.: AT010024
Date of Issue: 5/12/2025
Date of Re-Issue: -

Test Report No.
CHC8441-005-R002

PROJECT: Old Whangae - Consolidation testing
CLIENT: Far North Holdings Ltd
9 Baffin Street, Opuia 0200
ATTENTION: C/O PK Engineering Ltd Jonty White
TEST METHODS: Consolidation testing
ASTM D2435/D2435M-11

SAMPLING METHOD: Push Tube - Sampling not accredited

TEST RESULTS: As per attached sheets

M Adams

M. Adams

General Manager

N van Warmerdam

N. van Warmerdam

Approved Signatory

All results obtained in accordance with the test methods listed above.

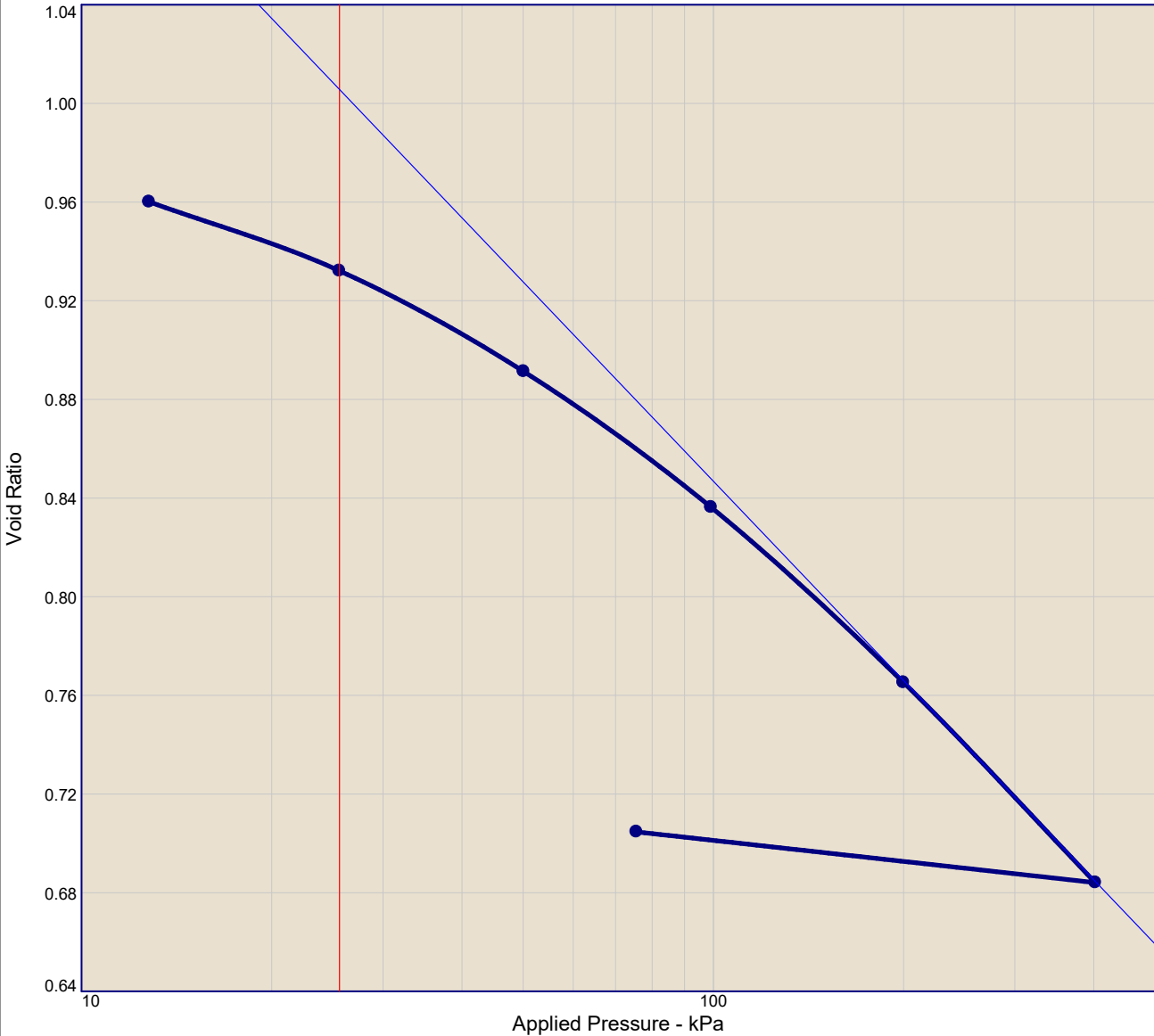
Any material descriptions included in this report are excluded from IANZ endorsement.

Test results relate only to the sample tested.



All tests reported herein
have been performed in
accordance with the
laboratory's scope of
accreditation

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (kg/m ³)	LL	PI	Sp. Gr.	Overburden (kPa)	P _c (kPa)	C _c	C _r	Swell Press. (kPa)	Swell %	e _o
Sat.	Moist.											
91.7 %	34.3 %	1345	50	24	2.71	40	57	0.27	0.03			1.015

MATERIAL DESCRIPTION										USCS	AASHTO
Clayey SILT, minor fine sands, traces of organic matter, grey mottled orange, wet											

Project No. 8441-005 Client: Far North Holdings Ltd							Remarks:
Project: Old Whangae							
Location: MB01 Depth: 2.20-2.95m Sample Number: WRE8441-005-S001							
GeoCivil Ltd.							Figure

Tested By: N.K.

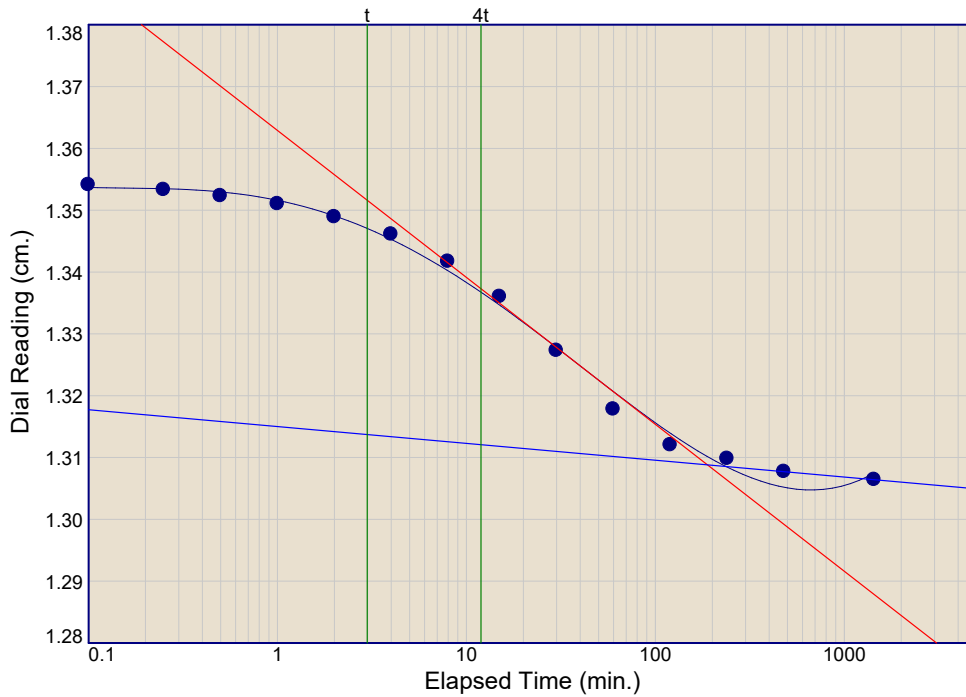
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 2.20-2.95m

Sample Number: WRE8441-005-S001



Load No.= 1

Load= 12.8 kPa

$D_0 = 1.3574$

$D_{50} = 1.3331$

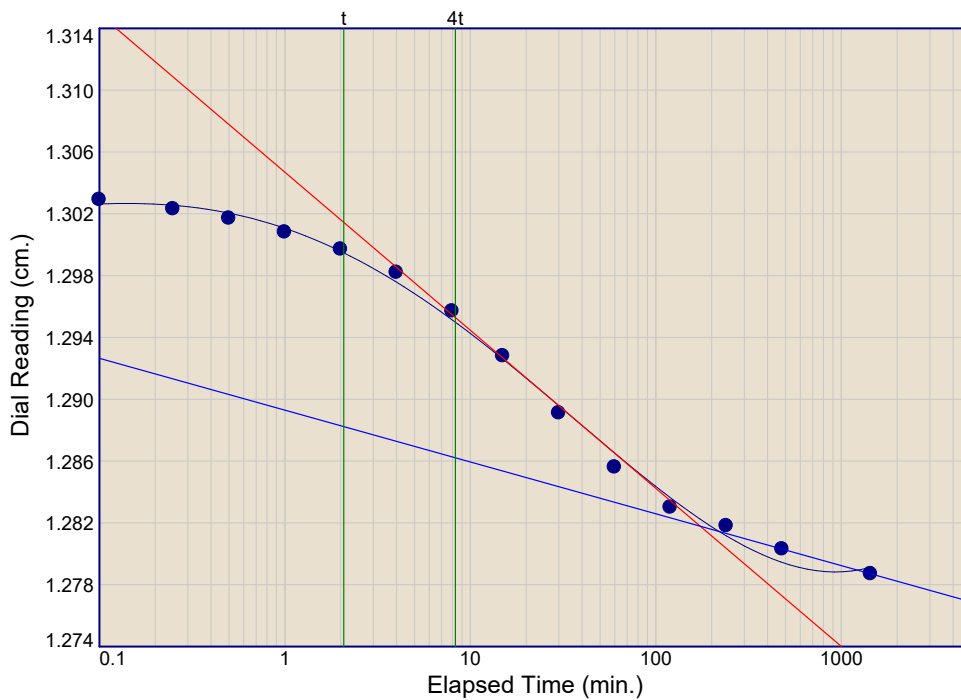
$D_{100} = 1.3088$

$T_{50} = 17.64$ min.

$C_v @ T_{50}$

0.6 m.²/yr.

$C_\alpha = 0.003$



Load No.= 2

Load= 25.6 kPa

$D_0 = 1.3040$

$D_{50} = 1.2929$

$D_{100} = 1.2818$

$T_{50} = 14.03$ min.

$C_v @ T_{50}$

0.7 m.²/yr.

$C_\alpha = 0.003$

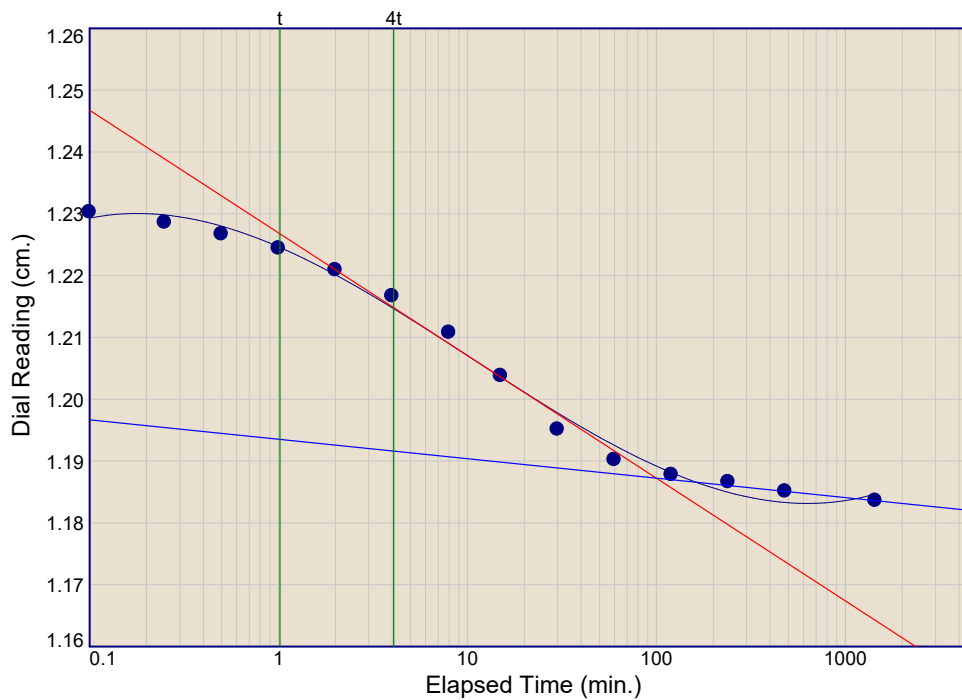
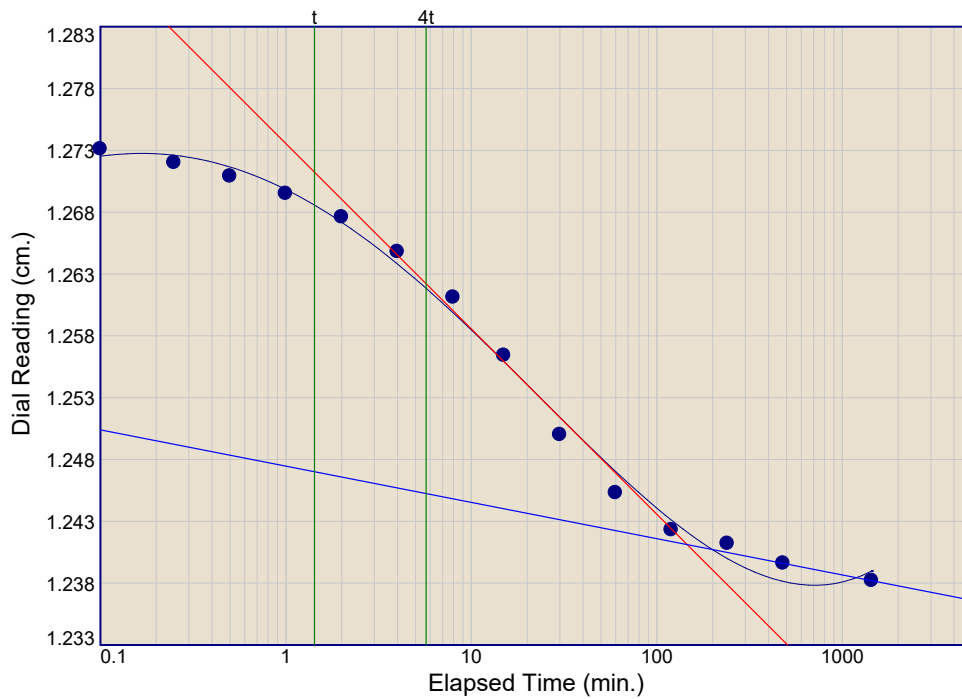
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 2.20-2.95m

Sample Number: WRE8441-005-S001



Figure

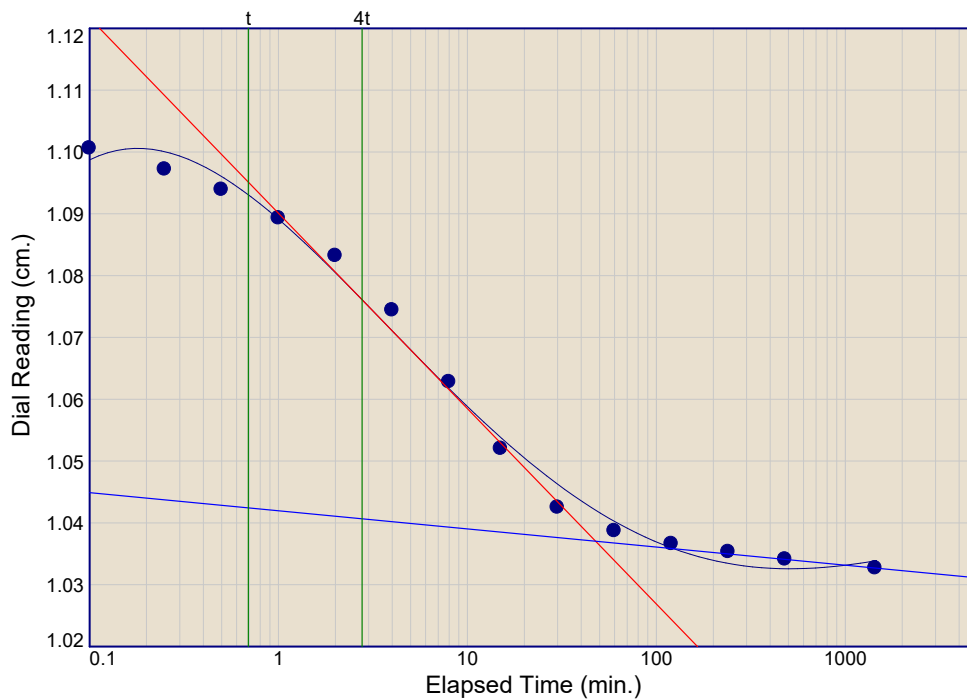
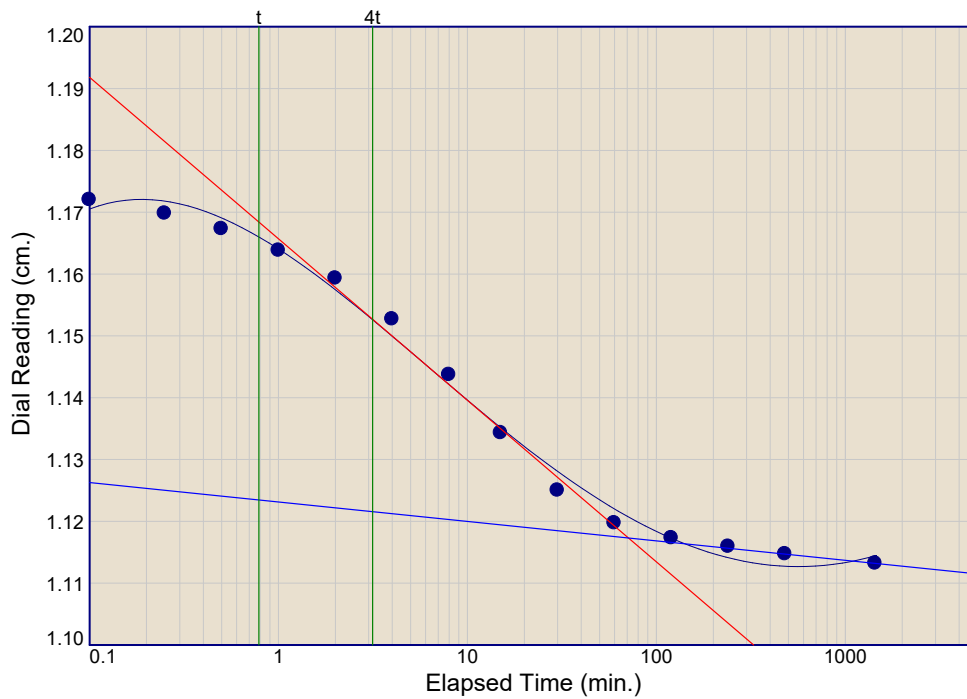
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 2.20-2.95m

Sample Number: WRE8441-005-S001



Figure

CONSOLIDATION TEST DATA

5/12/2025

Client: Far North Holdings Ltd

Project: Old Whangae

Project Number: 8441-005

Location: MB01

Depth: 2.20-2.95m

Sample Number: WRE8441-005-S001

Material Description: Clayey SILT, minor fine sands, traces of organic matter, grey mottled orange, wet

Liquid Limit: 50

Plasticity Index: 24

Tested by: N.K.

Test Specimen Data

NATURAL MOISTURE	VOID RATIO	AFTER TEST
Wet w+t = 255.28 g.	Spec. Gr. = 2.71	Wet w+t = 116.97 g.
Dry w+t = 216.85 g.	Est. Ht. Solids = 0.992 cm.	Dry w+t = 102.04 g.
Tare Wt. = 104.92 g.	Init. V.R. = 1.015	Tare Wt. = 51.39 g.
Moisture = 34.3 %	Init. Sat. = 91.7 %	Moisture = 29.5 %
UNIT WEIGHT	TEST START	
Height = 1.998 cm.	Height = 1.998 cm.	Dry Wt. = 50.65 g.
Diameter = 4.991 cm.	Diameter = 4.991 cm.	
Weight = 70.63 g.		
Dry Dens. = 1345 kg/m ³		

End-Of-Load Summary

Pressure (kPa)	Final Dial (cm.)	Deformation (cm.)	C _v (m. ² /yr.)	C _α	Void Ratio	% Strain
start	1.36060	0.00000			1.015	
12.8	1.30640	0.05420	0.6	0.003	0.960	2.7 Compr.
25.6	1.27870	0.08190	0.7	0.003	0.932	4.1 Compr.
50.1	1.23820	0.12240	0.9	0.003	0.891	6.1 Compr.
99.2	1.18360	0.17700	1.4	0.003	0.836	8.9 Compr.
199.9	1.11320	0.24740	1.8	0.003	0.765	12.4 Compr.
402.3	1.03270	0.32790	2.3	0.003	0.684	16.4 Compr.
75.6	1.05310	0.30750			0.705	15.4 Compr.
Compression index (C _c), kPa = 0.27 Preconsolidation pressure (P _p), kPa = 57 Void ratio at P _p (e _m) = 0.882 Overburden (σ _{vo}), kPa = 40 Void ratio at σ _{vo} (e _o) = 0.907 Recompression index (C _r) = 0.03						

Consolidometer Test
ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB01
Depth: 2.20-2.95m
Sample No.: WRE8441-005-S001

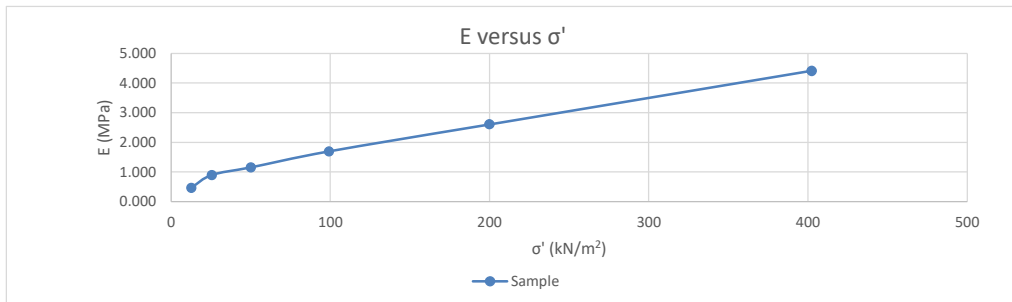
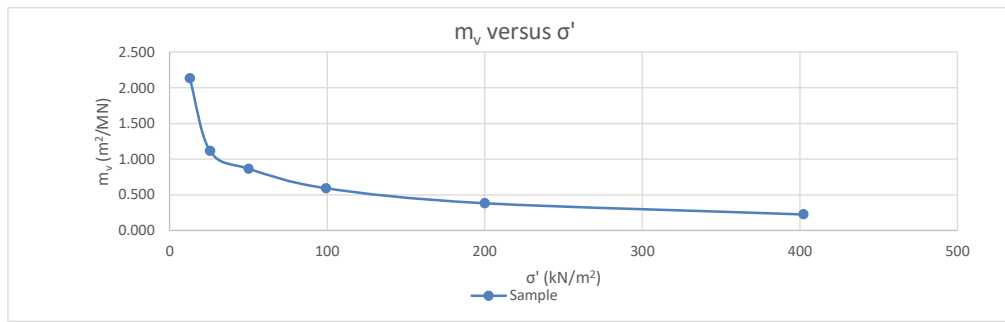
Tested By: N.K
Date: 15/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, minor fine sands, traces of organic matter, grey mottled orange, wet

Void ratio before loading:

1.015

Load (kPa)	e_f	e_0	σ' (kN/m ²)	σ'_0 (kN/m ²)	$\Delta\sigma'$ (kN/m ²)	m_v (m ² /MN)	E (MPa)	C_v (m ² /yr)	k (m/s)
12.8	0.960	1.015	12.8	0	12.8	2.132	0.469	0.6	3.979E-10
25.6	0.932	0.960	25.6	12.8	12.8	1.116	0.896	0.7	2.430E-10
50.1	0.891	0.932	50.1	25.6	24.5	0.866	1.154	0.9	2.424E-10
99.2	0.836	0.891	99.2	50.1	49.1	0.592	1.688	1.4	2.579E-10
199.9	0.765	0.836	199.9	99.2	100.7	0.384	2.604	1.8	2.150E-10
402.3	0.684	0.765	402.3	199.9	202.4	0.227	4.410	2.3	1.622E-10



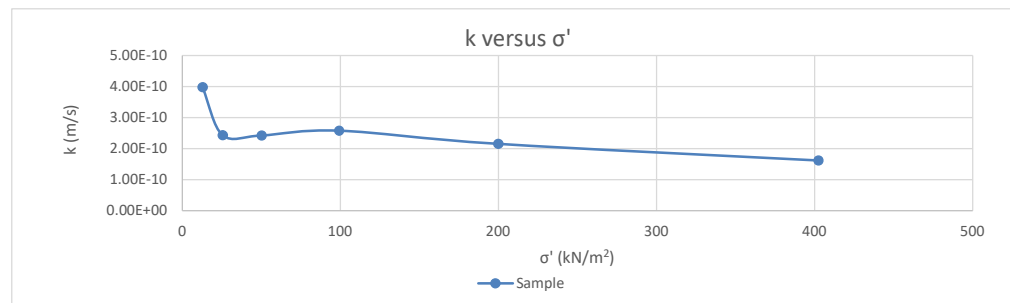
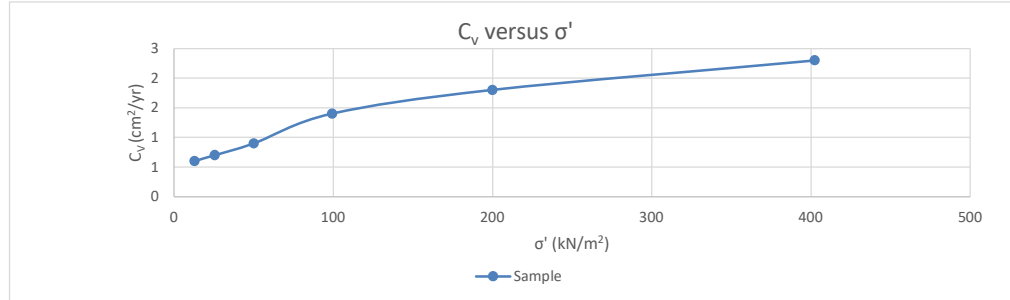
Note: It may not be possible to calculate a C_v for fast consolidating materials, or for low pressure cycles.

Consolidometer Test
ASTM D2435/D2435M-11

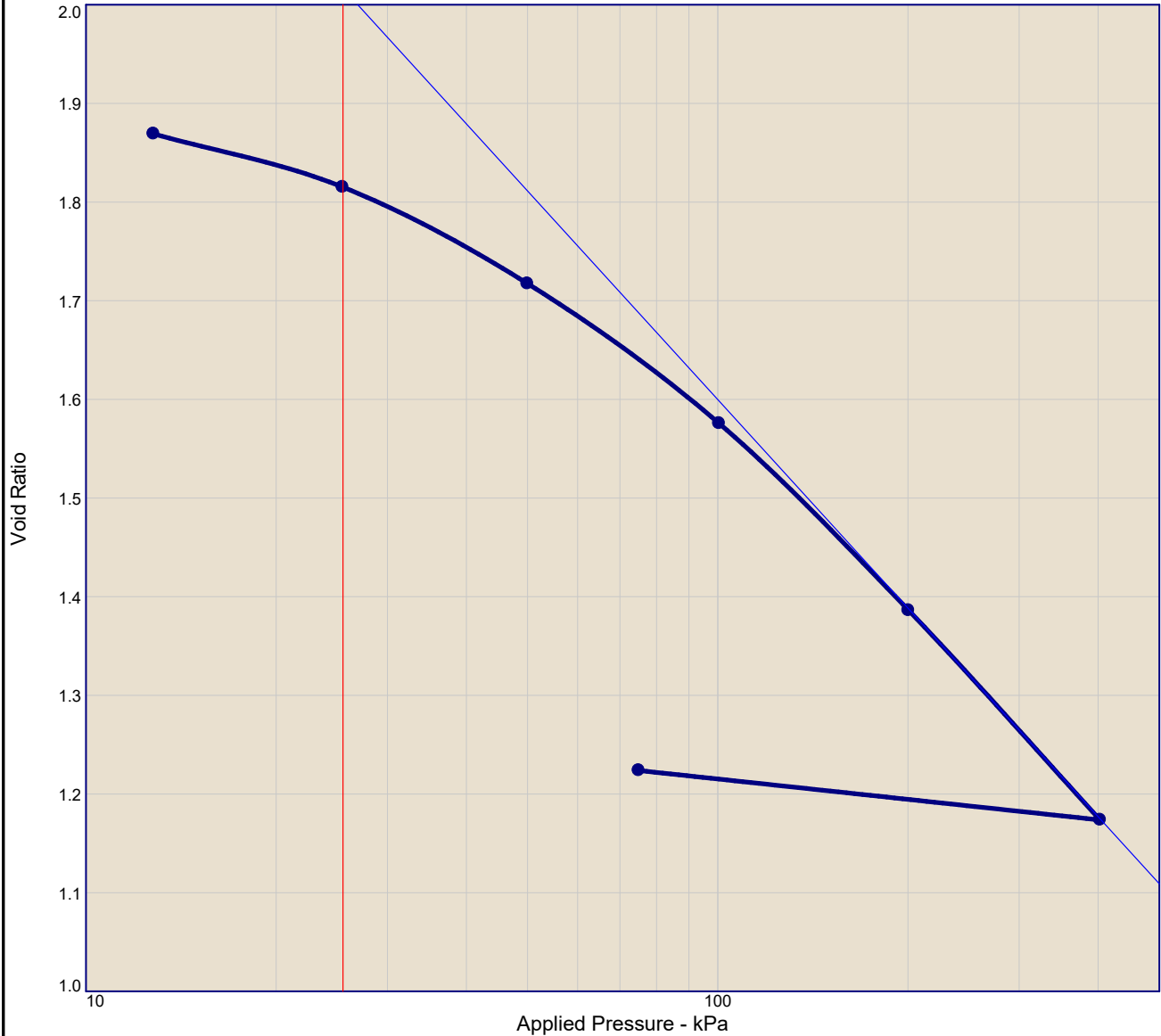
Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB01
Depth: 2.20-2.95m
Sample No.: WRE8441-005-S001

Tested By: N.K
Date: 15/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, minor fine sands, traces of organic matter, grey mottled orange, wet



CONSOLIDATION TEST REPORT



Natural		Dry Dens. (kg/m ³)	LL	PI	Sp. Gr.	Overburden (kPa)	P _c (kPa)	C _c	C _r	Swell Press. (kPa)	Swell %	e _o
Sat.	Moist.											
84.1 %	60.0 %	920	51	25	2.67	75	57	0.70	0.07			1.903

MATERIAL DESCRIPTION										USCS	AASHTO
Clayey SILT, traces of fine sands, minor organic matter, dark grey, wet											

Project No. 8441-005			Client: Far North Holdings Ltd			Remarks:
Project: Old Whangae						
Location: MB01		Depth: 4.20-4.95		Sample Number: WRE8441-005-S002		
GeoCivil Ltd.						

Figure

Tested By: N.K.

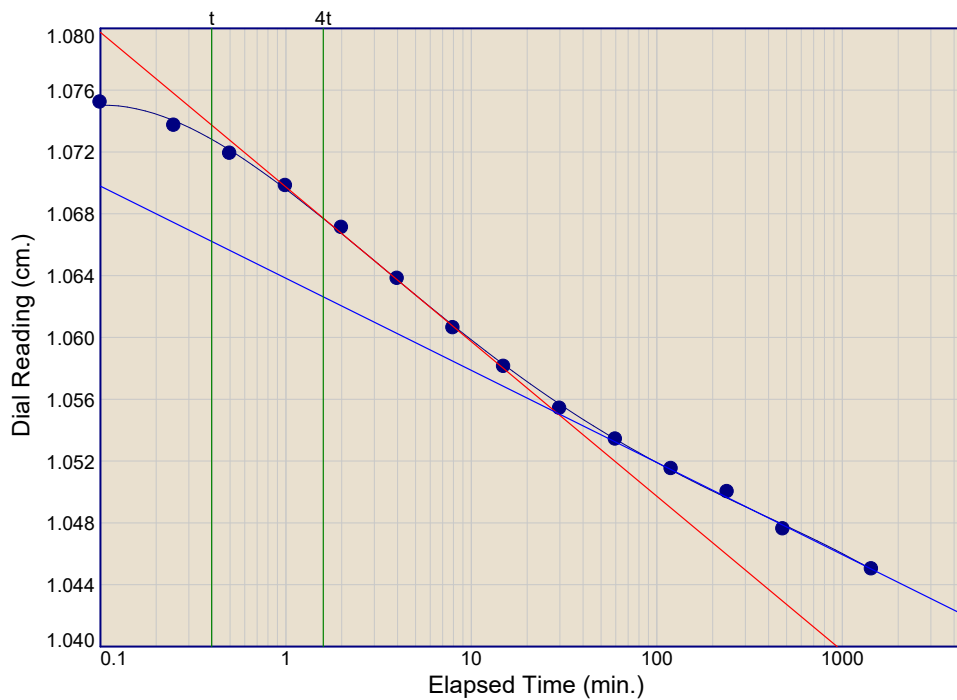
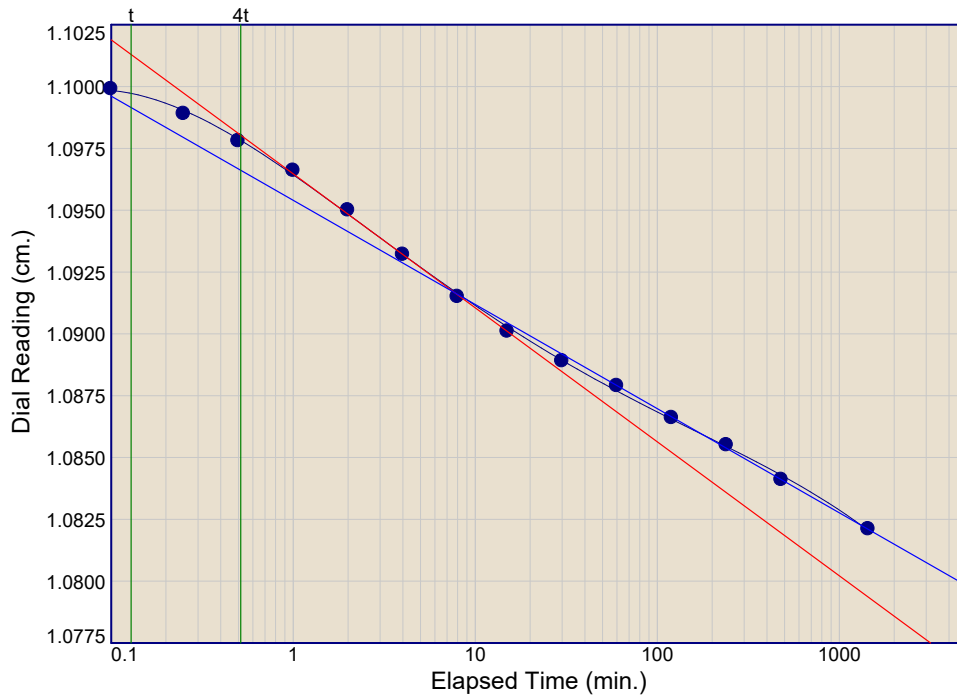
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 4.20-4.95

Sample Number: WRE8441-005-S002



Figure

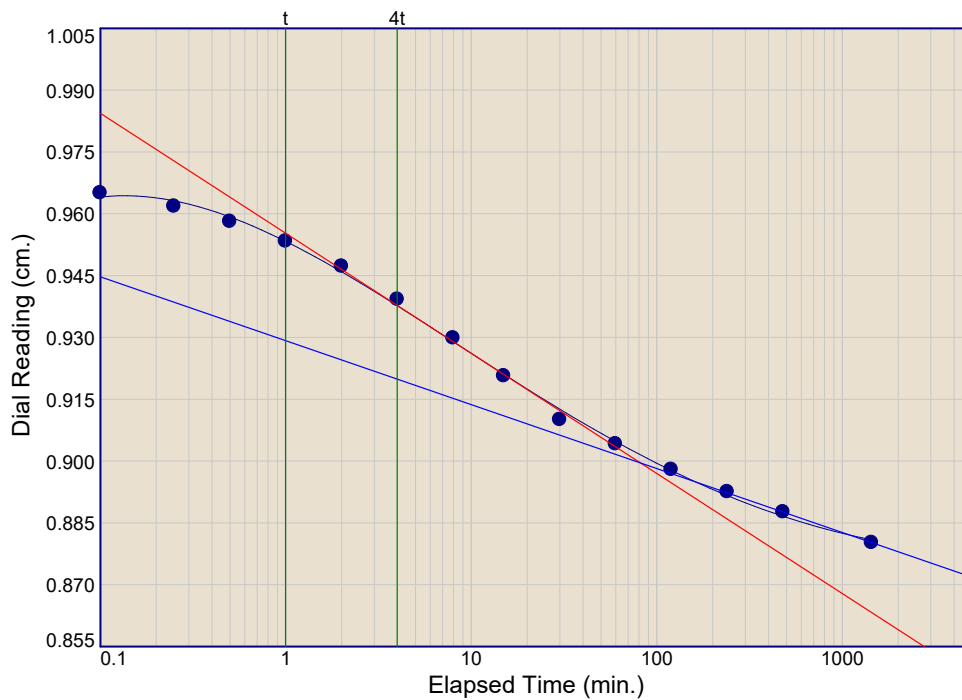
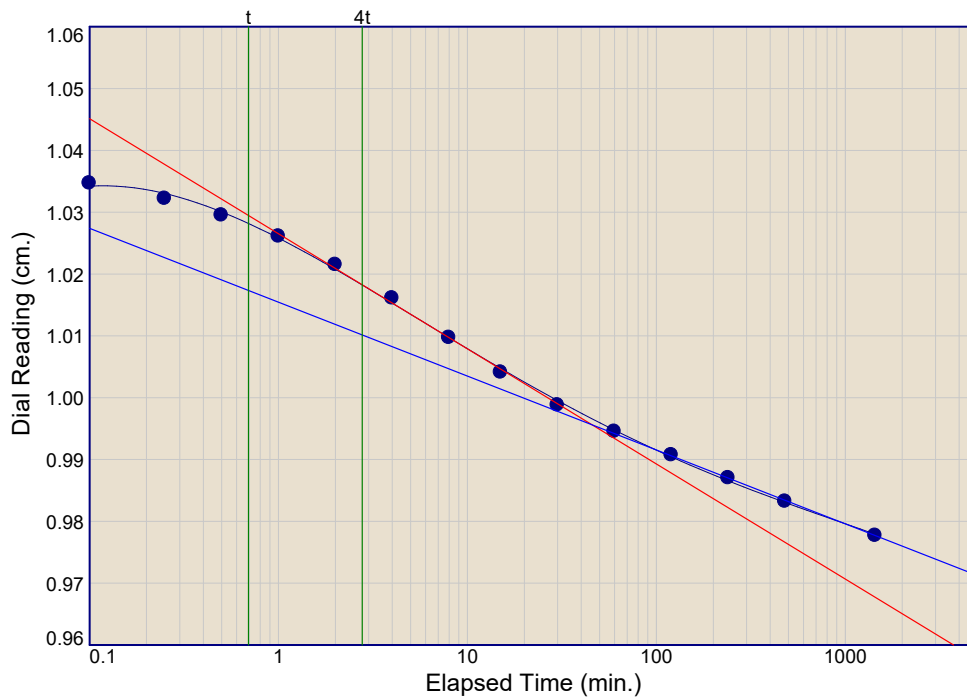
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 4.20-4.95

Sample Number: WRE8441-005-S002



Figure

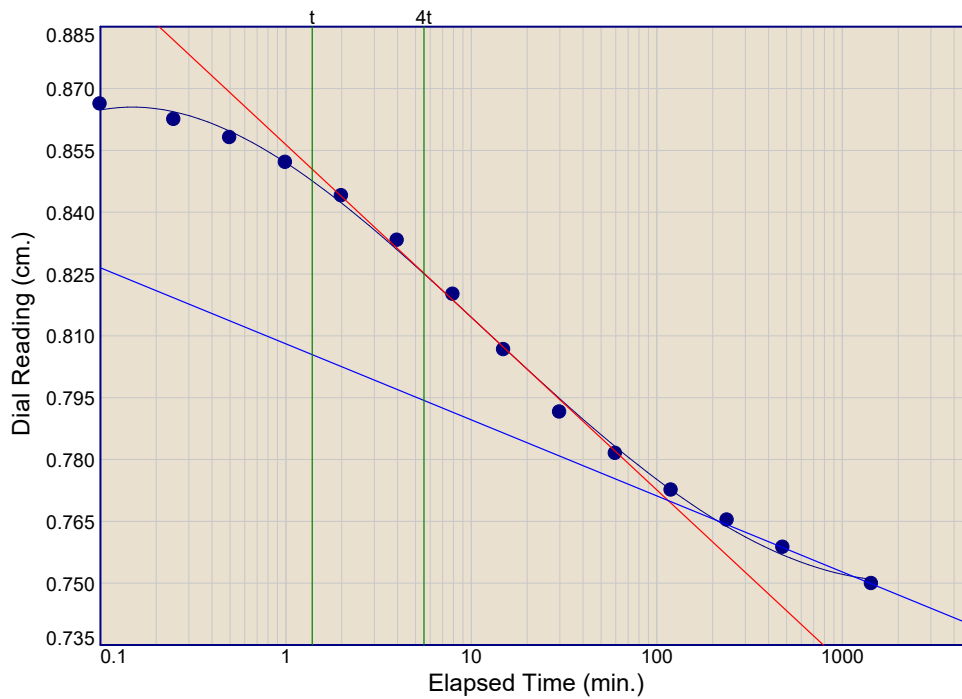
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB01

Depth: 4.20-4.95

Sample Number: WRE8441-005-S002



Load No.= 5

Load= 200.5 kPa

$D_0 = 0.8701$

$D_{50} = 0.8201$

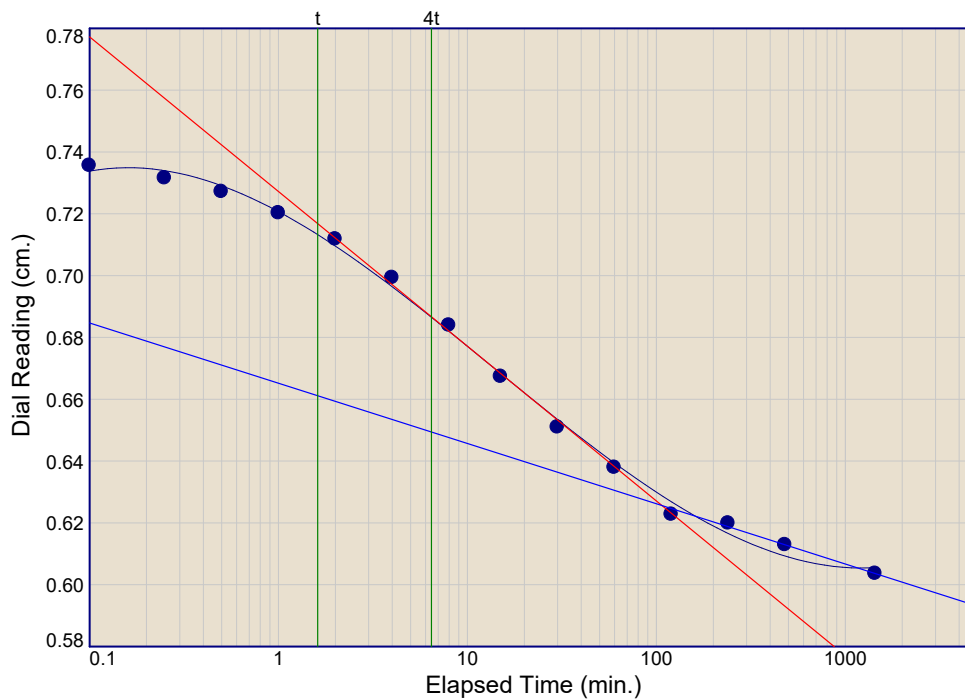
$D_{100} = 0.7700$

$T_{50} = 7.34$ min.

$C_v @ T_{50}$

$1.0 \text{ m}^2/\text{yr.}$

$C_\alpha = 0.027$



Load No.= 6

Load= 403.0 kPa

$D_0 = 0.7400$

$D_{50} = 0.6828$

$D_{100} = 0.6256$

$T_{50} = 7.68$ min.

$C_v @ T_{50}$

$0.8 \text{ m}^2/\text{yr.}$

$C_\alpha = 0.028$

CONSOLIDATION TEST DATA

5/12/2025

Client: Far North Holdings Ltd

Project: Old Whangae

Project Number: 8441-005

Location: MB01

Depth: 4.20-4.95

Sample Number: WRE8441-005-S002

Material Description: Clayey SILT, traces of fine sands, minor organic matter, dark grey, wet

Liquid Limit: 51

Plasticity Index: 25

Tested by: N.K.

Test Specimen Data

NATURAL MOISTURE	VOID RATIO	AFTER TEST
Wet w+t = 223.73 g.	Spec. Gr. = 2.67	Wet w+t = 103.05 g.
Dry w+t = 179.04 g.	Est. Ht. Solids = 0.688 cm.	Dry w+t = 84.72 g.
Tare Wt. = 104.53 g.	Init. V.R. = 1.903	Tare Wt. = 51.14 g.
Moisture = 60.0 %	Init. Sat. = 84.1 %	Moisture = 54.6 %
UNIT WEIGHT	TEST START	
Height = 1.998 cm.	Height = 1.998 cm.	Dry Wt. = 33.58 g.
Diameter = 4.996 cm.	Diameter = 4.996 cm.	
Weight = 57.62 g.		
Dry Dens. = 920 kg/m ³		

End-Of-Load Summary

Pressure (kPa)	Final Dial (cm.)	Deformation (cm.)	C _v (m. ² /yr.)	C _α	Void Ratio	% Strain
start	1.10560	0.00000			1.903	
12.8	1.08210	0.02350	11.2	0.006	1.869	1.2 Compr.
25.5	1.04500	0.06060	4.8	0.009	1.815	3.0 Compr.
50.0	0.97770	0.12790	2.9	0.017	1.717	6.4 Compr.
100.5	0.88020	0.22540	1.6	0.023	1.576	11.3 Compr.
200.5	0.74980	0.35580	1.0	0.027	1.386	17.8 Compr.
403.0	0.60360	0.50200	0.8	0.028	1.174	25.1 Compr.
75.0	0.63810	0.46750			1.224	23.4 Compr.
Compression index (C _c), kPa = 0.70 Preconsolidation pressure (P _p), kPa = 57 Void ratio at P _p (e _m) = 1.694 Overburden (σ _{vo}), kPa = 75 Void ratio at σ _{vo} (e _o) = 1.641 Recompression index (C _r) = 0.07						

Consolidometer Test
ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB01
Depth: 4.20-4.95m
Sample No.: WRE8441-005-S002

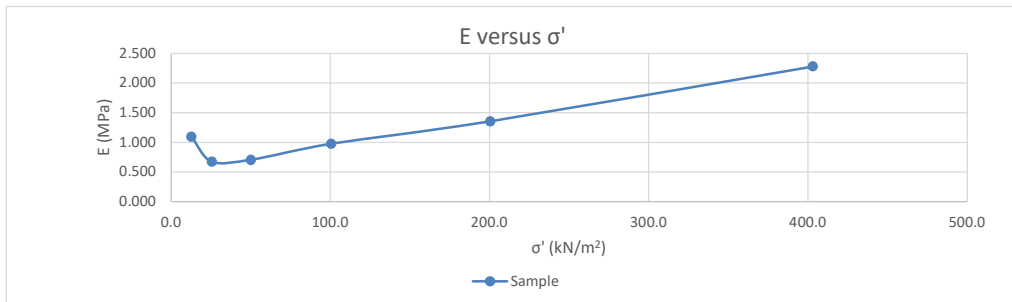
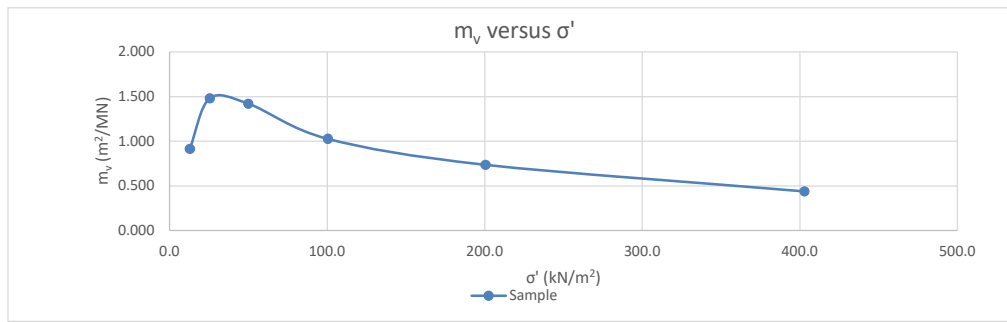
Tested By: N.K
Date: 16/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, traces of fine sands, minor organic matter, dark grey, wet

Void ratio before loading:

1.903

Load (kPa)	e_f	e_0	σ' (kN/m ²)	σ'_0 (kN/m ²)	$\Delta\sigma'$ (kN/m ²)	m_v (m ² /MN)	E (MPa)	C_v (m ² /yr)	k (m/s)
12.8	1.869	1.903	12.8	0.0	12.8	0.915	1.093	11.2	3.187E-09
25.5	1.815	1.869	25.5	12.8	12.7	1.482	0.675	4.8	2.212E-09
50.0	1.717	1.815	50.0	25.5	24.5	1.421	0.704	2.9	1.282E-09
100.5	1.576	1.717	100.5	50.0	50.5	1.028	0.973	1.6	5.114E-10
200.5	1.386	1.576	200.5	100.5	100.0	0.738	1.356	1.0	2.294E-10
403.0	1.174	1.386	403.0	200.5	202.5	0.439	2.279	0.8	1.092E-10



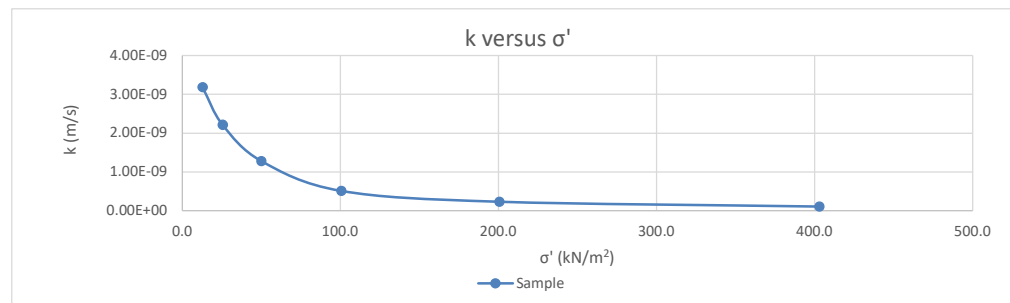
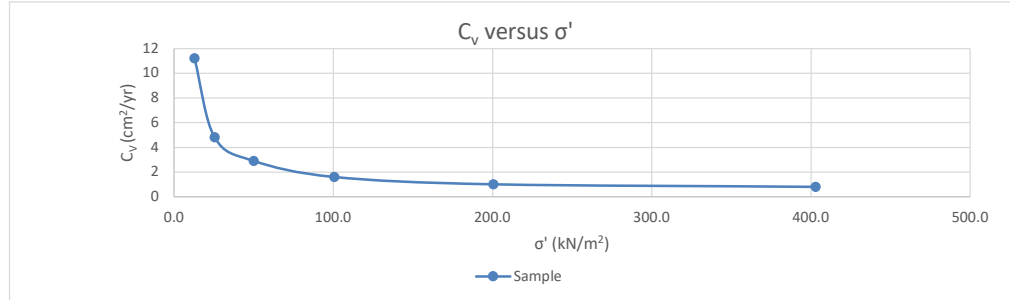
Note: It may not be possible to calculate a C_v for fast consolidating materials, or for low pressure cycles.

Consolidometer Test
ASTM D2435/D2435M-11

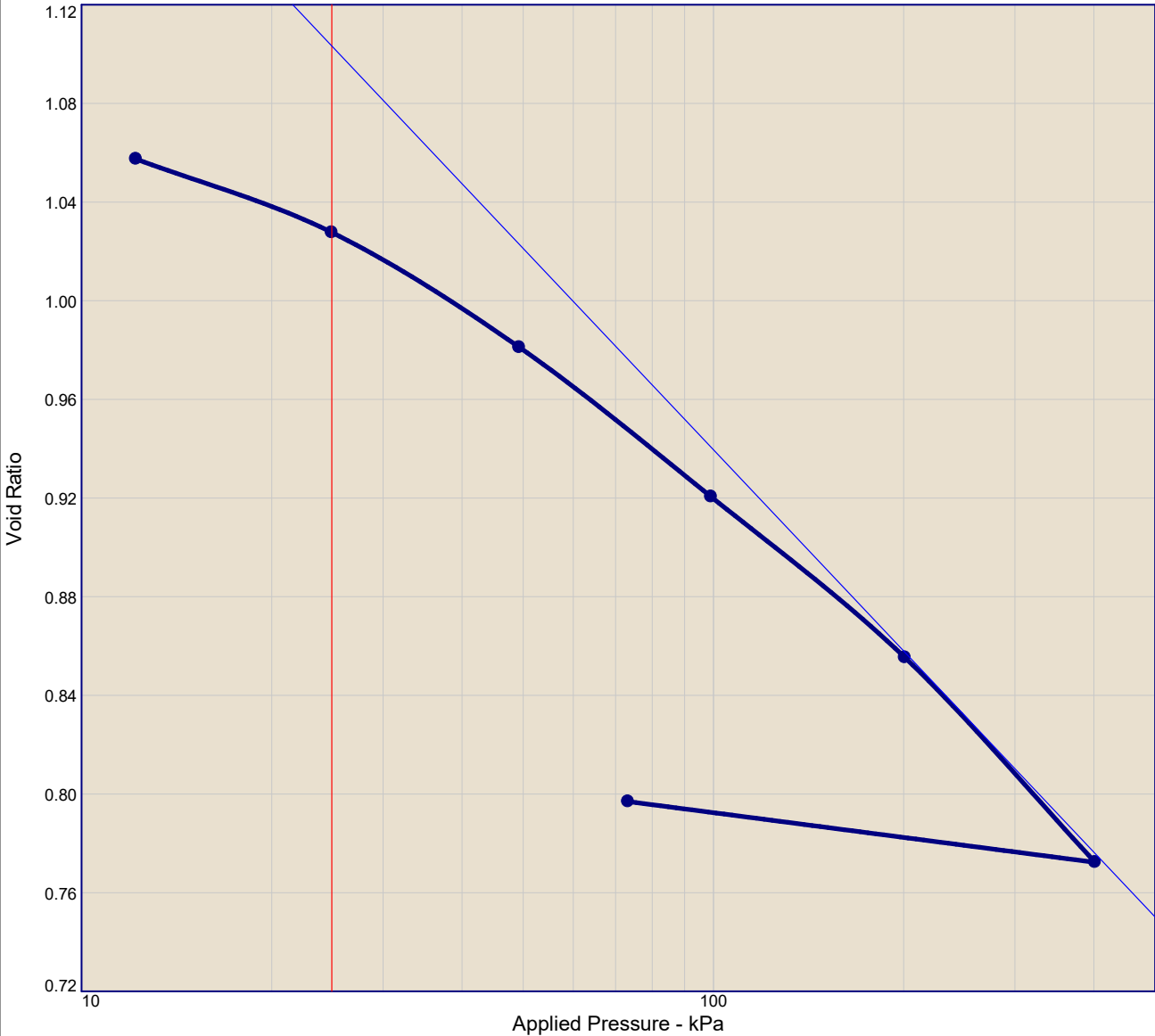
Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB01
Depth: 4.20-4.95m
Sample No.: WRE8441-005-S002

Tested By: N.K
Date: 16/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, traces of fine sands, minor organic matter, dark grey, wet



CONSOLIDATION TEST REPORT



Natural		Dry Dens. (kg/m ³)	LL	PI	Sp. Gr.	Overburden (kPa)	P _c (kPa)	C _c	C _r	Swell Press. (kPa)	Swell %	e _o
Sat.	Moist.											
96.9 %	39.2 %	1293	50	24	2.71	40	57	0.27	0.03			1.096

MATERIAL DESCRIPTION										USCS	AASHTO
Clayey SILT, traces of fine sands, grey mottled orange, wet											

Project No. 8441-005			Client: Far North Holdings Ltd			Remarks:
Project: Old Whangae						
Location: MB02		Depth: 2.20-2.95		Sample Number: WRE8441-005-S003		
GeoCivil Ltd.						
						Figure

Tested By: N.K

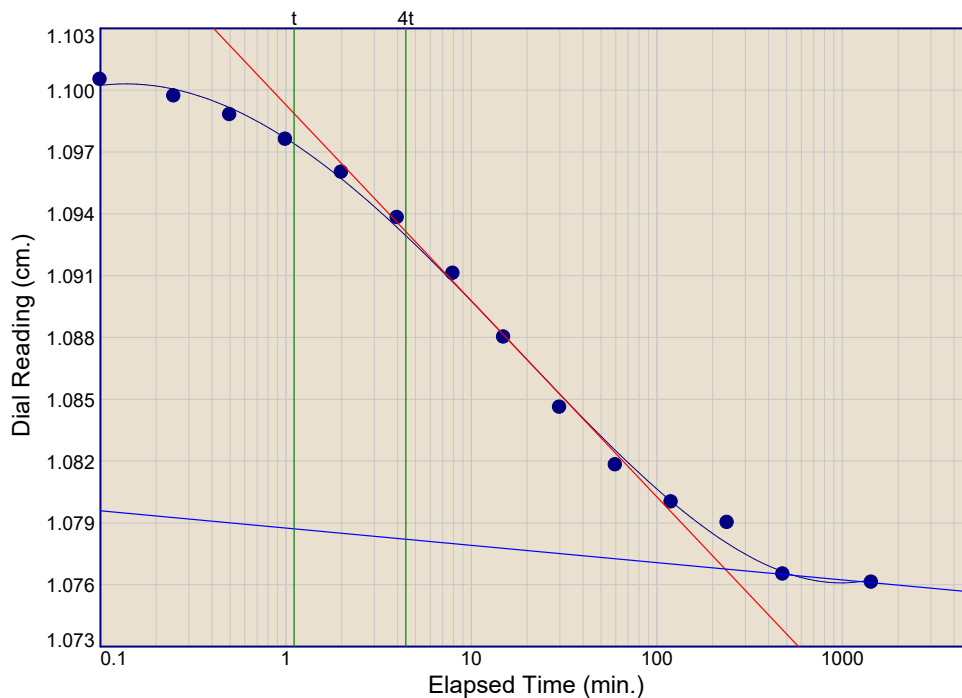
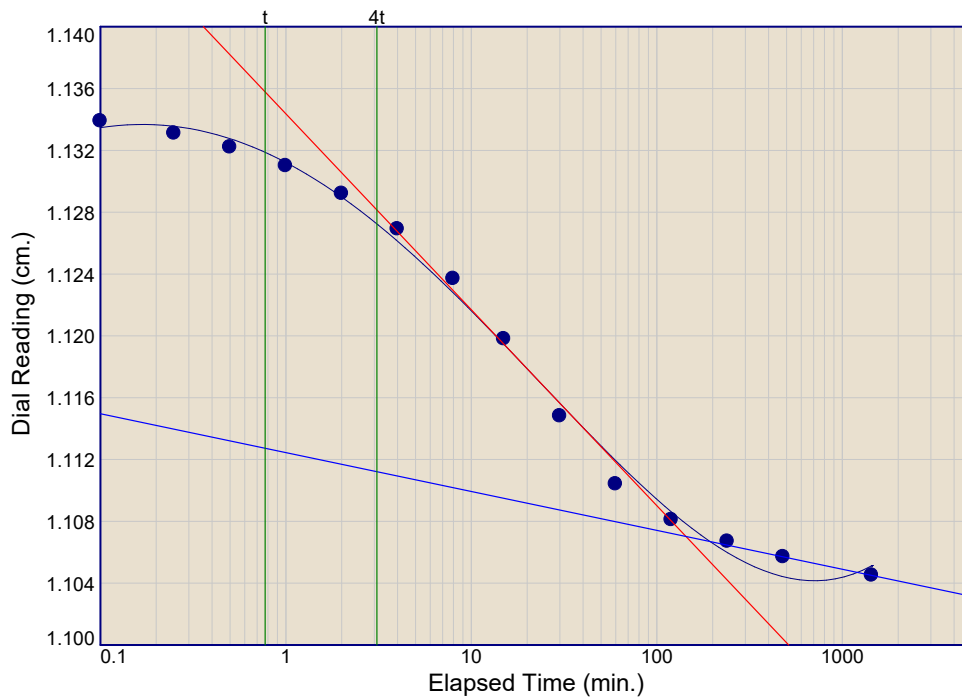
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 2.20-2.95

Sample Number: WRE8441-005-S003



Figure

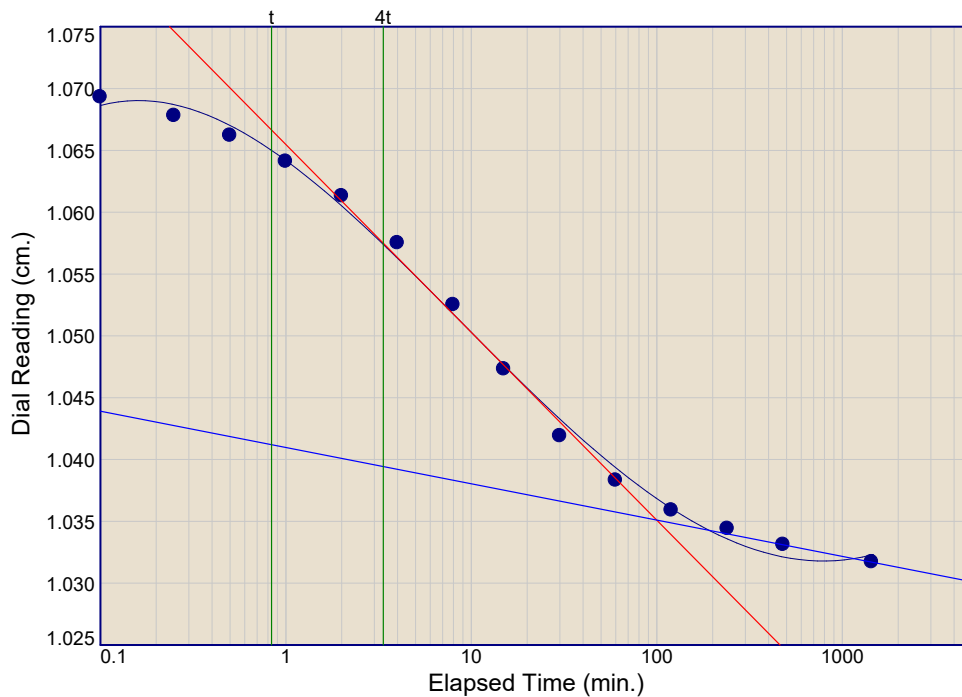
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 2.20-2.95

Sample Number: WRE8441-005-S003



Load No.= 3

Load= 49.3 kPa

$D_0 = 1.0726$

$D_{50} = 1.0539$

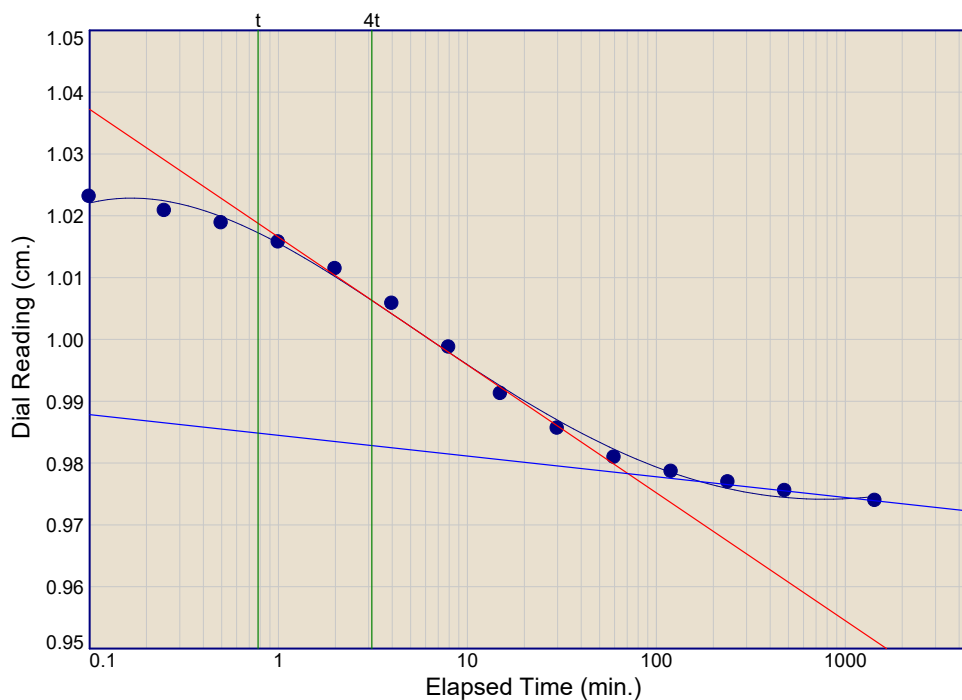
$D_{100} = 1.0351$

$T_{50} = 5.81 \text{ min.}$

$C_v @ T_{50}$

$1.6 \text{ m}^2/\text{yr.}$

$C_\alpha = 0.003$



Load No.= 4

Load= 99.2 kPa

$D_0 = 1.0282$

$D_{50} = 1.0032$

$D_{100} = 0.9783$

$T_{50} = 4.39 \text{ min.}$

$C_v @ T_{50}$

$2.0 \text{ m}^2/\text{yr.}$

$C_\alpha = 0.004$

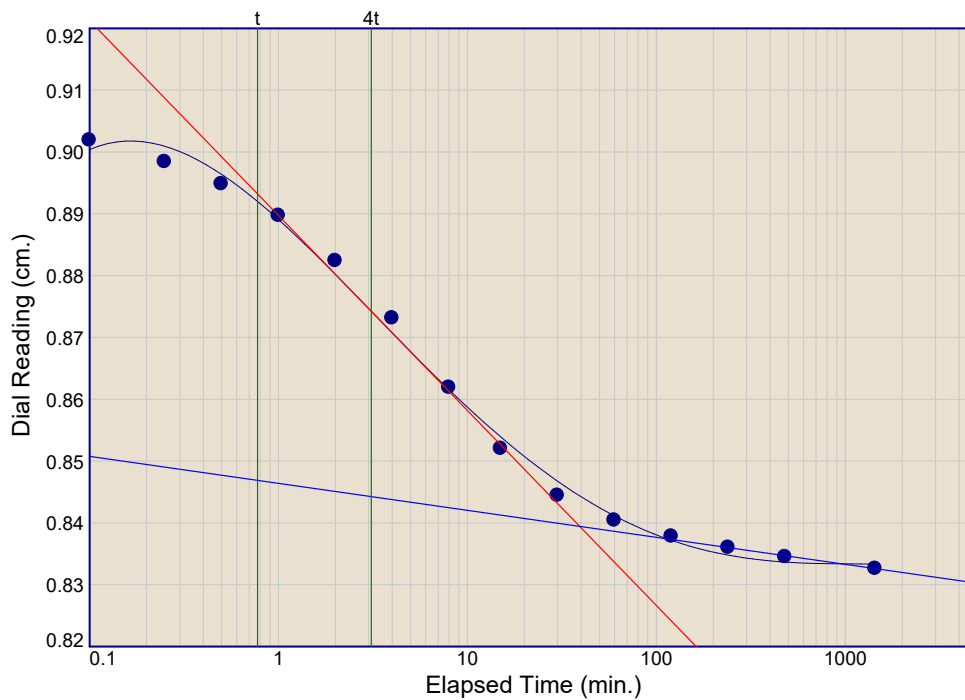
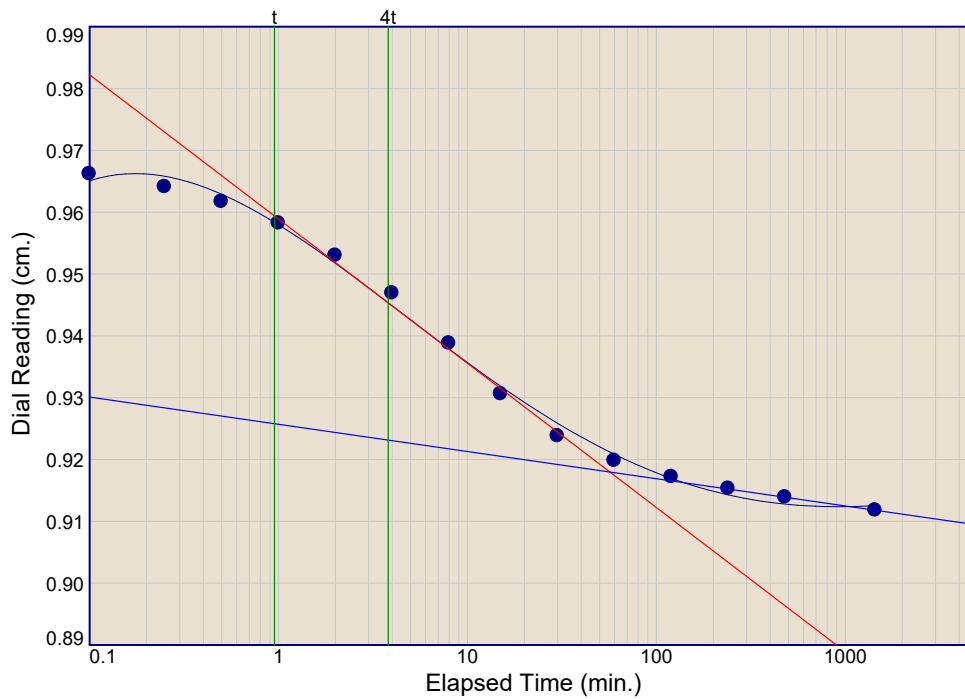
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 2.20-2.95

Sample Number: WRE8441-005-S003



Figure

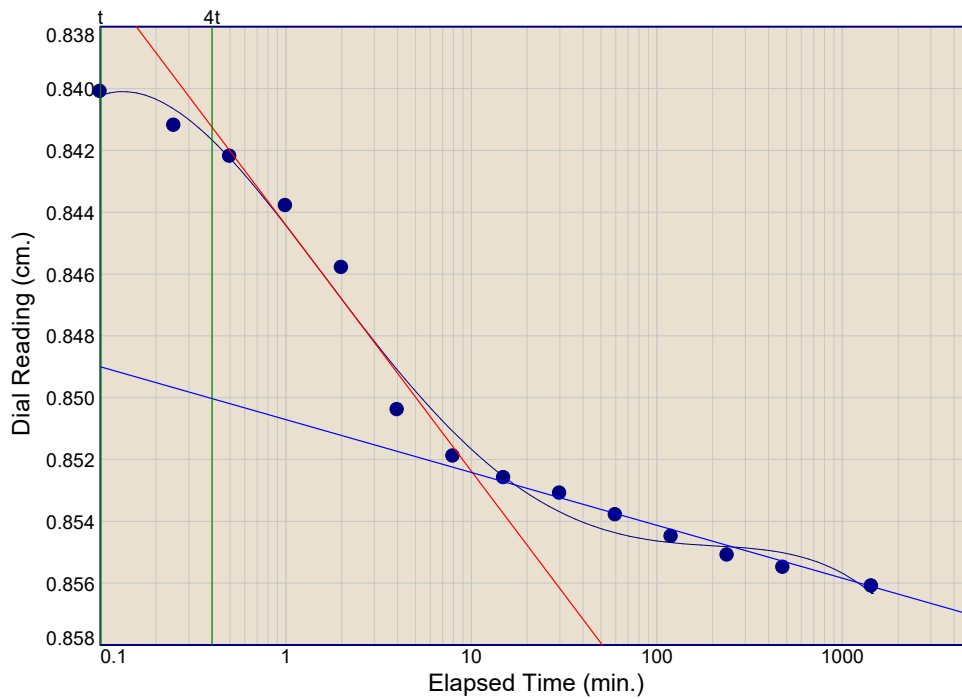
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 2.20-2.95

Sample Number: WRE8441-005-S003



Load No.= 7

Load= 73.3 kPa

$D_0 = 0.8388$

$D_{50} = 0.8456$

$D_{100} = 0.8524$

$T_{50} = 1.41 \text{ min.}$

$C_v @ T_{50}$

$5.3 \text{ m.}^2/\text{yr.}$

CONSOLIDATION TEST DATA

5/12/2025

Client: Far North Holdings Ltd

Project: Old Whangae

Project Number: 8441-005

Location: MB02

Depth: 2.20-2.95

Sample Number: WRE8441-005-S003

Material Description: Clayey SILT, traces of fine sands, grey mottled orange, wet

Liquid Limit: 50

Plasticity Index: 24

Tested by: N.K

Test Specimen Data

NATURAL MOISTURE	VOID RATIO	AFTER TEST
Wet w+t = 232.33 g.	Spec. Gr. = 2.71	Wet w+t = 119.98 g.
Dry w+t = 197.21 g.	Est. Ht. Solids = 0.953 cm.	Dry w+t = 103.37 g.
Tare Wt. = 107.58 g.	Init. V.R. = 1.096	Tare Wt. = 52.90 g.
Moisture = 39.2 %	Init. Sat. = 96.9 %	Moisture = 32.9 %
UNIT WEIGHT	TEST START	
Height = 1.998 cm.	Height = 1.998 cm.	Dry Wt. = 50.48 g.
Diameter = 5.003 cm.	Diameter = 5.003 cm.	
Weight = 70.70 g.		
Dry Dens. = 1293 kg/m ³		

End-Of-Load Summary

Pressure (kPa)	Final Dial (cm.)	Deformation (cm.)	C _v (m.2/yr.)	C _α	Void Ratio	% Strain
start	1.14100	0.00000			1.096	
12.2	1.10450	0.03650	1.0	0.003	1.057	1.8 Compr.
24.9	1.07610	0.06490	0.9	0.001	1.028	3.2 Compr.
49.3	1.03170	0.10930	1.6	0.003	0.981	5.5 Compr.
99.2	0.97390	0.16710	2.0	0.004	0.920	8.4 Compr.
200.9	0.91180	0.22920	2.1	0.005	0.855	11.5 Compr.
401.9	0.83260	0.30840	2.6	0.005	0.772	15.4 Compr.
73.3	0.85610	0.28490	5.3		0.797	14.3 Compr.
Compression index (C _c), kPa = 0.27 Preconsolidation pressure (P _p), kPa = 57 Void ratio at P _p (e _m) = 0.969 Overburden (σ _{vo}), kPa = 40 Void ratio at σ _{vo} (e _o) = 0.997 Recompression index (C _r) = 0.03						

Consolidometer Test
ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB02
Depth: 2.20-2.95m
Sample No.: WRE8441-005-S003

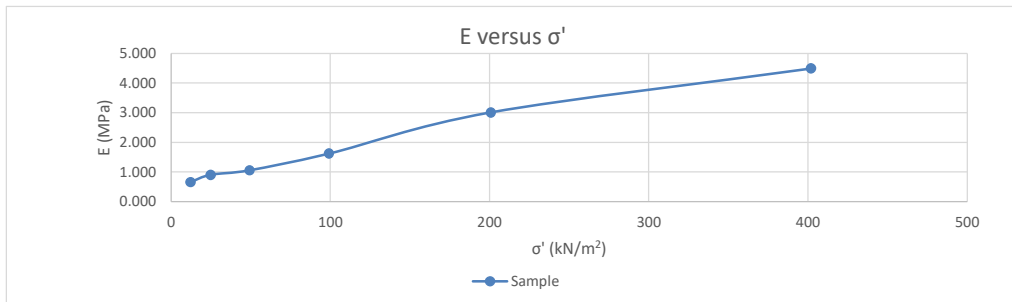
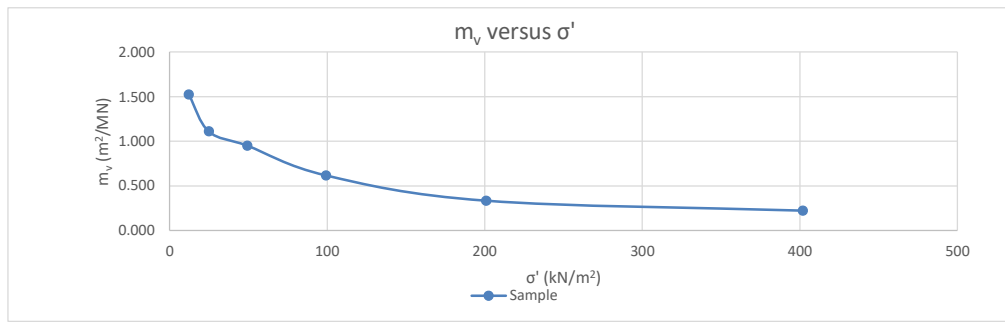
Tested By: N.K
Date: 16/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, traces of fine sands, grey mottled orange, wet

Void ratio before loading:

1.096

Load (kPa)	e_f	e_0	σ' (kN/m ²)	σ'_0 (kN/m ²)	$\Delta\sigma'$ (kN/m ²)	m_v (m ² /MN)	E (MPa)	C_v (m ² /yr)	k (m/s)
12.2	1.057	1.096	12.2	0	12.2	1.525	0.656	1.0	4.743E-10
24.9	1.028	1.057	24.9	12.2	12.7	1.110	0.901	0.9	3.107E-10
49.3	0.981	1.028	49.3	24.9	24.4	0.950	1.053	1.6	4.726E-10
99.2	0.920	0.981	99.2	49.3	49.9	0.617	1.621	2.0	3.838E-10
200.9	0.855	0.920	200.9	99.2	101.7	0.333	3.004	2.1	2.174E-10
401.9	0.772	0.855	401.9	200.9	201	0.223	4.492	2.6	1.800E-10



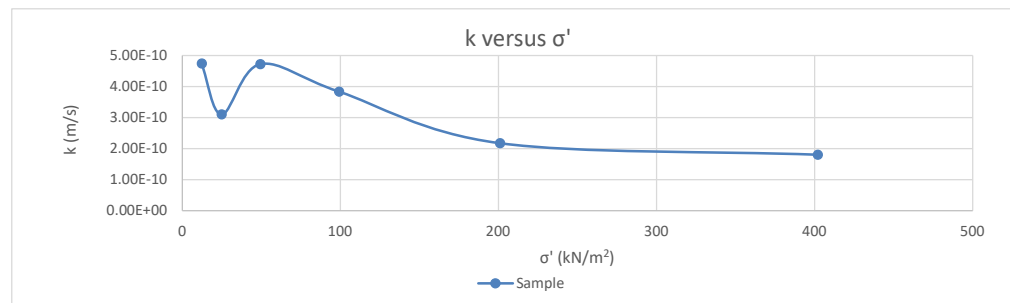
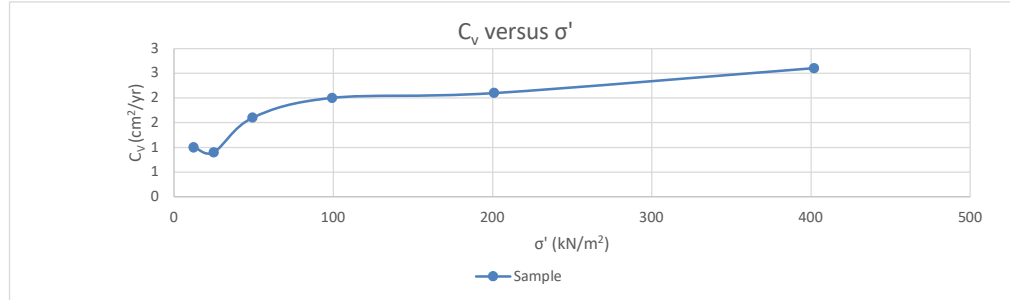
Note: It may not be possible to calculate a C_v for fast consolidating materials, or for low pressure cycles.

Consolidometer Test
ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB02
Depth: 2.20-2.95m
Sample No.: WRE8441-005-S003

Tested By: N.K
Date: 16/10/2025
Checked By: M.A
Date: 5/12/2025
Report No: CHC8441-005-R002

Sample Description: Clayey SILT, traces of fine sands, grey mottled orange, wet



TEST REPORT

Lab Job No: 8441-005

Your ref.: AT010024

Date of Issue: 8/12/2025

Date of Re-Issue: -

Test Report No.
WRE8441-005-R003

PROJECT: Old Whangae - Consolidation Analysis

CLIENT: Far North Holdings Ltd
9 Baffin Street, Opuia 0200

ATTENTION: C/O PK Engineering Ltd Jonty White

TEST METHODS: Consolidation testing
ASTM D2435/D2435M-11

SAMPLING METHOD: Push Tube - Sampling not accredited

TEST RESULTS: As per attached sheets



S. Kokich

Senior Technician



D. Krissansen

Approved Signatory

All results obtained in accordance with the test methods listed above.

Any material descriptions included in this report are excluded from IANZ endorsement.

Test results relate only to the sample tested.



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Consolidometer Test
ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB02
Depth: 5.20 - 5.95m
Sample No.: WRE8441-005-S004

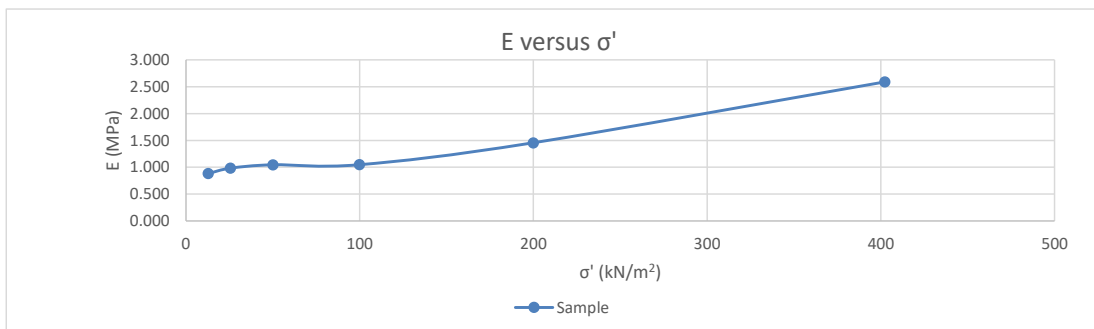
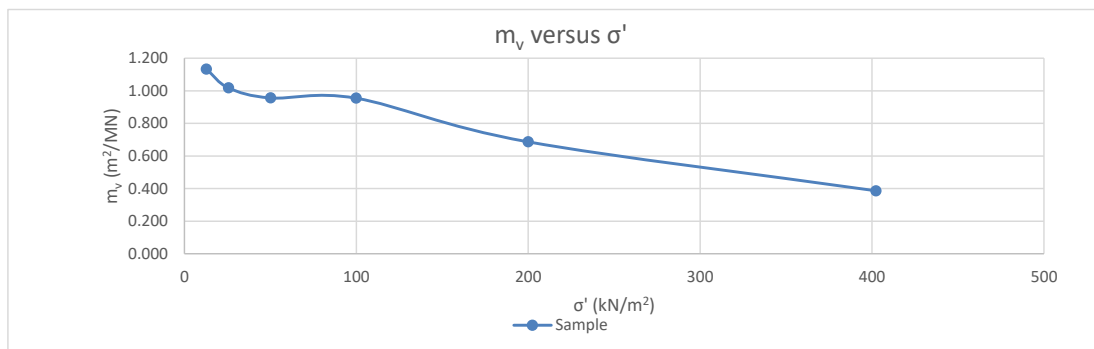
Tested By: N.K
Date: 28/10/2025
Checked By: D.K.
Date: 8/12/2025
Report No: WRE8441-005-R003

Sample Description: Clayey SILT, traces of shells to 15mm, traces organics, grey, wet.

Void ratio before loading:

1.414

Load (kPa)	e_f	e_0	σ' (kN/m ²)	σ'_0 (kN/m ²)	$\Delta\sigma'$ (kN/m ²)	m_v (m ² /MN)	E (MPa)	C_v (m ² /yr)	k (m/s)
12.8	1.379	1.414	12.8	0	12.8	1.133	0.883	2.3	8.102E-10
25.6	1.348	1.379	25.6	12.8	12.8	1.018	0.982	1.6	5.066E-10
50.1	1.293	1.348	50.1	25.6	24.5	0.956	1.046	3.5	1.041E-09
99.9	1.184	1.293	99.9	50.1	49.8	0.955	1.048	0.9	2.672E-10
199.9	1.034	1.184	199.9	99.9	100	0.687	1.456	1.0	2.136E-10
402.3	0.875	1.034	402.3	199.9	202.4	0.386	2.589	1.3	1.561E-10



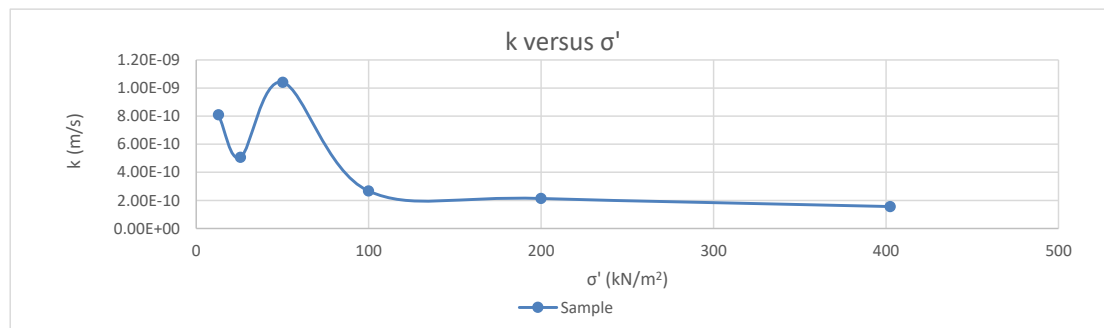
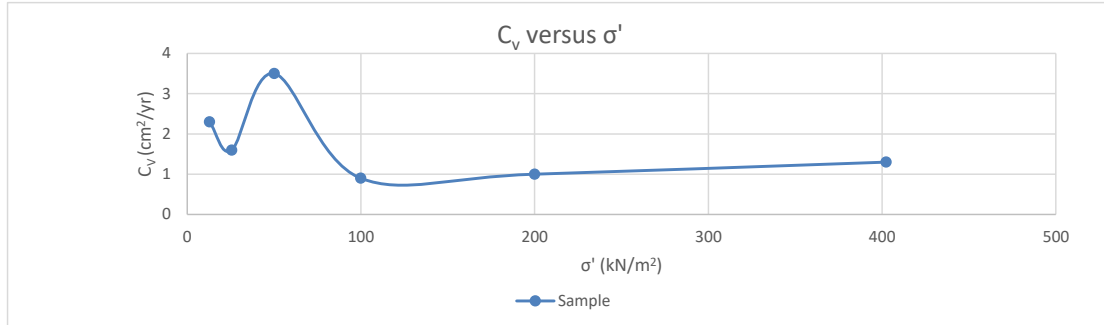
Note: It may not be possible to calculate a C_v for fast consolidating materials, or for low pressure cycles.

Consolidometer Test ASTM D2435/D2435M-11

Lab Job No: 8441-005
Client: Far North Holdings Ltd
Project: Old Whangae
Location: MB02
Depth: 5.20 - 5.95m
Sample No.: WRE8441-005-S004

Tested By: N.K
Date: 28/10/2025
Checked By: D.K.
Date: 8/12/2025
Report No: WRE8441-005-R003

Sample Description: Clayey SILT, traces of shells to 15mm, traces organics, grey, wet.



CONSOLIDATION TEST DATA

8/12/2025

Client: Far North Holdings Ltd

Project: Old Whangae

Project Number: 8441-005

Location: MB02

Depth: 5.20 - 5.95m

Sample Number: WRE8441-005-S004

Material Description: Clayey SILT, traces of shells to 15mm, traces organics, grey, wet.

Tested by: N.K.

Checked by: D.K.

Test Specimen Data

NATURAL MOISTURE

Wet w+t = 209.12 g.
Dry w+t = 174.45 g.
Tare Wt. = 104.94 g.
Moisture = 49.9 %

VOID RATIO

Spec. Gr. = 2.69
Est. Ht. Solids = 0.828 cm.
Init. V.R. = 1.414
Init. Sat. = 94.8 %

AFTER TEST

Wet w+t = 112.15 g.
Dry w+t = 96.25 g.
Tare Wt. = 53.15 g.
Moisture = 36.9 %

UNIT WEIGHT

Height = 1.998 cm.
Diameter = 4.991 cm.
Weight = 65.27 g.
Dry Dens. = 1114 kg/m³

TEST START

Height = 1.998 cm.
Diameter = 4.991 cm.

Dry Wt. = 43.10 g.

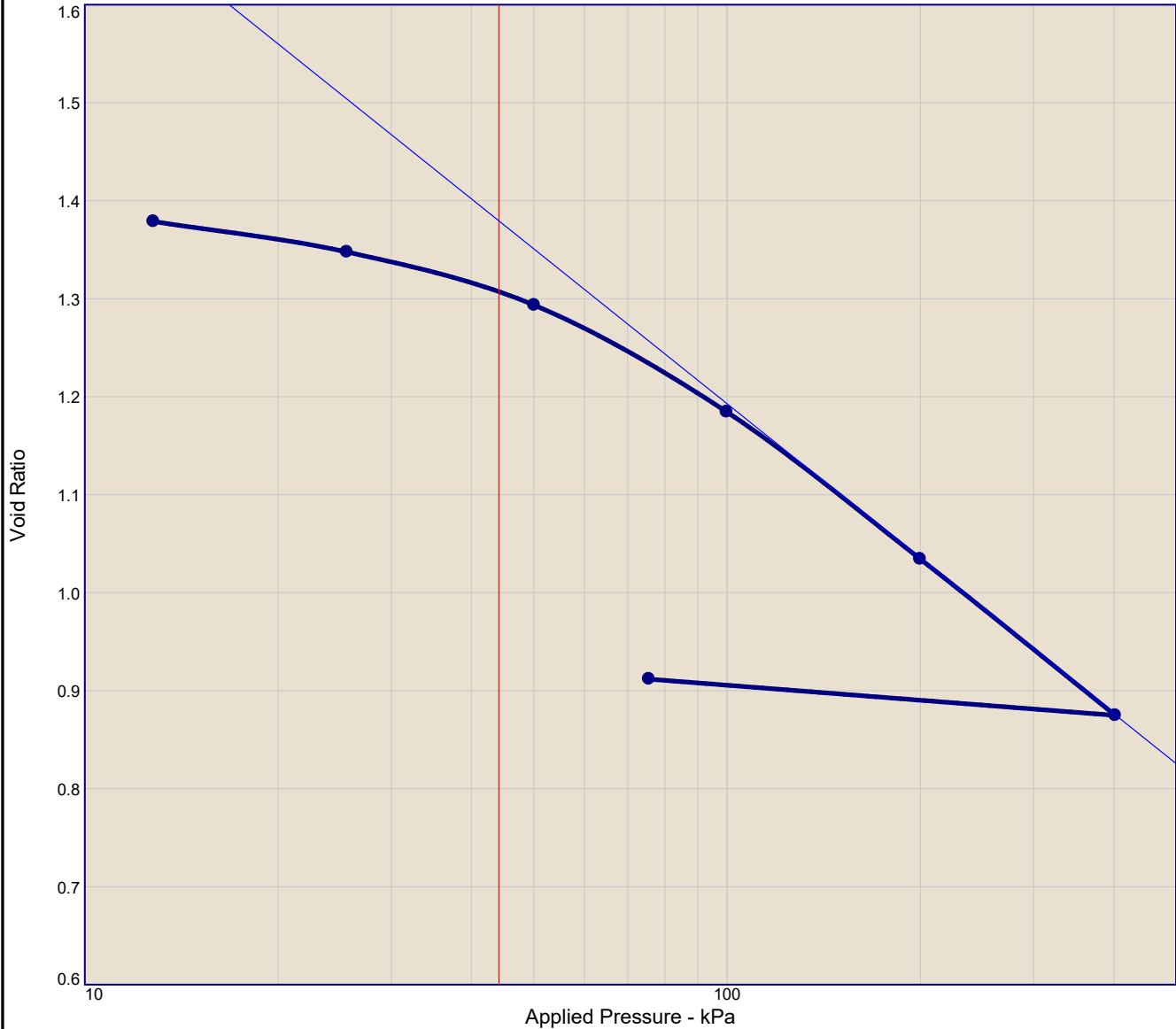
End-Of-Load Summary

Pressure (kPa)	Final Dial (cm.)	Machine Defl. (cm.)	Deformation (cm.)	C _v (m.2/yr.)	C _α	Void Ratio	% Strain
start	1.10090		0.00000			1.414	
12.8	1.06870	0.00270	0.02950	2.3	0.003	1.379	1.5 Compr.
25.6	1.04340	0.00030	0.05720	1.6	0.004	1.348	2.8 Compr.
50.1	0.99990	0.00080	0.10020	3.5	0.008	1.293	5.0 Compr.
99.9	0.90780	0.00270	0.19040	0.9	0.014	1.184	9.5 Compr.
199.9	0.78410	0.00220	0.31460	1.0	0.014	1.034	15.7 Compr.
402.3	0.65140	0.00290	0.44660	1.3	0.013	0.875	22.4 Compr.
75.6	0.68270	0.00220	0.41600	3.1		0.912	20.8 Compr.
0.0	0.68270	0.00220	0.41600				

Compression index (C_c), kPa = 0.53 Preconsolidation pressure (P_p), kPa = 66 Void ratio at P_p (e_m) = 1.256

Overburden (σ_{vo}), kPa = 100 Void ratio at σ_{vo} (e_o) = 1.184 Recompression index (C_r) = 0.05

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (kg/m ³)	LL	PI	Sp. Gr.	Overburden (kPa)	P _c (kPa)	C _c	C _r	Swell Press. (kPa)	Swell %	e _o
Sat.	Moist.											
94.8 %	49.9 %	1114			2.69	100	66	0.53	0.05			1.414

MATERIAL DESCRIPTION										USCS	AASHTO
Clayey SILT, traces of shells to 15mm, traces organics, grey, wet.											

Project No. 8441-005			Client: Far North Holdings Ltd			Remarks:
Project: Old Whangae						
Location: MB02		Depth: 5.20 - 5.95m		Sample Number: WRE8441-005-S004		
GeoCivil Ltd.						
						Figure

Tested By: N.K. Checked By: D.K.

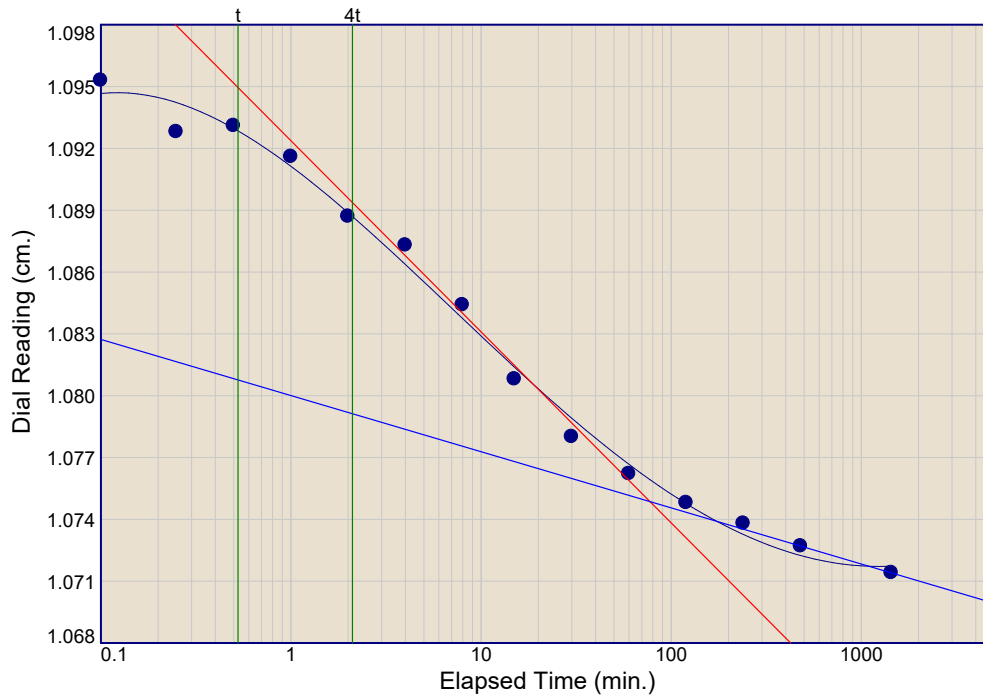
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 5.20 - 5.95m

Sample Number: WRE8441-005-S004



Load No.= 1

Load= 12.8 kPa

$D_0 = 1.0970$

$D_{50} = 1.0859$

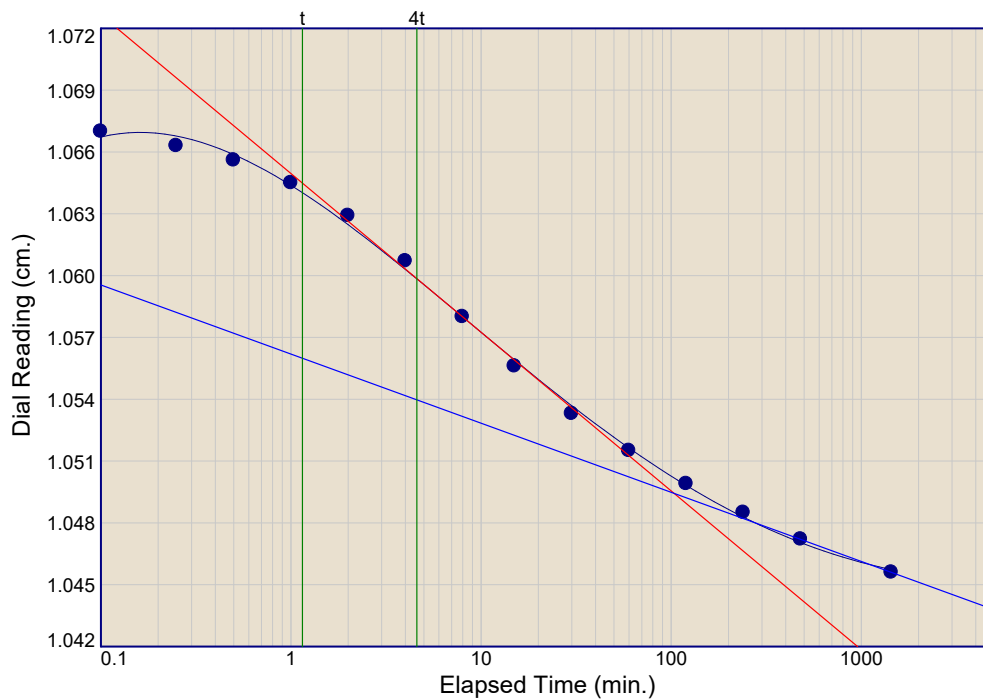
$D_{100} = 1.0749$

$T_{50} = 4.48 \text{ min.}$

$C_v @ T_{50}$

2.3 m.²/yr.

$C_\alpha = 0.003$



Load No.= 2

Load= 25.6 kPa

$D_0 = 1.0682$

$D_{50} = 1.0588$

$D_{100} = 1.0494$

$T_{50} = 6.25 \text{ min.}$

$C_v @ T_{50}$

1.6 m.²/yr.

$C_\alpha = 0.004$

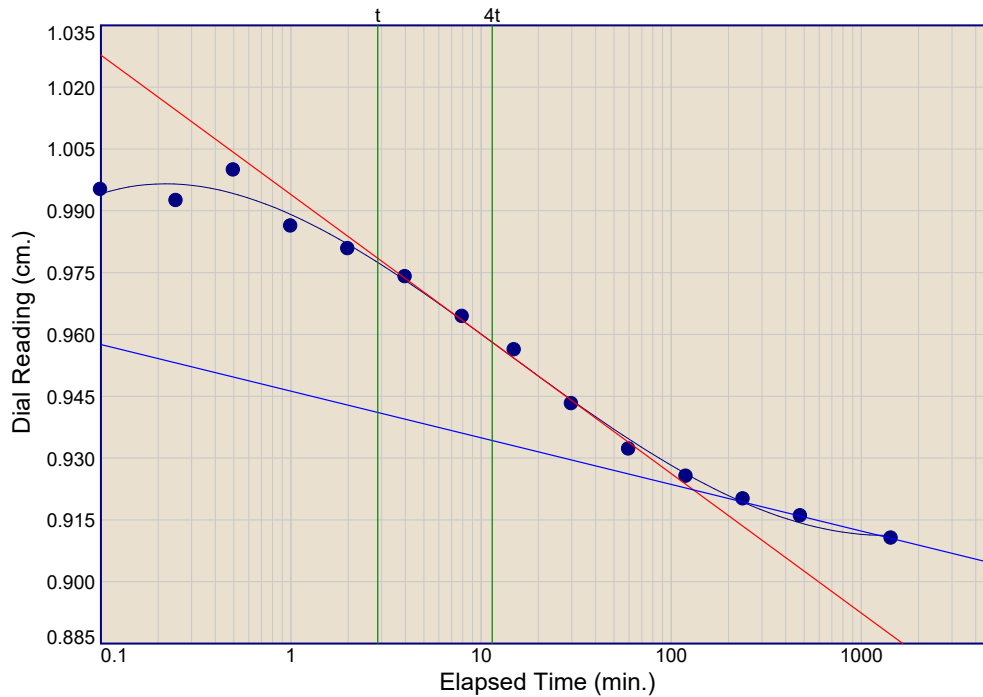
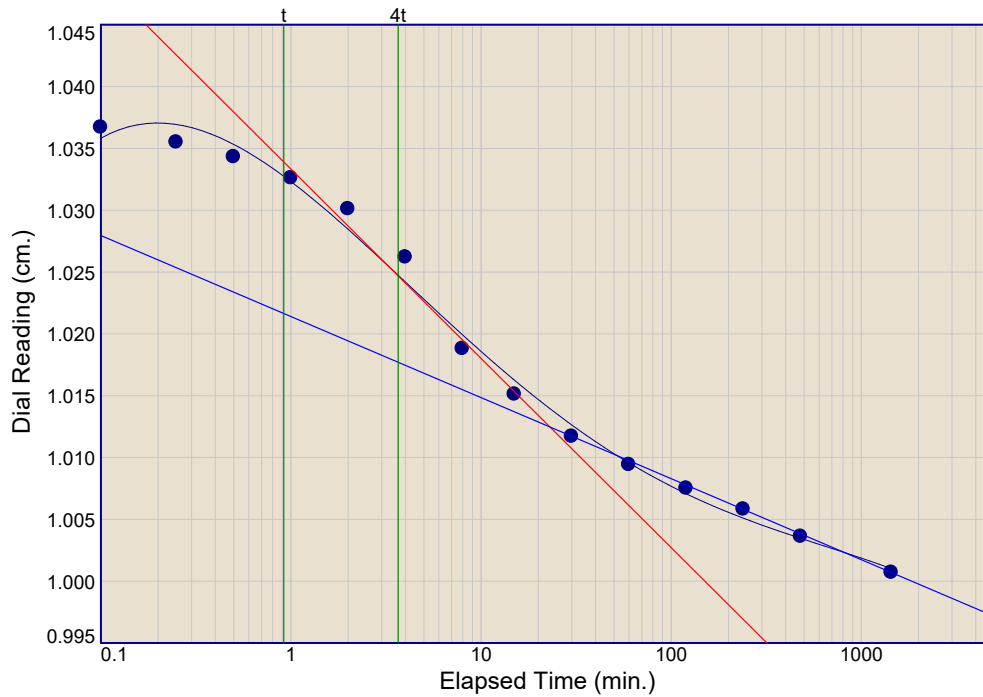
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 5.20 - 5.95m

Sample Number: WRE8441-005-S004



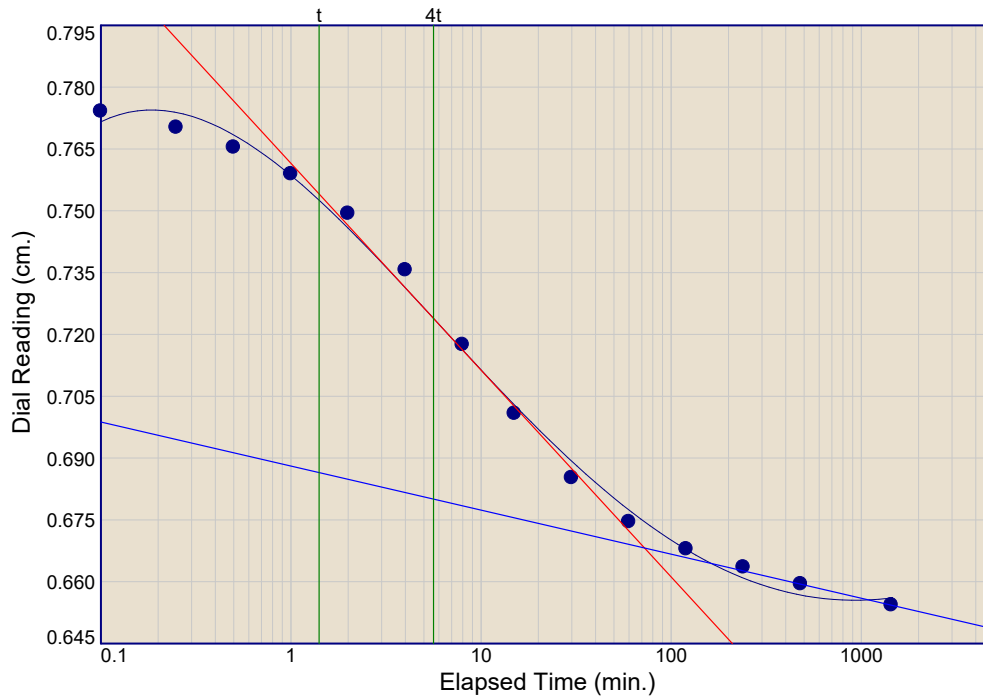
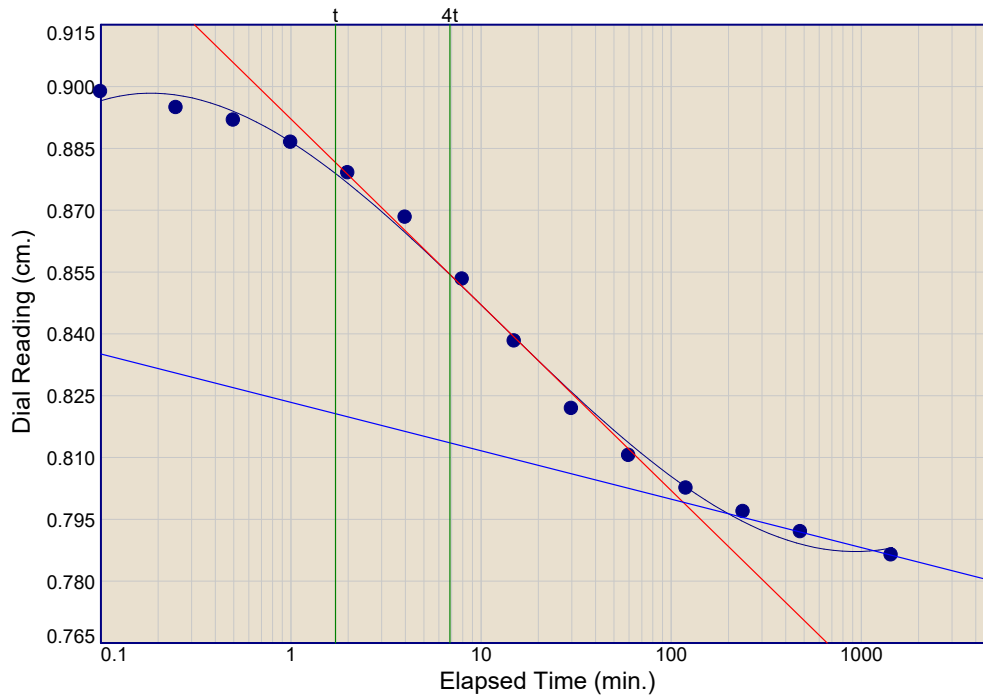
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 5.20 - 5.95m

Sample Number: WRE8441-005-S004



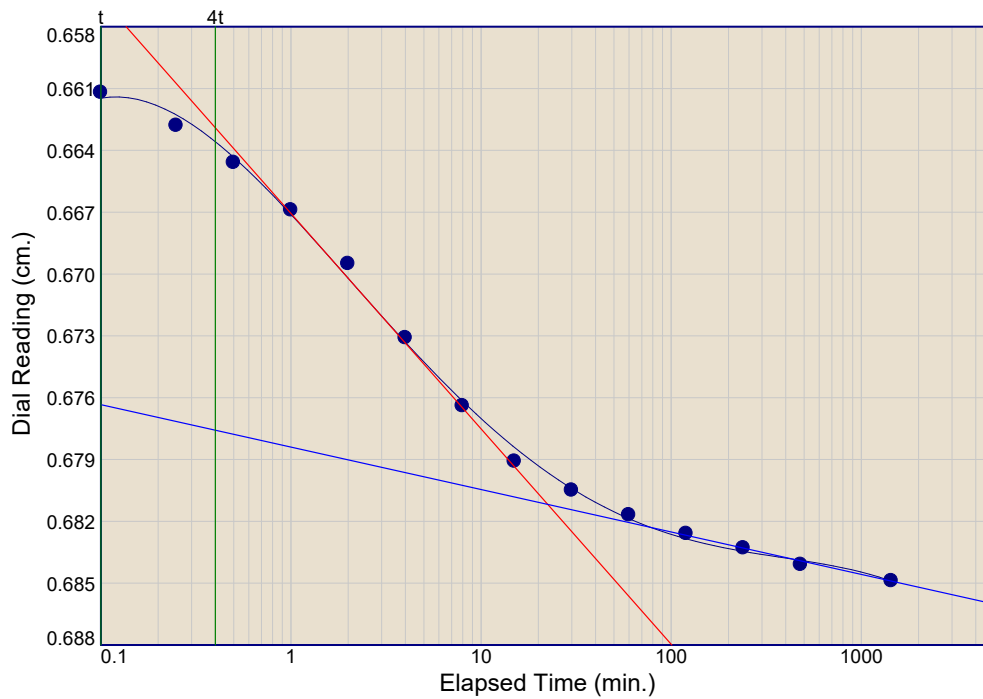
Dial Reading vs. Time

Project No.: 8441-005
Project: Old Whangae

Location: MB02

Depth: 5.20 - 5.95m

Sample Number: WRE8441-005-S004



Load No.= 7

Load= 75.6 kPa

$D_0 = 0.6594$

$D_{50} = 0.6703$

$D_{100} = 0.6812$

$T_{50} = 2.03 \text{ min.}$

$C_v @ T_{50}$

3.1 m.²/yr.

Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Phi-B (°)	Piezometric Surface
■	Gravel Raft	Mohr-Coulomb	20	0	40	0	1
■	Stiff Crust	Mohr-Coulomb	18	8	22	0	1
■	Weak Alluvium	Mohr-Coulomb	16	1	12	0	1

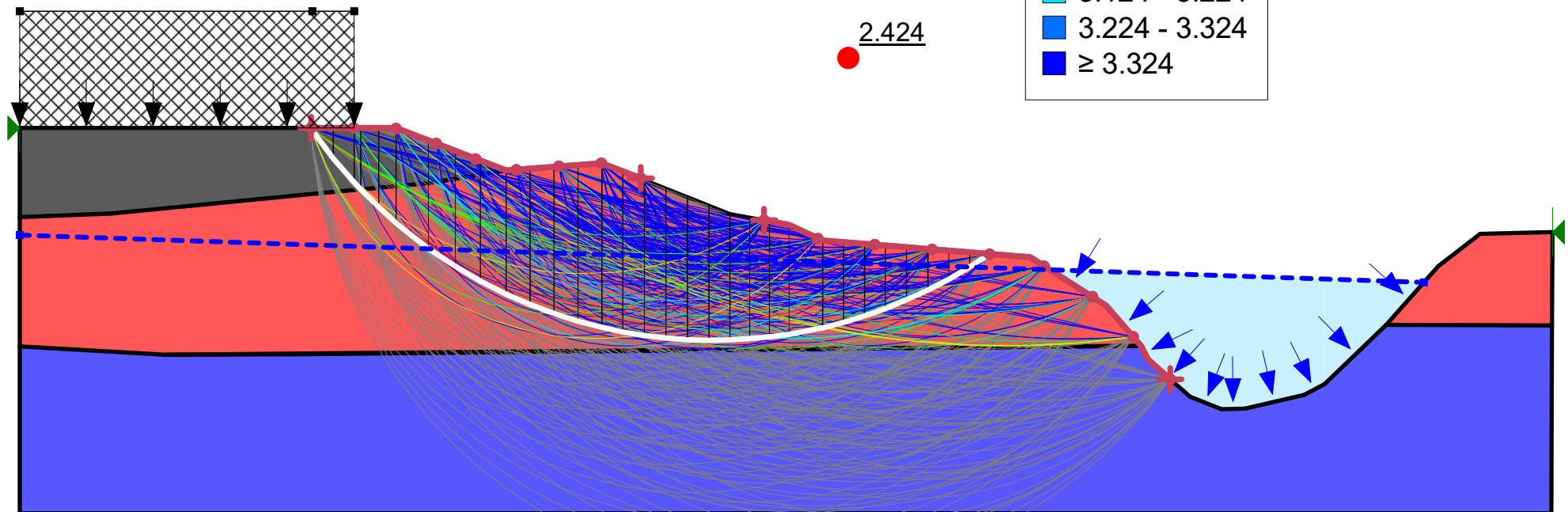
Factor of Safety

■	2.424 - 2.524
■	2.524 - 2.624
■	2.624 - 2.724
■	2.724 - 2.824
■	2.824 - 2.924
■	2.924 - 3.024
■	3.024 - 3.124
■	3.124 - 3.224
■	3.224 - 3.324
■	≥ 3.324

Surcharge 20kN/m³

F.O.S

2.424



Slope Stability

Slope Model.gsz

05/12/2025

1:143

Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Effective Cohesion (kPa)	Effective Friction Angle (°)	Phi-B (°)	Piezometric Surface
■	Gravel Raft	Mohr-Coulomb	20	0	40	0	1
■	Stiff Crust	Mohr-Coulomb	18	8	22	0	1
■	Weak Alluvium	Mohr-Coulomb	16	1	12	0	1

Factor of Safety

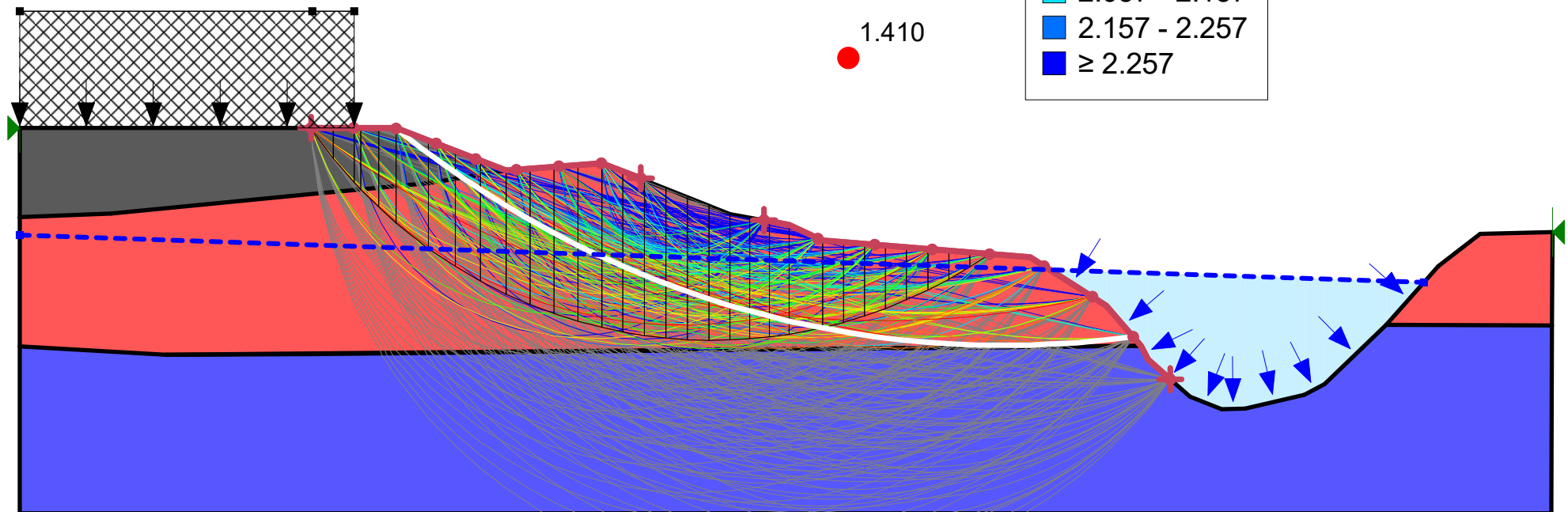
■	1.357 - 1.457
■	1.457 - 1.557
■	1.557 - 1.657
■	1.657 - 1.757
■	1.757 - 1.857
■	1.857 - 1.957
■	1.957 - 2.057
■	2.057 - 2.157
■	2.157 - 2.257
■	≥ 2.257

Surcharge 20kN/m³

Dynamic model Co=0.1992

F.O.S

1.410



Slope Stability

Slope Model.gsz

05/12/2025

1:143

APPENDIX C



SURVEYED	DATE	DRAWN	DATE	CHECKED	DATE
BEM	30.09.2025	BEM	25.09.2025	JGF	30.09.2025
O	ORIGINAL ISSUE				02.10.2025
REV	AMENDMENTS				DATE

➤ COPYRIGHT:
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SURVEY NOTES:

- BEARING AND COORDINATE DATUM IS NZGD2000 MOUNT EDEN CURT.
- LEVELS ARE IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016.
- ORIGIN OF SURVEY IT I DP 168475 GD CODE: EHPQ
966053.648mN 336457.052mE
RL 20.45m
- BOUNDARIES SHOWN ON THIS PLAN HAVE NOT BEEN SURVEYED AND ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL NOT BE USED FOR DESIGN PURPOSES. IF THE POSITION OF BOUNDARIES IS REQUIRED A REMOVAL OF LIMITATIONS REDEFINITION SURVEY SHOULD BE UNDERTAKEN.
- XML BOUNDARY PARCELS ARE SHOWN FOR ABUTTING LOTS AND ARE SOURCED FROM LINZ LANDONLINE DATABASE.
- BOUNDARIES ARE SUBJECT TO SURVEY.

GENERAL NOTES:

- BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
- AERIAL IMAGERY CAPTURED BY SURVEY WORK ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.
- SURFACE CONTOURS ARE SHOWN AT 0.1m INTERVALS.

SURVEY
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CONSTRUCTION & LAND SURVEYORS

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www.surveyworx.co.nz

➤ CLIENT



**FAR NORTH
HOLDINGS**
LIMITED

PROJECT

84 GILLIES STREET
KAWAKAWA

TOPOGRAPHICAL PLAN

▶ SCALE 1:500 (A1) 1:1000 (A3)		
▶ DRAWING No 11226-705-001	▶ SHEET 1 of 1 <small>..... of</small>	▶ REVISION 0



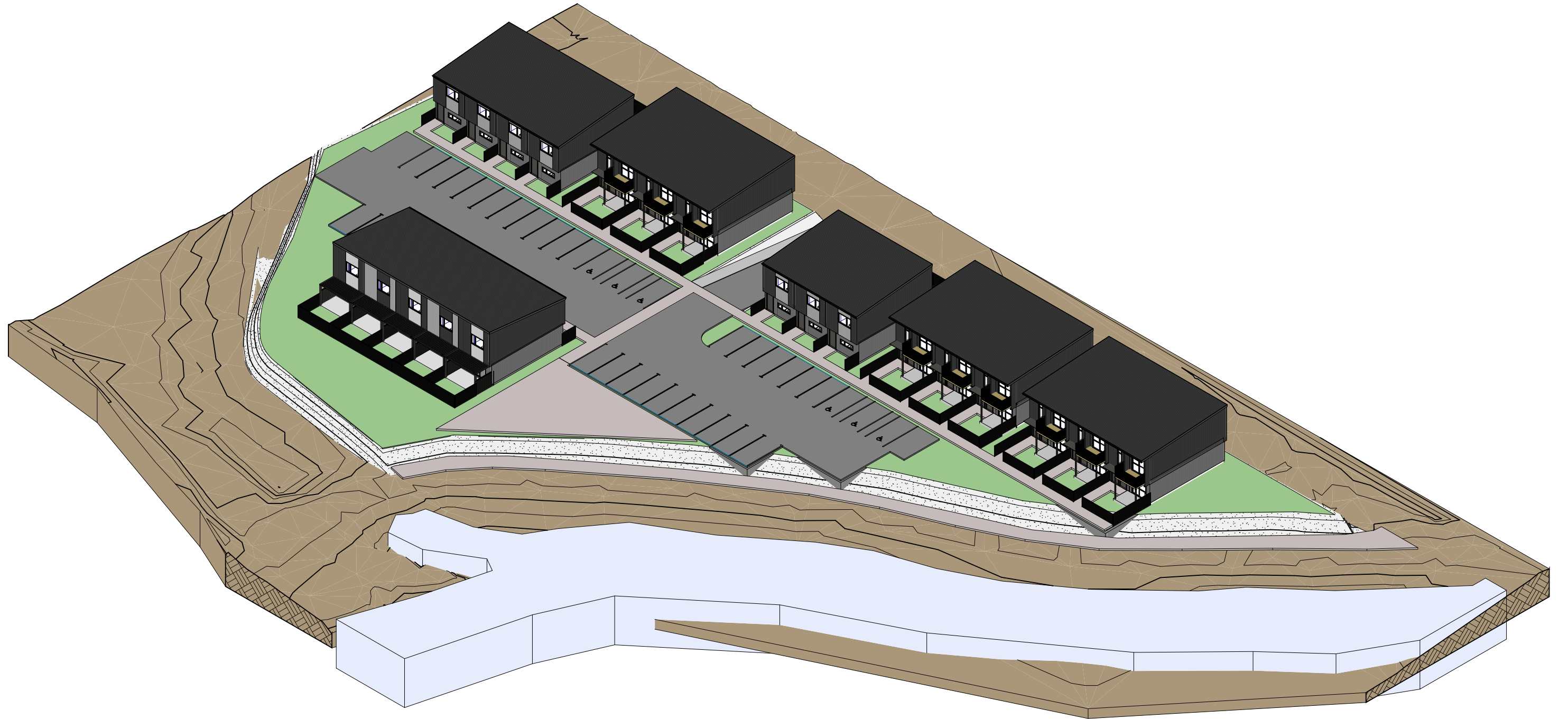
LOCALITY MAP - LARGE SCALE
NTS@A1 HALF-SCALE@A3

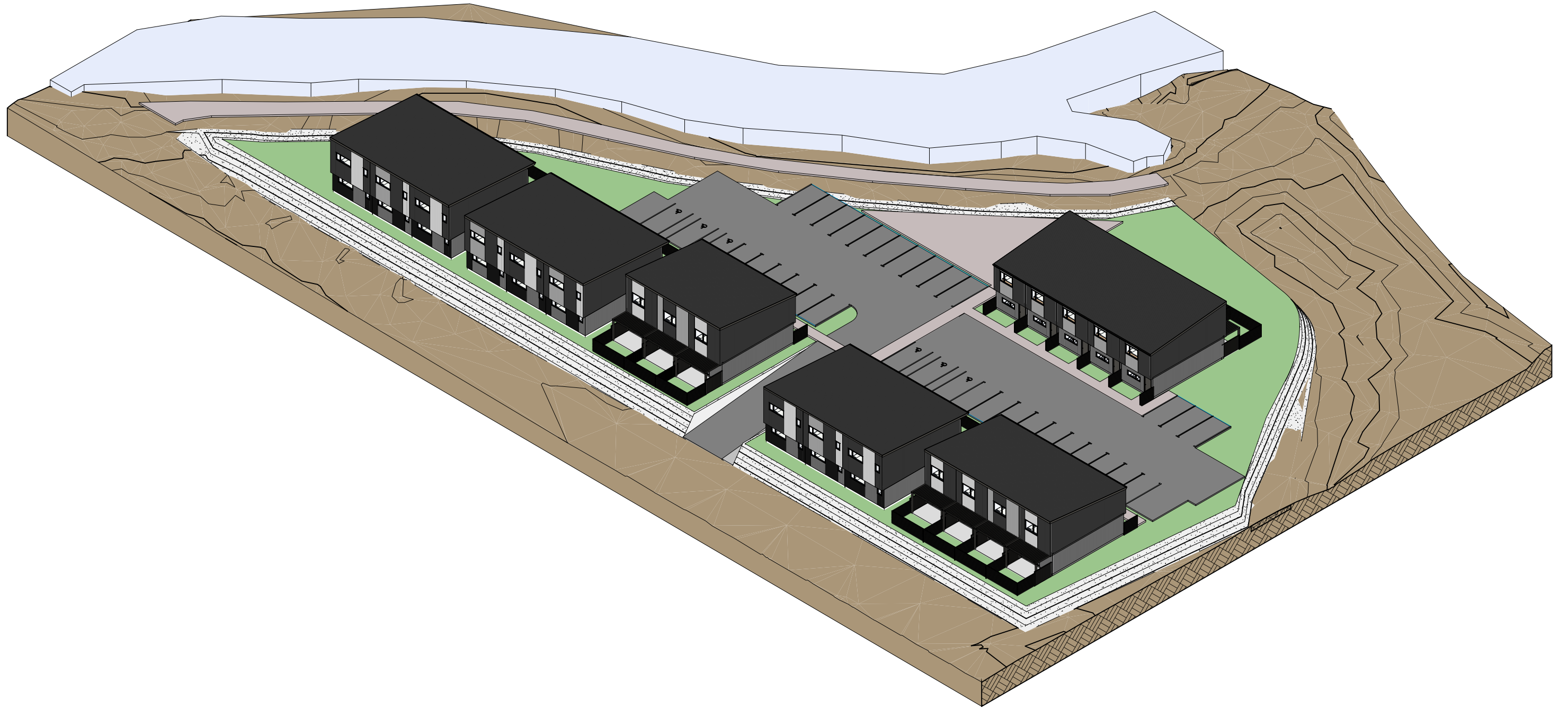
DESTINATION	DISTANCE	TIME BY WALK
LOCAL TOWN CENTER	100M-500M	1-10 MIN
CULTURAL CENTER	300M	5 MIN
SPORTS / RECREATION	650M	10 MIN
CHURCH	400M	7 MIN
PRIMARY SCHOOL	450M	8 MIN
HIGH SCHOOL	1.4KM	20 MIN



SITE LOCATION
NTS@A1 HALF-SCALE@A3









KAWAKAWA HOUSING DEVELOPMENT
ADDRESS: 84 GILLIES STREET KAWAKAWA
LEGAL DESCRIPTION: LOT 1 DP 63674

ZONE: MIXED USE

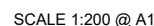
TOTAL UNIT NUMBERS: 30
TYPE A: 18
TYPE B: 12
TOTAL CARPARKS: 35
PARKING RATIO: 35/30 = 116%

TYPOLOGY

TYPE A: 1 BED UNIT PER FLOOR
A1: 1 BED UNIT GROUND FLOOR
FLOOR AREA = 57.75 m²
+
A2: 1 BED UNIT FIRST FLOOR
FLOOR AREA = 60.5 m²

TYPE B: 2 BED UNIT
GROUND FLOOR
FLOOR AREA = 43.5 m²
+
FIRST FLOOR
FLOOR AREA = 46.11 m²

RETAINING WALL/RETAINED BATTER
REFER CIVIL ENGINEER DRAWINGS



PA

SITE DESCRIPTION

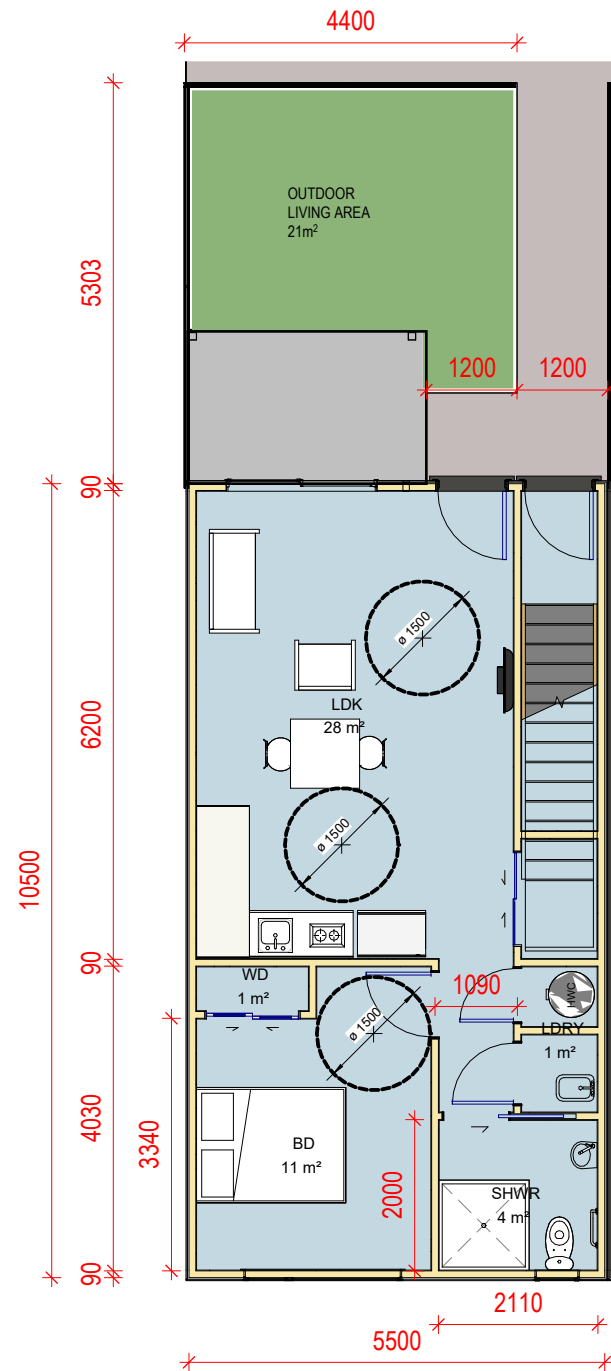
KAWAKAWA HOUSING DEVELOPMENT
ADDRESS: 84 GILLIES STREET KAWAKAWA
LEGAL DESCRIPTION: LOT 1 DP 63674

TOTAL UNIT NUMBERS: 30
TYPE A: 18
TYPE B: 12
TOTAL CARPARKS: 35
PARKING RATIO: 35/30 = 116%

SITE AREA CALCULATION

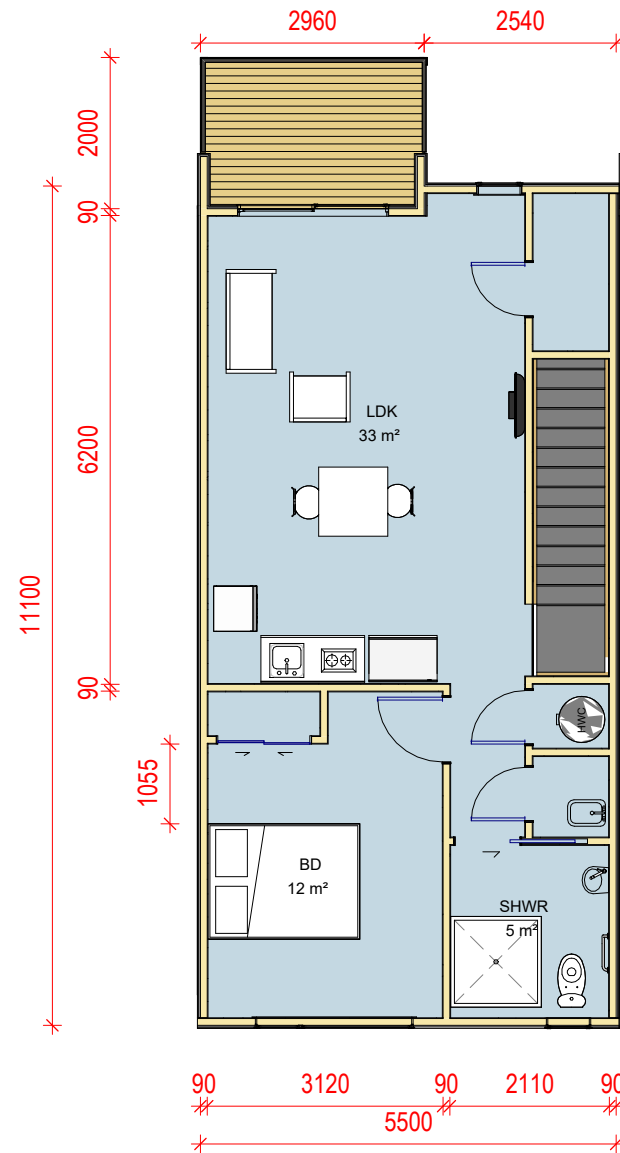
	TOTAL
LEGAL SITE AREA	7,588 m ²
PROPOSED SITE AREA	6,055 m ²
BUILDING COVERAGE	1,054.5 m ² (17.4%)
TOTAL IMPERMEABLE AREA	1,976 m ² (32.6%)
DRIVEWAY/CARPARK	1,142.4 m ²
PATHWAY PAVING	514.4 m ²
PRIVATE COURTYARD	174.2 m ²
SHARED COURTYARD PAVING	145 m ²
OUTDOOR LIVING AREA	>20 m ²
LANDSCAPE AREA	3024.5 m ² (50%)





1 GROUND FLOOR PLAN - TYPE A1
1 : 50@A1 HALF-SCALE@A3

FLOOR AREA
GROUND FLOOR: 53M²
FIRST FLOOR: 60M²

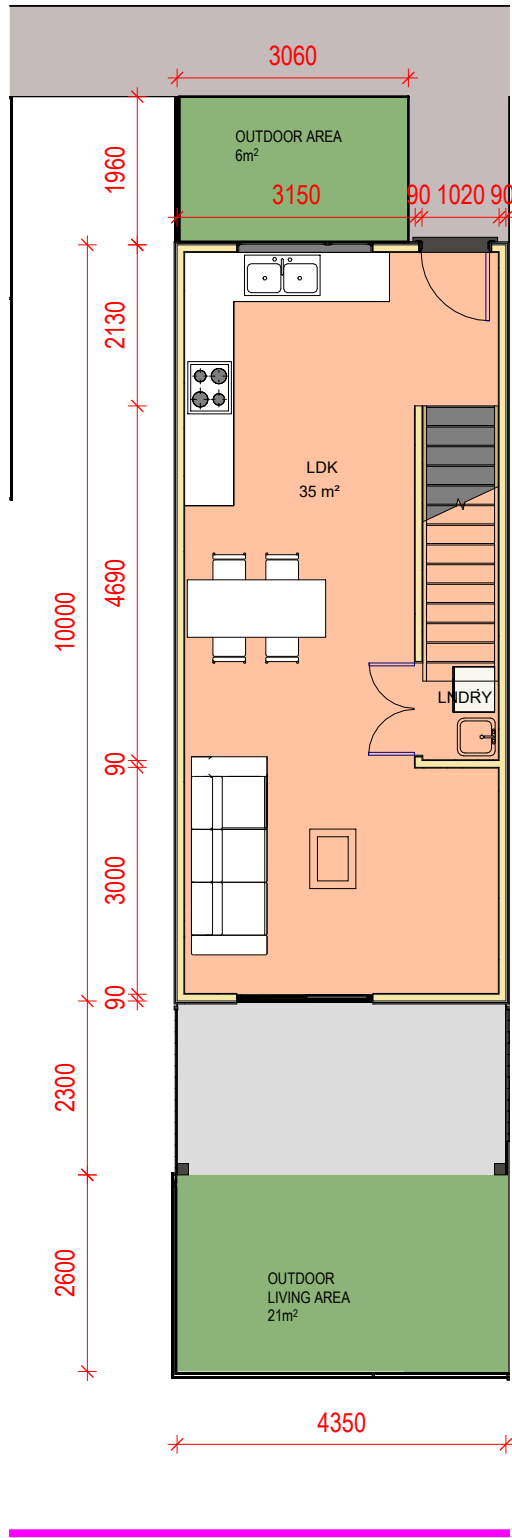


2 FIRST FLOOR PLAN - TYPE A1
1 : 50@A1 HALF-SCALE@A3



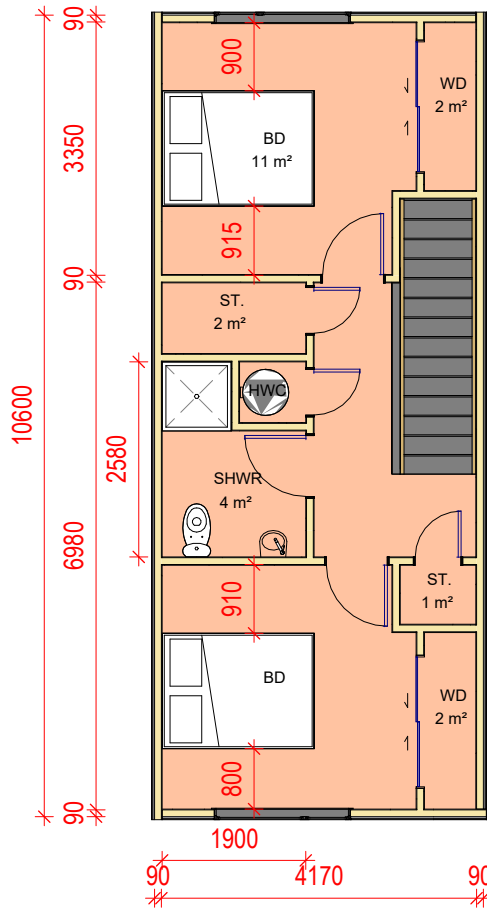
5 KEY PLAN - TYPE A
1 : 1000@A1 HALF-SCALE@A3

STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	YES
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	YES
	The main entry pathway is at least 1m wide from the street and/or parking area.	YES
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	YES
	One path is at least 600mm wide between the dwelling and the clothesline	YES
	Where Timber landings and decks are provided, they are level entry.	YES
	All exterior doors have a clear opening width of at least 810mm.	YES
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	YES
	There is step-free access from the main-entry to the main living-area.	YES
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	YES
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	YES
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	YES
Bathroom	All bathrooms on the main living level are at least 2120mm x 1920mm (measured between framing) with clearances of at 800mm between fixtures. Do not install a wet area-shower. No floor rebate required. Door swing inwards.	YES
Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	YES
Fixtures and Fittings	To be compliant during BC Stage	YES
Finishes	To be compliant during BC Stage	YES

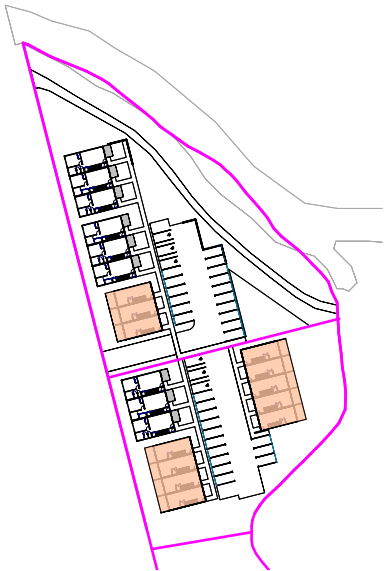


FLOOR AREA
GROUND FLOOR: 42M²
FIRST FLOOR: 46M²
TOTAL: 88M²

1 GROUND FLOOR PLAN - TYPE B
1 : 50@A1 HALF-SCALE@A3

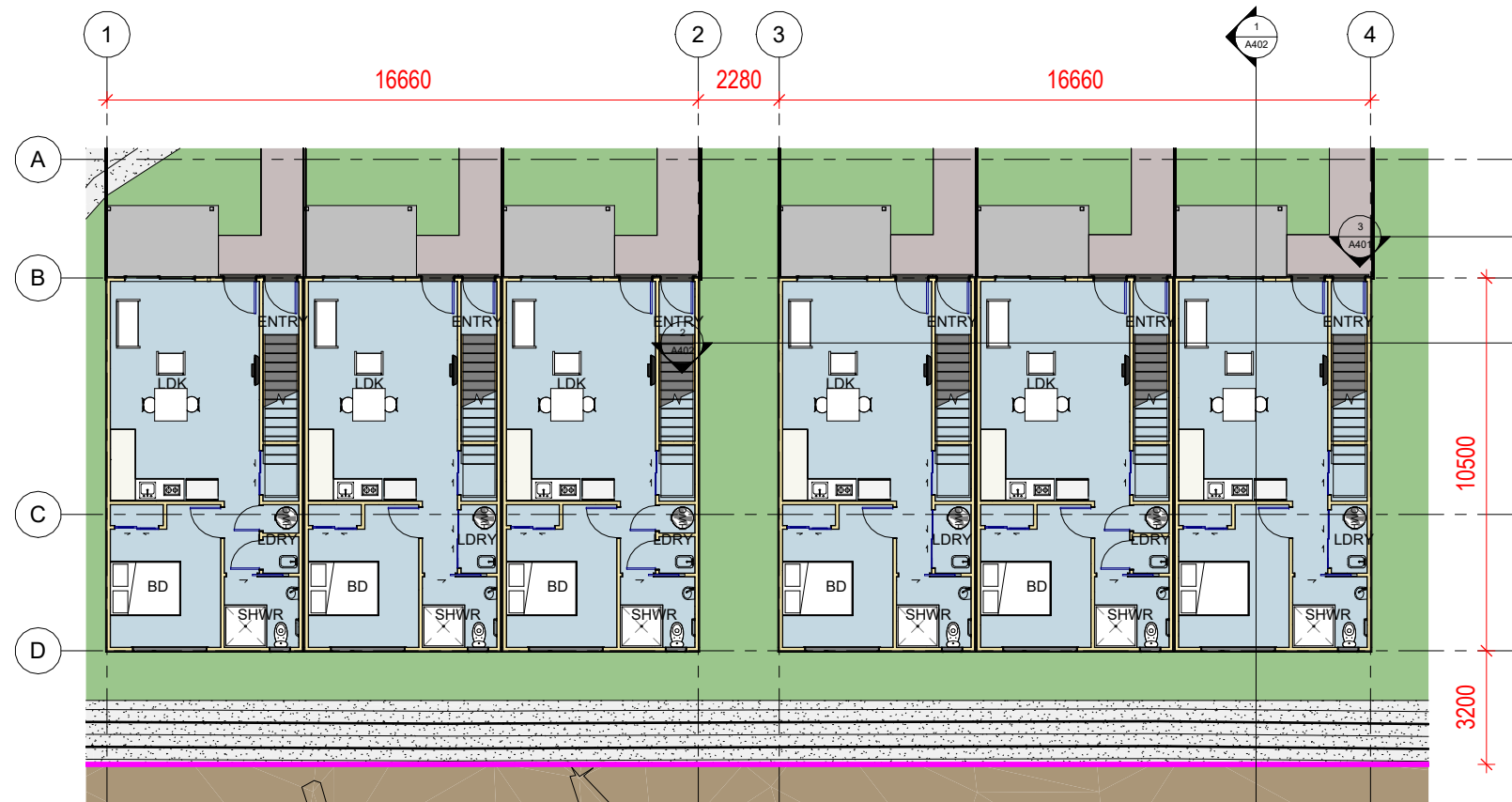


2 FIRST FLOOR PLAN - TYPE B
1 : 50@A1 HALF-SCALE@A3

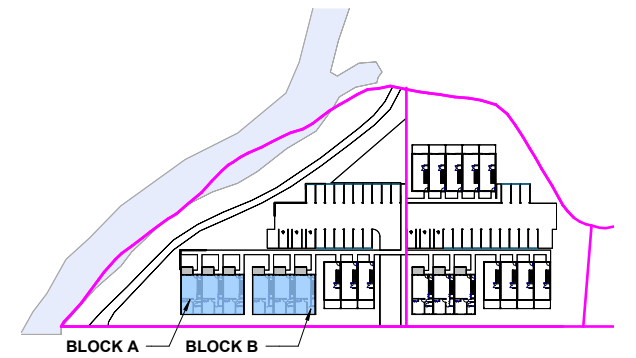


3 KEY PLAN - TYPE B
1 : 1000@A1 HALF-SCALE@A3

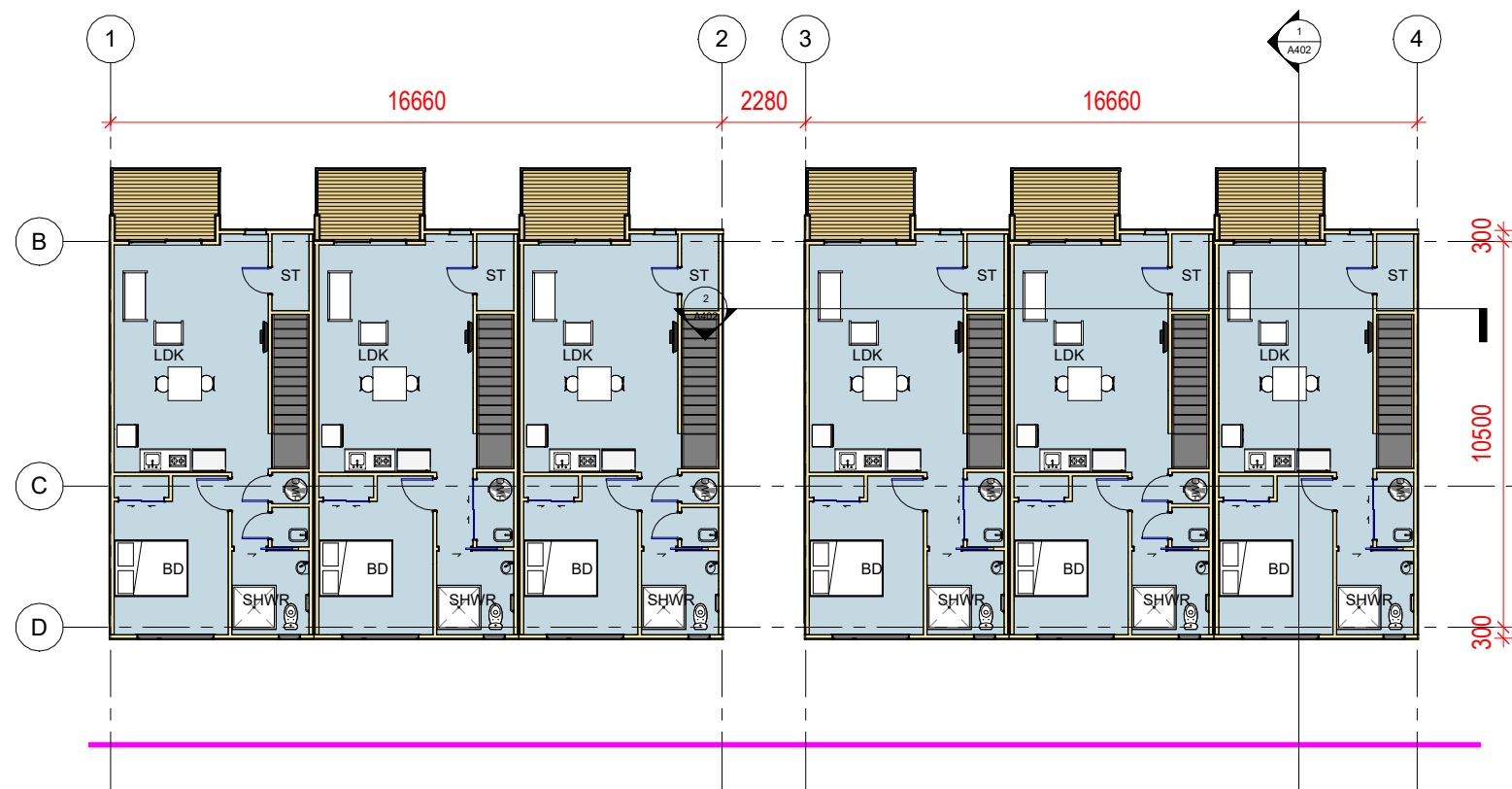
STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	YES
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	YES
	The main entry pathway is at least 1m wide from the street and/or parking area.	YES
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	YES
	One path is at least 600mm wide between the dwelling and the clothesline	YES
	Where Timber landings and decks are provided, they are level entry.	YES
	All exterior doors have a clear opening width of at least 810mm.	YES
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	YES
	There is step-free access from the main-entry to the main living-area.	YES
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	YES
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	YES
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	YES
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Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	YES
Fixtures and Fittings	To be compliant during BC Stage	YES
Finishes	To be compliant during BC Stage	YES



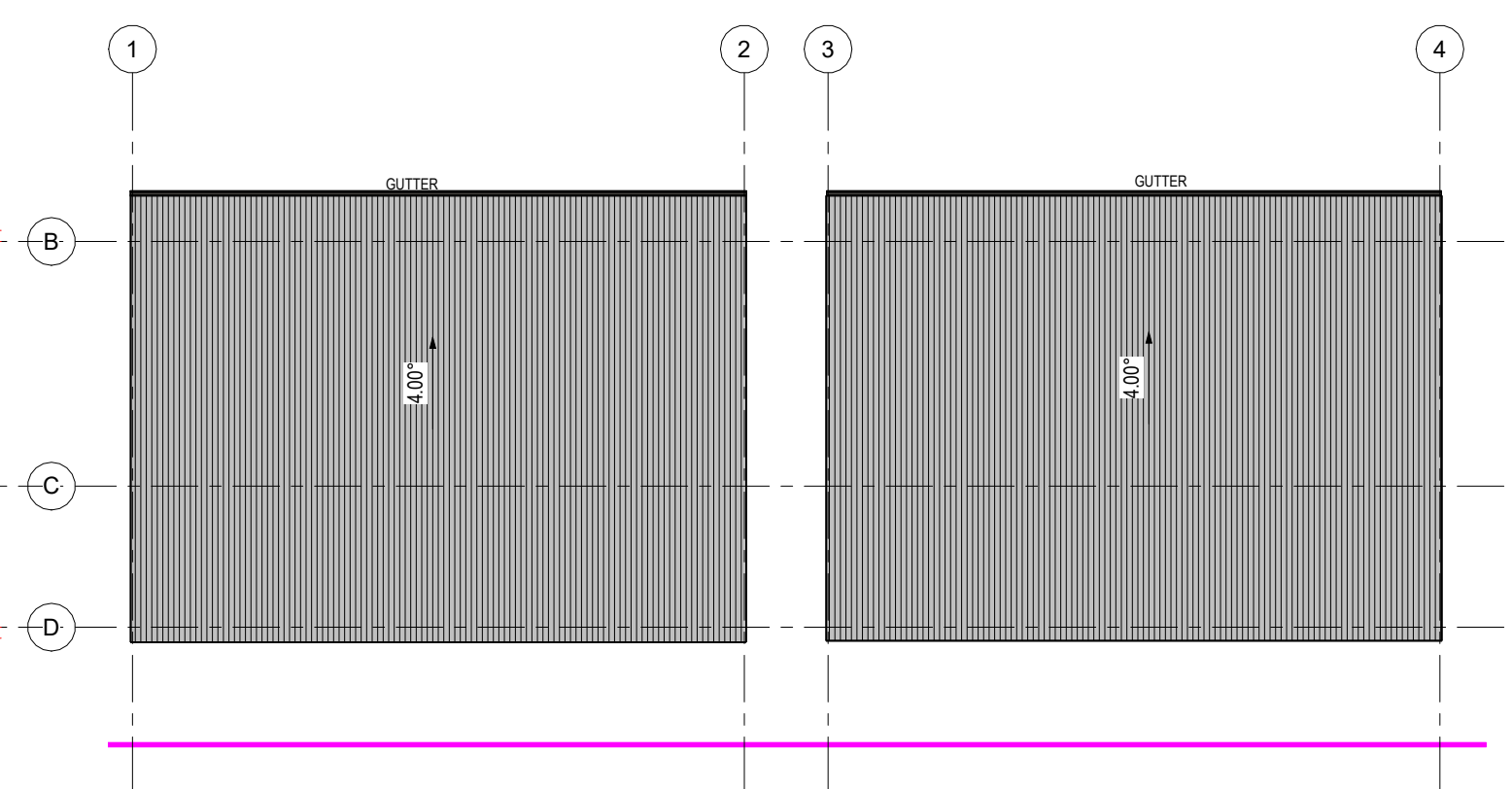
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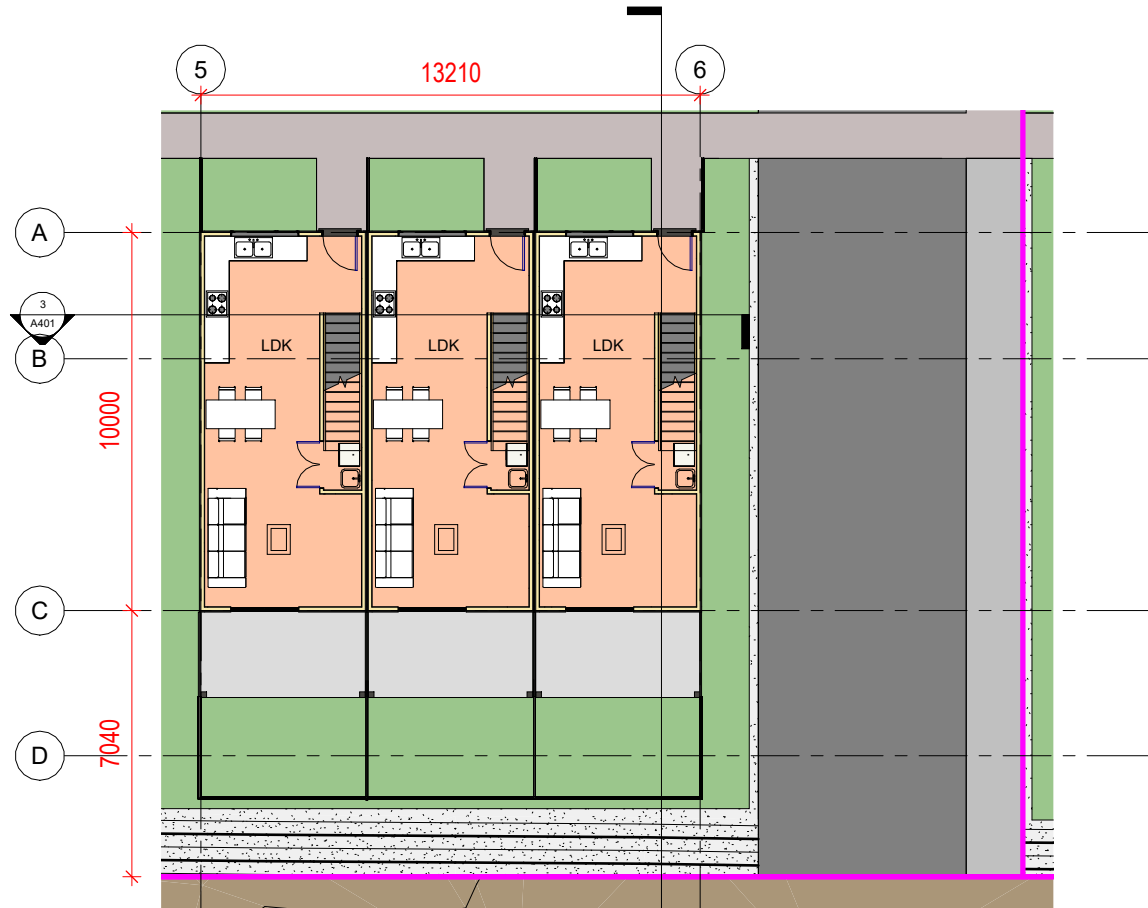
4 KEY PLAN - BLOCK A-B
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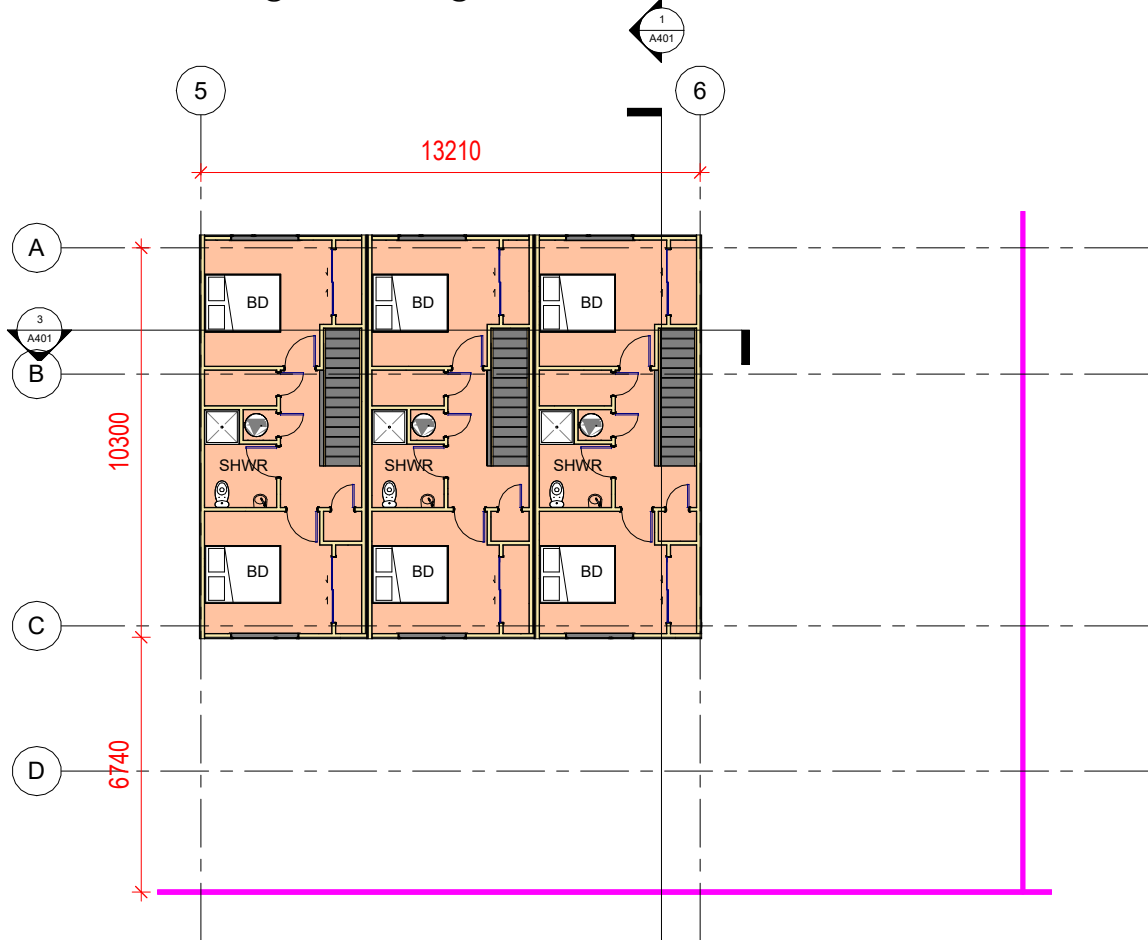
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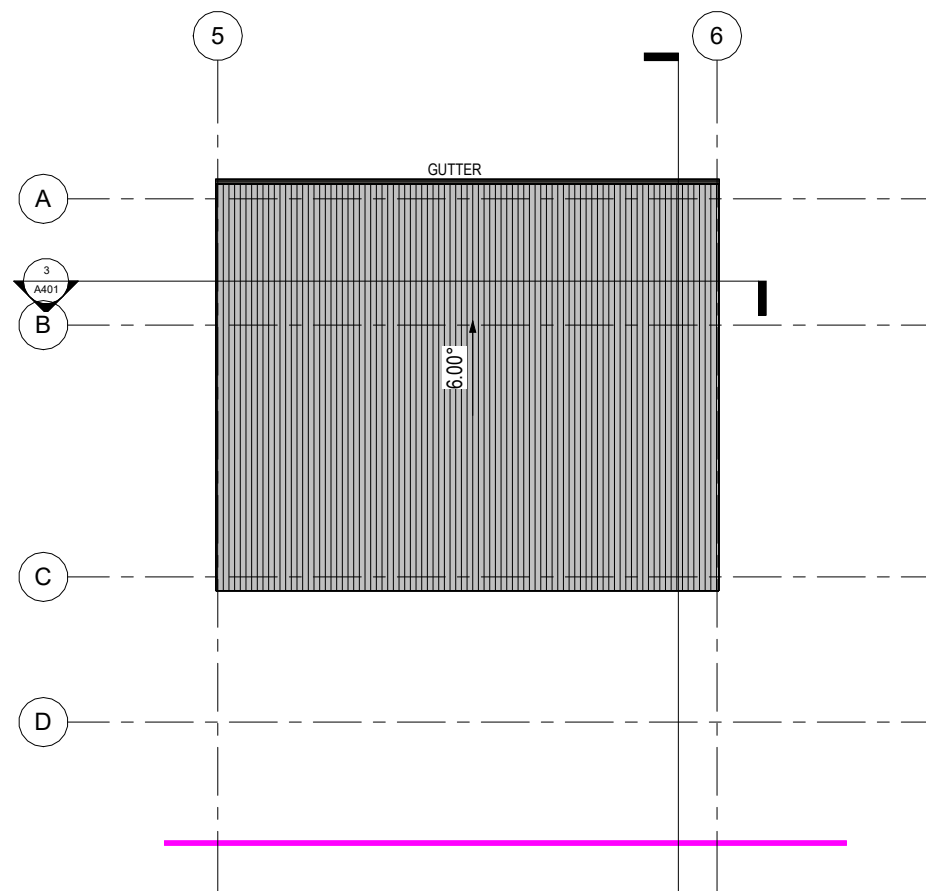
3 ROOF PLAN - BLOCK A-B
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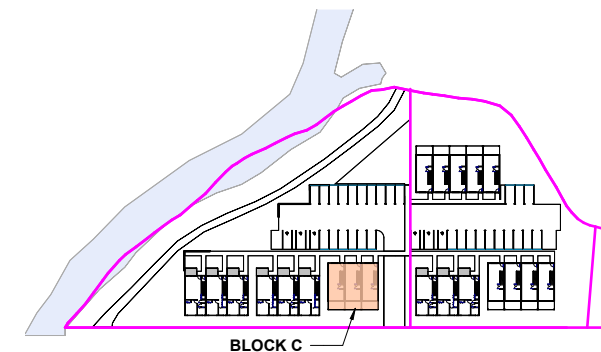
1 GROUND FLOOR PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



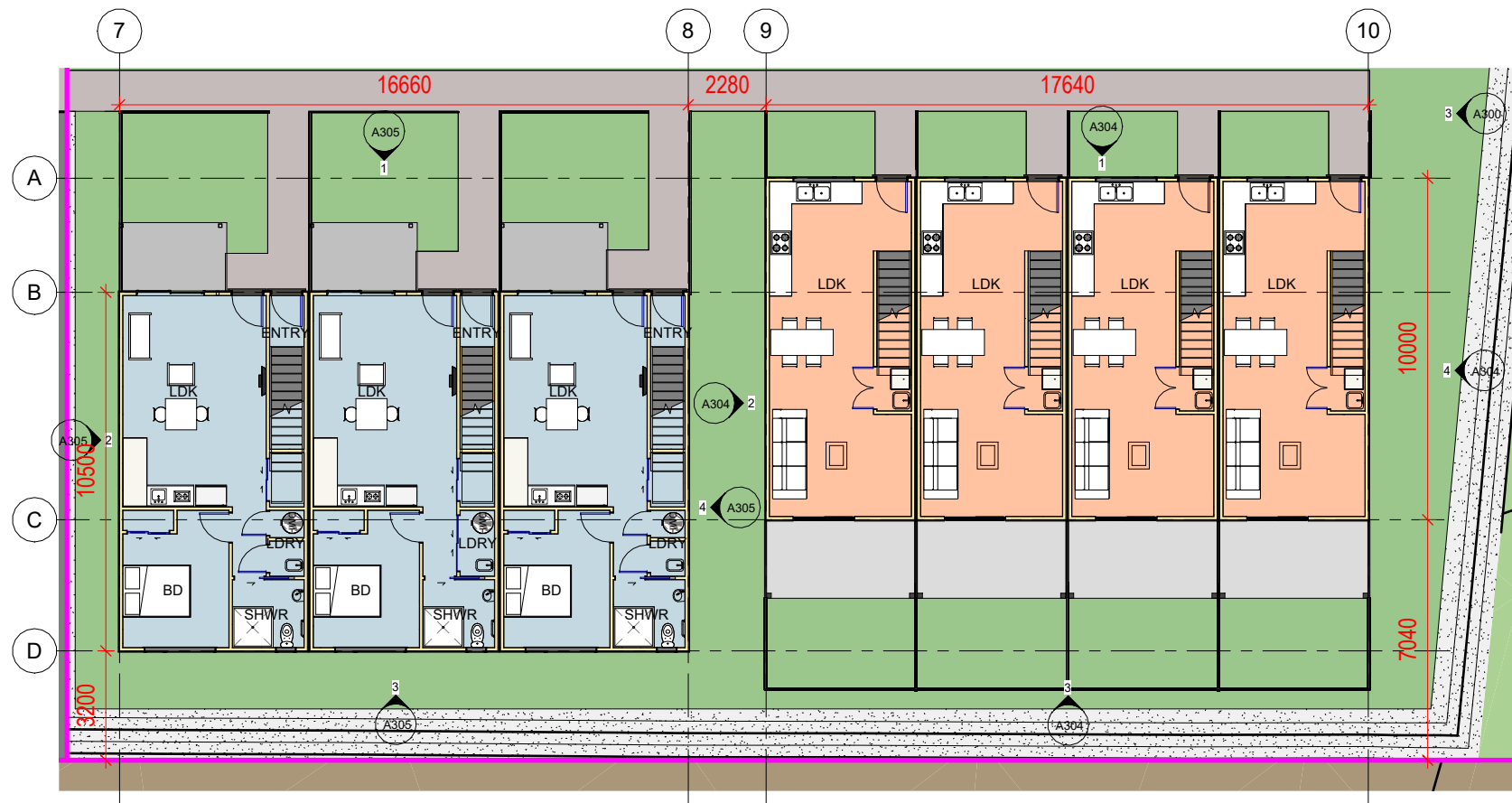
2 FIRST FLOOR PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



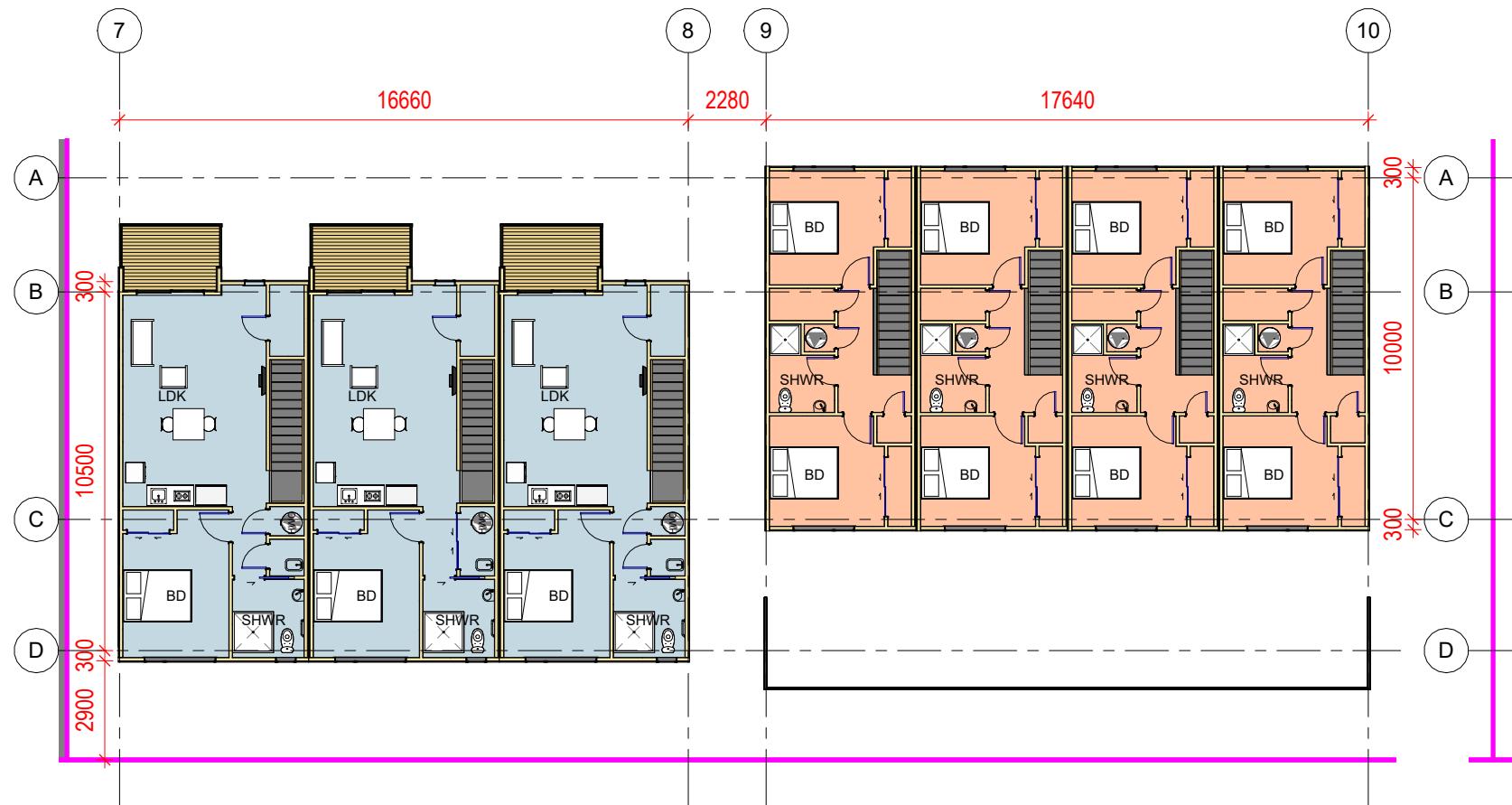
3 ROOF PLAN - BLOCK C
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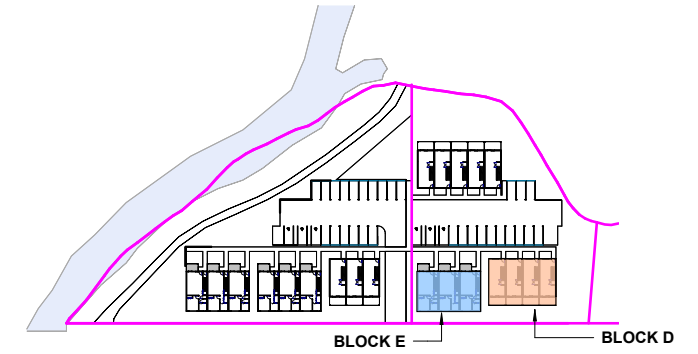
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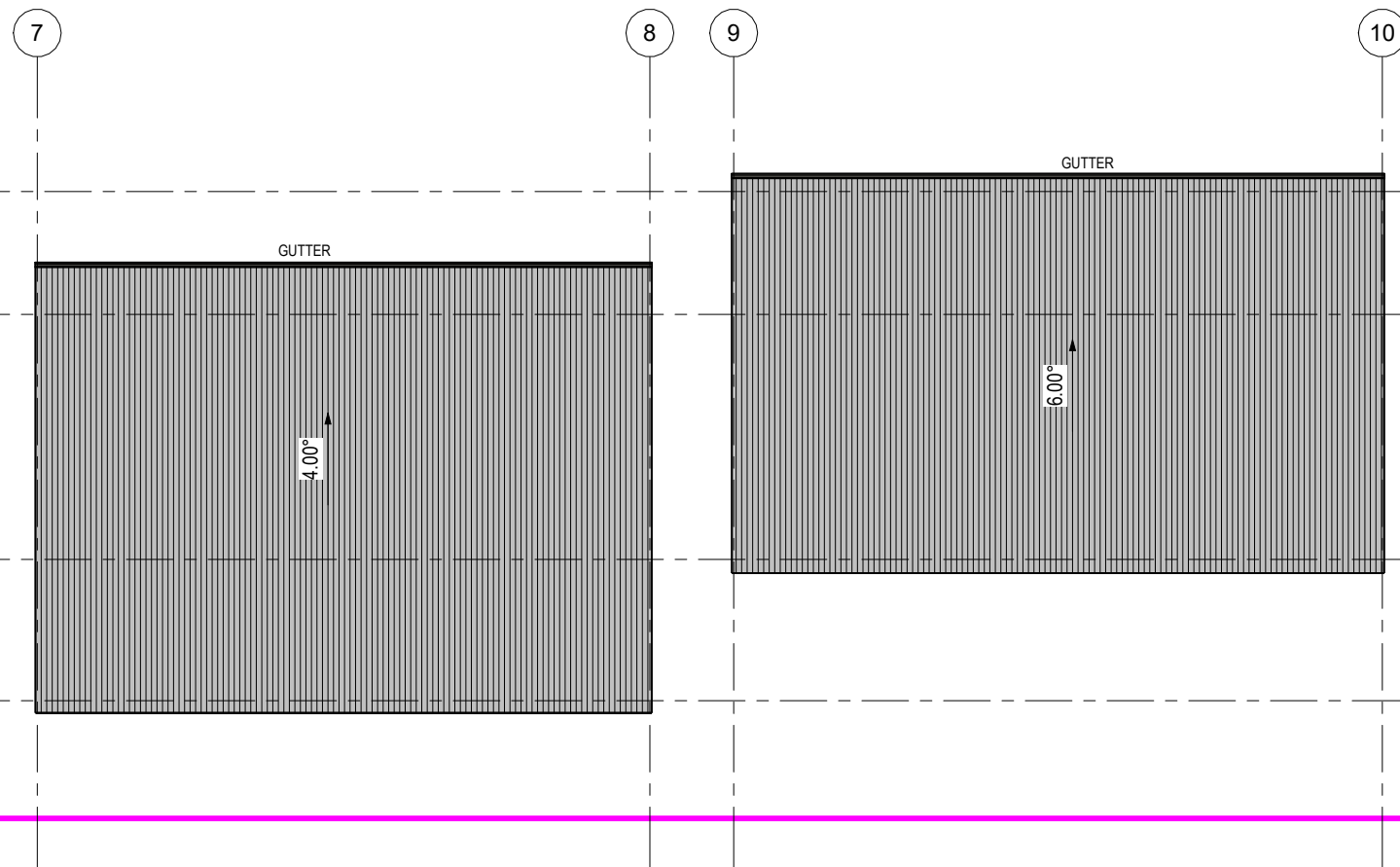
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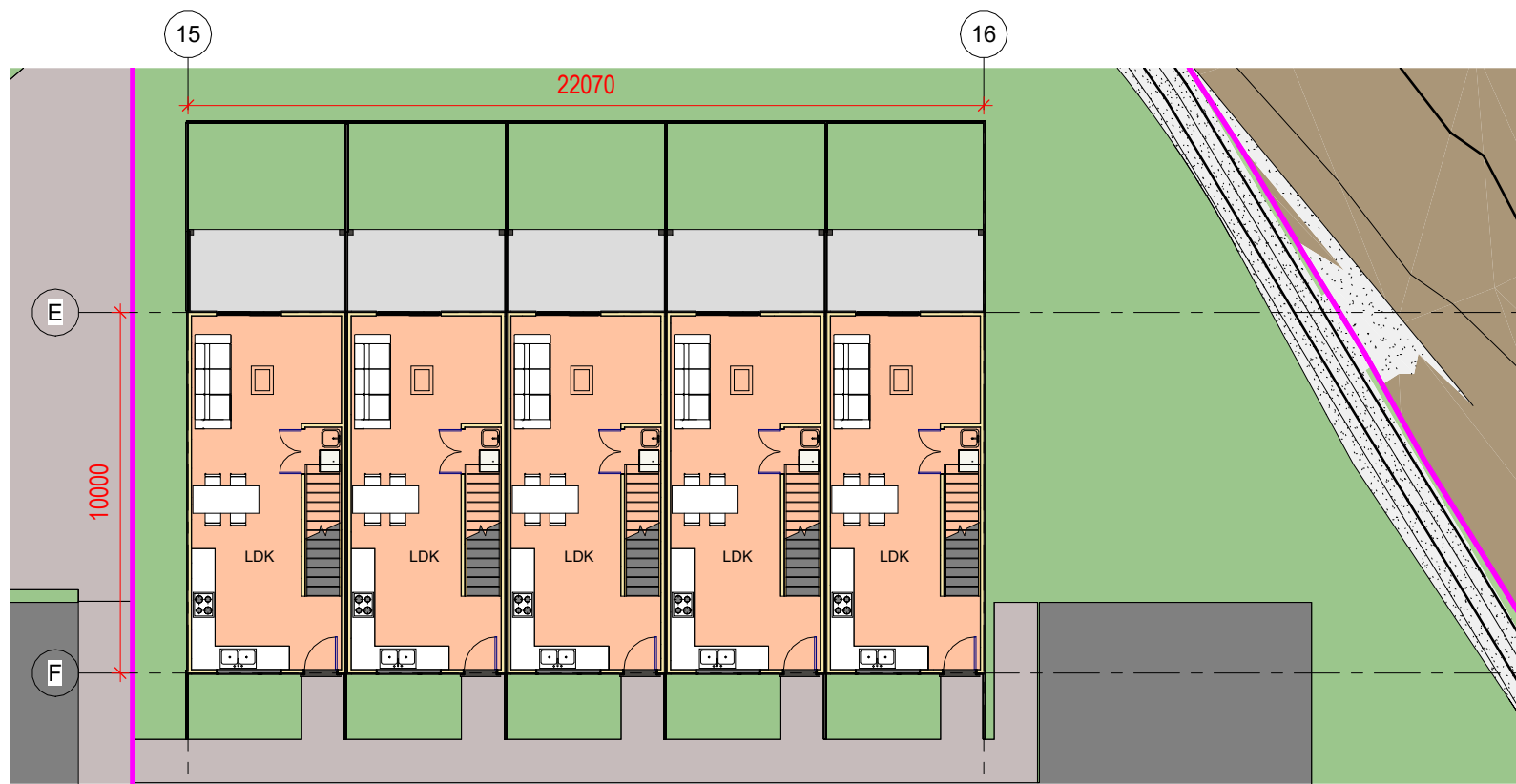
2 FIRST FLOOR PLAN - BLOCK D-E
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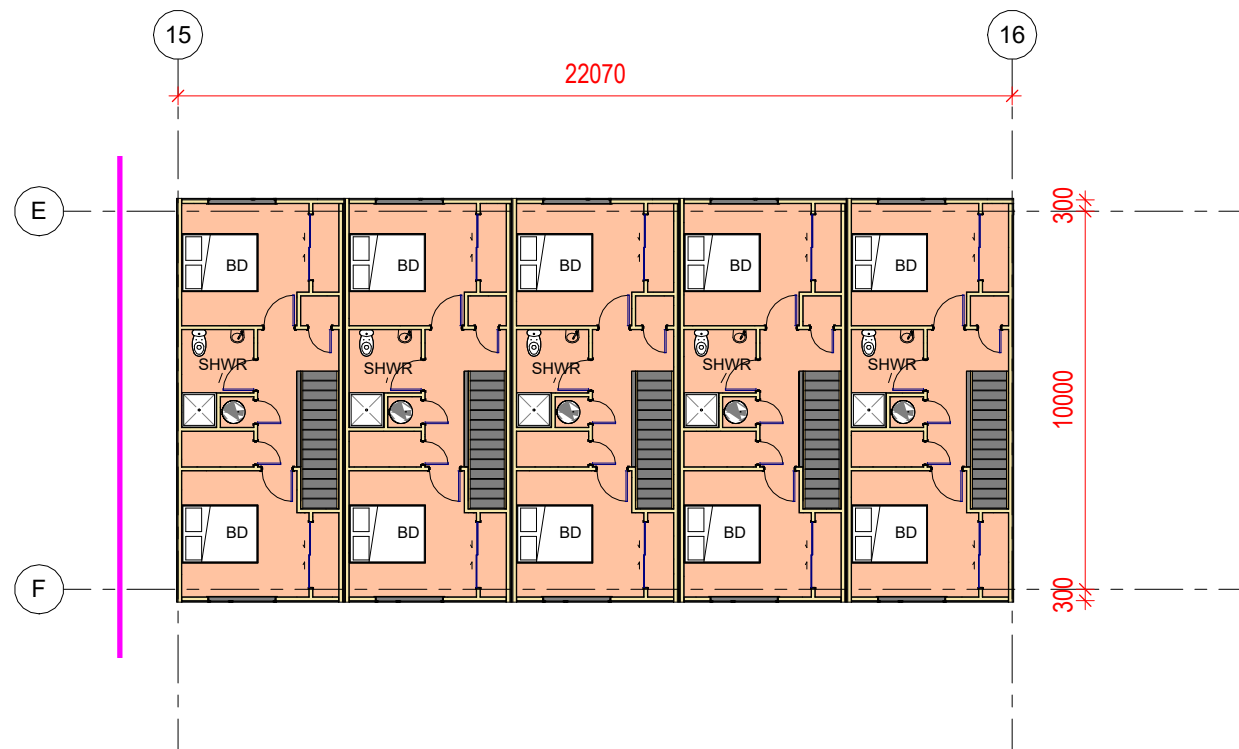
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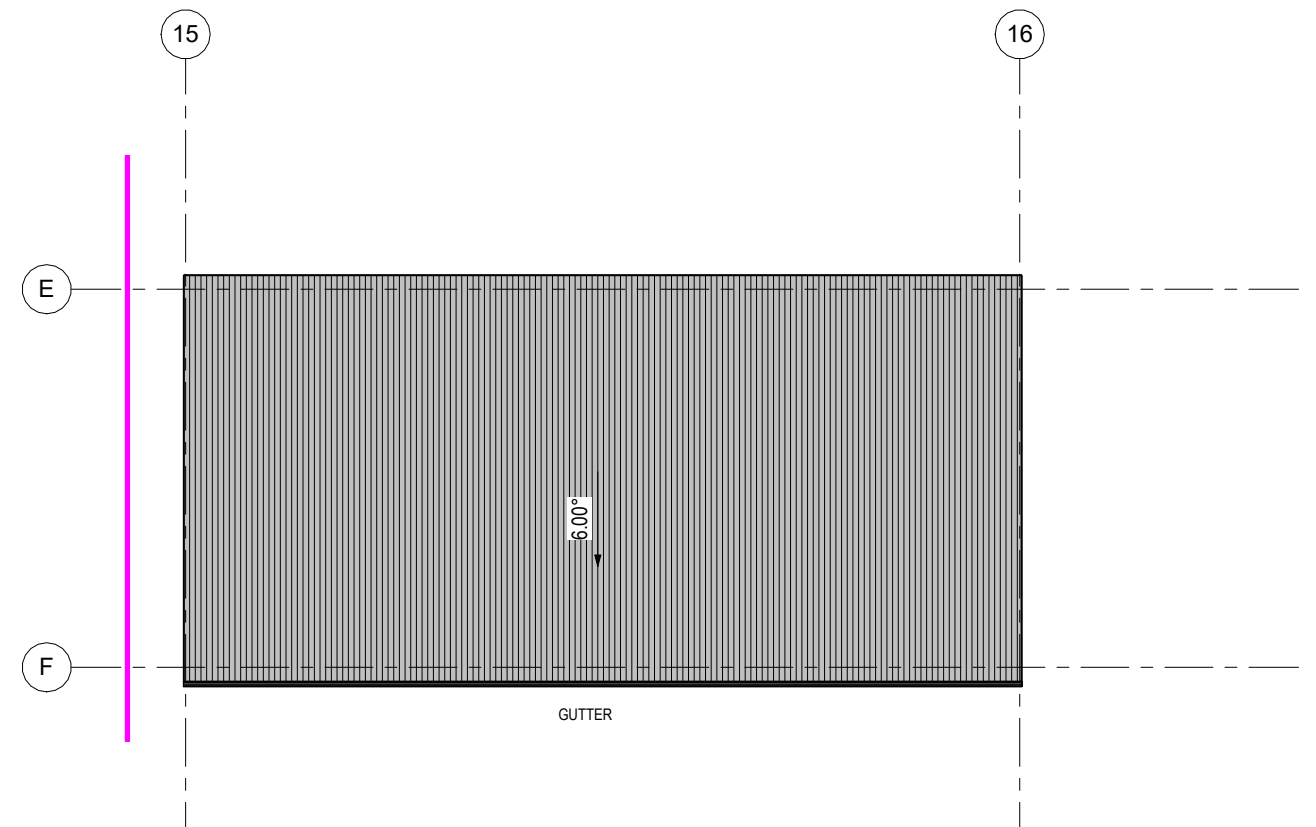
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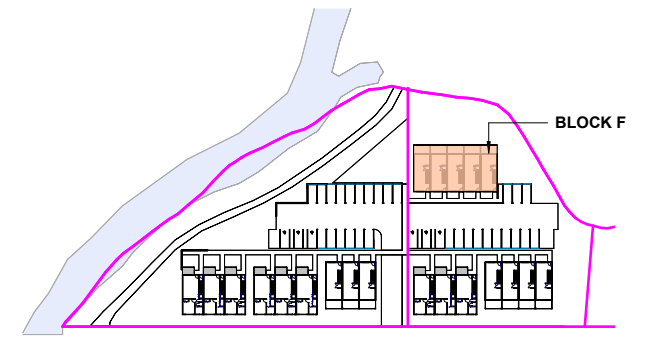
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1 : 100@A1 HALF-SCALE@A3



2 FIRST FLOOR PLAN - BLOCK F
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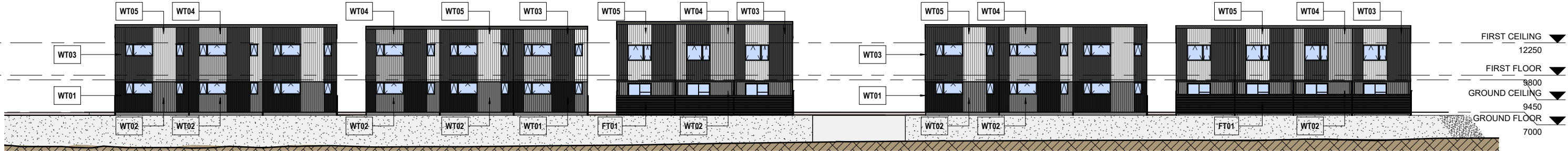


4 ROOF PLAN - BLOCK F
1 : 100@A1 HALF-SCALE@A3



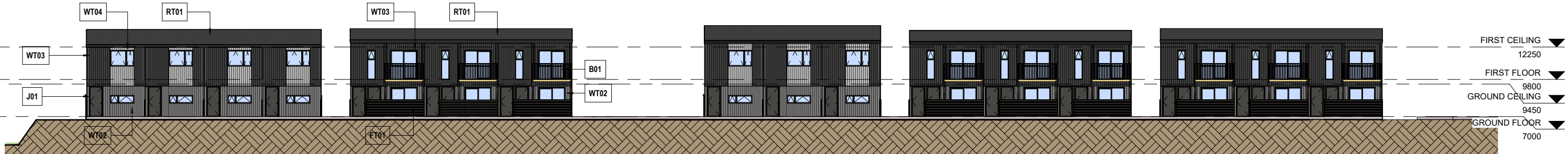
3 KEY PLAN - BLOCK F
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12m Height Boundary



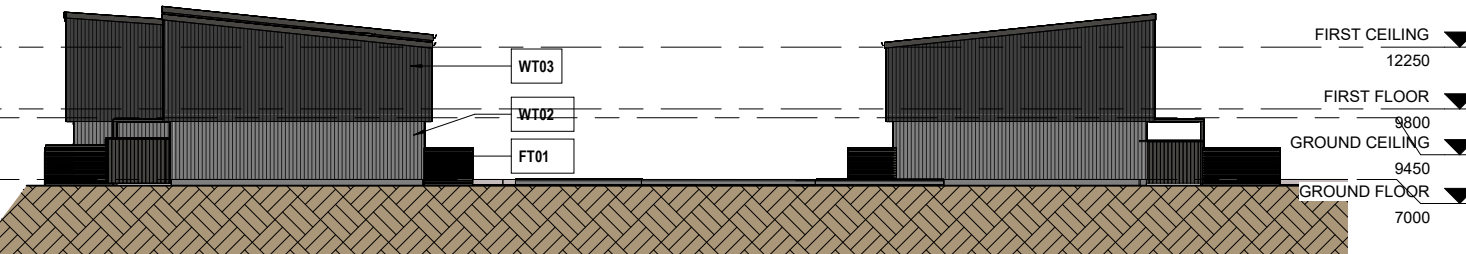
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12m Height Boundary



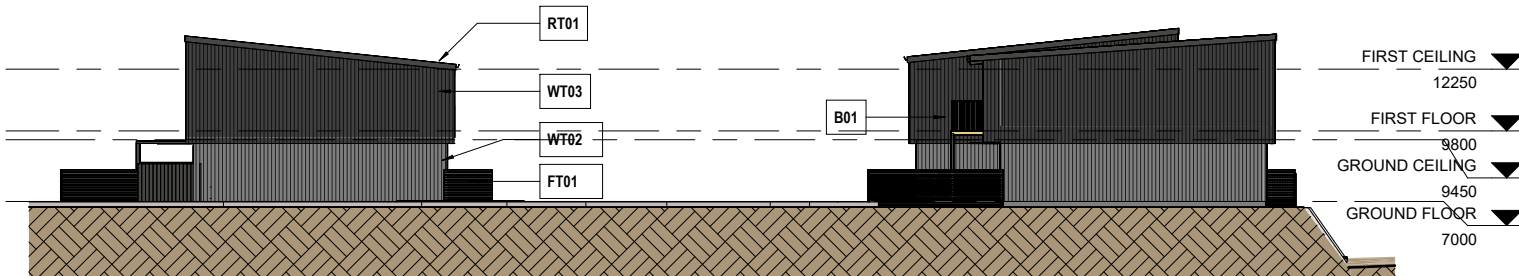
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12m Height Boundary

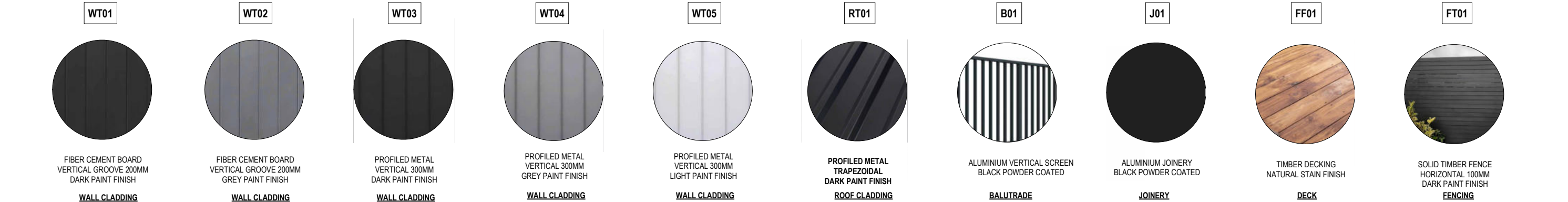


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12m Height Boundary



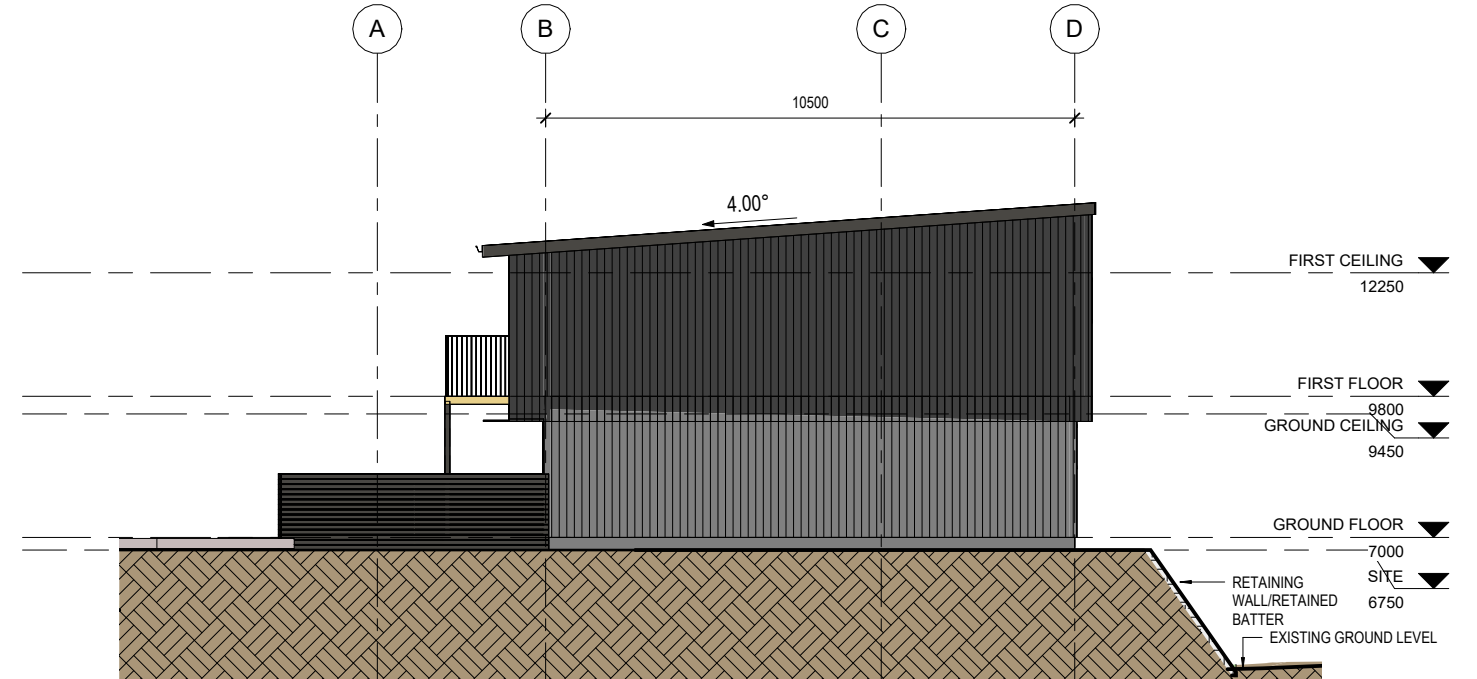
4 North Elevation
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BUILDING MATERIAL PALETTE



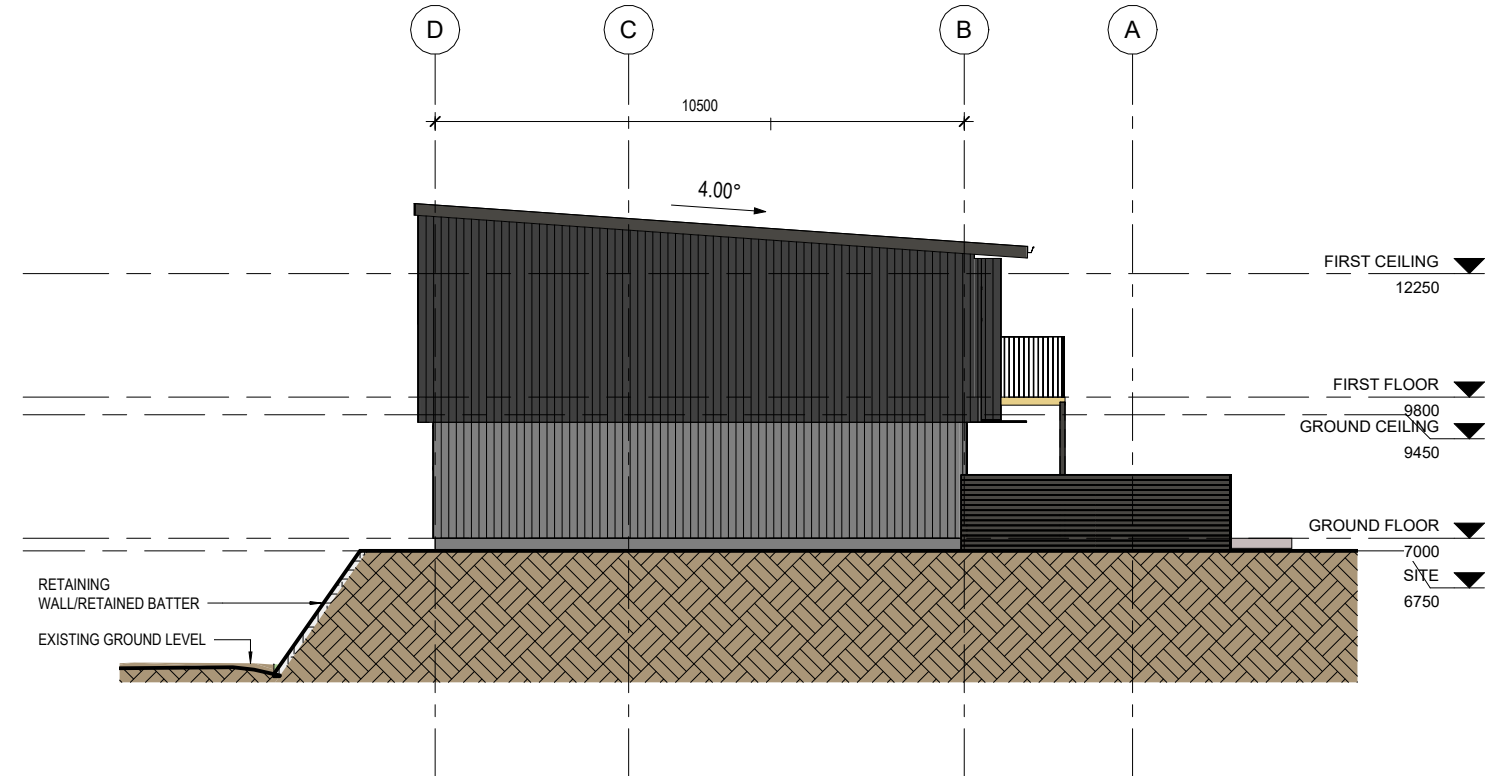
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2 North Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



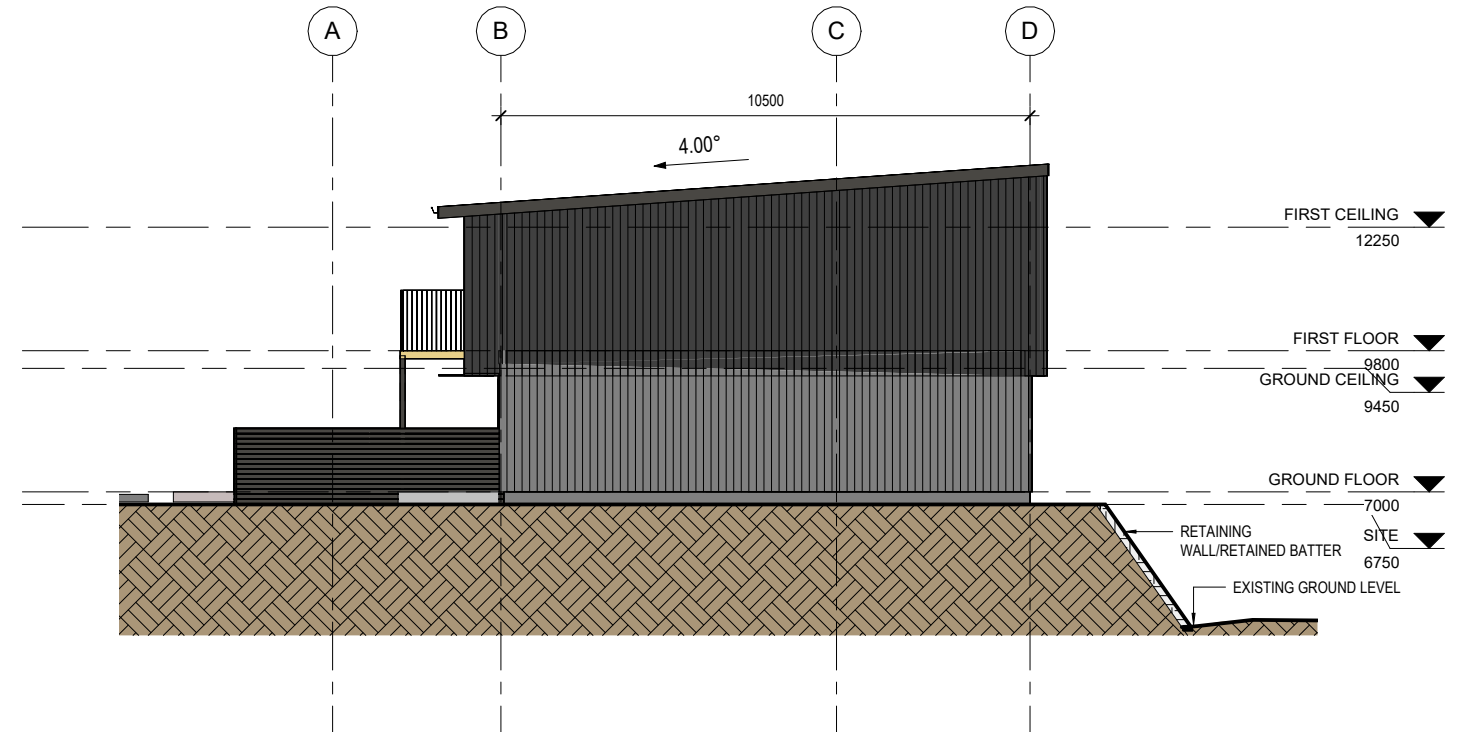
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4 South Elevation - Block A
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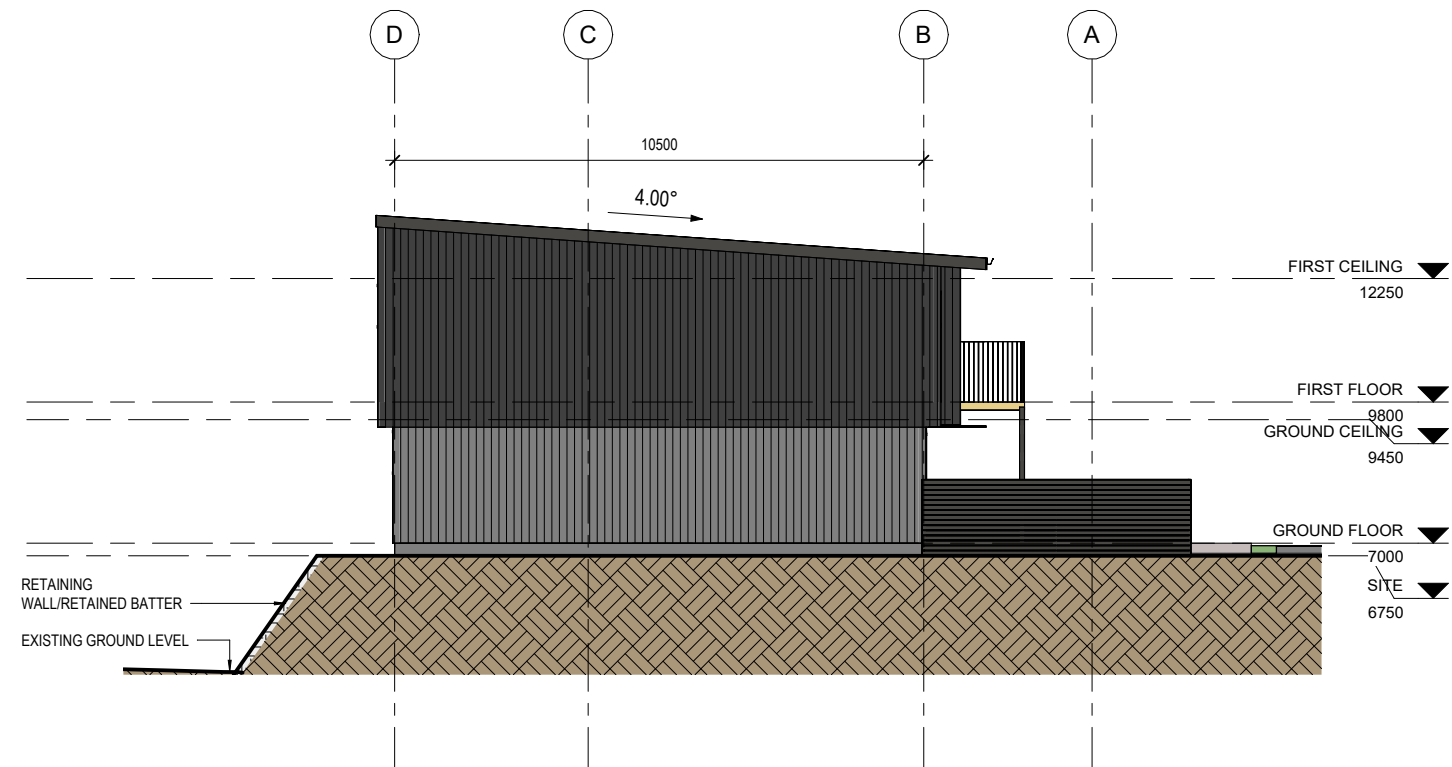
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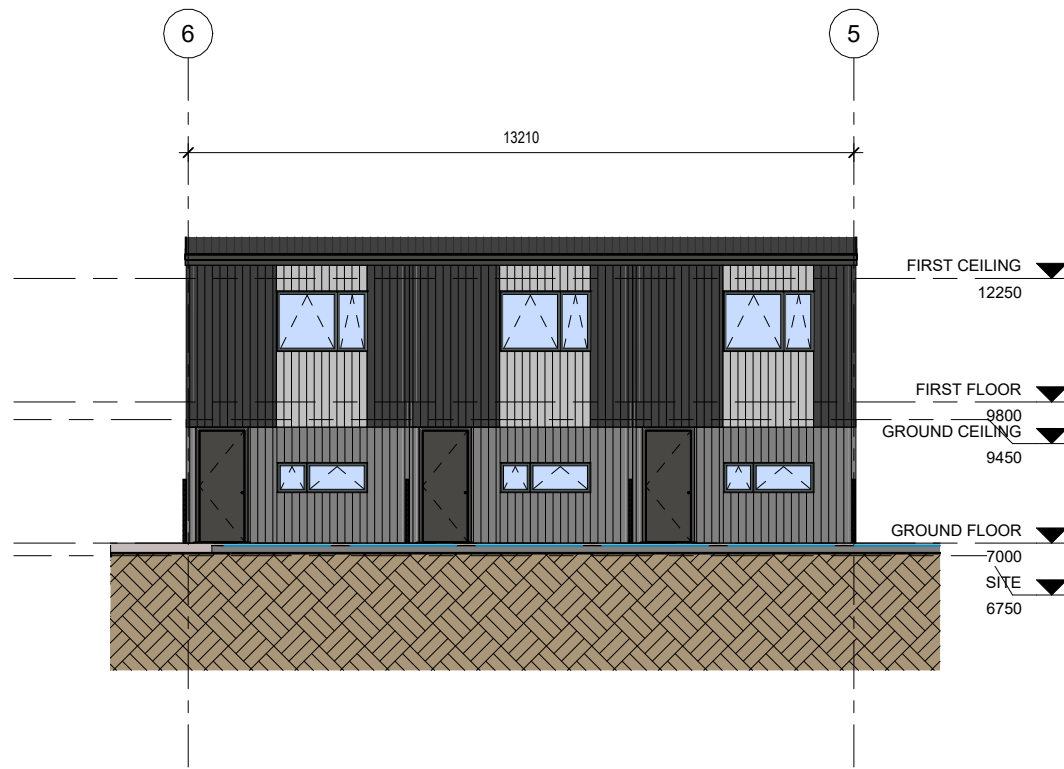
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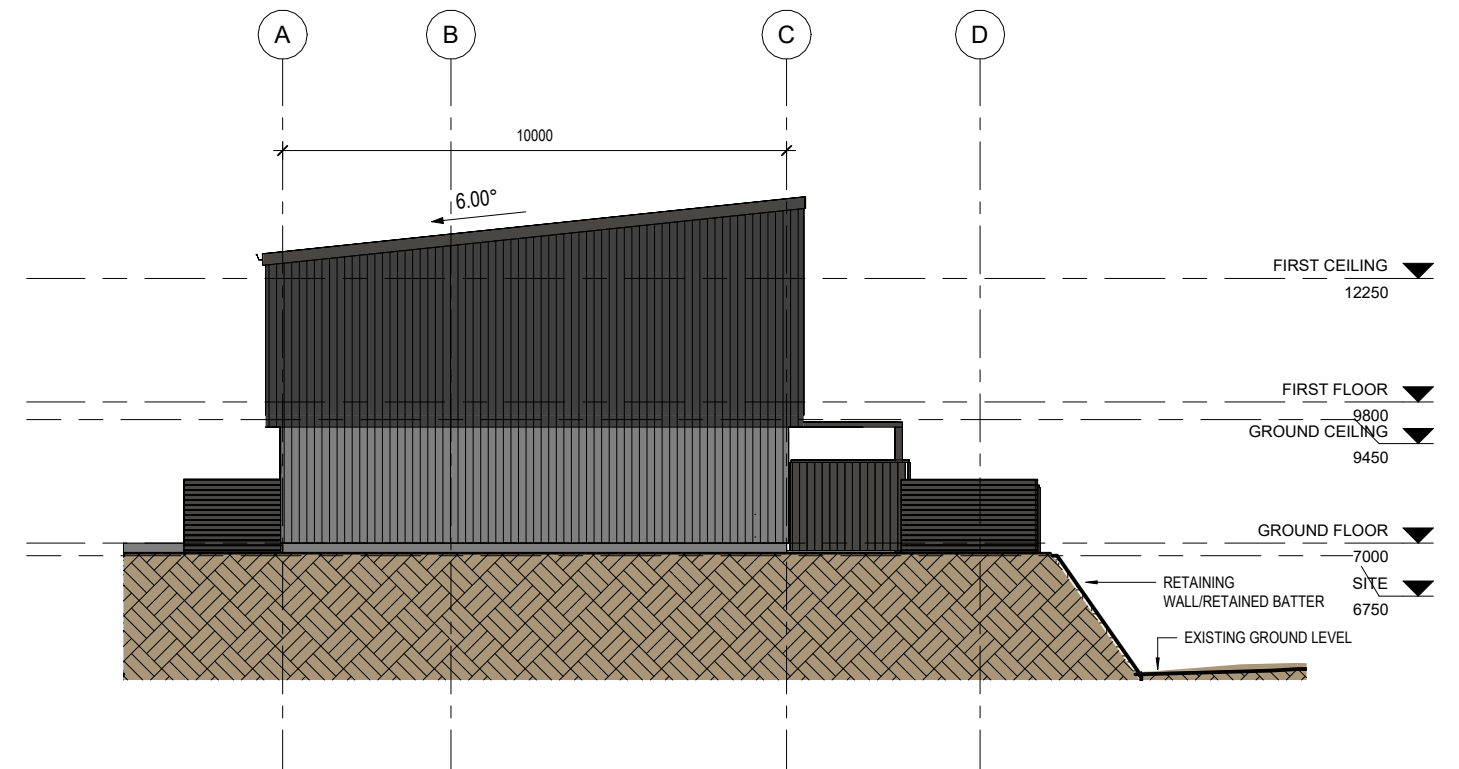
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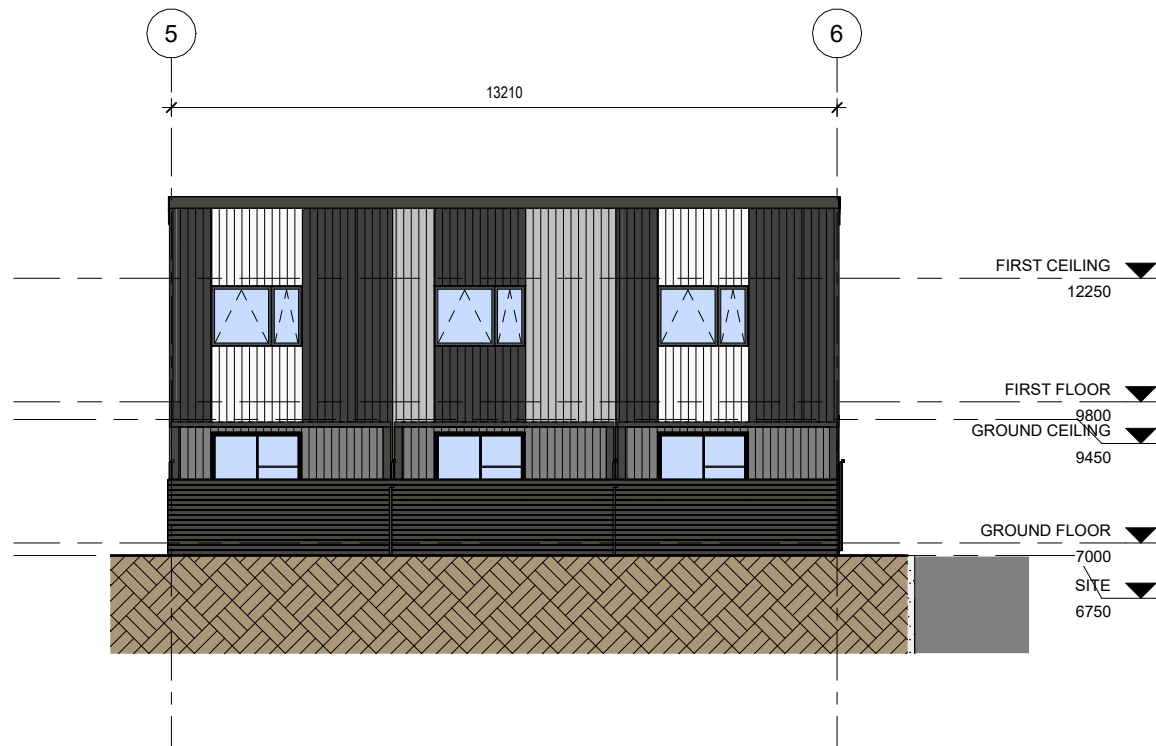
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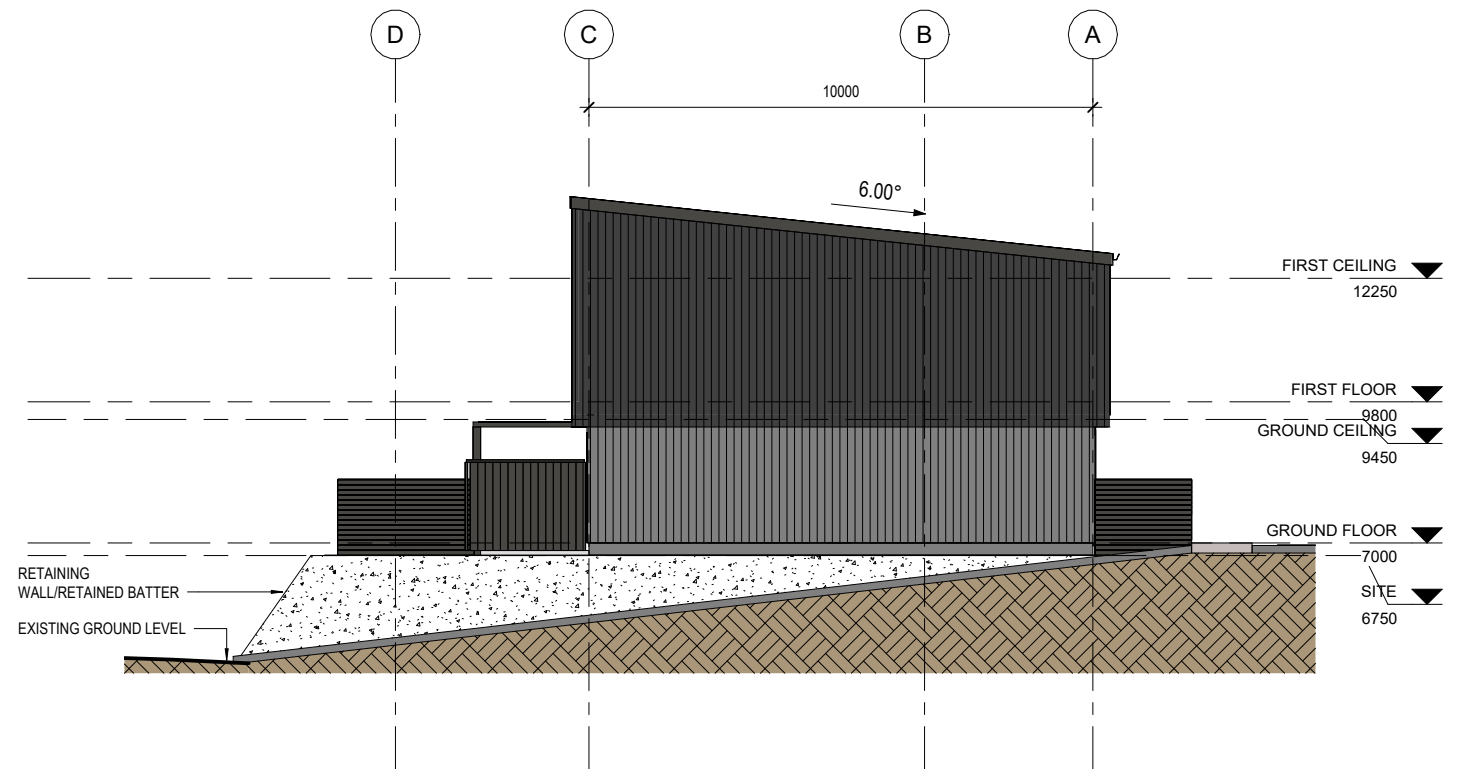
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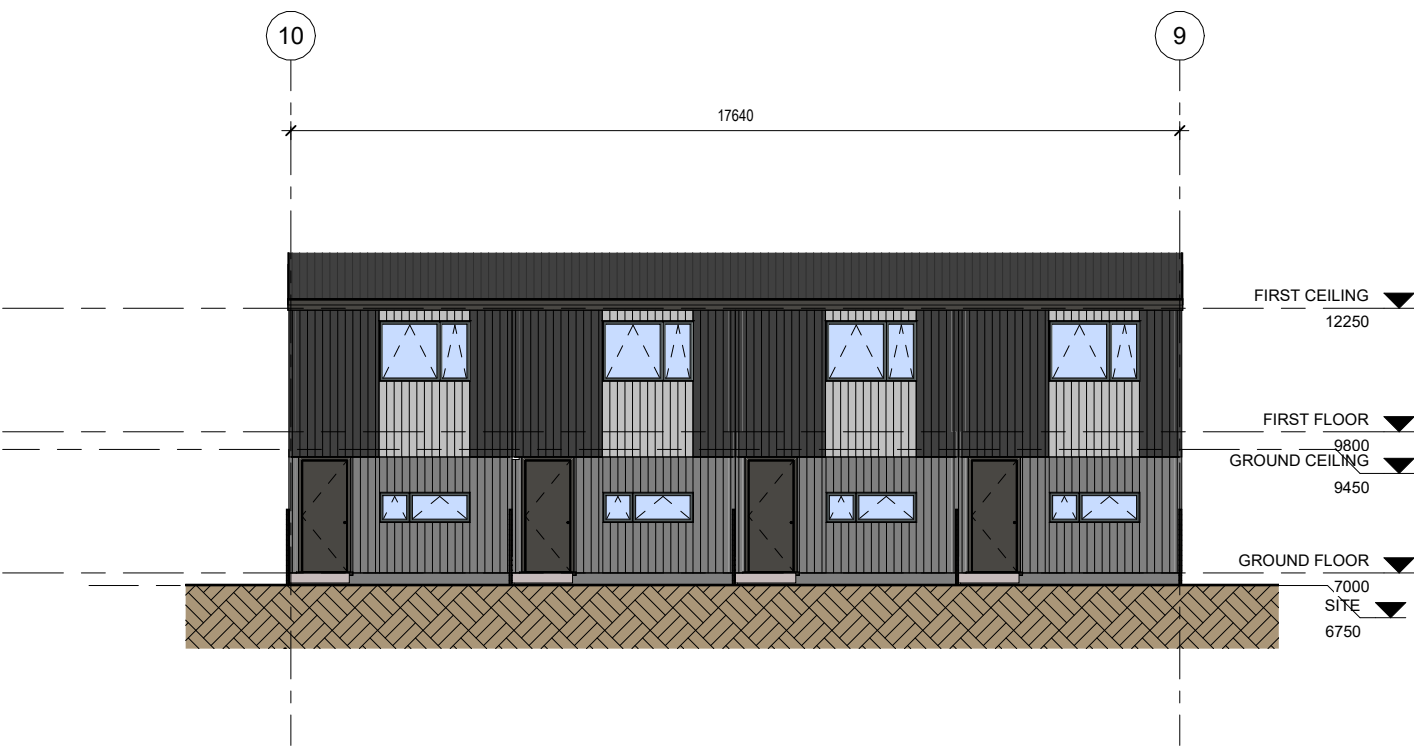
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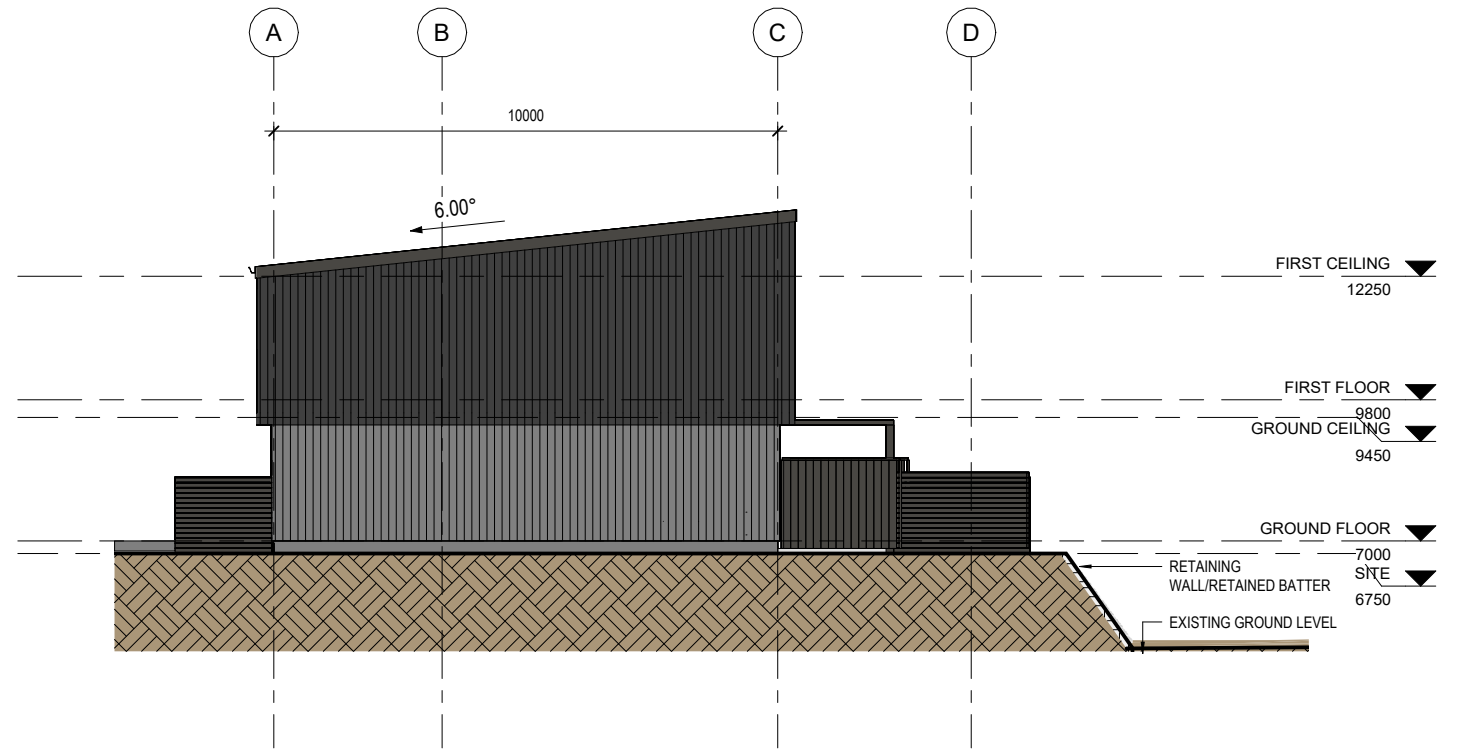
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4 South Elevation - Block C
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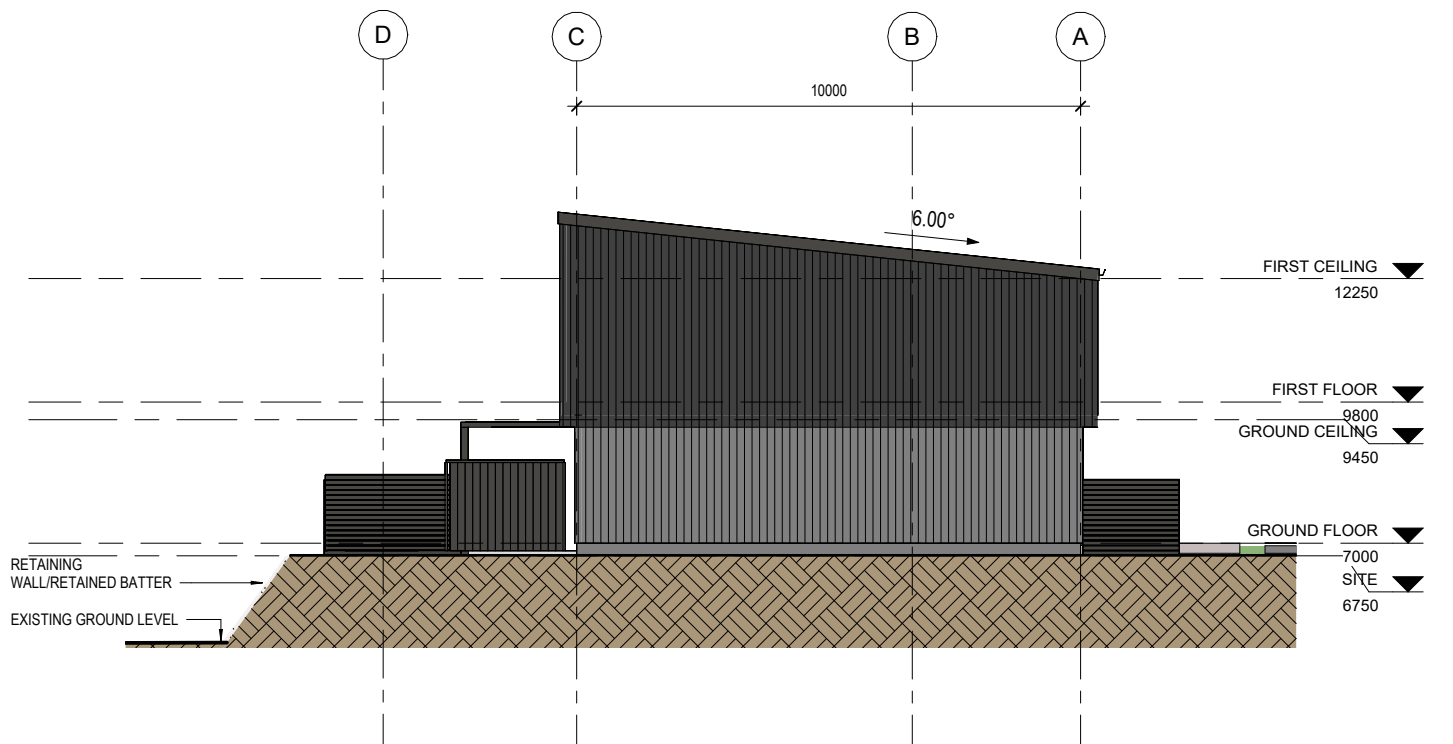
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2 North Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



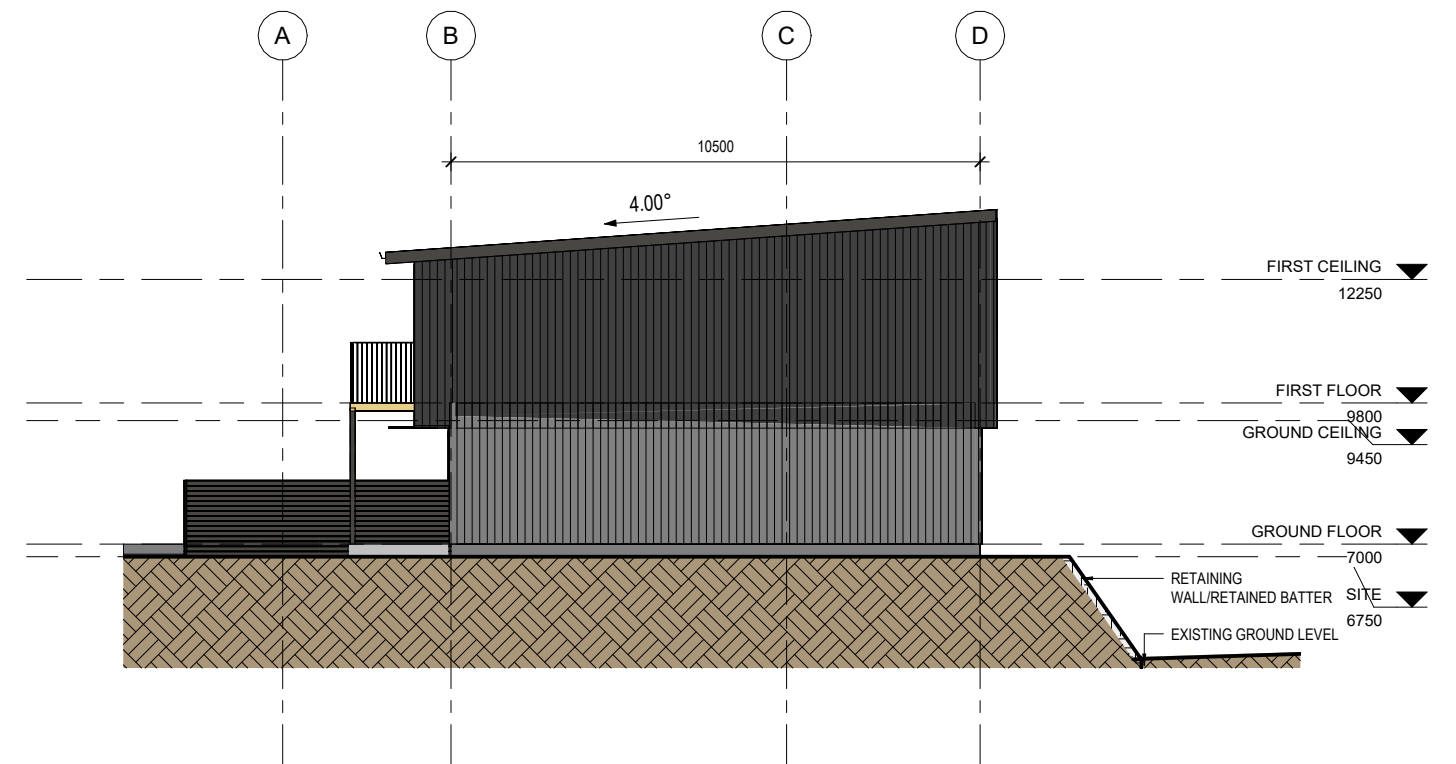
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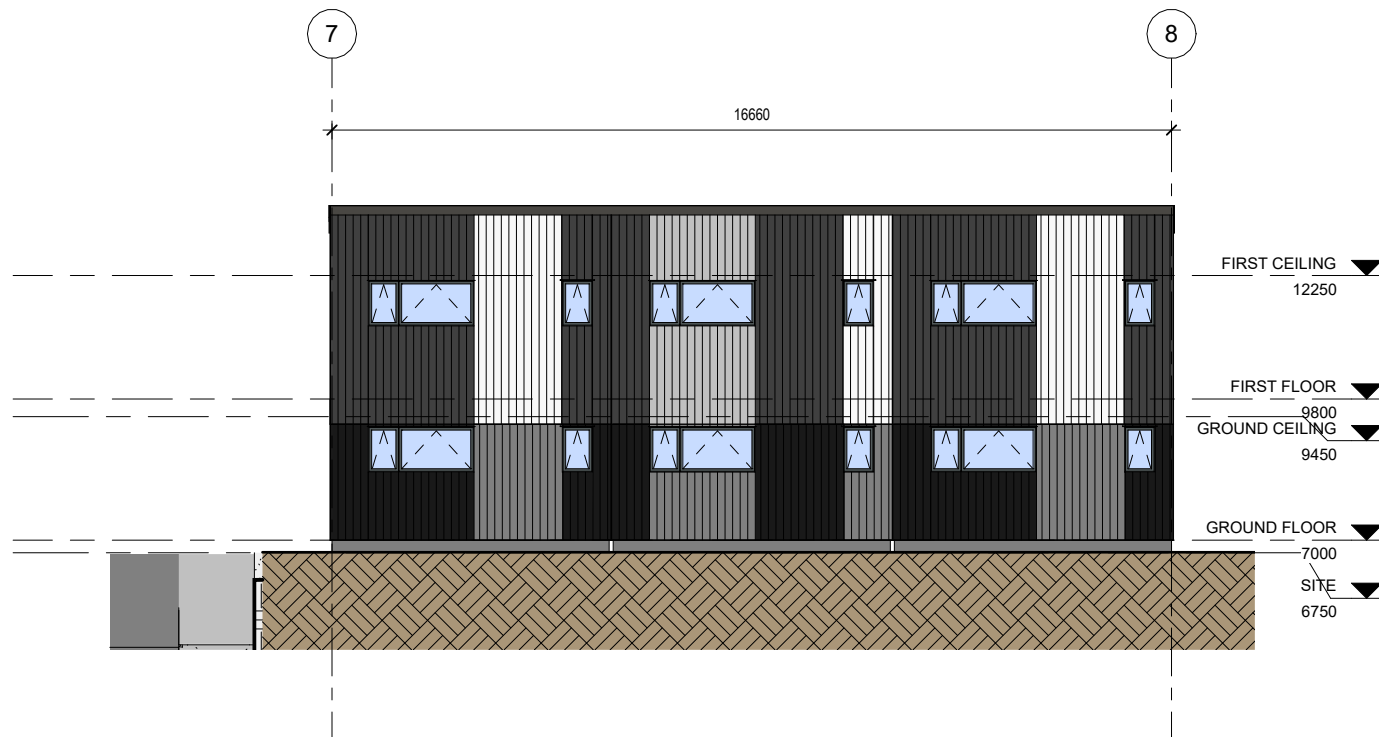
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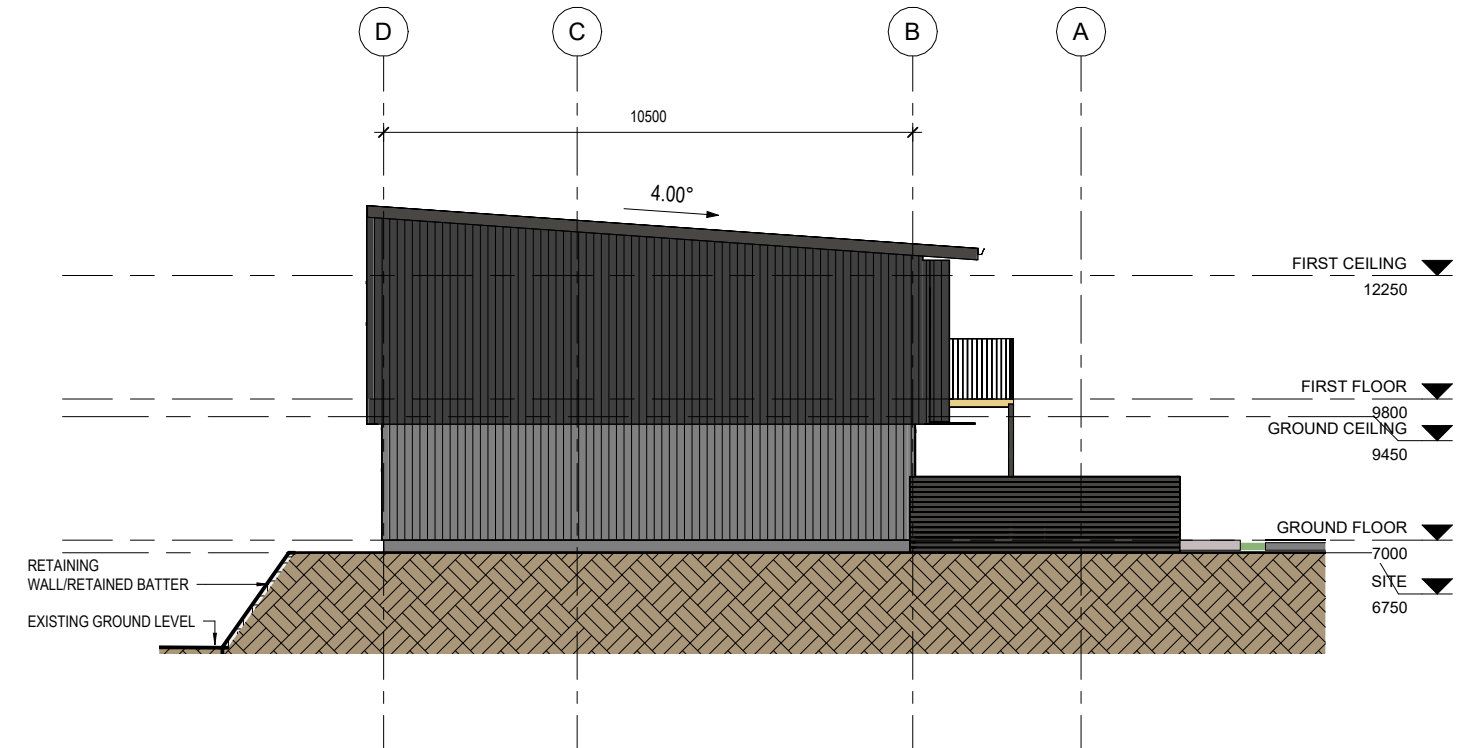
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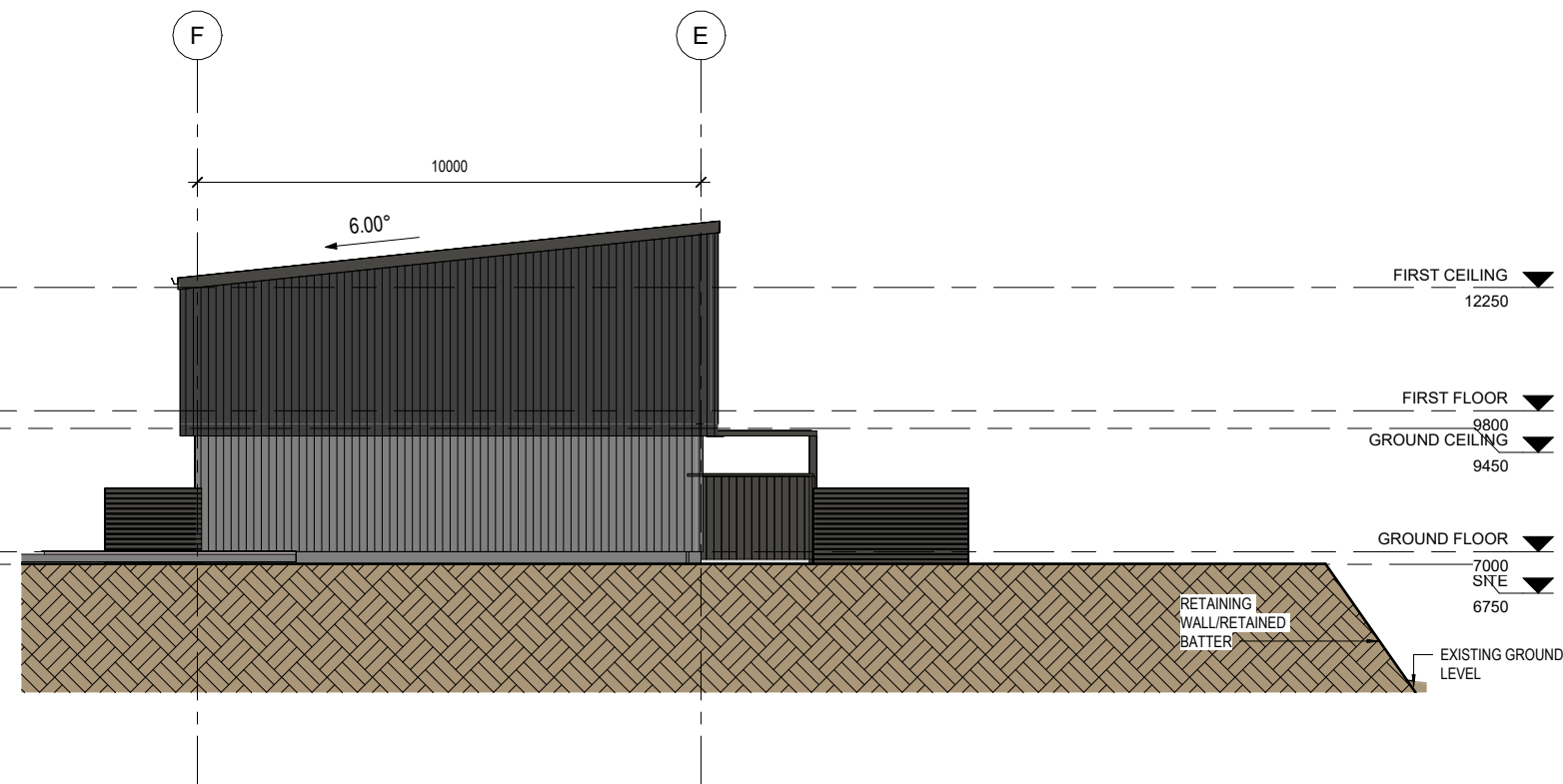
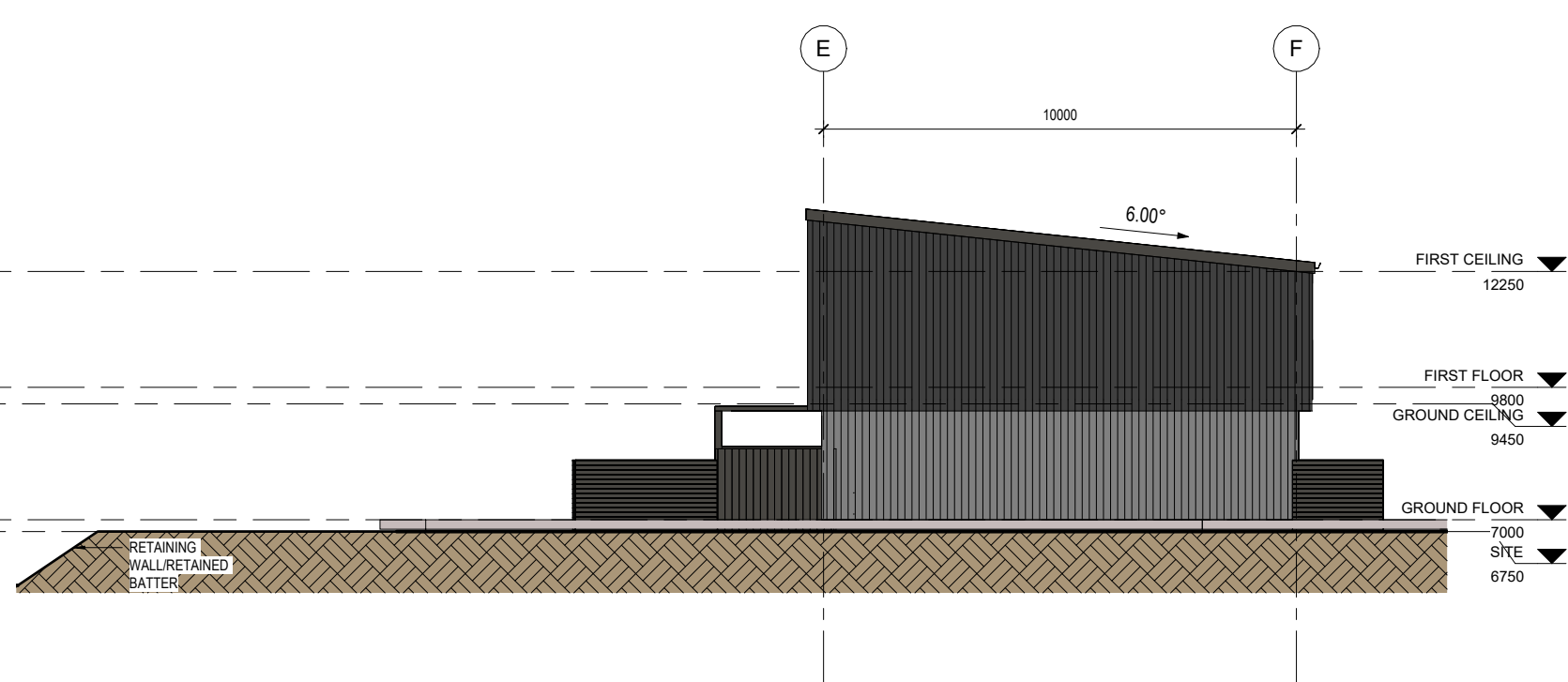
2 North Elevation - Block E
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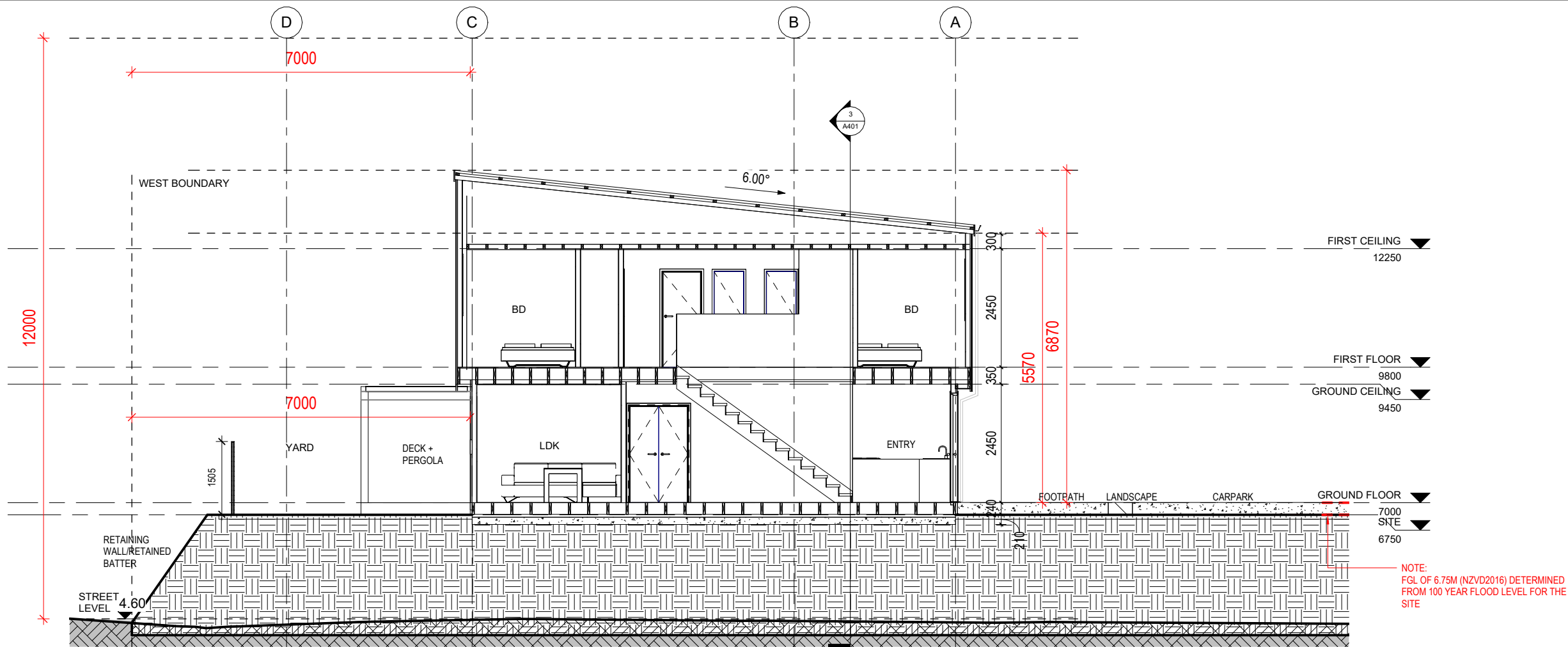


3 West Elevation - Block E
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4 South Elevation - Block E
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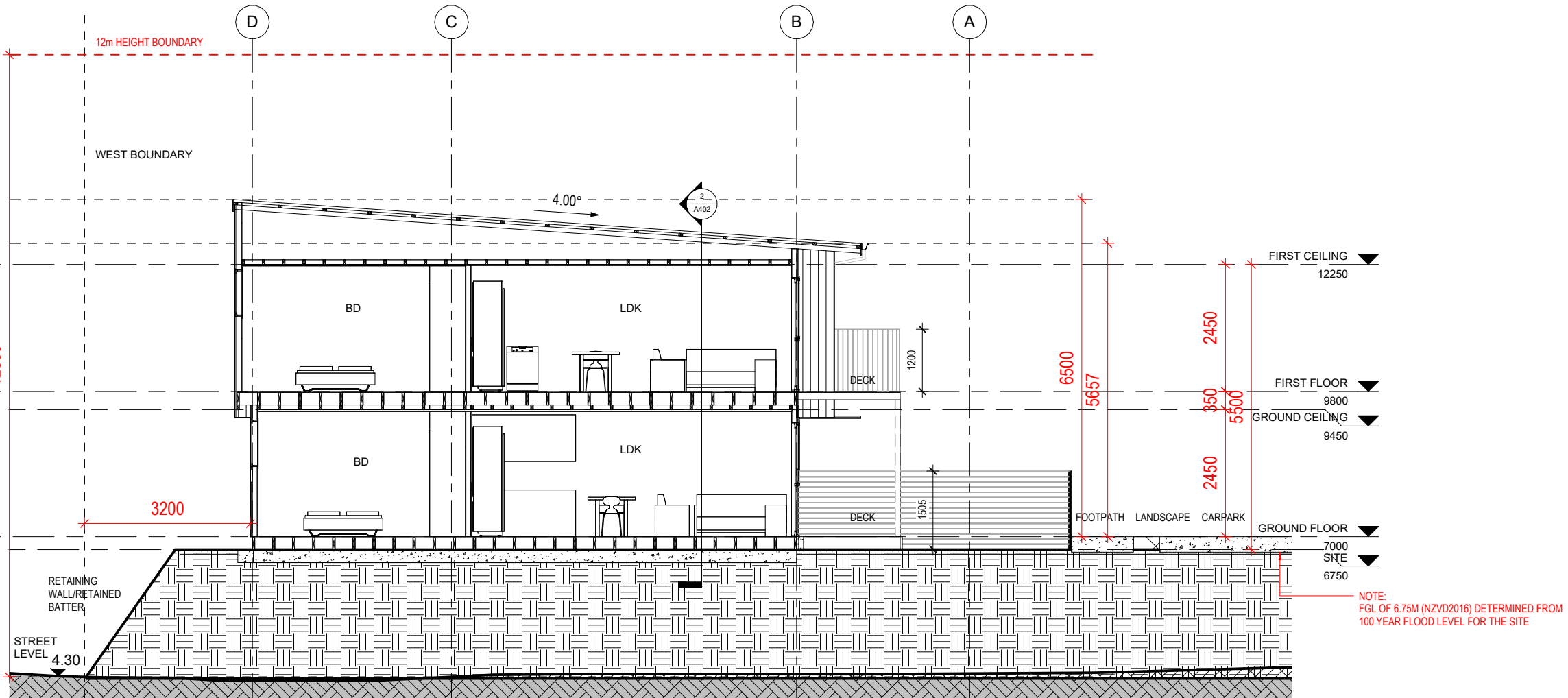




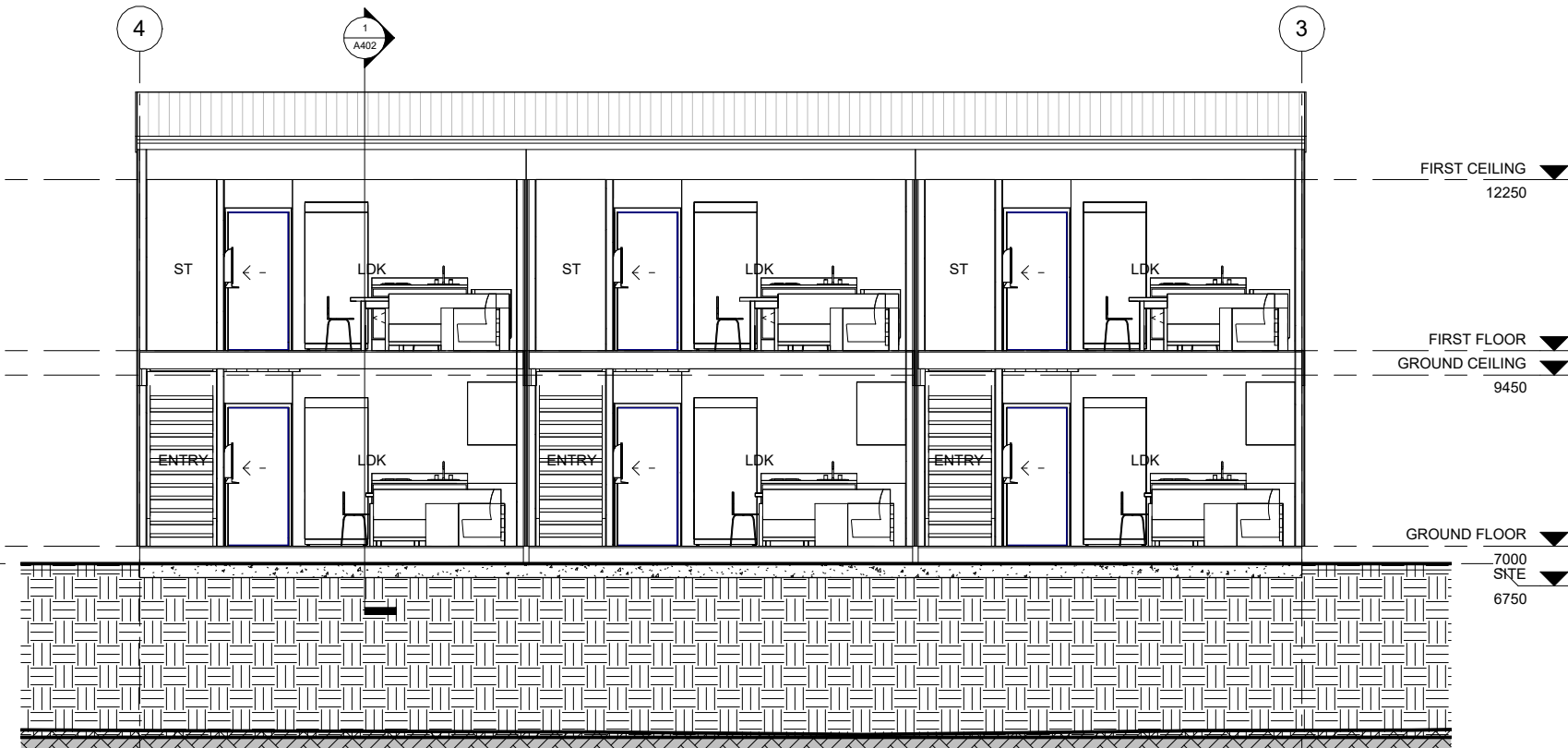
1 BLOCK C - CROSS SECTION
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3 BLOCK C - LONG SECTION
1 : 50@A1 HALF-SCALE@A3



1 BLOCK B - CROSS SECTION
1 : 50@A1 HALF-SCALE@A3



2 BLOCK B - LONG SECTION
1 : 50@A1 HALF-SCALE@A3

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6.4	APPENDIX C:	21

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Reviewed by	Aaron Parker (CPEng)
Approved by	Kelvin Kapp (CPEng)
Date Issued	8 December 2025

Hoskin Civil Quality System: Revision Details

Revision Number	N/A
Revised Sections	N/A
Revisions by	N/A
Revision Reviewed by	

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1. Introduction

This Three Waters Report has been prepared to support the proposed Far North Housing Limited development at Old Whangae Road Development, Kawakawa, shown in Figure 1. The purpose of the report is to assess the servicing requirements for water supply, wastewater, and stormwater, and to confirm that appropriate and compliant infrastructure solutions are available to support the development.

The assessment has been informed by a review of existing public infrastructure, proposed site layout drawings, regional flood information, and the FNDC Engineering Standards (May 2023). Proposed servicing solutions have been developed to ensure that the development can be integrated into the existing networks while meeting performance, resilience, and compliance requirements.

This report must be read in conjunction with the supporting appendices, which form an integral part of the assessment. These include:

- **Appendix A:** Proposed site development layout from Eclipse Architecture (20251128 FNH0769.03 Kawakawa Housing RC).
- **Appendix B:** Resource consent engineering drawings prepared for the Old Whangae Road Development.
- **Appendix C:** Flood Modelling Maps Outputs
- **Appendix D:** NRC Flood Level Report (Parcel ID 4991387), providing modelled flood information for the site.

Together, the report and its appendices provide a comprehensive overview of the existing and proposed Three Waters servicing arrangements for the proposed development.



Figure 1: Old Whangae Road Development, Kawakawa

2. Water Supply

2.1 Existing and Proposed Water Network

The site is currently serviced by two water mains:

- an existing 50 mm diameter MDPE water rider main along the east side of Old Whangae Road, and
- an existing 100 mm diameter MDPE water main along the west side of Old Whangae Road.

As illustrated in **Figure 2**, it is proposed to extend the existing 50mm rider main along the eastern side of Old Whangae Road.

Water supply connections to each development block are proposed as follows:

- **Block A & Block B:** Connected to the new extended 50 mm main on Old Whangae Road (west boundary).
- **Block C, D,E & F:** Connected to the existing 50 mm rider main on Old Whangae Road (west boundary).

This configuration ensures each block has a suitably sized service connection consistent with expected demand and network configuration.



Figure 2: Existing & Proposed Water Supply Network

2.2 Demand Calculation

Water demand has been calculated in accordance with the FNDC Engineering Standards (May 2023, Section 6.2.2).

Table 1 summarises the adopted design criteria. These criteria form the basis for domestic, peak day, and peak hourly demand calculations for the proposed development.

Domestic water demand for each block, based on the proposed unit types and expected household population, is summarised in **Table 2**. The total demand summary is presented in **Table 3**.

Table 1: Demand Calculation Criteria

Demand Calculation Criteria	
Average Domestic Day Demand	300 L/person/day
Peak Domestic & Commercial Day Factor	2
Peak Domestic & Commercial Hourly Factor	5
Average Hourly Demand on peak day	12.5 L/person/hour

Table 2: Estimated Domestic Day Demand

	Block A	Block B	Block C	Block D	Block E	Block F
Number of Units	6	6	3	4	6	5
Number of Beds per unit	1	1	2	2	1	2
Population Per Unit	2	2	4	4	2	4
Total Population per Block	12	12	12	16	12	20
Average Day Demand (L/s)	0.04	0.04	0.04	0.06	0.04	0.07
Peak Day Demand (L/s)	0.08	0.08	0.08	0.11	0.08	0.14
Peak Hourly Demand (L/s)	0.21	0.21	0.21	0.28	0.21	0.35

Table 3: Estimated Total Demand

Total Estimated Commercial Day Demand (L/s)	
Average Day Demand (L/s)	0.29
Peak Day Demand (L/s)	0.58
Peak Hourly Demand (L/s)	1.46

2.3 Existing Capacity

2.3.1 Current Peak Day

Existing network capacity was assessed using the FNDC Kawakawa Hydraulic Water Model (2023). As shown in **Figure 3**, a current peak-day simulation indicates that pressures within the mains supplying the site range from:

- Minimum pressure: 73 m
- Maximum pressure: 88 m

These modelled results include existing demand allocations for the parcels within the development footprint. The existing modelled pre-development demand for the existing Hunter Star Hotel is summarised in **Table 4**.

The available pressure range demonstrates that the existing network is capable of supplying the development under typical peak-day conditions, with ample residual pressure above FNDC's minimum 25m service level requirement.

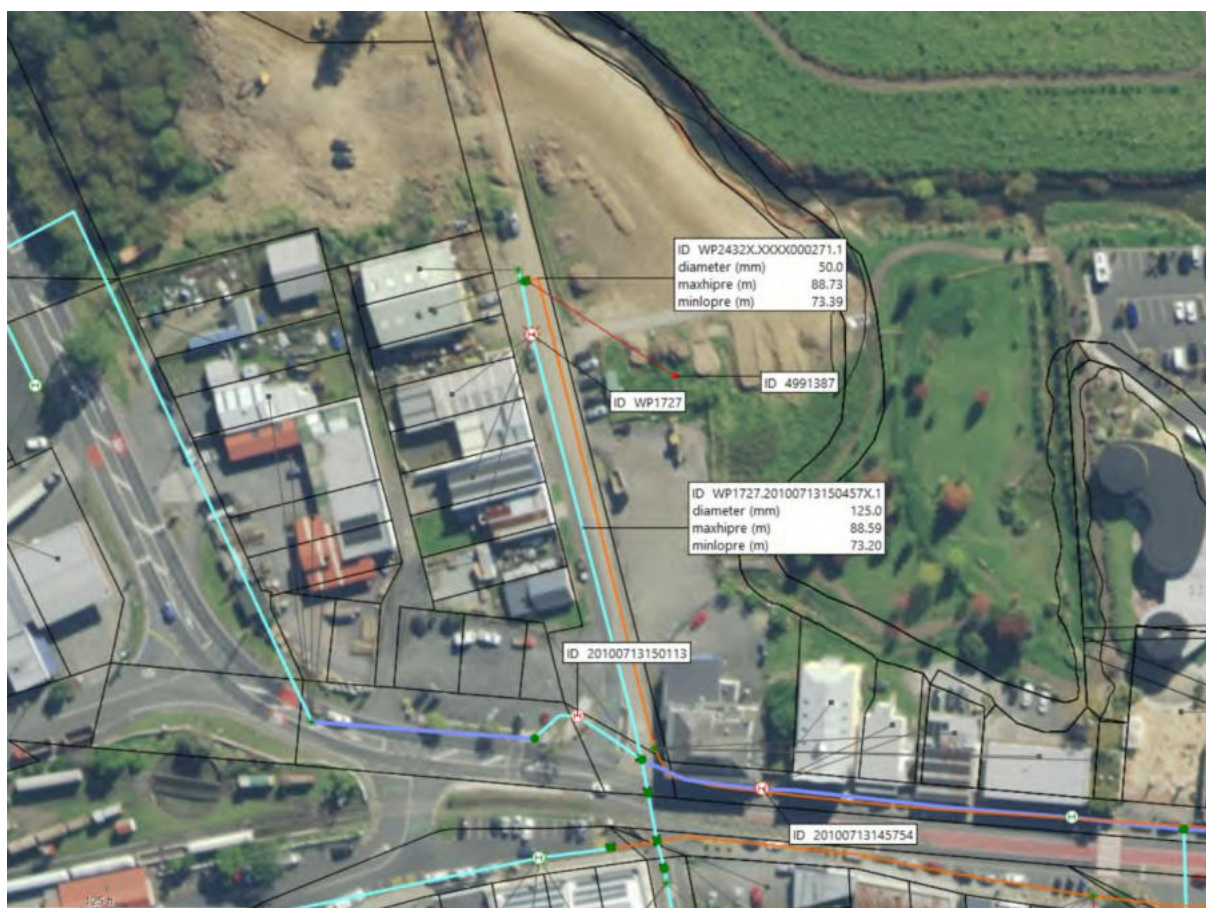


Figure 3: FNDC Kawakawa Hydraulic Model Peak Day Scenario

Table 4: Existing Modelled Demand

Hunter Star Hotel Modelled Demand	
Parcel ID	Average Demand (l/s)
4991387	0.0341

2.3.2 Firefighting

A Fire Hydrant Test was conducted using the FNDC Kawakawa hydraulic model. As shown in **Table 5**, the nearby hydrants are capable of providing:

- FW2 (12.5 L/s) with residual pressures between 42–44 m, and
- Max Fire Flow (18 L/s) with residual pressures at 11 m,

all of which exceed the minimum 10 m residual pressure required in SNZ PAS 4509:2008.

Given that the development's Peak Hourly Demand is only 1.46 L/s, the additional demand loading is negligible relative to the tested FW2/Max firefighting flows. The network therefore has sufficient capacity to meet both domestic peak demands and firefighting requirements.

Table 5: Fire Flow Analysis

Hydrant	Minimum Fire Flow FW2 (L/s)	Residual Pressure at Minimum Fire Flow (m)	Maximum Fire Flow FW3 (L/s)	Residual Pressure at Maximum Fire Flow (m)	Pre-Test Pressure (m)
WP1727	12.5	43.87	18.47	11.28	83.24
20100713150113	12.5	42.56	18.37	11.16	81.46
20100713145754	12.5	42.03	18.38	11.17	80.34

2.4 Summary

The following conclusions are made with respect to the water supply servicing for the Old Whangae Road development:

- Blocks A & B will be serviced from the new extended 50 mm main on Old Whangae Road (west boundary).
- Block C, D, E & F will connect to the existing 50 mm rider main on Old Whangae Road (west boundary).

The calculated Peak Hourly Demand of 1.46 L/s is minor relative to the available network capacity. The existing hydraulic model demonstrates a minimum pressure of 73 m under peak-day conditions. A 12.5 L/s firefighting drawdown reduces pressure by approximately 40 m, meaning the significantly smaller development demand will not compromise minimum pressure requirements.

Firefighting performance meets SNZ PAS 4509:2008 requirements up to a FW2 classification, retaining the required 10 m residual pressure. The system does not meet category FW3.

Overall, the existing water supply network has sufficient capacity to service the proposed development.

3. Wastewater

3.1 Existing and Proposed Wastewater Network

The site is currently serviced by a 300 mm concrete gravity wastewater main that runs from West to through the southern side of the proposed development.

As shown in **Figure 4**, the development will be reticulated internally by a series of 150 mm PVC gravity wastewater lines that will collect flows from each block and convey them to the receiving public network.

Wastewater connections for each block are proposed as follows:

- Block A to F: Connected to a new private 150 mm network discharging to the existing 300mm concrete gravity main.

This configuration ensures that each block is serviced by an appropriately sized wastewater connection, consistent with expected flow contributions and FNDC reticulation requirements.



Figure 4: Existing and Proposed Wastewater Network

3.2 Contributing Flows Calculation

Wastewater flow contributions have been calculated in accordance with the FNDC Engineering Standards (May 2023, Section 5.2.2).

Table 6 summarises the adopted design criteria, which form the basis for calculating:

- Average Daily Dry Weather Flow (ADWF)
- Peak Dry Weather Flow (PDWF)
- Peak Wet Weather Flow (PWWF)

Residential wastewater contributions from each block are summarised in **Table 7** and the total estimated development flows are summarised in **Table 8**.

Table 6: Wastewater Flow Contribution Design Criteria

Wastewater Flow Contribution Calculation Criteria	
Average Daily Dry Weather Flows (ADWF) for Residential Activities	200 L/person/day
Peaking Factors to be applied to ADWF Flows for Dry weather peak daily flow (PDWF)	2.5
Peaking Factors to be applied to ADWF Flows for Peak wet weather flow (PWWF)	5

Table 7: Residential Flow Contribution

	Block A	Block B	Block C	Block D	Block E	Block F
Number of Units	6	6	3	4	6	5
Number of Beds per unit	1	1	2	2	1	2
Population Per Unit	2	2	4	4	2	4
Total Population per Block	12	12	12	16	12	20
ADWF (L/s)	0.03	0.03	0.03	0.04	0.03	0.05
PDWF (L/s)	0.06	0.06	0.06	0.07	0.06	0.09
PWWF (L/s)	0.14	0.14	0.14	0.19	0.14	0.23

Table 8: Estimated Total Flow Contribution

Estimated Total Flow Contribution (L/s)	
ADWF (L/s)	0.19444
PDWF (L/s)	0.38889
PWWF (L/s)	0.97222

3.3 Existing Capacity

As part of the Local Water Done Well programme, a previous wastewater network capacity assessment was undertaken using the hydraulic performance criteria requested by Far North District Council (FNDC). The following hydraulic capacity criteria were applied to determine the pass/fail results:

- FNDC ES FNDC ES - May 2023 Final, Clause 5.1.3. Performance Standards, d) Ensure that the proposed system does not surcharge at the peak design wet weather flow and is designed not to overflow.

Figure 5 (site outlined in blue) presents the traffic-light assessment of the wastewater reticulation network. The results indicate that there are no immediate capacity constraints at the proposed development's discharge point. However, capacity limitations do exist further downstream within the trunk network conveying flows toward the wastewater treatment plant.

FNDC is currently progressing a programme of wastewater network and treatment upgrades in Kawakawa through the Infrastructure Acceleration Fund (IAF) administered by Kāinga Ora. These works are intended to increase conveyance capacity, reduce wet-weather overflows, and improve overall system resilience to accommodate future township

growth. The upgrade package includes improvements to key reticulation routes, additional network storage, and enhancements to the treatment process.

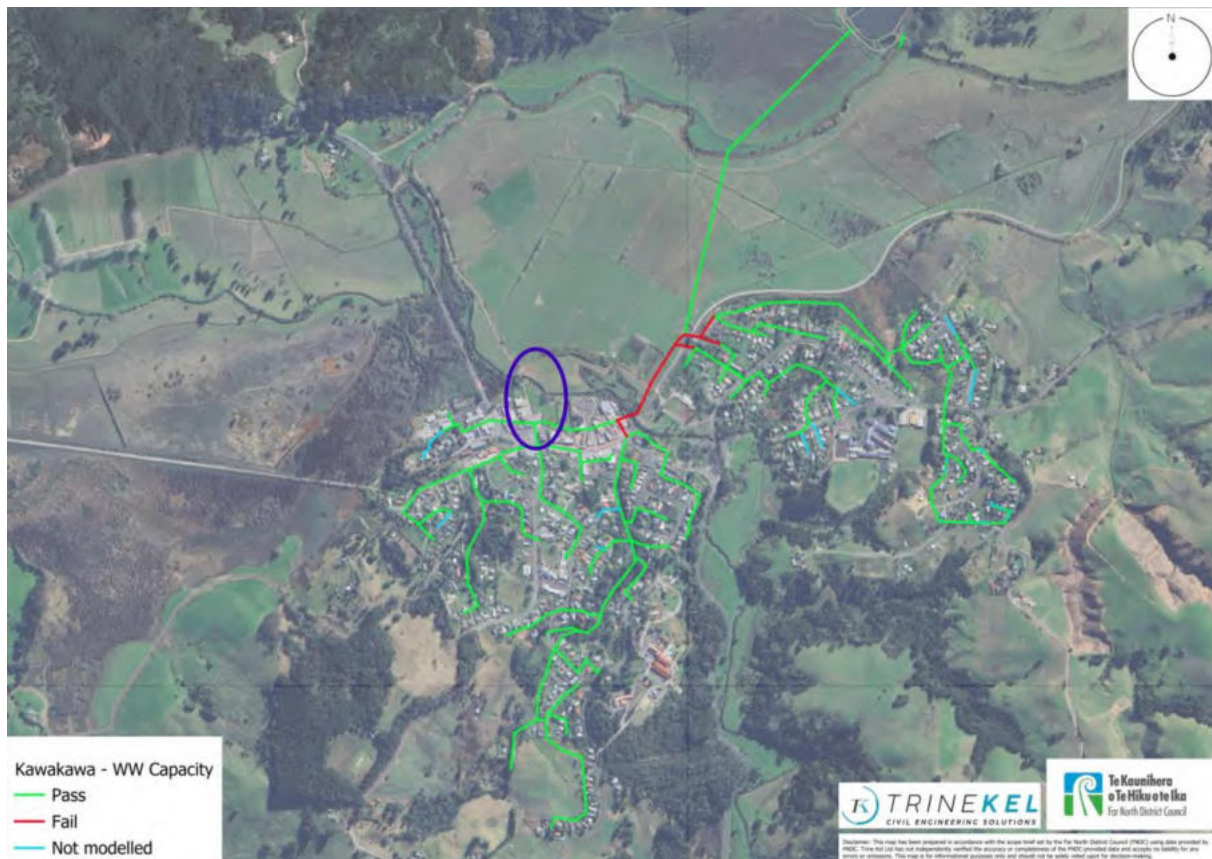


Figure 5: Local Water Done Well Capacity Assessments

3.4 Summary

The proposed development will connect to the existing 300 mm concrete gravity wastewater main located along the southern boundary of the site, with internal reticulation provided by new 150 mm PVC gravity lines servicing each block.

Wastewater flows have been calculated in accordance with FNDC Engineering Standards (May 2023), using standard ADWF, PDWF, and PWWF design criteria. The resulting total Peak Wet Weather Flow for the development is estimated at 0.97 L/s, confirming relatively low contributing flows.

A review of the Local Water Done Well wastewater capacity assessment indicates that while the development's discharge point has no immediate capacity constraints, sections of the downstream trunk network do exhibit existing limitations under peak wet-weather conditions. FNDC is addressing these constraints through planned upgrades funded via the Kāinga Ora Infrastructure Acceleration Fund, including reticulation improvements, increased storage, and treatment plant enhancements. These works are expected to improve conveyance capacity, reduce overflows, and support future growth in Kawakawa.

4. Stormwater

4.1 Existing and Proposed Stormwater Network

The site is currently serviced by an unlined channel to the east, with only minor existing stormwater infrastructure located within Old Whangae Road. As shown in **Figure 6**, a new 525 mm diameter pipe is proposed to replicate pre-development overflow behaviour from the unlined channel. This is described in further detail in **Section 4.2: Flood Modelling**.

Stormwater reticulation for each block is proposed as follows:

- Blocks A to F will be serviced via a new private stormwater network discharging to the northern side of the existing diversion bank.

Stormwater neutrality (attenuation) is not required for this development because the site is located at the lower end of the catchment, and all stormwater discharges north of the diversion bank. Potential changes to overland flow paths resulting from raising site levels have been assessed, with only minor effects observed between pre- and post-development scenarios.

This design ensures that stormwater runoff is managed in a manner consistent with existing discharge pathways, without generating adverse effects on the upstream or downstream public systems or properties.



Figure 6: Existing and Proposed Stormwater Network

4.2 Flood Modelling

Trine Kel Limited have been engaged by Far North Housing Limited to undertake comprehensive 2D flood modelling to assess the post-development impacts of the proposed medium-density housing project at Old Whangae Road, Kawakawa (Lot 1 DP 63674). The objective of the modelling is to compare existing flood conditions with those under the proposed development and to assess any potential changes in flood behaviour.

The modelling was based on the Northland Regional Council's Regionwide Kawakawa Catchment TUFLOW Model (M15). The regional model does not explicitly include detailed local stormwater infrastructure. For application to the proposed development site, the model was refined using updated topographical data, surveyed culverts, and key stormwater assets, providing a more representative basis for comparing existing and proposed scenarios. Refer to **Figure 7**, which provides an overview of the model extent and key features.

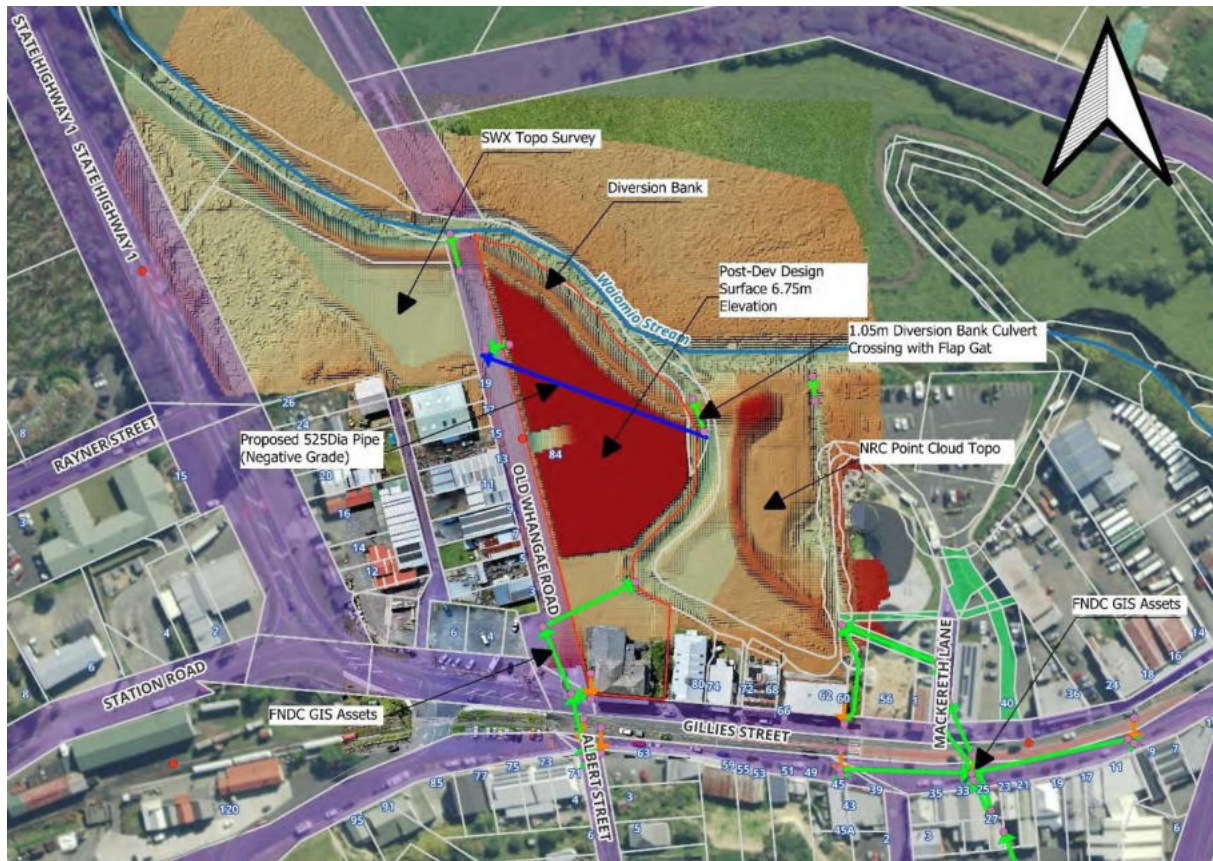


Figure 7: New Proposed Old Whangae Road, Kawakawa (Lot 1 DP 63674) FNHL Development, Flood Model

4.2.1 Model Development

4.2.1.1 Methodology

The modelling involved the following key steps:

1. Base Model Review: Set up the NRC M15 base model, ran initial simulations, and compared outputs against NRC results to confirm suitability as the foundation.
2. Data Collection:
 - Relevant FNDC stormwater infrastructure (FNDC online GIS data).
 - Survey Worx Topographical Survey.
 - NRC Topographical Point Cloud containing the deflection bank.
 - Proposed Post Development Surface from FNHL/Hoskin Civil.
3. Build the pre-development (existing) 1% AEP + CC model run (Model 2):
 - Base Model: NRC M15 with 1.25 m quadtree refinement in the development area.
 - Rainfall: 1% AEP 24-hour storm event, RCP 8.5 scenario, for the 2081–2100.
 - Existing Infrastructure: 3 x Culverts crossing the deflection bank + 1 Culvert Crossing Old Whangae Road + Relevant FNDC Stormwater Network.
 - DEM: NRC M15 Model DEM + NRC Point Cloud (Deflection Bank) + SWX Topo Survey (Pre-Development Site).
4. Built the proposed post-development 1% AEP + CC model run (Model 5):

- Base Model: NRC M01 with 1.25 m quadtree refinement in the Springs Flat area.
 - Rainfall: 1% AEP 12-hour storm event, RCP 8.5 scenario, for the 2081–2100.
 - Existing Infrastructure: 3 x Culverts crossing the deflection bank + 1 Culvert Crossing Old Whangae Road + Relevant FNDC Stormwater Network + **Proposed 525mm Dia negative grade stormwater pipe.**
 - DEM: NRC M15 Model DEM + NRC Point Cloud (Deflection Bank) + SWX Topo Survey (Pre-Development Site) + Proposed Post Development Design Surface at elevation 6.75m (NZVD 2016).
5. Produce final model runs on the existing and proposed model scenarios.
 6. Produce afflux (flood depth difference) maps between pre-development and post development scenarios.

4.2.1.2 Calibration & Validation

The NRC M15 Regionwide TuFlow model was previously calibrated against the January 2011 flood event using two river gauges: Waiharakeke River at Willowbank and Tirohanga River below Old Mill. This calibration was retained as part of the proposed medium-density housing project at Old Whangae Road, Kawakawa refinement to ensure consistency with the NRC model. No additional calibration was carried out, as the model builds directly on NRC's validated model and retains its calibration parameters.

4.2.1.3 Model Outputs

Table 9 shows the deliverables that were generated refer to **Appendix C**:

Table 9: Flood Modelling Maps Output Register (Appendix C)

Flood Depth Mapping: Maximum depth for existing and proposed cases.	Difference Mapping: Raster outputs highlighting increases/decreases in flood depth between the existing (pre-development) and post-development scenarios.
<ul style="list-style-type: none"> • 078-SWC-100_00: Pre-Development (Existing) Ground + Deflection bank Flood Depth – Model 2 (100yr + CC) • 078-SWC-102_01: Post-Development Ground + Deflection bank Flood Depth – Model 4 (100yr + CC) 	<ul style="list-style-type: none"> • 078-SWC-103_01: Pre & Post Maximum Flood Depth Differences (100yr + CC) • 078-SWC-104_01: Pre & Post Flood Depth Differences (100yr+CC 16hr time interval)

4.2.1.4 Model Results Summary

At the maximum flood depth of the 1% AEP (24-hour) storm event under the RCP 8.5 (2081–2100) climate change scenario, the model results indicate less than 5 mm difference in flood depth between the pre- and post-development scenarios. Refer to the pre and post-development maximum depth-difference map in **Appendix C: 078-SWC-103**.

This minimal variation occurs because floodwaters back up from the north-west of the site, creating a ponded (dam-like) condition across the wider floodplain. Under these conditions, the flood extent pushes southward, fully submerging the pre-development ground surface and forming an inundated basin around the elevated post-development platform. The post-

development platform remains above the peak flood level but produces similar maximum flood extents to the pre-development scenario.

However, before this full ponding condition is established, when surface runoff is still moving toward the north-western flood area, more noticeable differences in overland flow paths and shallow inundation occur between the two scenarios, particularly around 16 hours into the 30-hour model run. These localised variations result from changes to surface grading in the post-development layout.

In the pre-development scenario (**Figure 8**), the unlined eastern channel becomes inundated and is hydraulically governed by the 1.05 m diameter culvert with a flap gate through the diversion bank. When downstream water levels equal or exceed upstream levels, the flap gate closes, preventing outflow and causing the eastern channel to back up and overflow at its north-western end.

In the post-development scenario (**Figure 9**), where a 525 mm diameter negative-grade pipe is proposed, the same hydraulic control occurs; however, once backing-up begins, overflow from the channel is conveyed through the new pipe beneath the site and discharged to a scruffy dome west of Old Whangae Road. Refer to the pre and post-developments 16hr-interval depth-difference map in **Appendix C: 078-SWC-104**.

Overall, the post-development scenario has a negligible effect at peak flood depth during the 1% AEP event, as both surfaces are fully inundated within the same floodplain. Smaller, more frequent storm events are expected to exhibit more noticeable differences; however, these are appropriately managed through the inclusion of the proposed 525 mm negative-grade stormwater pipe.

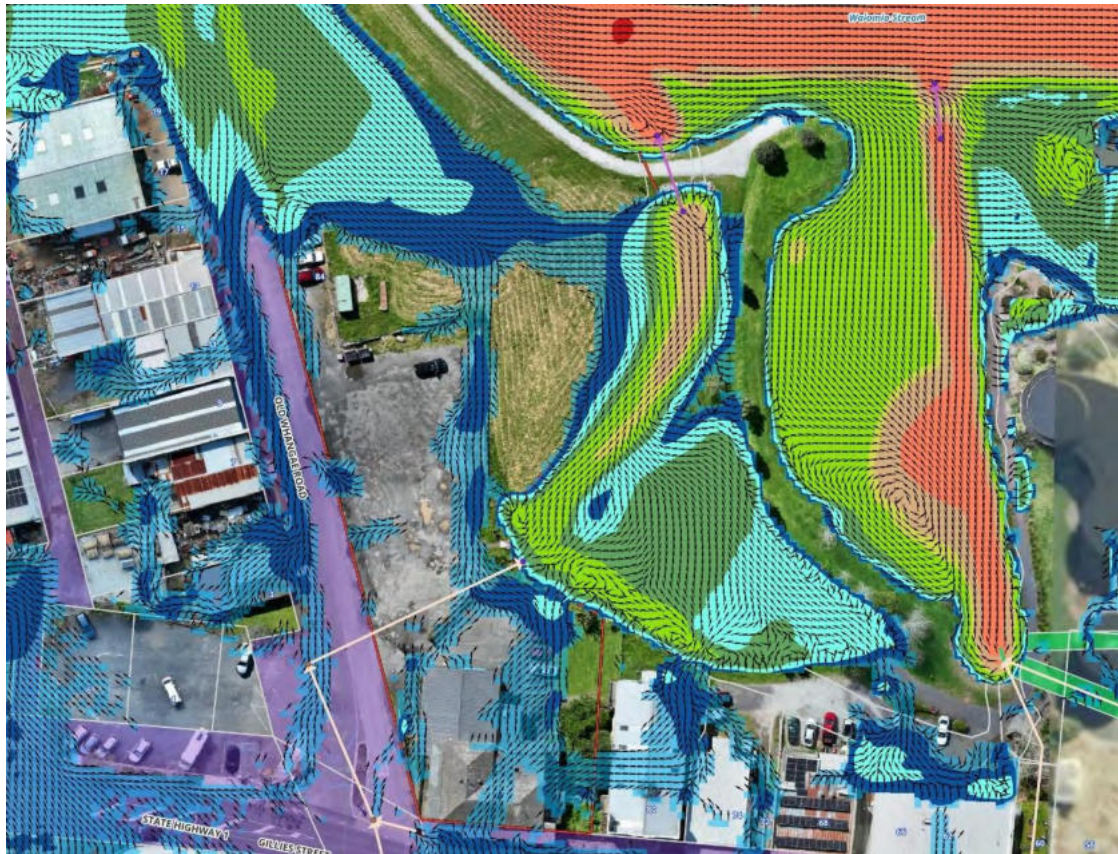


Figure 8: Pre-Development Scenario Flood Depth @ 16hr into the Storm Duration

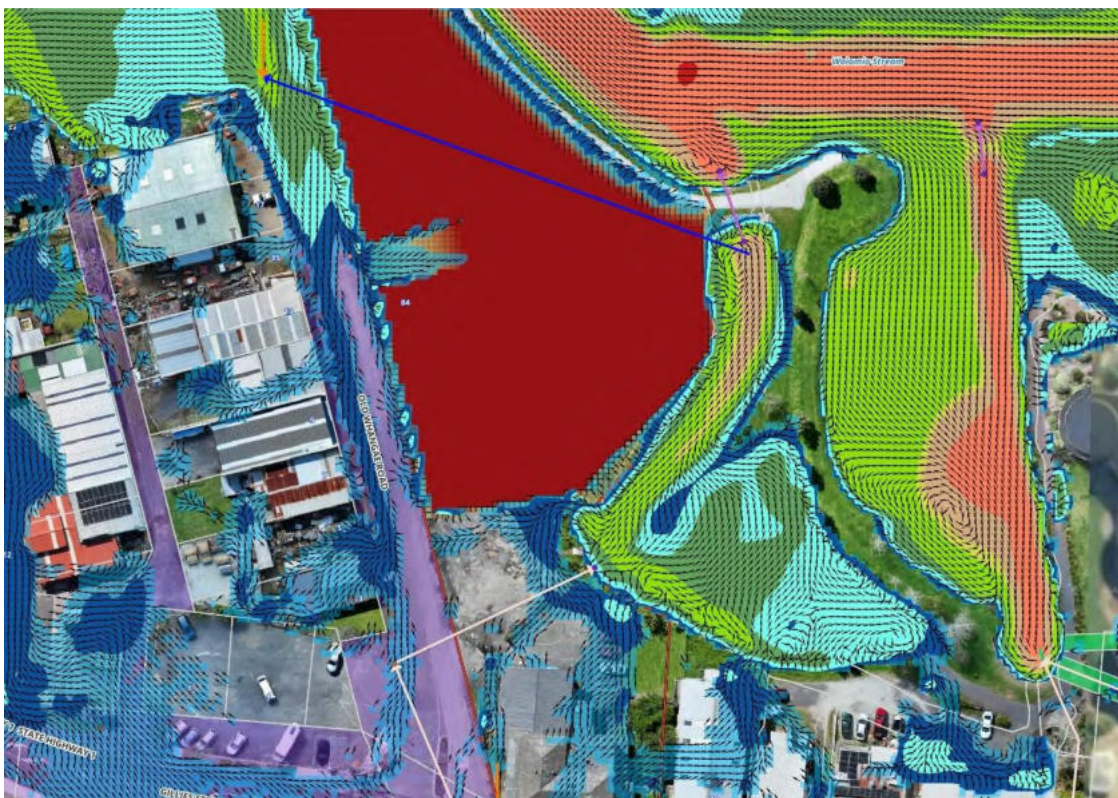


Figure 9: Figure 3: Post-Development Scenario Flood Depth @ 16hr into the Storm Duration

4.2.1.5 Limitations and Assumptions

The model is based on survey, infrastructure, and hydrological data supplied by NRC, FNDC, NIWA, and FNHL. The reliability of the outputs depends on the accuracy and completeness of this information.

Flood modelling involves simplifying assumptions. Small changes in rainfall intensity, culvert blockages, or future land use could influence the results.

Results should be interpreted in the context of the information available at the time of modelling and may require revision if new or updated data becomes available.

This assessment is intended for comparative flood impact purposes and should not be used for detailed design of drainage structures without further validation.

4.3 Flood Hazard

Flood hazards at the site were assessed using the NRC Priority River Model with the available regional flood information presented in Appendix D.

Finished floor levels and site design contours have been set to ensure that ground and building levels are raised at least 500 mm above the NRC priority model 1% AEP + CC flood level, in accordance with standard flood resilience requirements

4.4 Summary

The proposed development manages stormwater using a combination of new private reticulation and a 525 mm diameter pipe designed to replicate existing overflow behaviour from the eastern unlined channel. As the site is located at the lower end of the catchment and discharges north of the diversion bank, no attenuation is required, and only minor changes to overland flow paths are expected.

A refined 2D TUFLOW flood model was developed using the NRC Kawakawa Catchment Model (M15), incorporating updated topography, surveyed culverts, key FNDC stormwater assets, and the proposed development design. Model simulations for the 1% AEP (24-hour) RCP 8.5 (2081–2100) storm event indicate less than 5 mm difference in maximum flood depths between existing and proposed scenarios. This is due to a basin-like ponding condition that develops from the north-west, which inundates the pre-development ground surface and forms an island around the elevated post-development platform, resulting in comparable peak flood extents.

Localised changes in shallow flow and inundation occur before the full ponding condition is established, particularly around 16 hours into the storm event, these effects are mitigated through the inclusion of the proposed 525 mm negative-grade stormwater pipe conveying overflow beneath the site.

Overall, the modelling demonstrates that the development has a negligible effect on peak flood levels during the critical design storm, with no adverse impacts on upstream or downstream flood behaviour. Flood hazard requirements are met by setting finished floor

levels and site contours at least 500 mm above the NRC Priority River Model 1% AEP + climate change flood level.

5. Recommendations

5.1 Water Supply

1. **Hydrant pressure testing:** Undertake on-site hydrant flow and pressure tests to confirm the hydraulic model outputs and validate available firefighting performance.
2. **Flow meter data acquisition:** Request recent flow meter records from FNDC for the surrounding network to validate base demand assumptions and confirm model calibration.
3. **Detailed design modelling:** Incorporate the calculated development demands into the FNDC hydraulic model during detailed design and run updated scenarios to confirm operational and firefighting performance.

5.2 Wastewater

1. **Confirm downstream capacity with FNDC:** Engage with FNDC during the detailed design phase to obtain updated network modelling or capacity assessments confirming that the downstream system can accommodate the proposed development flows.
2. **Detailed design modelling:** Incorporate the calculated development flow contribution into the updated FNDC hydraulic model during detailed design and run updated scenarios to confirm operational performance.

5.3 Stormwater

1. **Detailed design modelling:** Refine the stormwater model during the detailed design phase, including updated design surfaces, final pipe alignments, and site levels, to confirm post-development flood behaviour and runoff pathways.
2. **Critical storm assessment:** Simulate a range of smaller and more frequent storm events to identify the critical storm for local overland flow and to validate the performance of the proposed stormwater network.
3. **Infrastructure sensitivity testing:** Assess the sensitivity of key stormwater structures (including culverts and the proposed 525 mm pipe) to partial or full blockage scenarios to understand their potential influence on upstream water levels.
4. **Incorporation of existing structures:** Include relevant existing building footprints in the final model to ensure that overland flow paths and surface runoff behaviour are accurately represented.

6. Appendices

6.1 Appendix A:

Proposed site development layout from Eclipse Architecture (20251128 FNH0769.03 Kawakawa Housing RC).



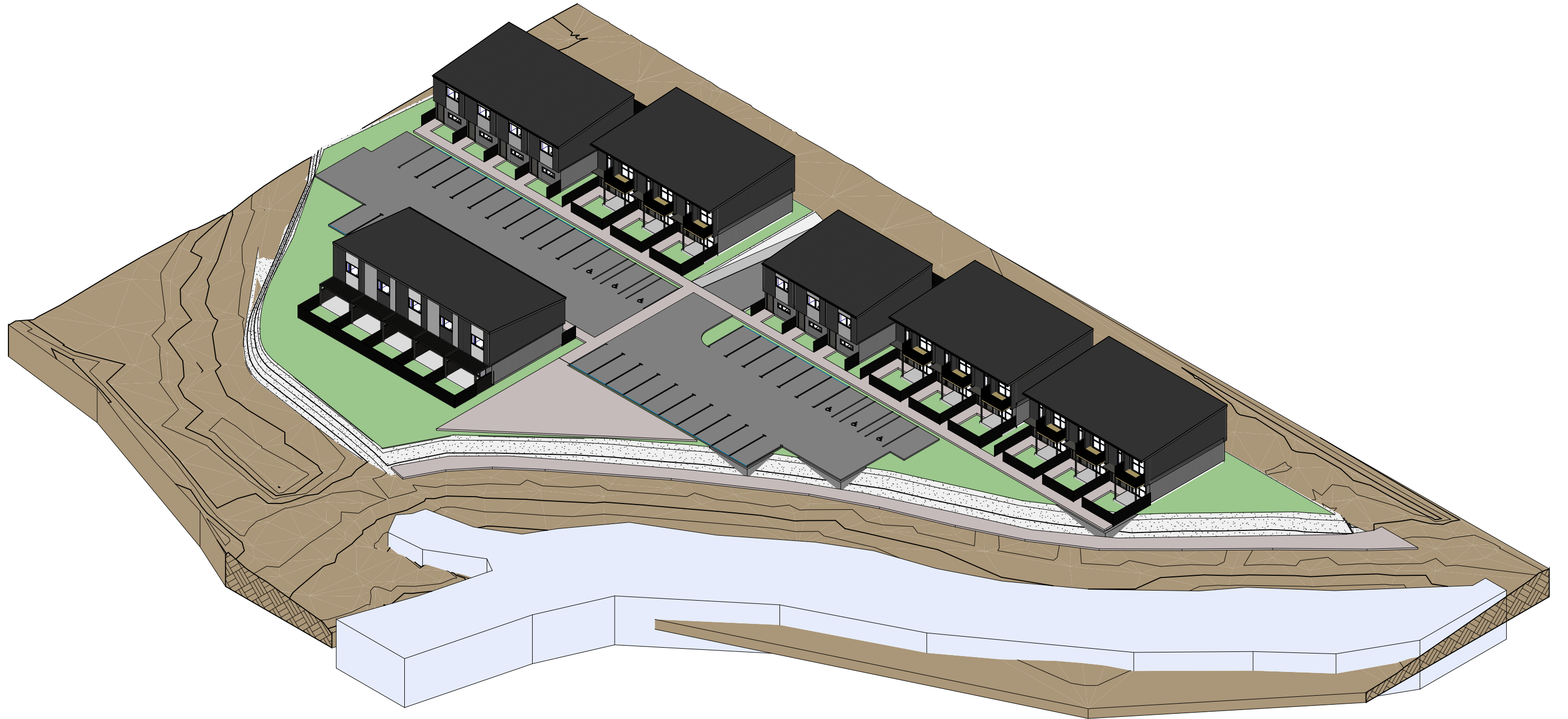
LOCALITY MAP - LARGE SCALE
NTS@A1 HALF-SCALE@A3

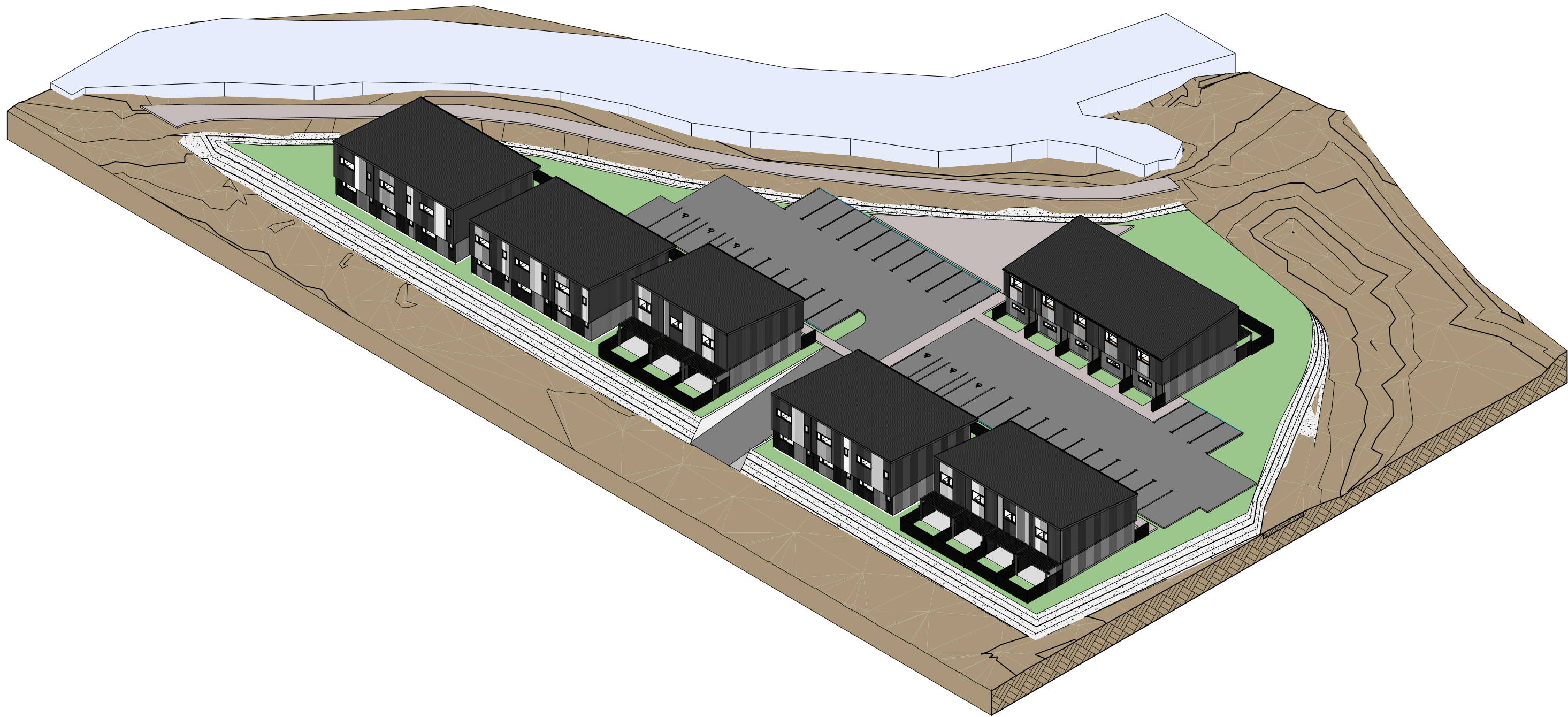
DESTINATION	DISTANCE	TIME BY WALK
LOCAL TOWN CENTER	100M-500M	1-10 MIN
CULTURAL CENTER	300M	5 MIN
SPORTS / RECREATION	650M	10 MIN
CHURCH	400M	7 MIN
PRIMARY SCHOOL	450M	8 MIN
HIGH SCHOOL	1.4KM	20 MIN

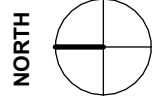


SITE LOCATION
NTS@A1 HALF-SCALE@A3









PA




SITE DESCRIPTION

KAWAKAWA HOUSING DEVELOPMENT
ADDRESS: 84 GILLIES STREET KAWAKAWA
LEGAL DESCRIPTION: LOT 1 DP 63674

ZONE: MIXED USE

TOTAL UNIT NUMBERS: 30
TYPE A: 18
TYPE B: 12
TOTAL CARPARKS: 35
PARKING RATIO: 35/30 = 116%

TPOLOGY

-  TYPE A: 1 BED UNIT PER FLOOR
A1: 1 BED UNIT GROUND FLOOR
FLOOR AREA = 57.75 m²
+
A2: 1 BED UNIT FIRST FLOOR
FLOOR AREA = 60.5 m²
-  TYPE B: 2 BED UNIT
GROUND FLOOR
FLOOR AREA = 43.5 m²
+
FIRST FLOOR
FLOOR AREA = 46.11 m²
-  RETAINING WALL/RETAINED BATTER
REFER CIVIL ENGINEER DRAWINGS



SCALE 1:200 @ A1

PA

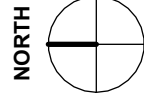
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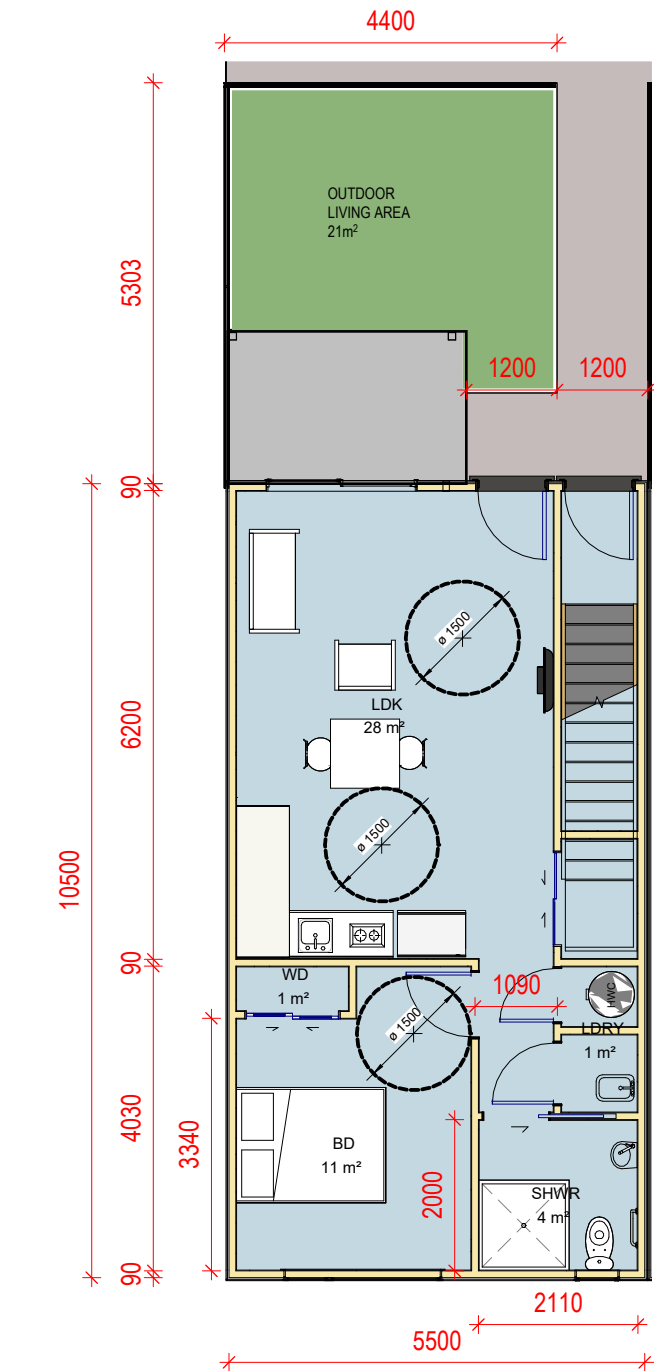
KAWAKAWA HOUSING DEVELOPMENT
ADDRESS: 84 GILLIES STREET KAWAKAWA
LEGAL DESCRIPTION: LOT 1 DP 63674

TOTAL UNIT NUMBERS: 30
TYPE A: 18
TYPE B: 12
TOTAL CARPARKS: 35
PARKING RATIO: 35/30 = 116%

SITE AREA CALCULATION

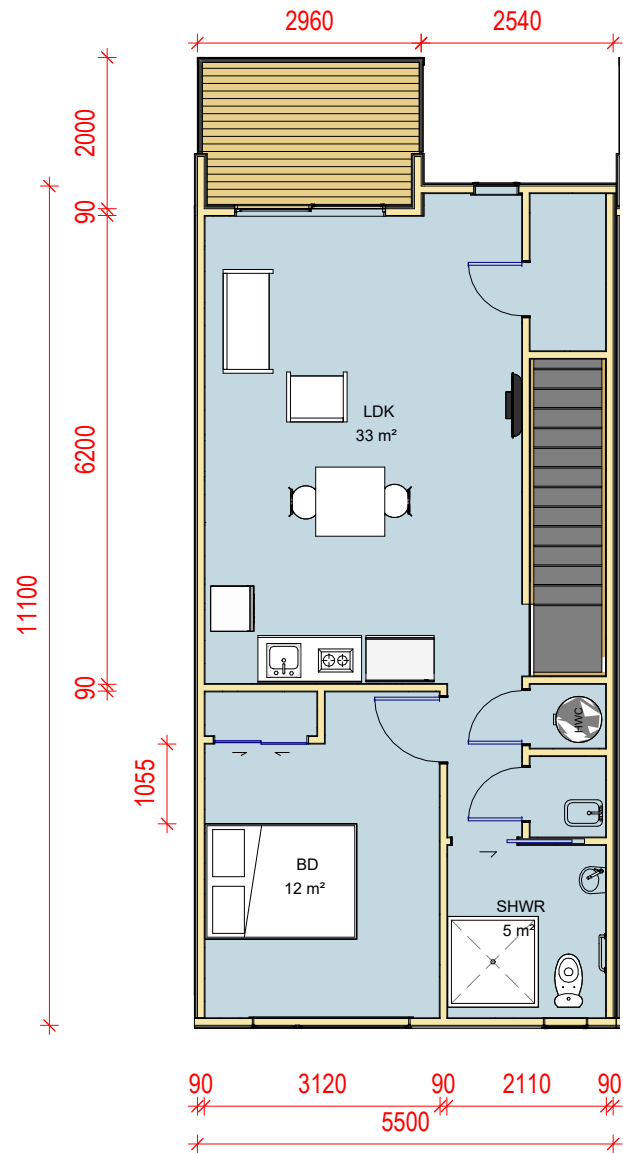
	TOTAL
LEGAL SITE AREA	7,588 m ²
PROPOSED SITE AREA	6,055 m ²
BUILDING COVERAGE	1,054.5 m ² (17.4%)
TOTAL IMPERMEABLE AREA	1,976 m ² (32.6%)
DRIVEWAY/CARPARK	1,142.4 m ²
PATHWAY PAVING	514.4 m ²
PRIVATE COURTYARD	174.2 m ²
SHARED COURTYARD PAVING	145 m ²
OUTDOOR LIVING AREA	>20 m ²
LANDSCAPE AREA	3024.5 m ² (50%)





1 GROUND FLOOR PLAN - TYPE A1
1 : 50@A1 HALF-SCALE@A3

FLOOR AREA
GROUND FLOOR: 53M²
FIRST FLOOR: 60M²

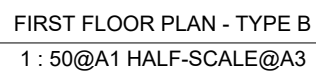


2 FIRST FLOOR PLAN - TYPE A1
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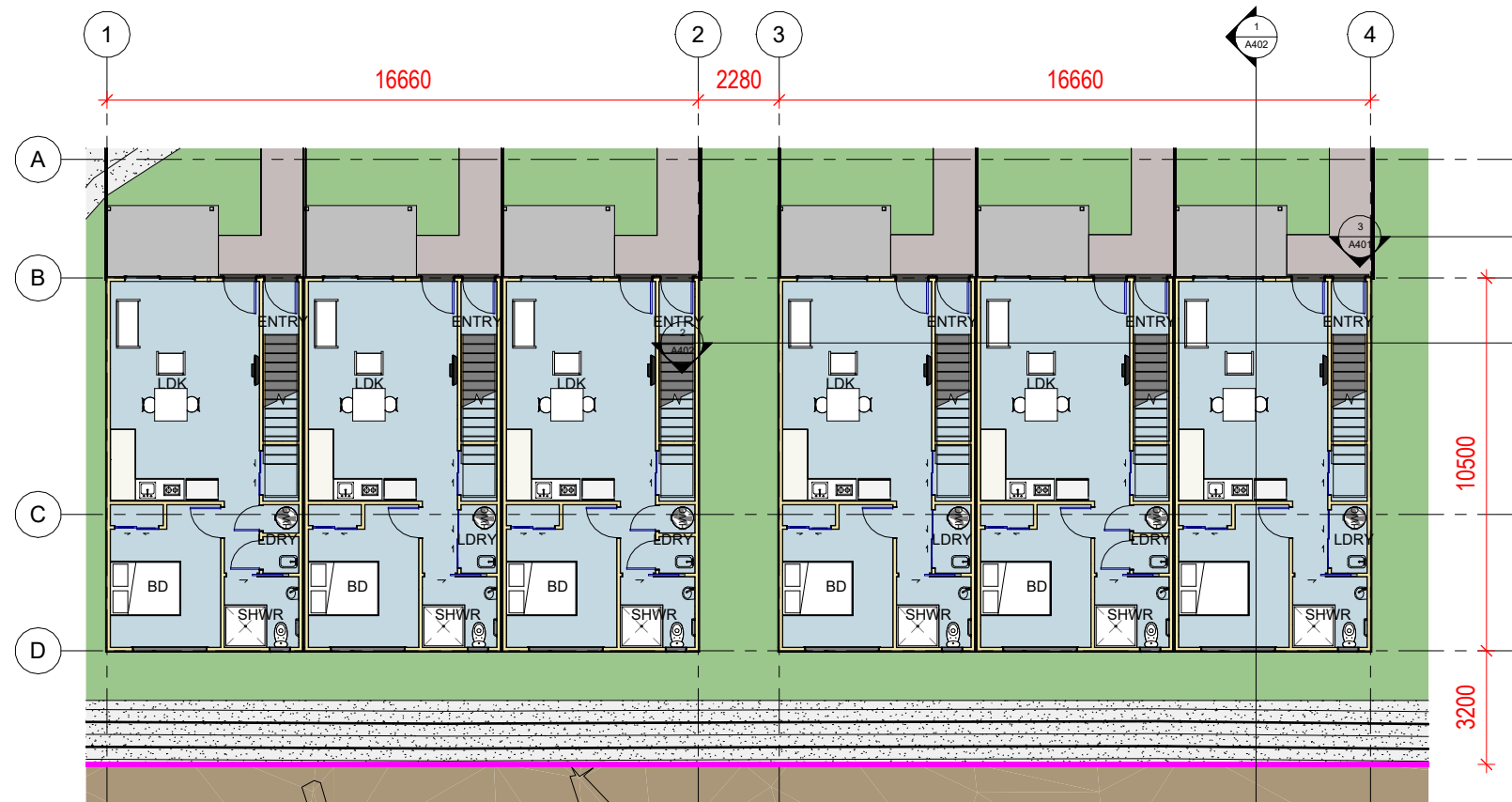
5 KEY PLAN - TYPE A
1 : 1000@A1 HALF-SCALE@A3

STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	YES
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	YES
	The main entry pathway is at least 1m wide from the street and/or parking area.	YES
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	YES
	One path is at least 600mm wide between the dwelling and the clothesline	YES
	Where Timber landings and decks are provided, they are level entry.	YES
	All exterior doors have a clear opening width of at least 810mm.	YES
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	YES
	There is step-free access from the main-entry to the main living-area.	YES
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	YES
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	YES
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	YES
Bathroom	All bathrooms on the main living level are at least 2120mm x 1920mm (measured between framing) with clearances of at 800mm between fixtures. Do not install a wet area-shower. No floor rebate required. Door swing inwards.	YES
Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	YES
Fixtures and Fittings	To be compliant during BC Stage	YES
Finishes	To be compliant during BC Stage	YES

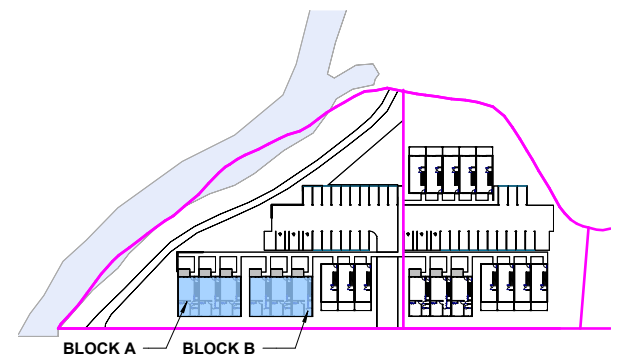


3 KEY PLAN - TYPE B
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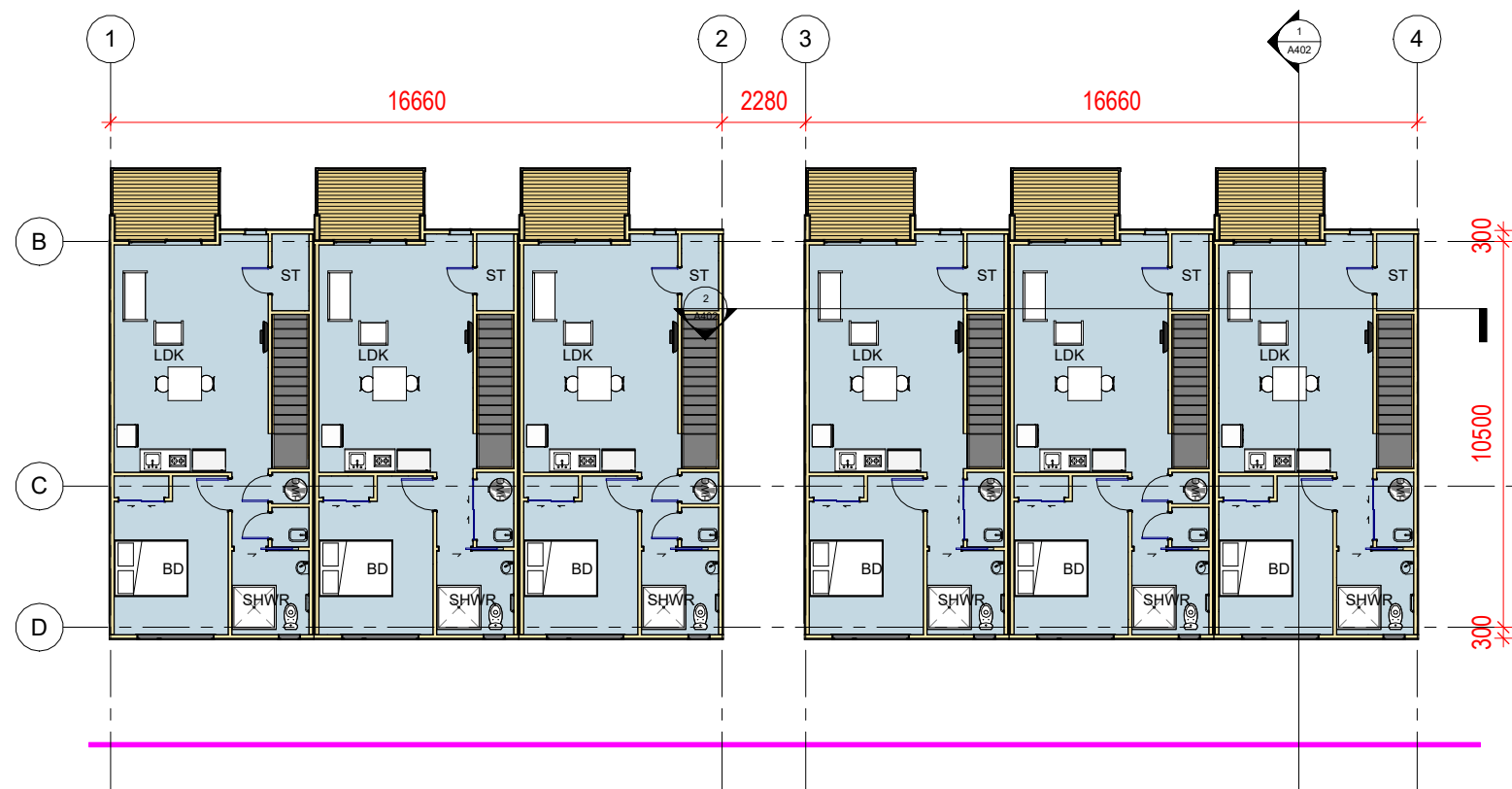
STANDARD UNIVERSAL DESIGN COMPLIANCE		
Parking	One carpark is provided per dwelling	<u>YES</u>
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.	<u>YES</u>
	The main entry pathway is at least 1m wide from the street and/or parking area.	<u>YES</u>
	Apartment complexes and multi-unit developments: Drop-off zone for customers ' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.	<u>YES</u>
	One path is at least 600mm wide between the dwelling and the clothesline	<u>YES</u>
	Where Timber landings and decks are provided, they are level entry.	<u>YES</u>
	All exterior doors have a clear opening width of at least 810mm.	<u>YES</u>
Interior Circulation	Circulation routes on the main living level are at least 1.05m-wide (between framing) and include at least 800mm clearance between items of furniture and fixtures.	<u>YES</u>
	There is step-free access from the main-entry to the main living-area.	<u>YES</u>
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.	<u>YES</u>
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.	<u>YES</u>
Kitchens	Studio – 3 bedrooms: 1.2m clearance in front of kitchen benches and appliances	<u>YES</u>
Bathroom	All bathrooms on the main living level are at least 2120mm x 1920mm (measured between framing) with clearances of at 800mm between fixtures. Do not install a wet area-shower. No floor rebate required. Door swing inwards.	<u>YES</u>
Laundry	There is 1050mm clearance in front of all laundry fittings and appliances	<u>YES</u>
Fixtures and Fittings	To be compliant during BC Stage	<u>YES</u>
Finishes	To be compliant during BC Stage	<u>YES</u>



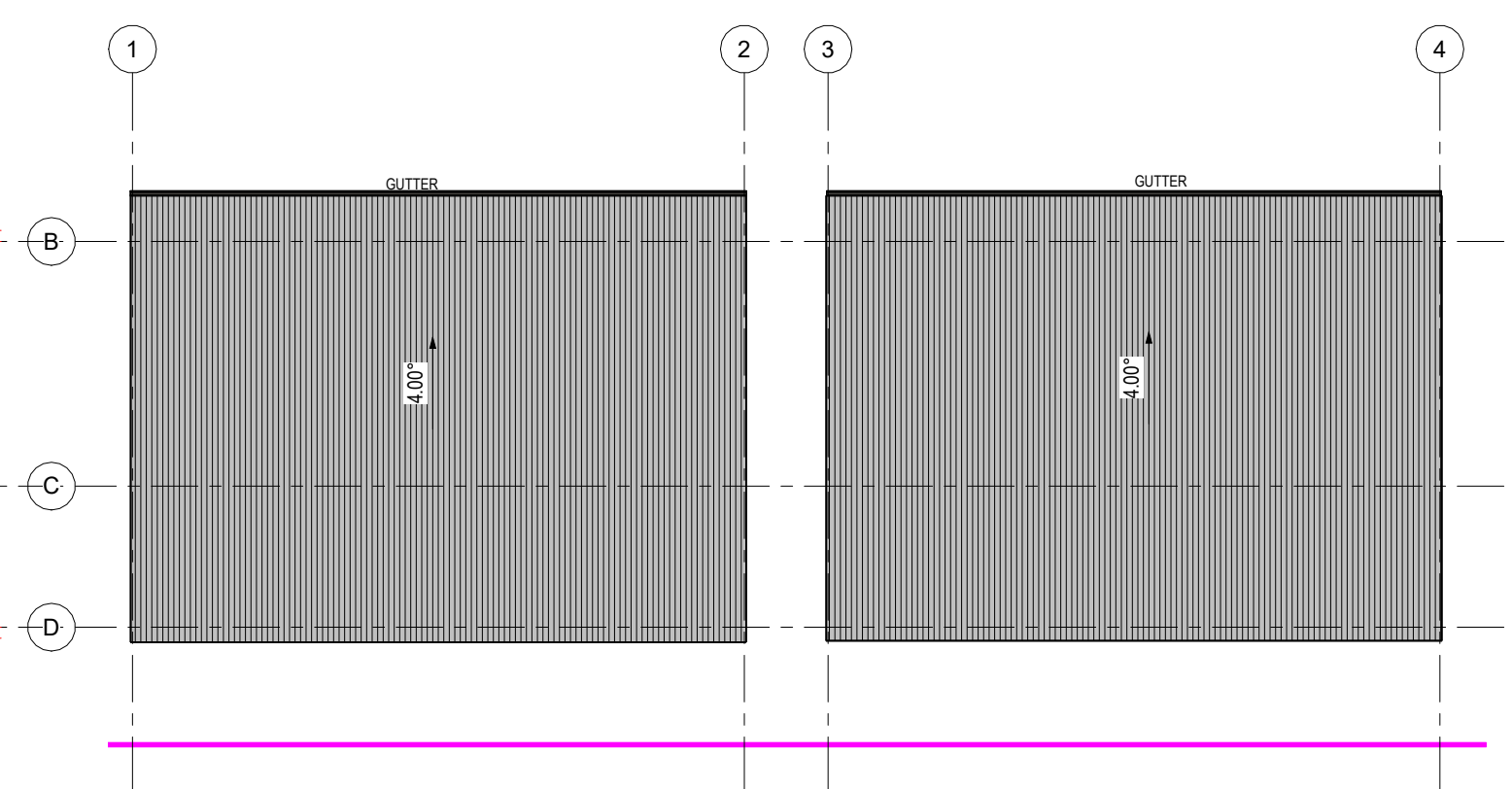
1 GROUND FLOOR PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



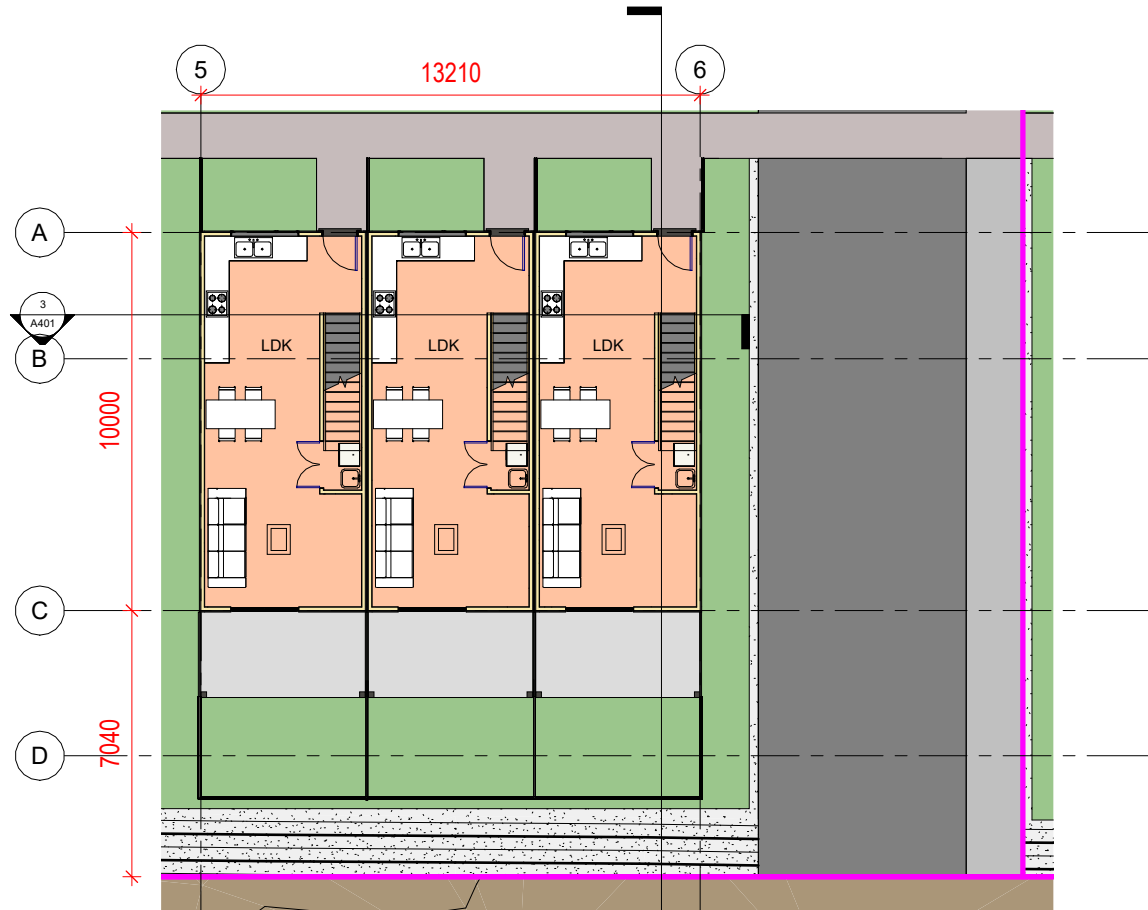
4 KEY PLAN - BLOCK A-B
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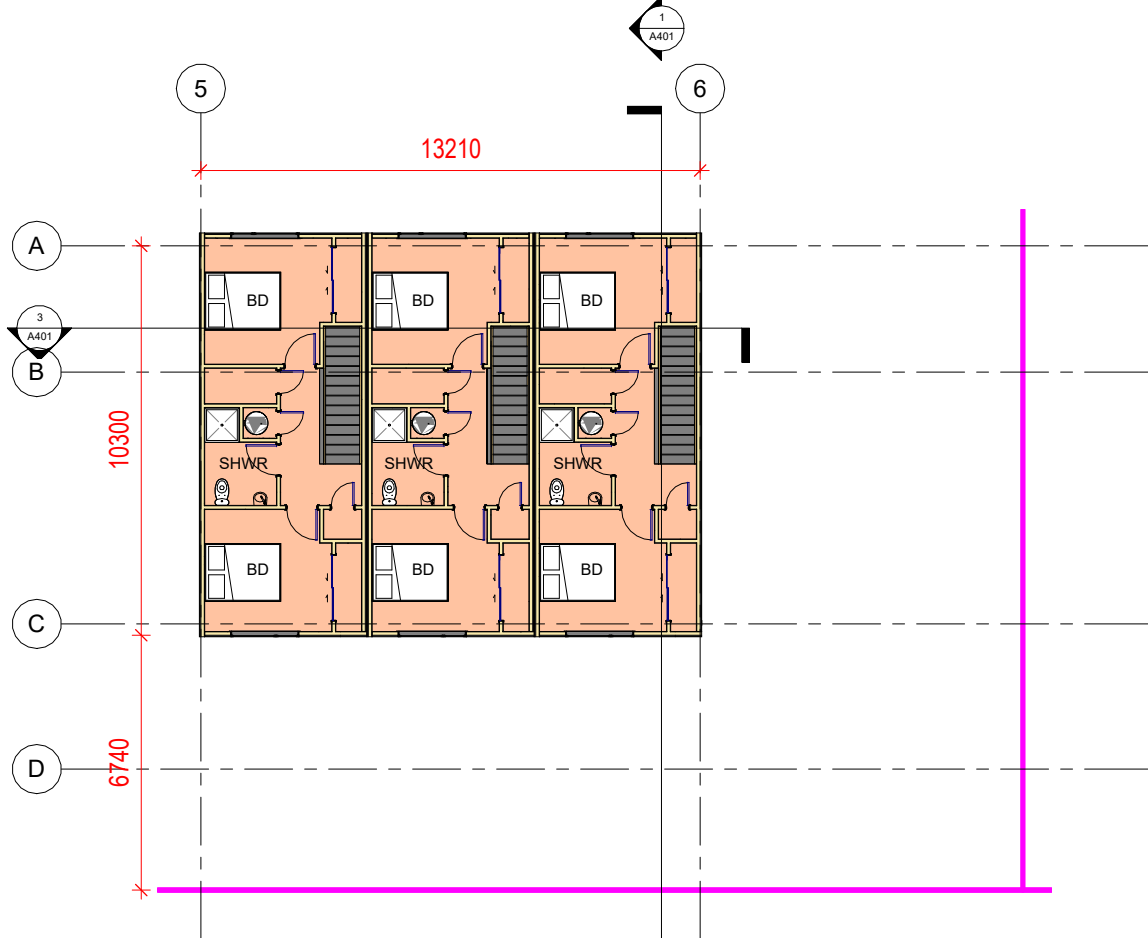
2 FIRST FLOOR PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



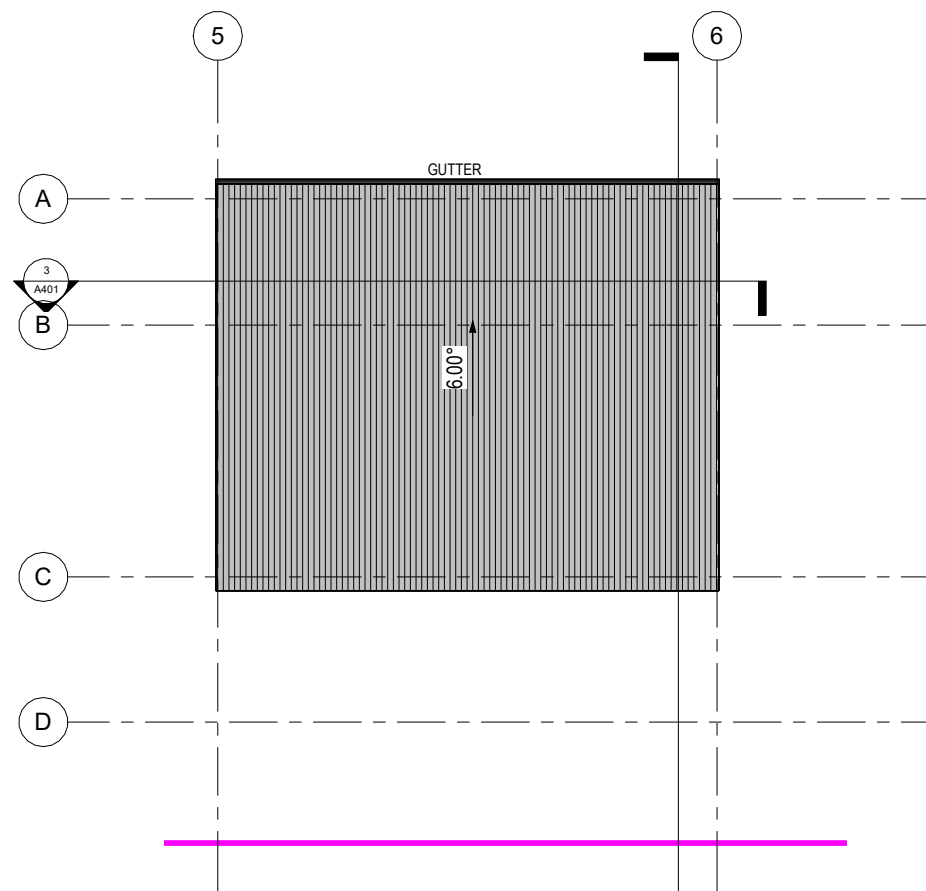
3 ROOF PLAN - BLOCK A-B
1 : 100@A1 HALF-SCALE@A3



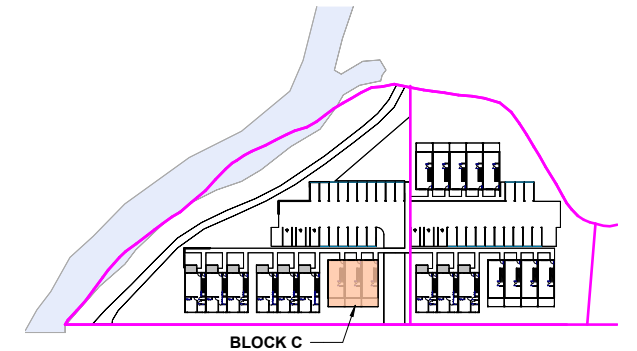
1 GROUND FLOOR PLAN - BLOCK C
1 : 100@A1 HALF-SCALE@A3



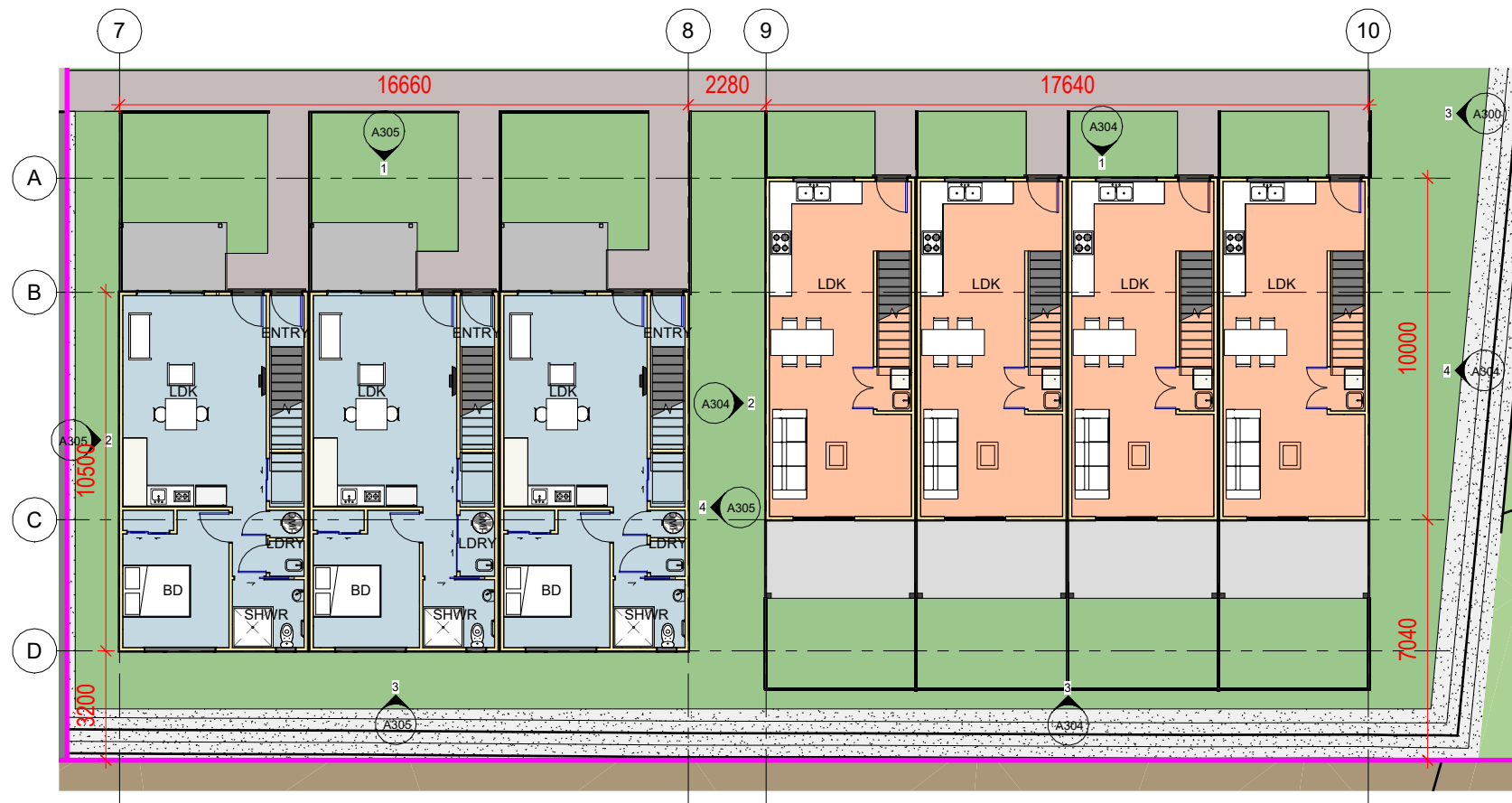
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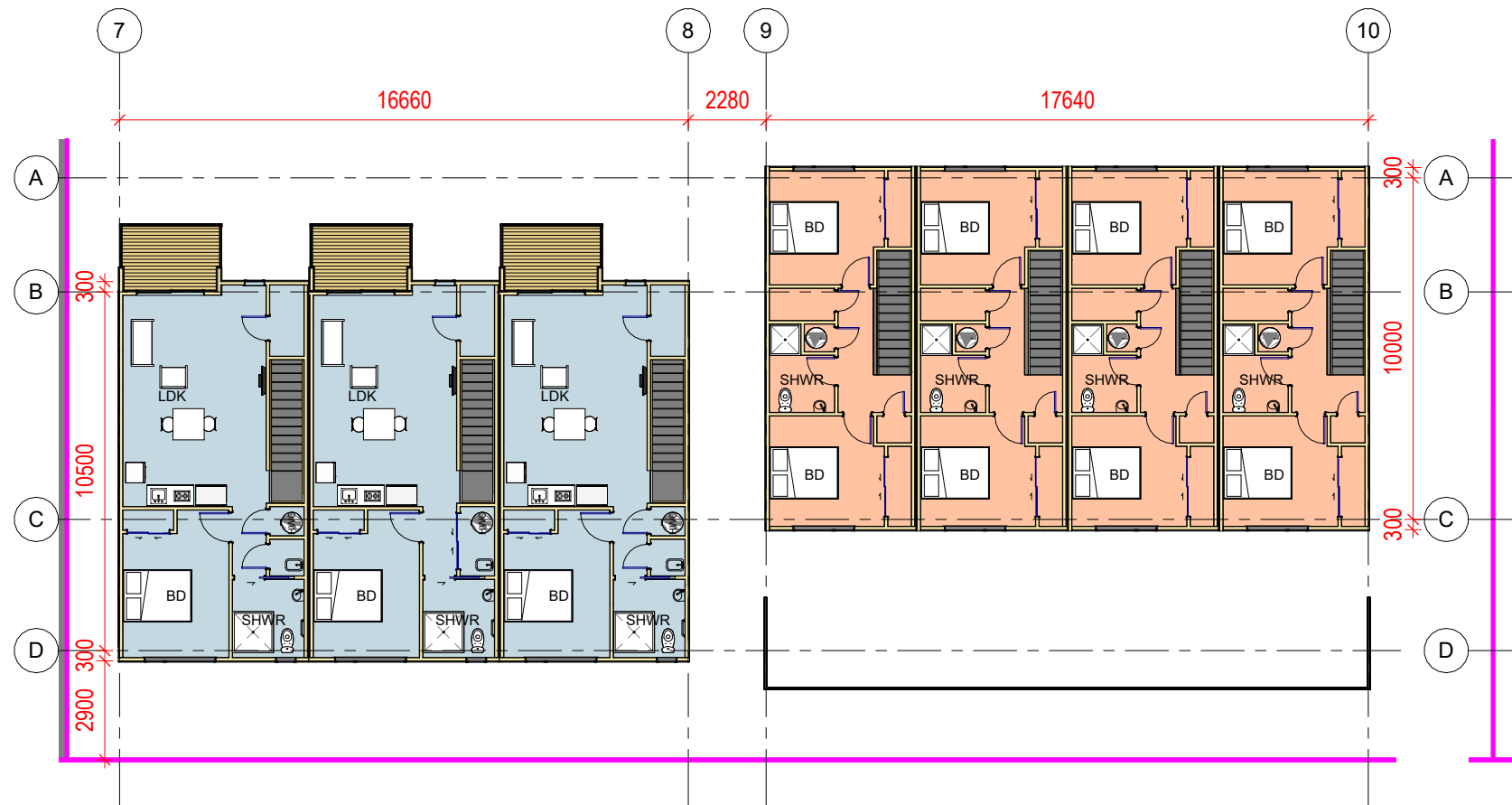
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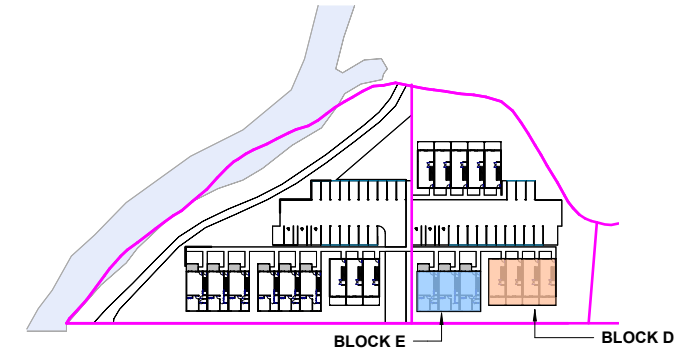
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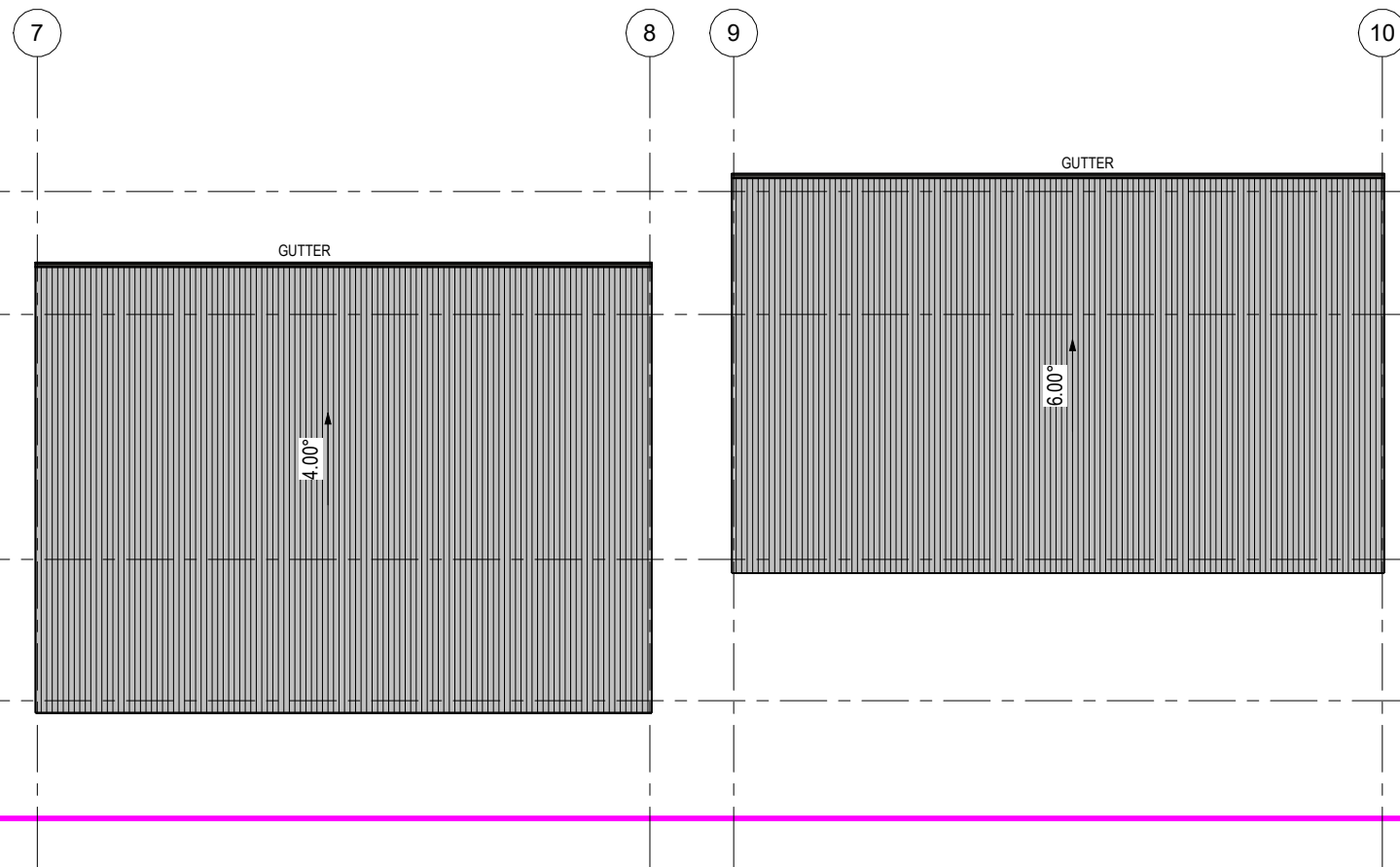
1 GROUND FLOOR PLAN - BLOCK D-E
1 : 100@A1 HALF-SCALE@A3



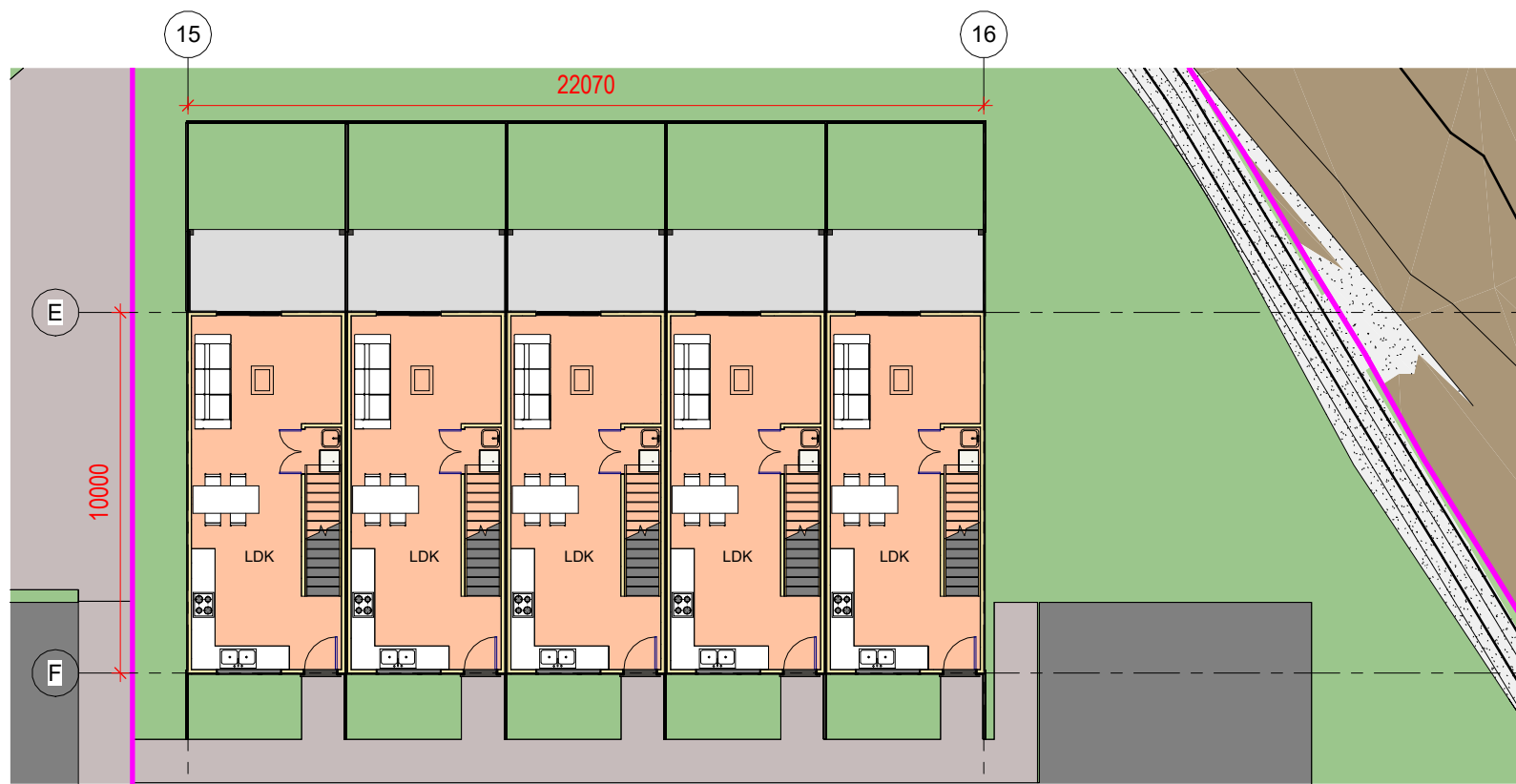
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1 : 100@A1 HALF-SCALE@A3



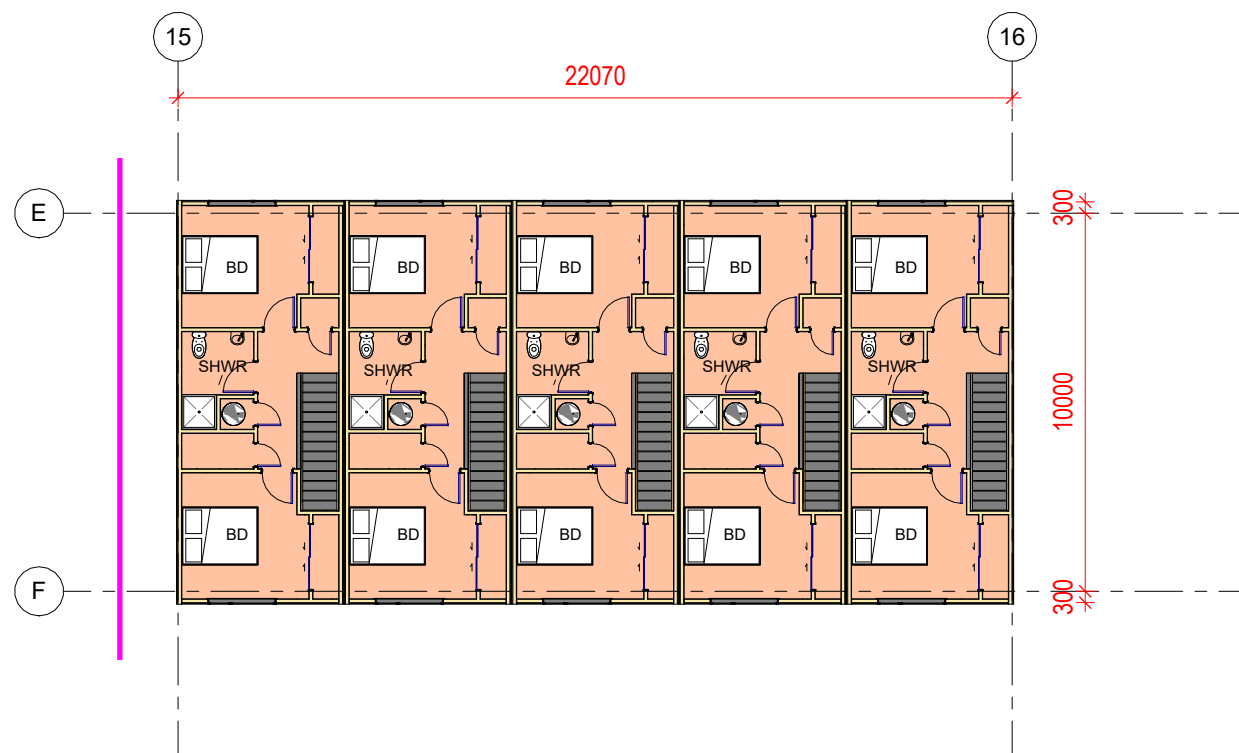
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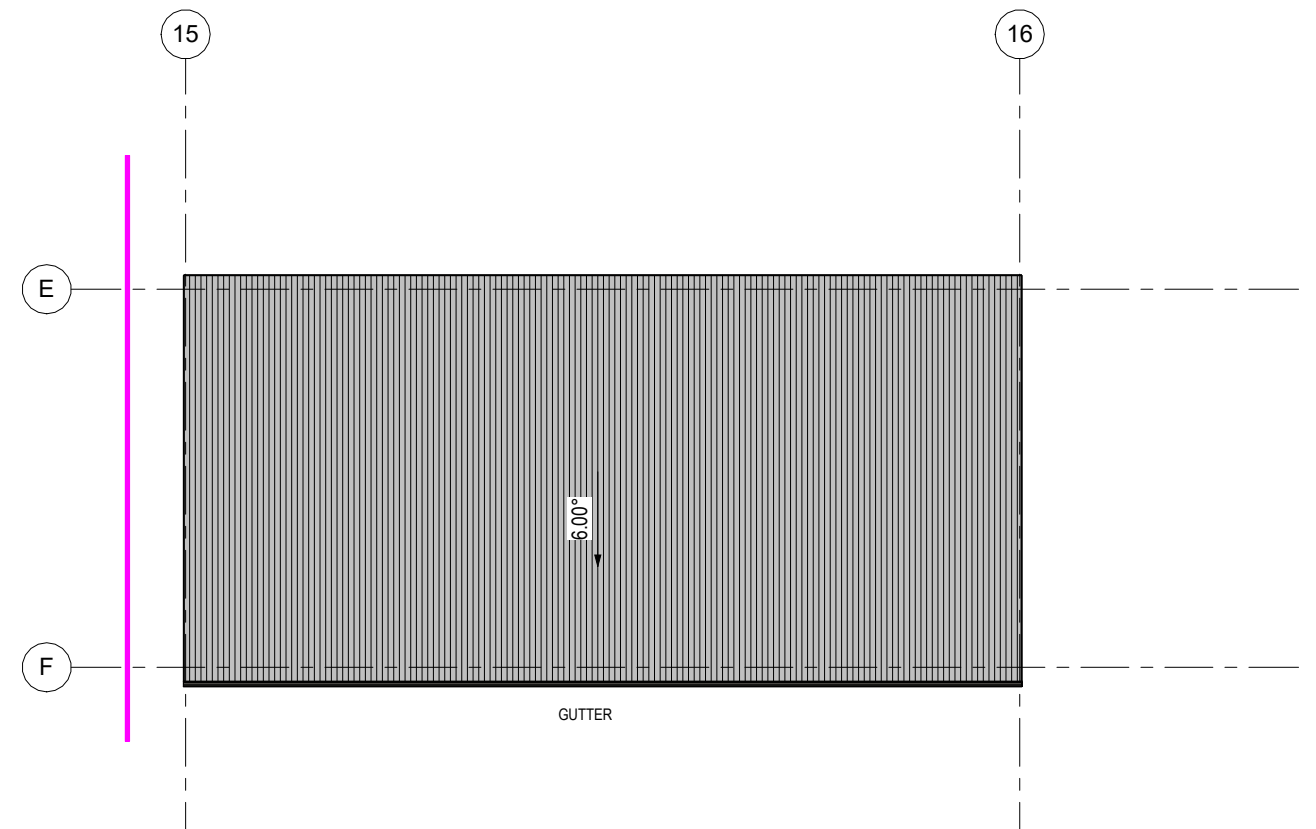
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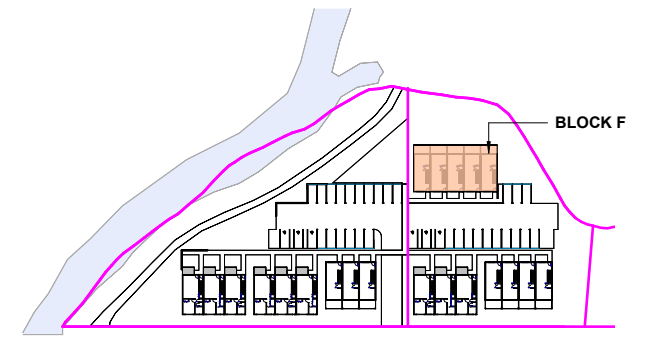
1 GROUND FLOOR PLAN - BLOCK F
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2 FIRST FLOOR PLAN - BLOCK F
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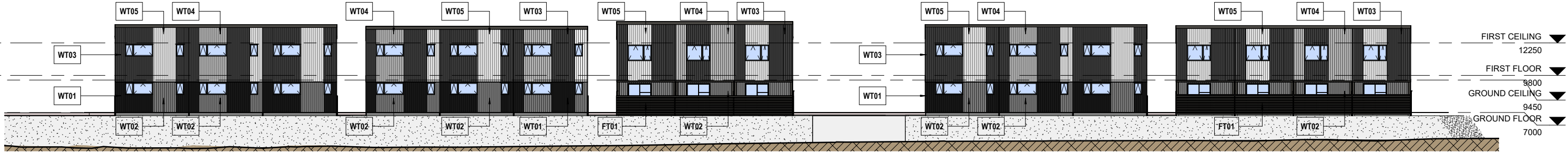


4 ROOF PLAN - BLOCK F
1 : 100@A1 HALF-SCALE@A3



3 KEY PLAN - BLOCK F
1 : 1000@A1 HALF-SCALE@A3

12m Height Boundary



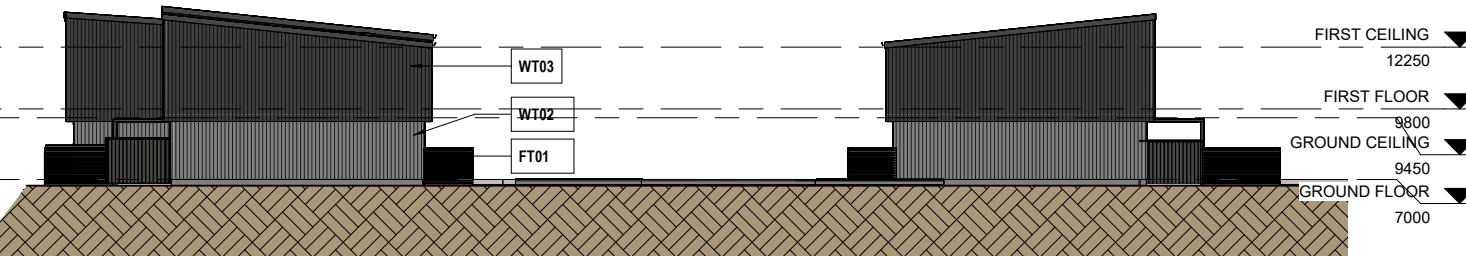
1 West Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary



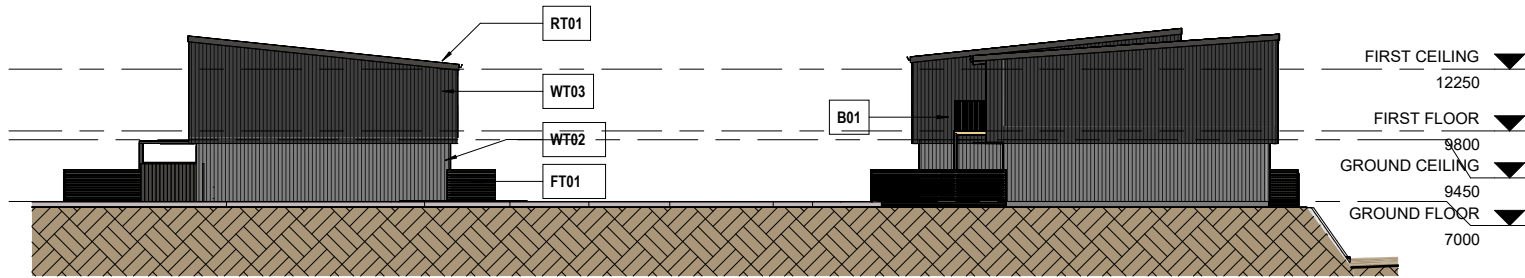
2 East Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary



3 South Elevation
1 : 150@A1 HALF-SCALE@A3

12m Height Boundary



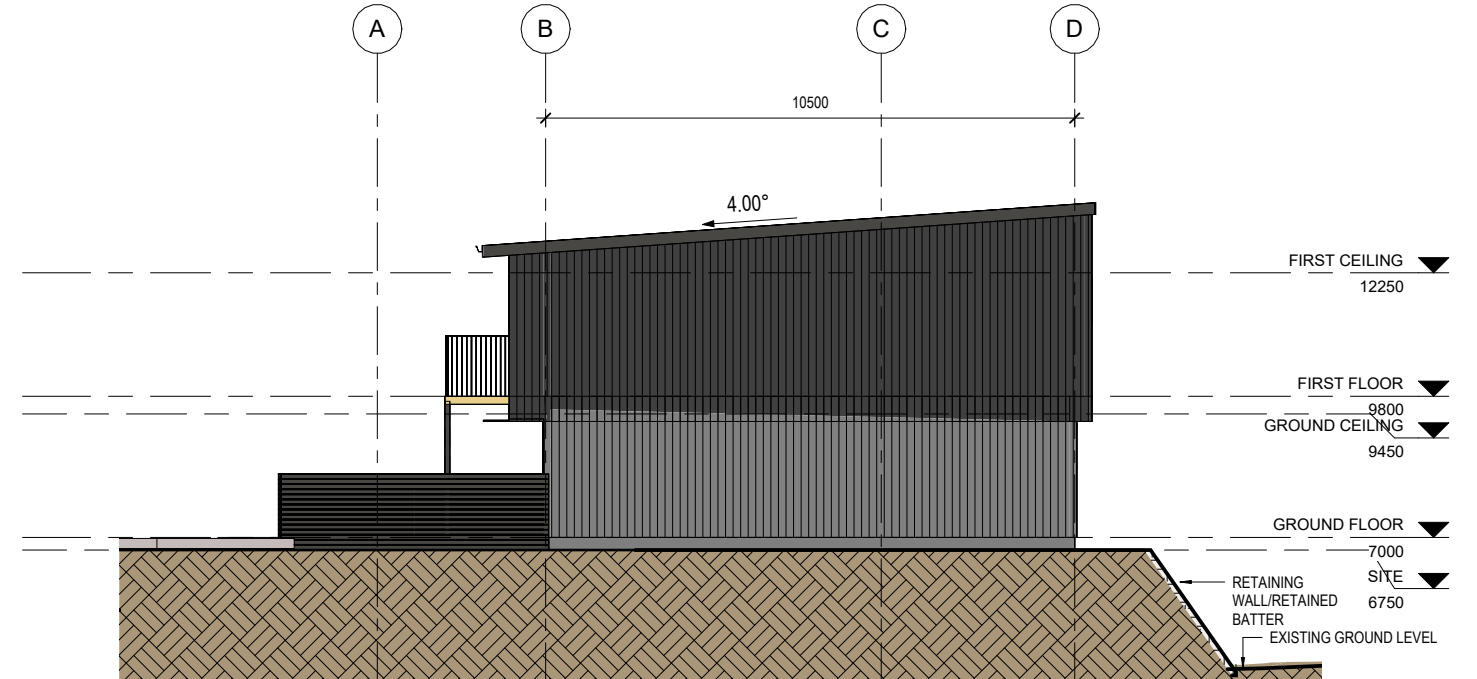
4 North Elevation
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BUILDING MATERIAL PALETTE



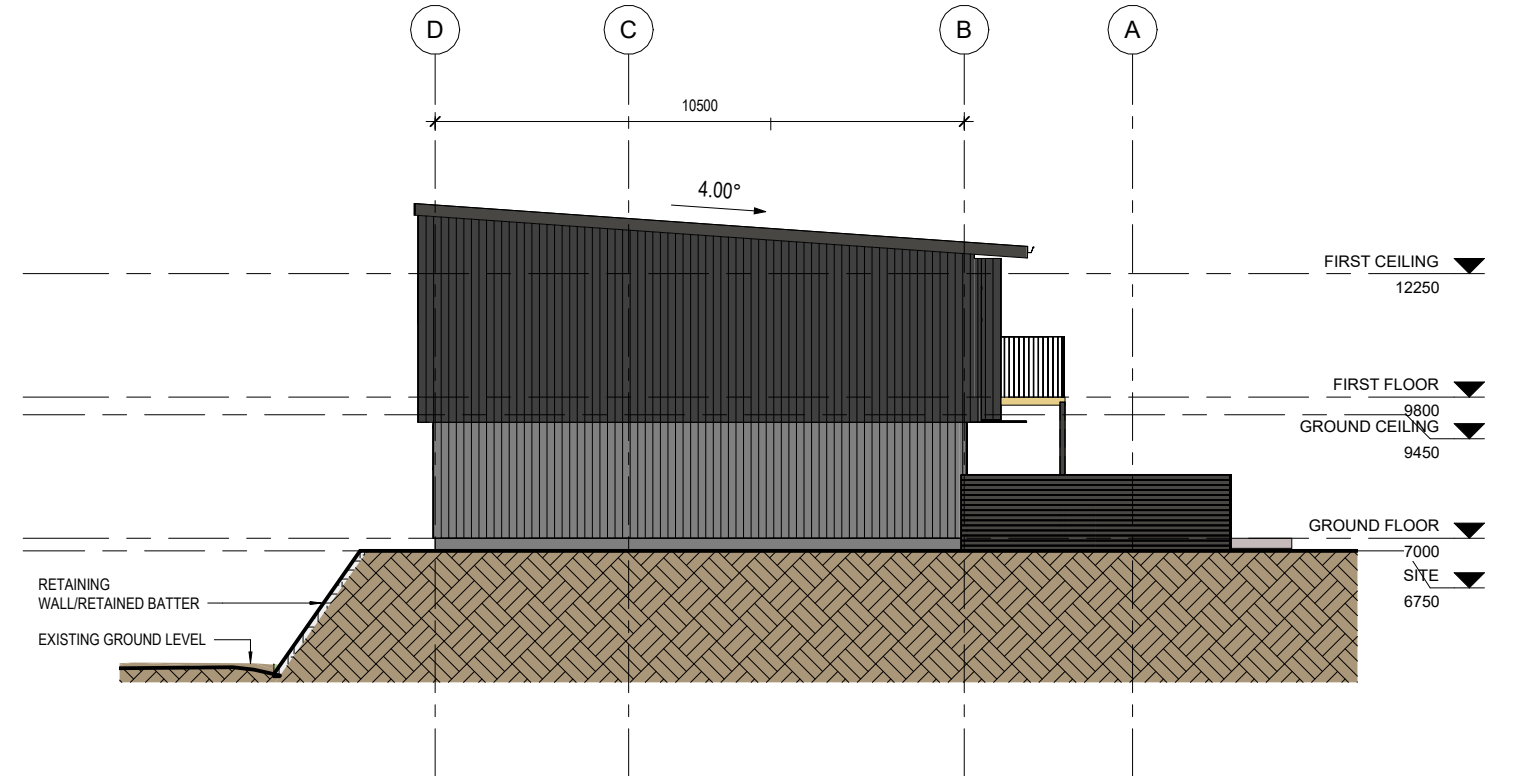
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1 : 75@A1 HALF-SCALE@A3



2 North Elevation - Block A
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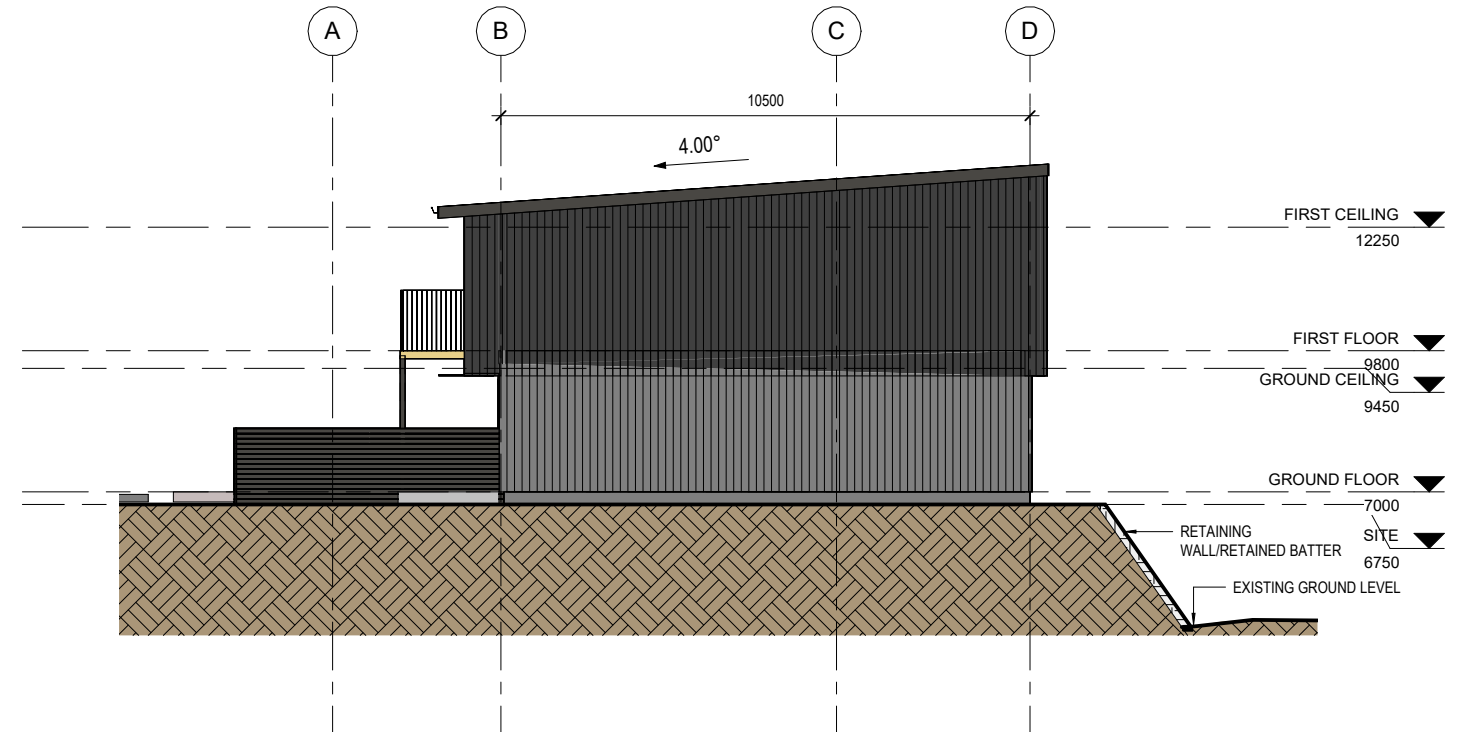
3 West Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



4 South Elevation - Block A
1 : 75@A1 HALF-SCALE@A3



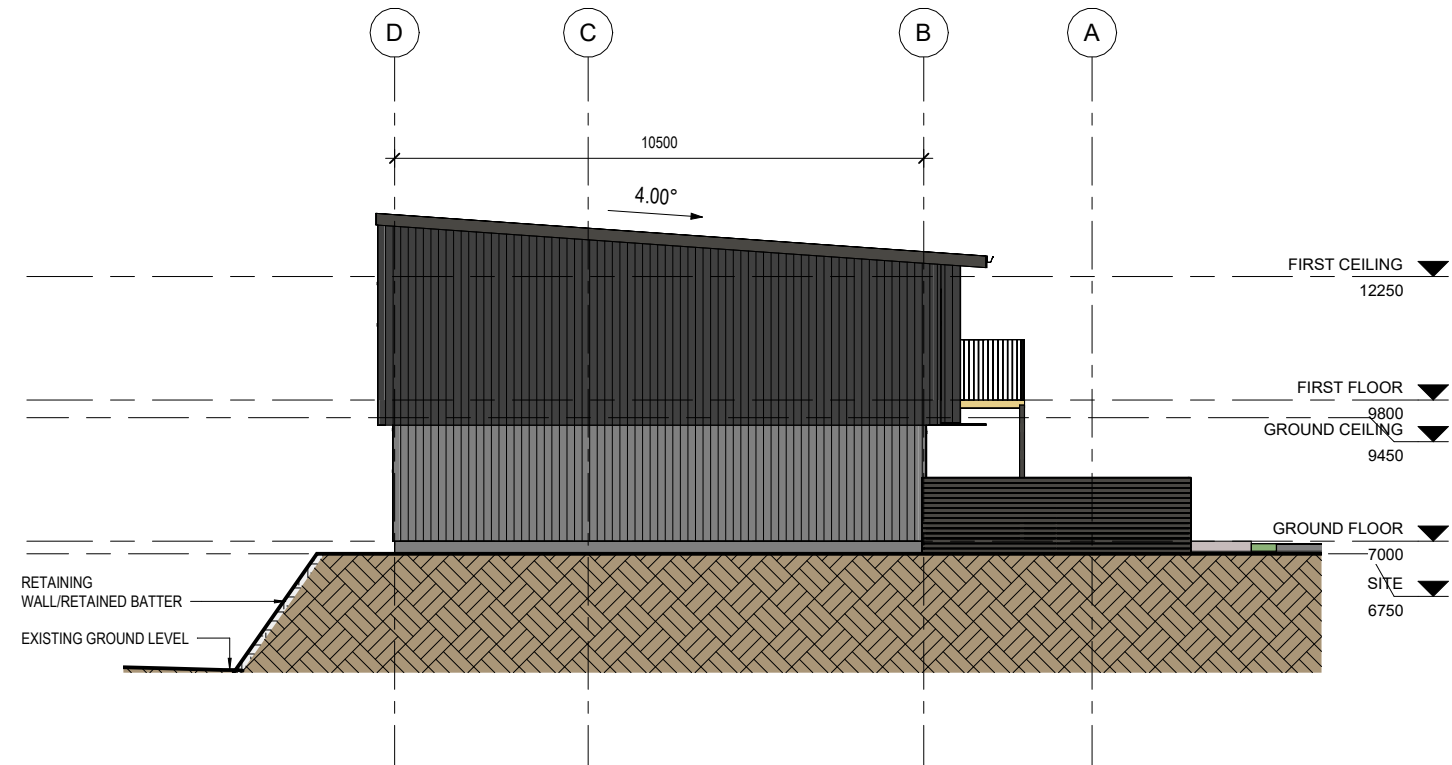
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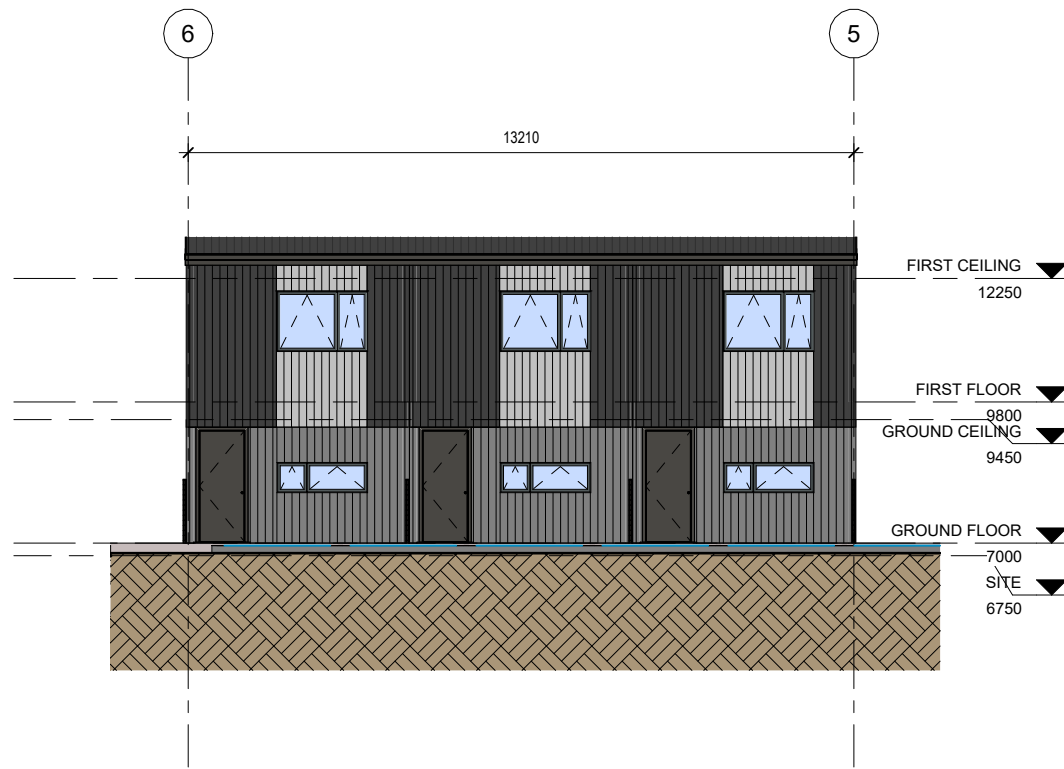
2 North Elevation - Block B
1 : 75@A1 HALF-SCALE@A3



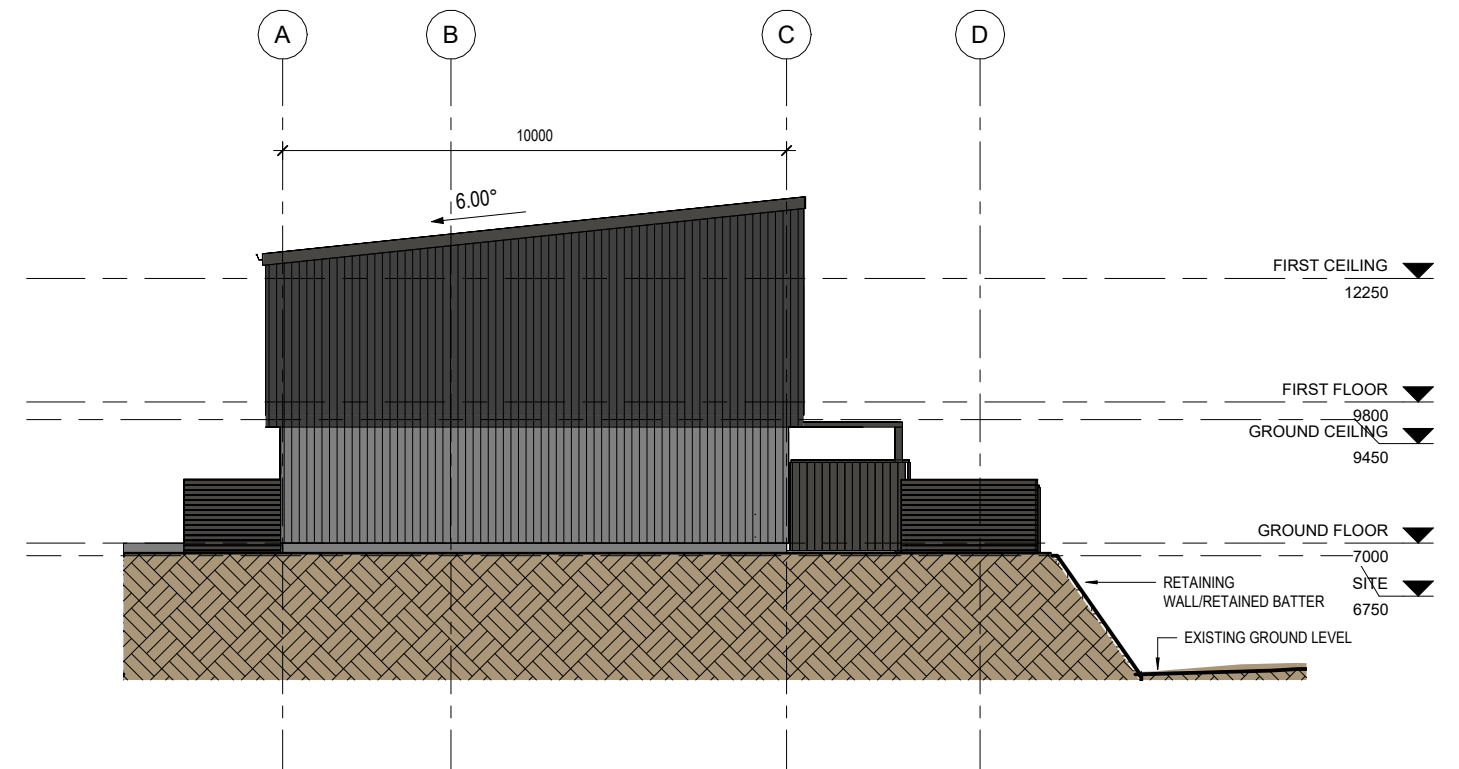
3 West Elevation - Block B
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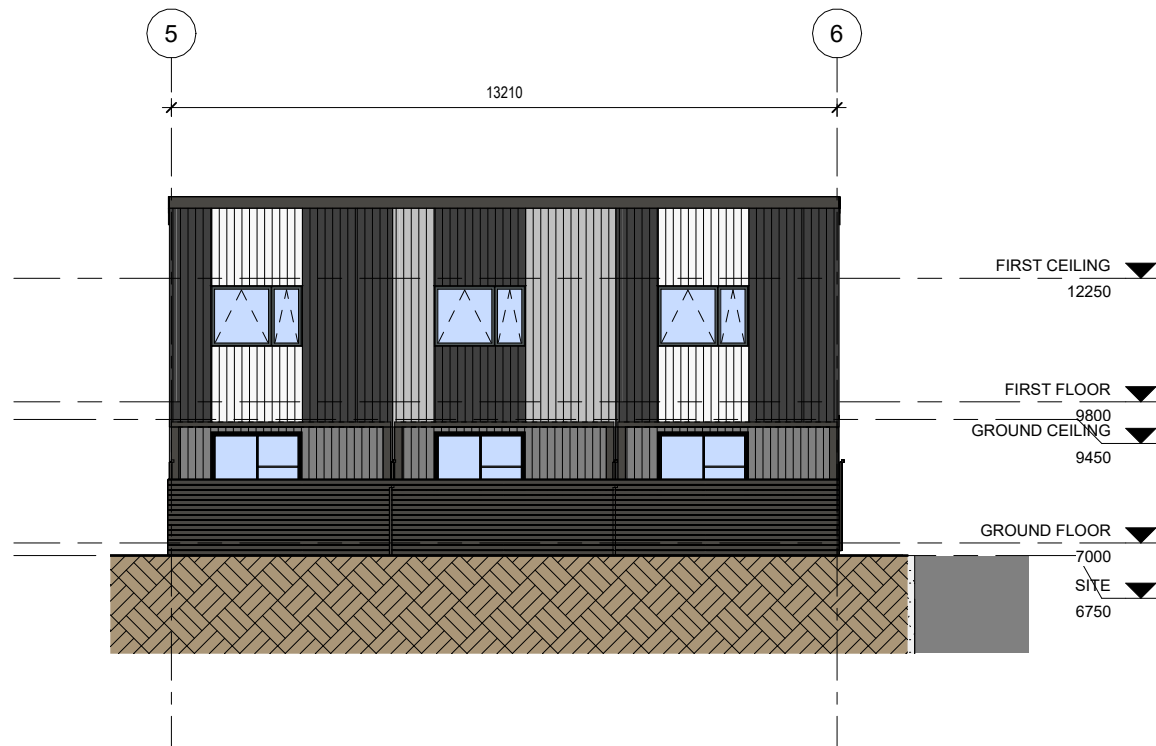
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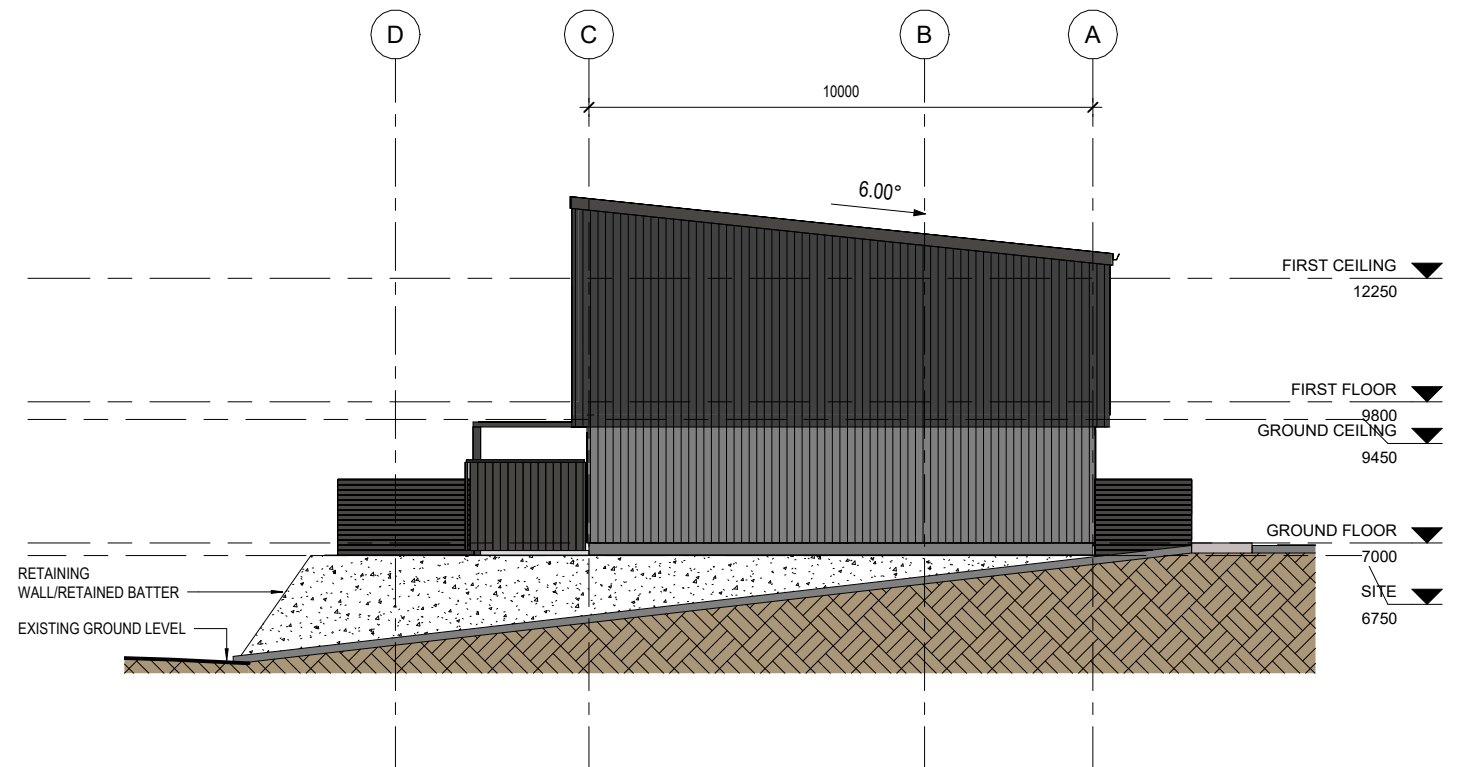
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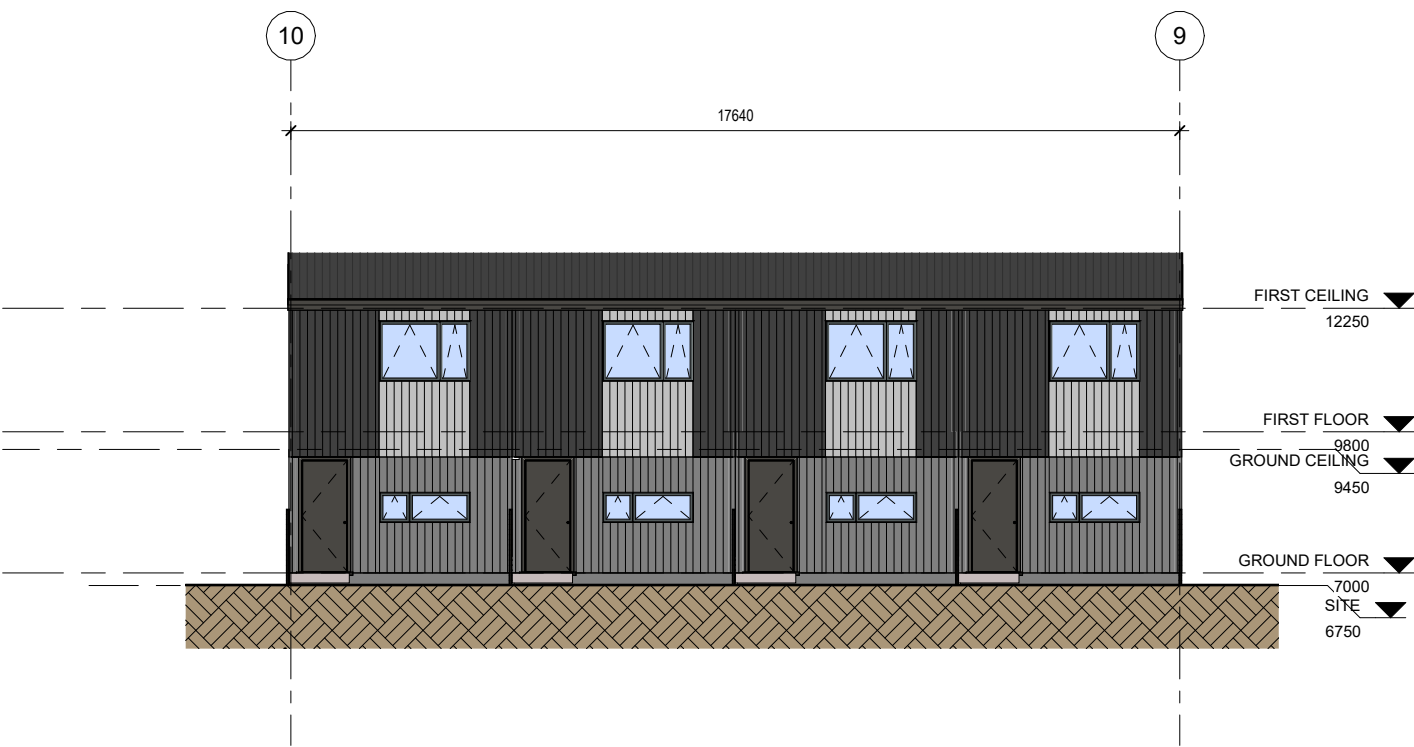
2 North Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



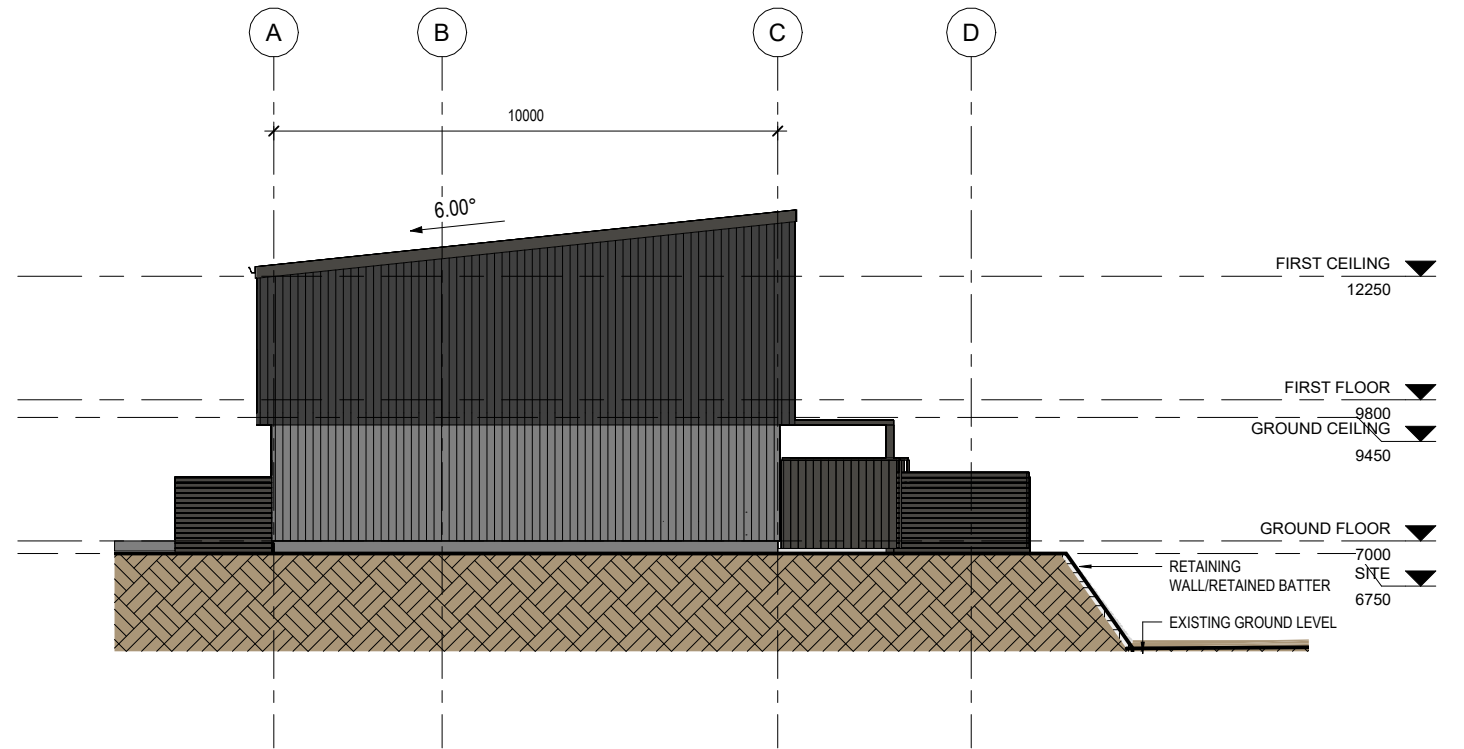
3 West Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



4 South Elevation - Block C
1 : 75@A1 HALF-SCALE@A3



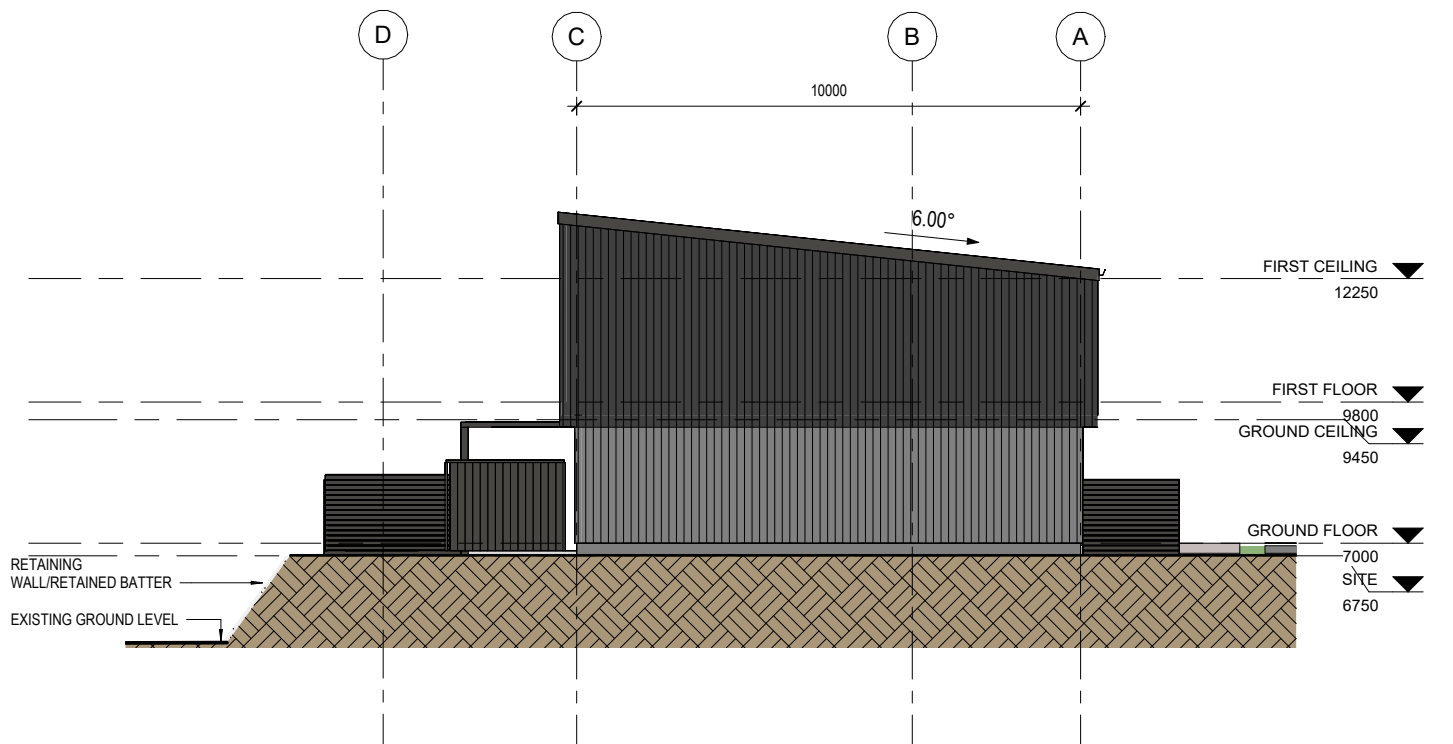
1 East Elevation - Block D
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2 North Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



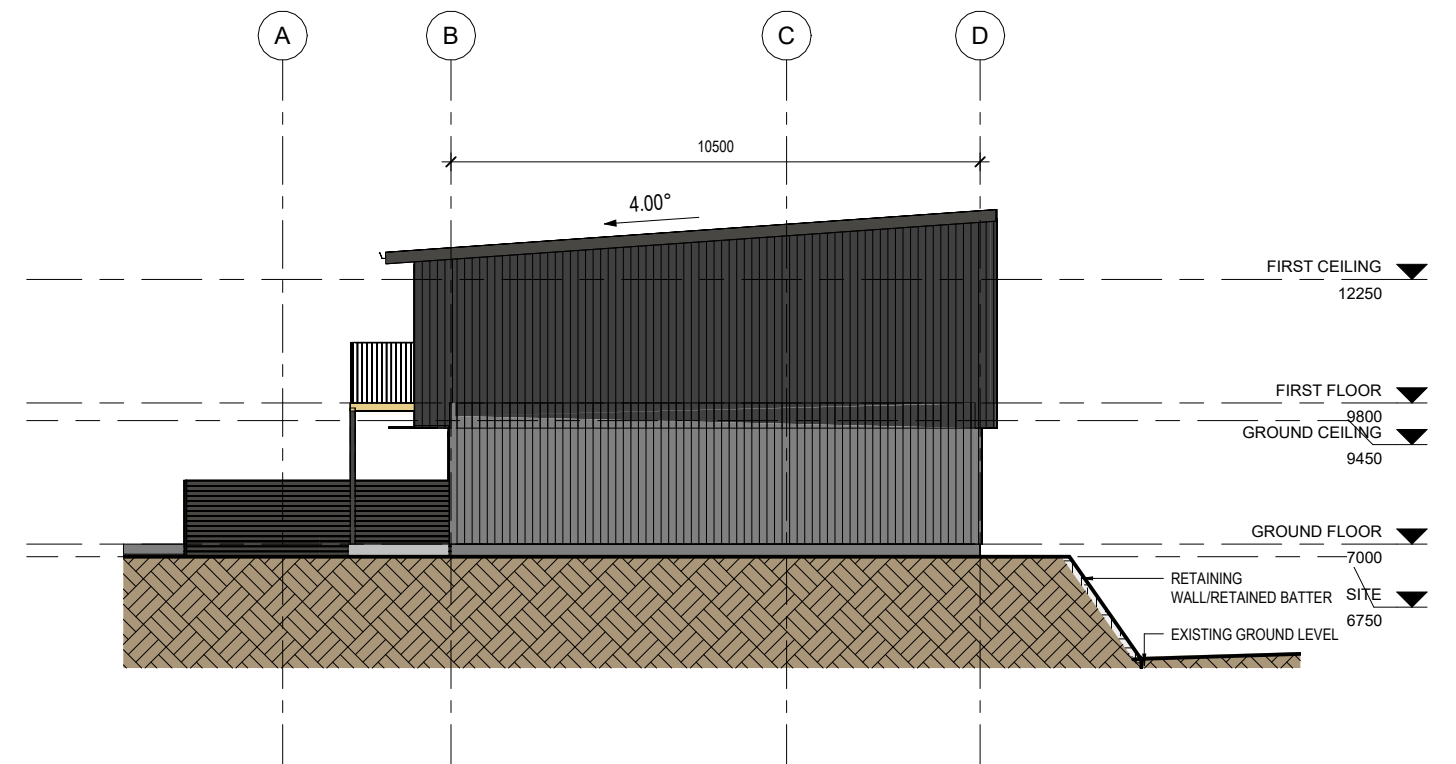
3 West Elevation - Block D
1 : 75@A1 HALF-SCALE@A3



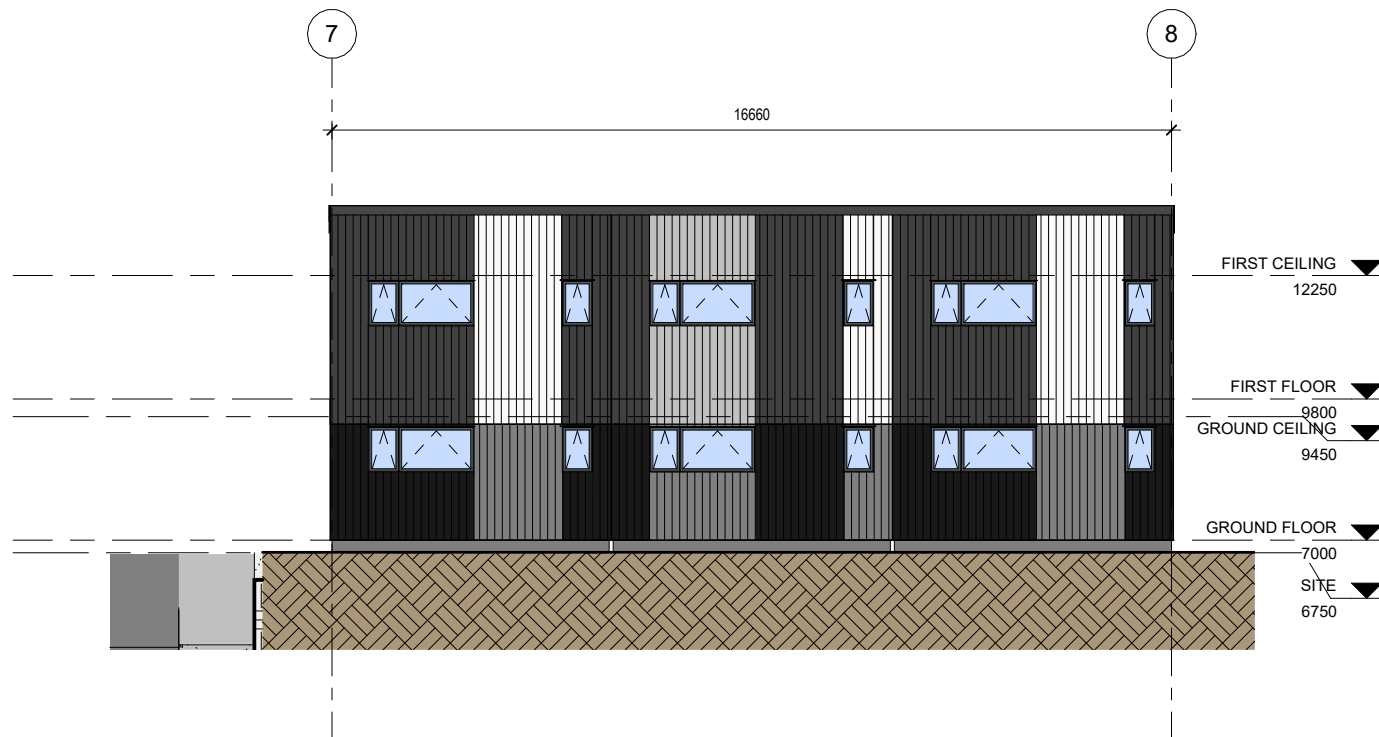
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1 : 75@A1 HALF-SCALE@A3



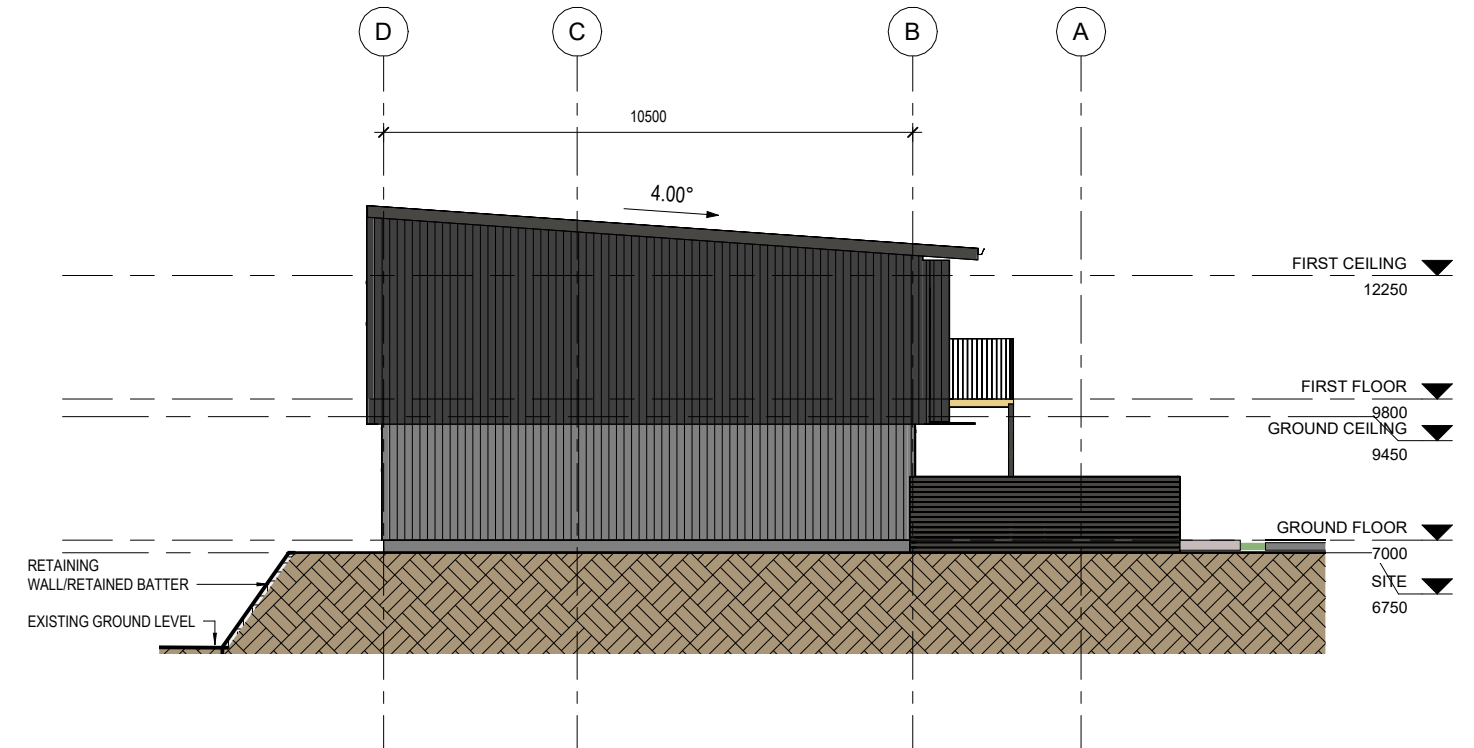
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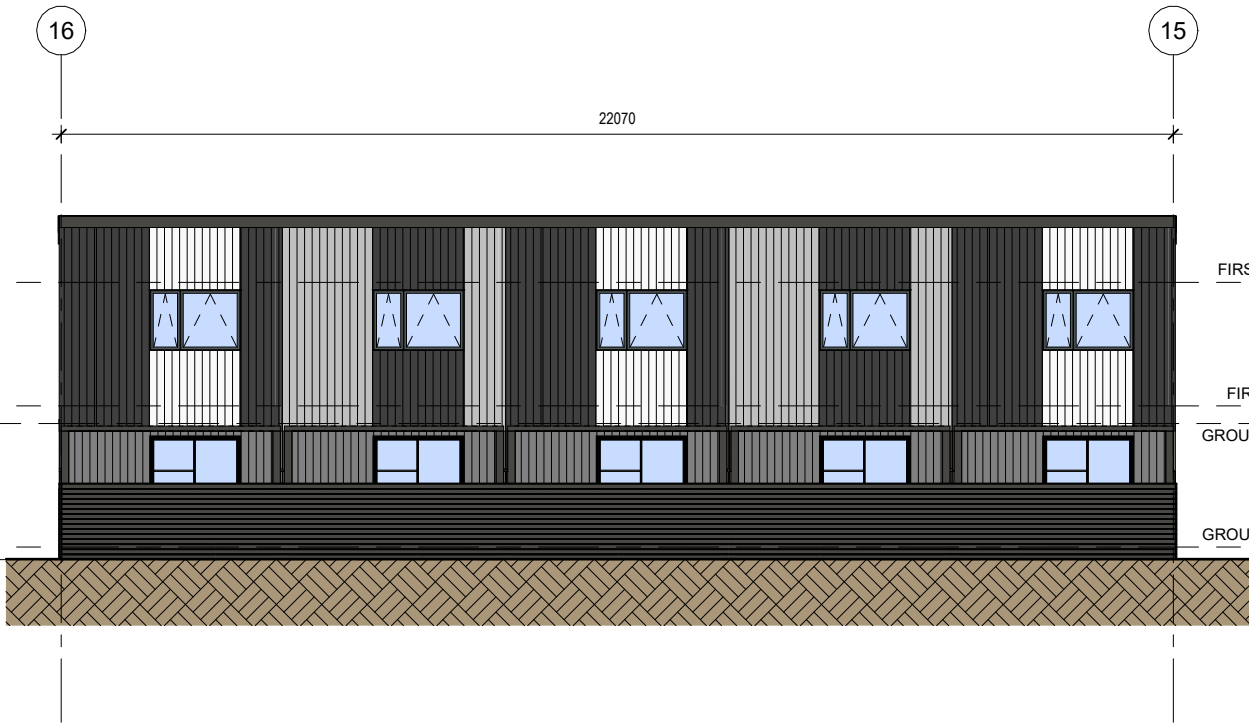
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1 : 75@A1 HALF-SCALE@A3



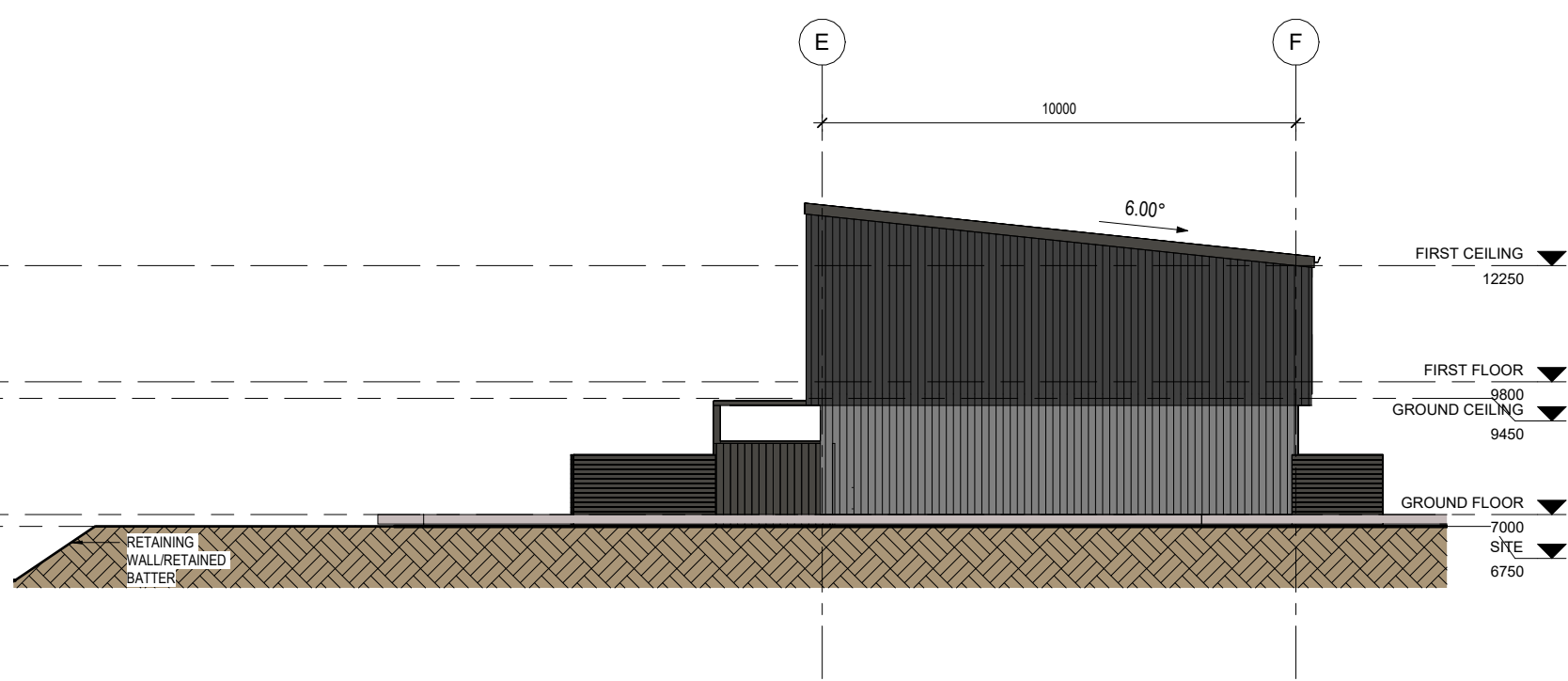
3 West Elevation - Block E
1 : 75@A1 HALF-SCALE@A3



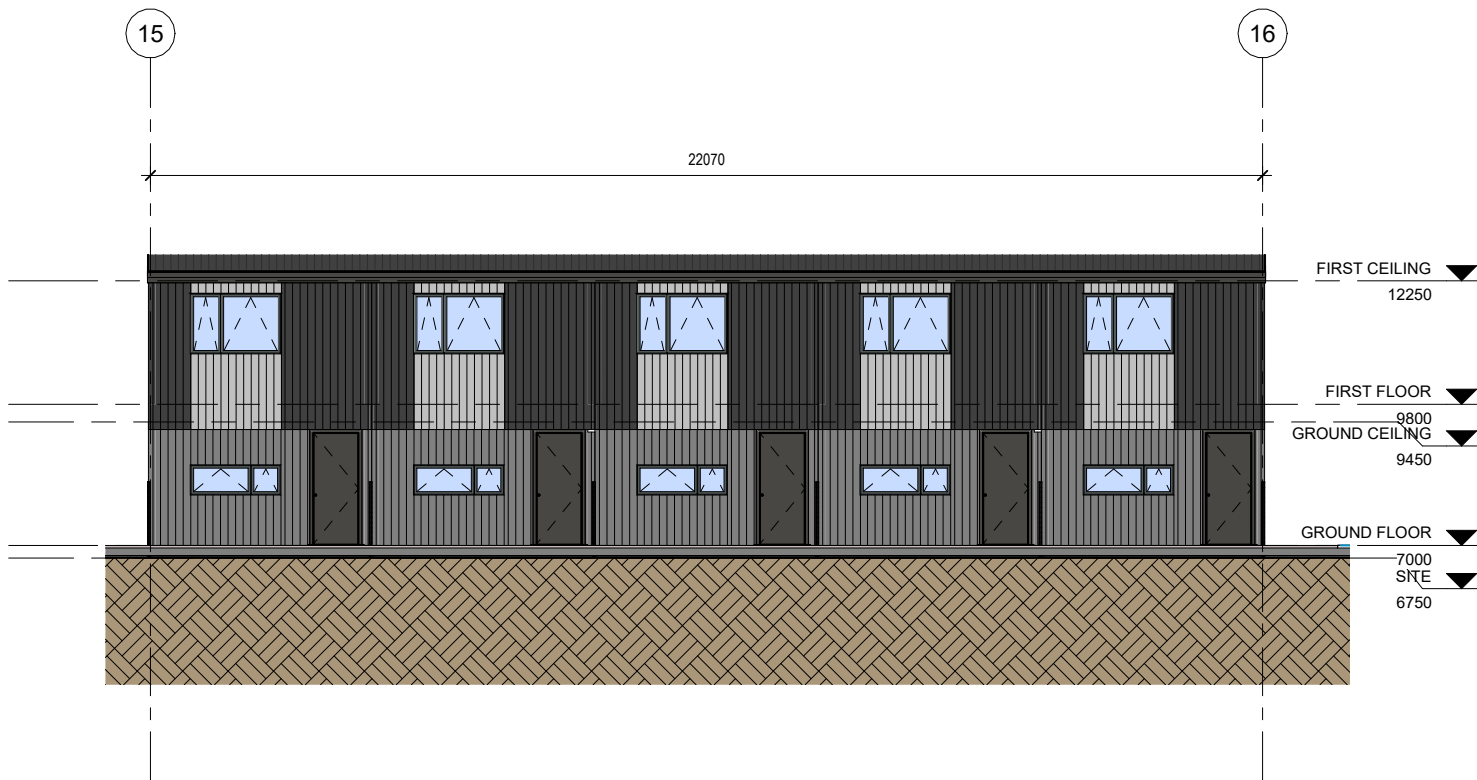
4 South Elevation - Block E
1 : 75@A1 HALF-SCALE@A3



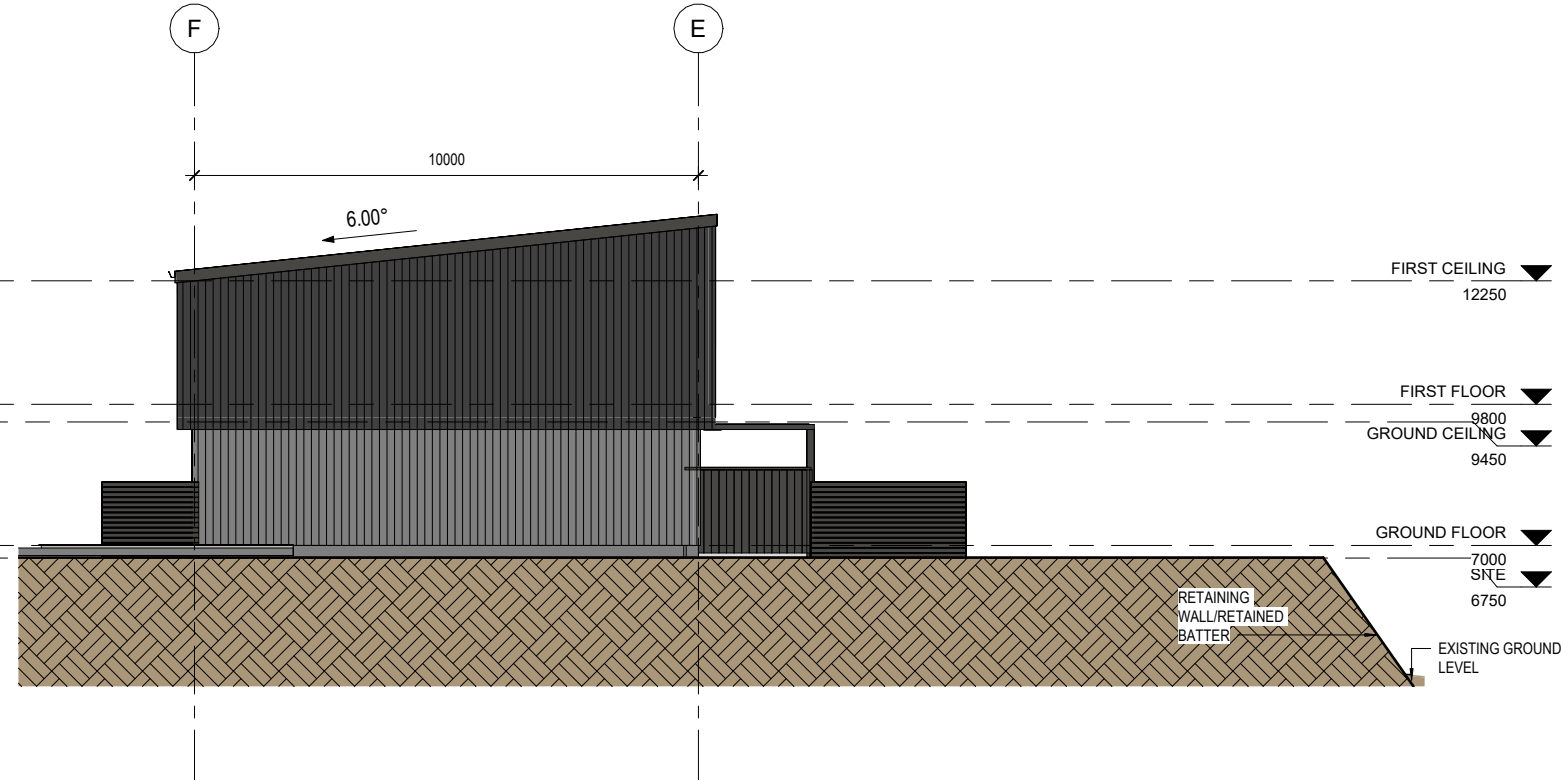
1 East Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



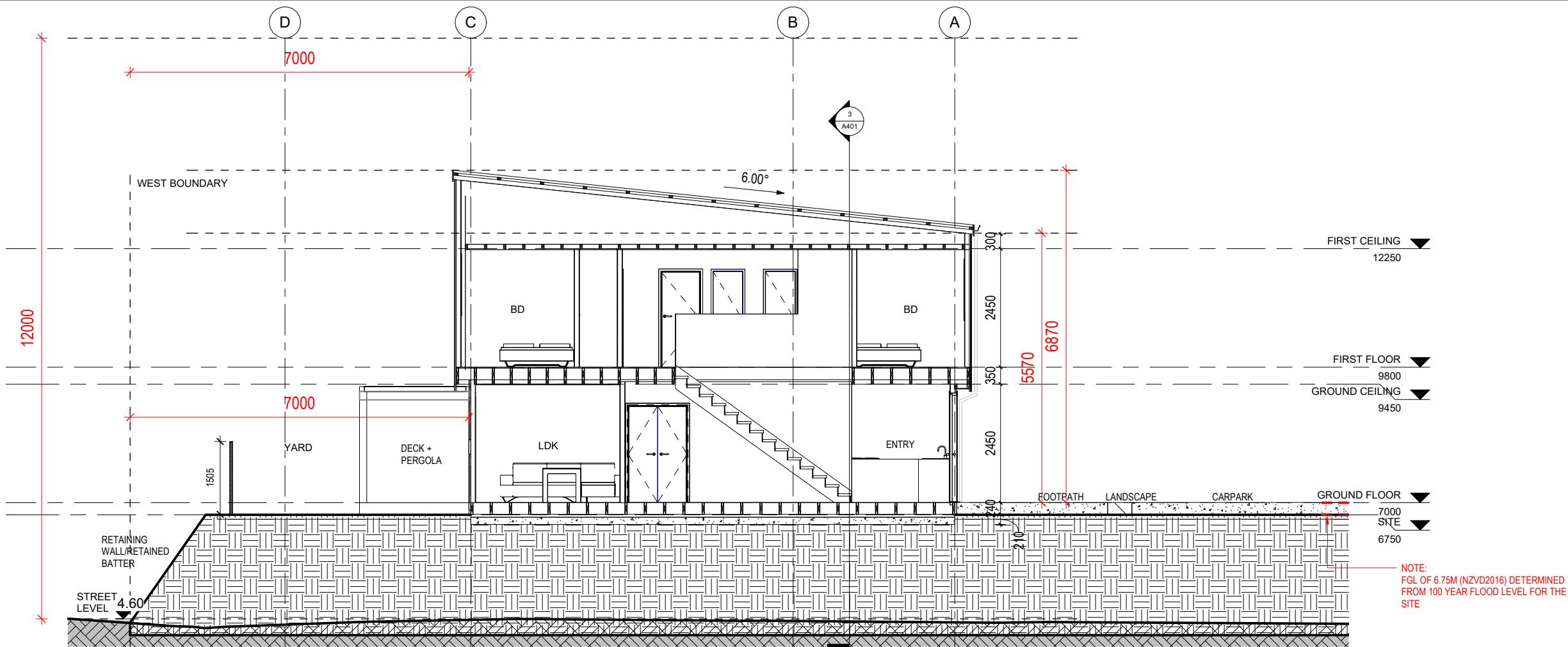
2 North Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



3 West Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



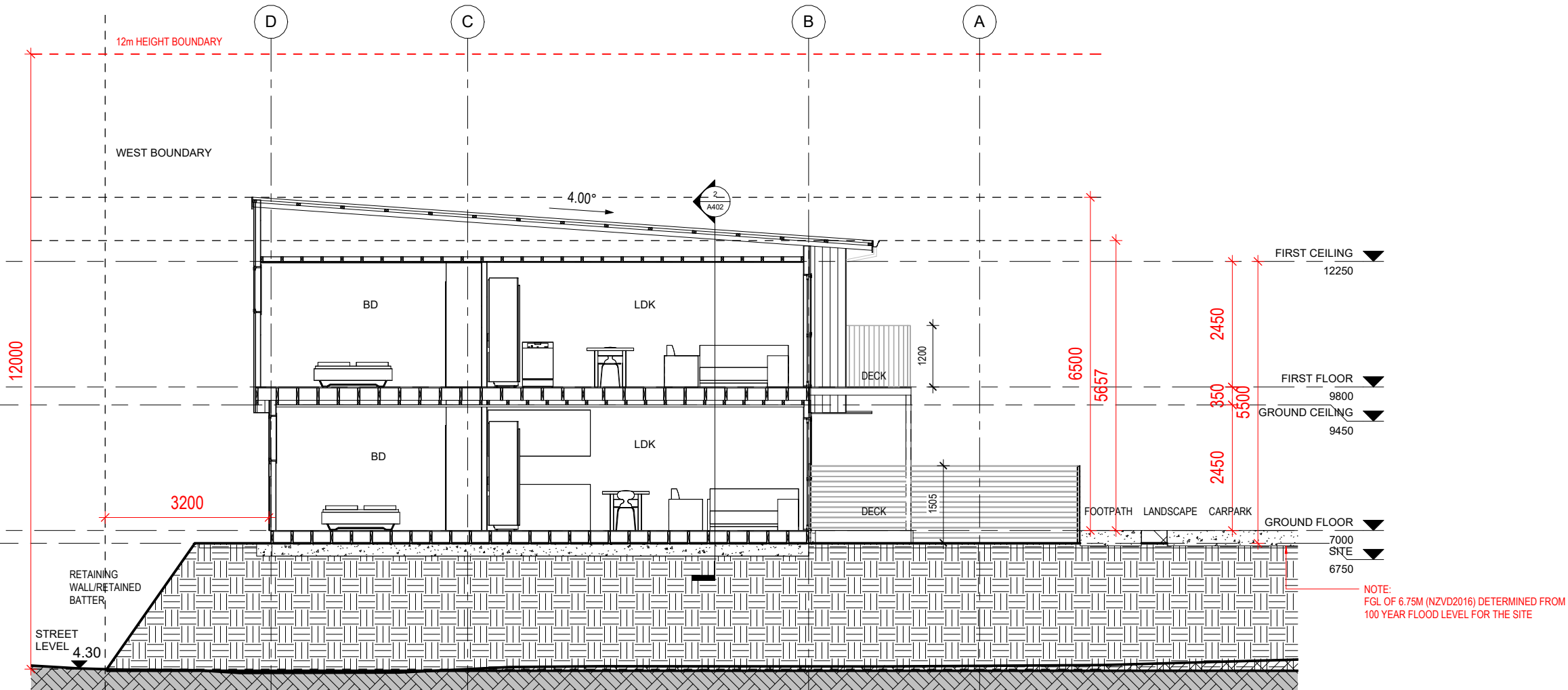
4 South Elevation - Block F
1 : 75@A1 HALF-SCALE@A3



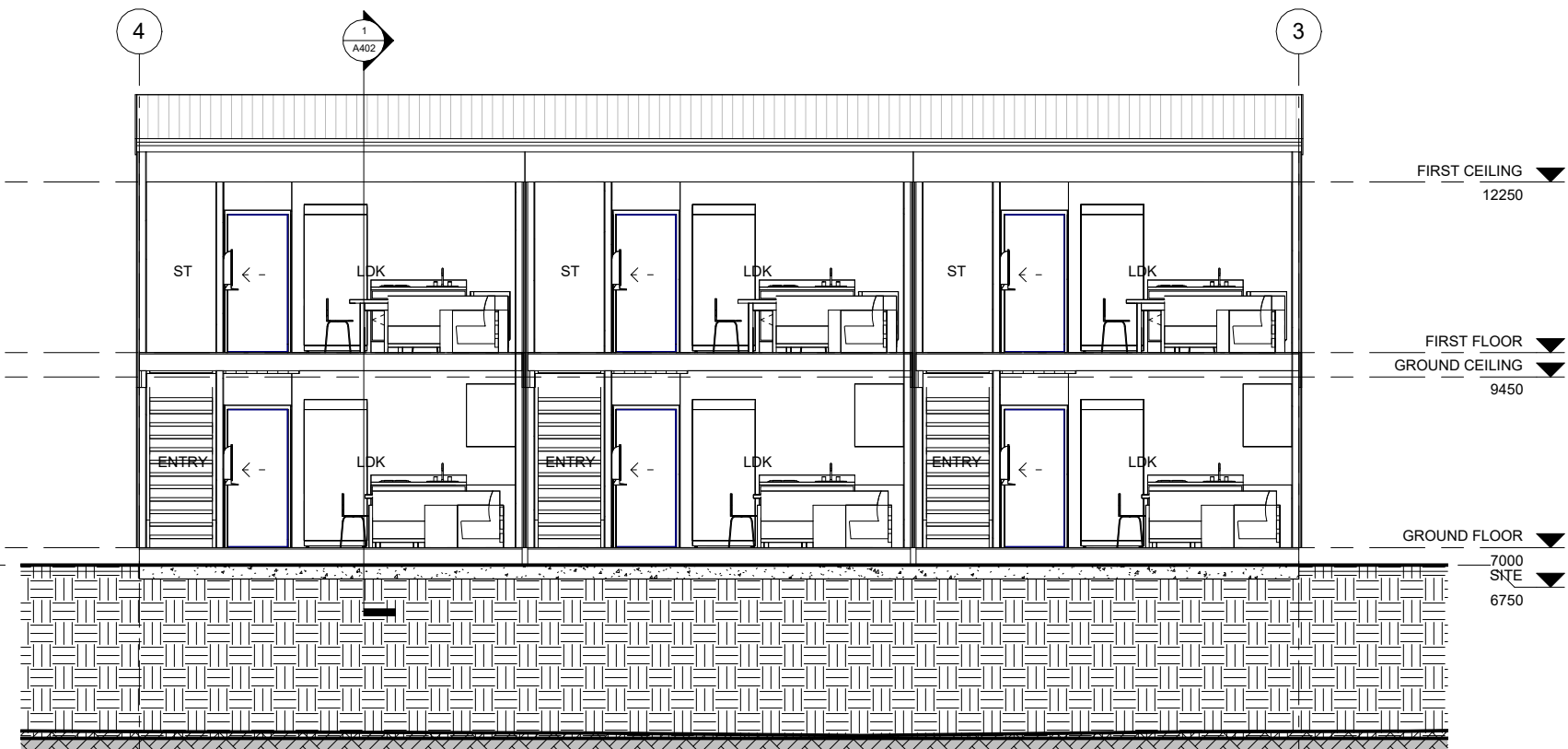
1 BLOCK C - CROSS SECTION
1 : 50@A1 HALF-SCALE@A3



3 BLOCK C - LONG SECTION
1 : 50@A1 HALF-SCALE@A3



1 BLOCK B - CROSS SECTION
1 : 50@A1 HALF-SCALE@A3



2 BLOCK B - LONG SECTION
1 : 50@A1 HALF-SCALE@A3

6.2 Appendix B:

Resource consent engineering drawings prepared for the Old Whangae Road Development.

CIVIL ENGINEERING DESIGN

FOR RESOURCE CONSENT

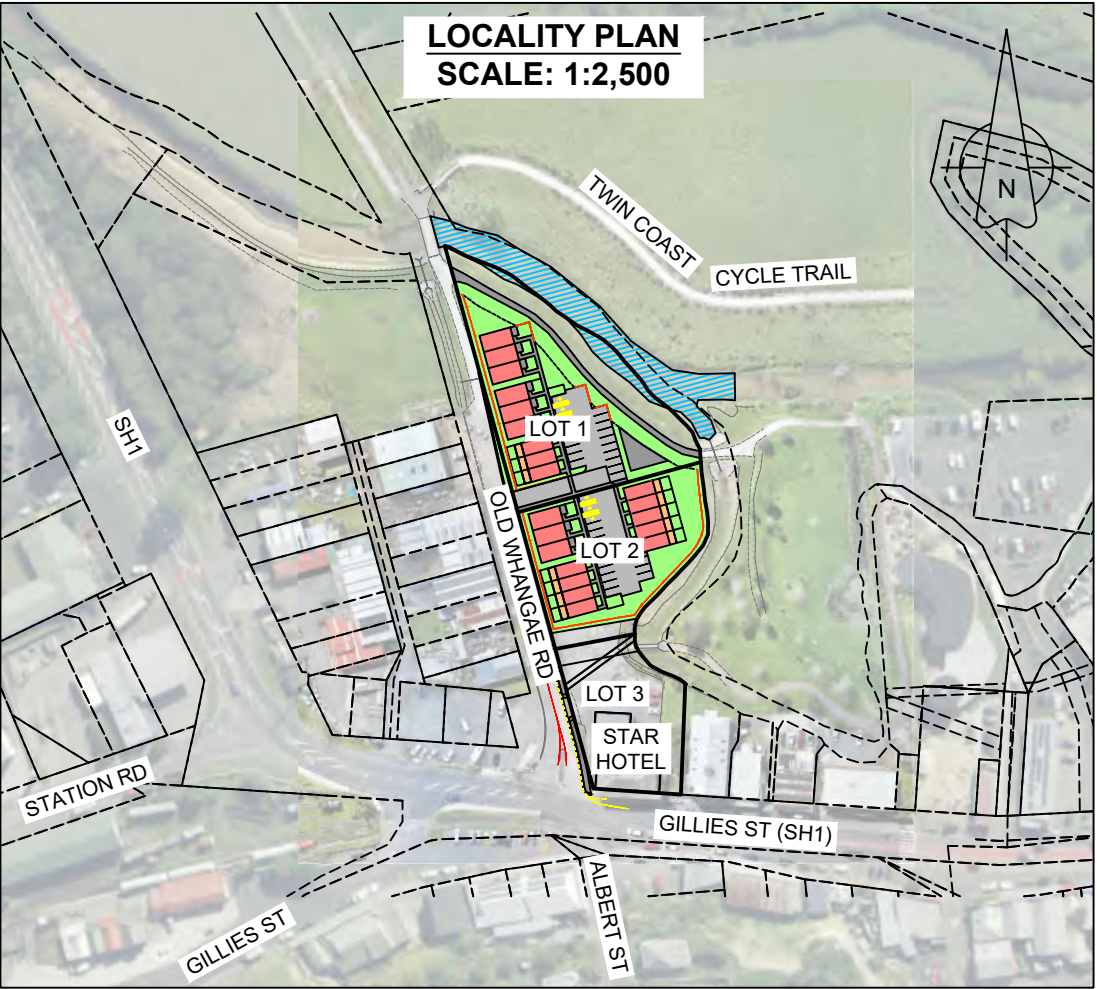
FAR NORTH HOUSING LTD

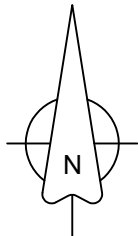
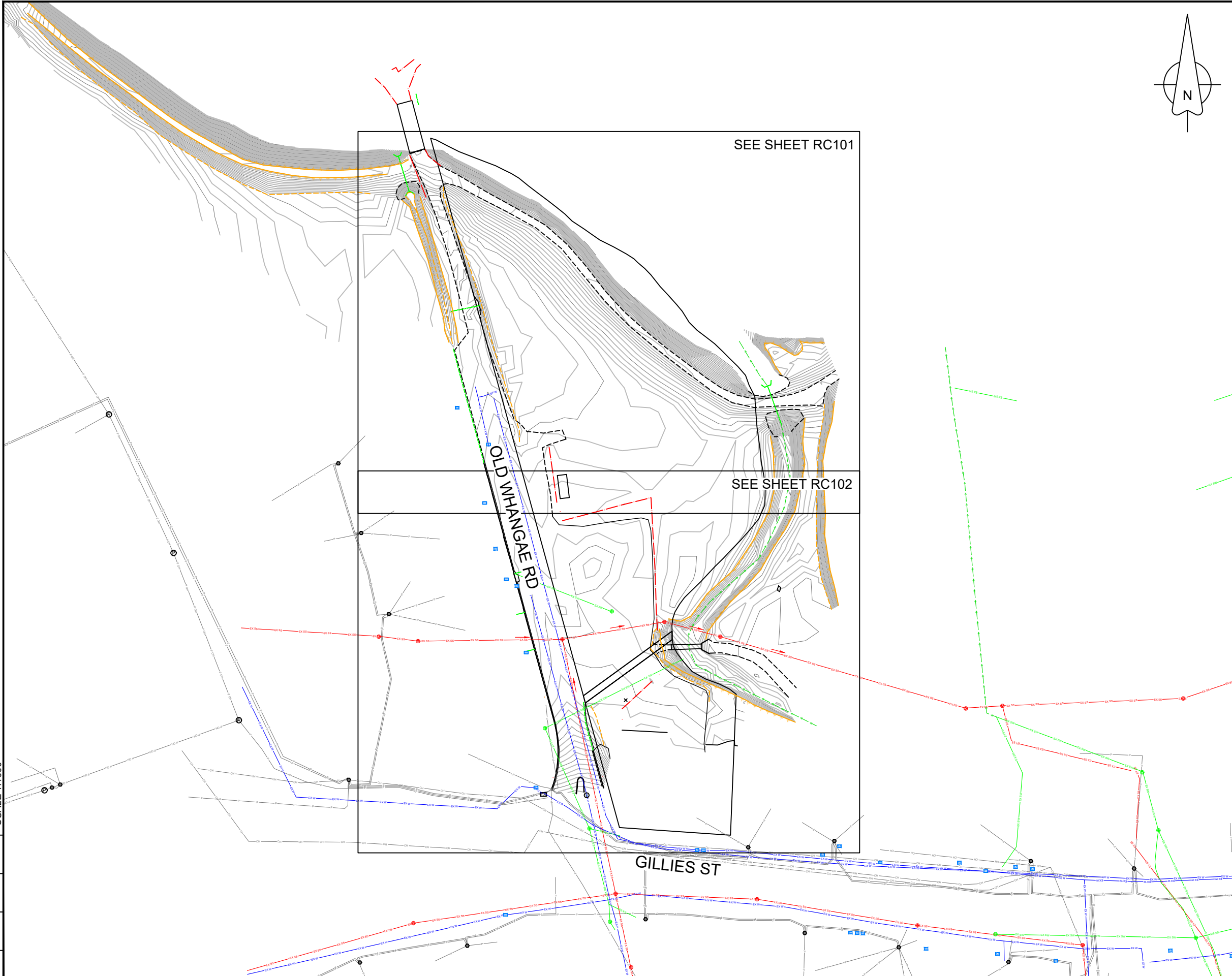
LOT 92, 98 DEEDS PLAN W 46,

84 GILLIES ST, KAWAKAWA

PROJECT REF: 25006

SCHEDULE OF DRAWINGS		
SHEET #	TITLE	REV
RC000	COVER SHEET	A
RC100	EXISTING SITE PLAN - OVERVIEW	A
RC101-102	EXISTING SITE PLAN - SHEETS 1 - 2	A
RC200	BULK EARTHWORKS PLAN	A
RC210	EROSION & SEDIMENT CONTROL PLAN	A
RC220-222	EROSION & SEDIMENT CONTROL DETAILS - SHEETS 1 - 3	A
RC300	ROADING, RETAINING & FINISHED LEVELS PLAN - OVERVIEW	A
RC301-303	ROADING, RETAINING & FINISHED LEVELS PLAN - SHEETS 1 - 3	A
RC400-401	DRAINAGE PLAN - SHEETS 1 - 2	A
RC410	EXISTING IMPERVIOUS AREAS CATCHMENT PLAN	A
RC415	PROPOSED DEVELOPMENT IMPERVIOUS AREAS CATCHMENT PLAN	A
RC420-422	STORMWATER LONGSECTIONS - SHEETS 1-3	A
RC430-431	SANITARY SEWER LONGSECTIONS - SHEETS 1-2	A
RC500	POTABLE WATER PLAN - OVERVIEW	A
RC501	POTABLE WATER PLAN - SHEET 1	A
RC510	POTABLE WATER FIRE HYDRANT PLAN	A





NOTES:


1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

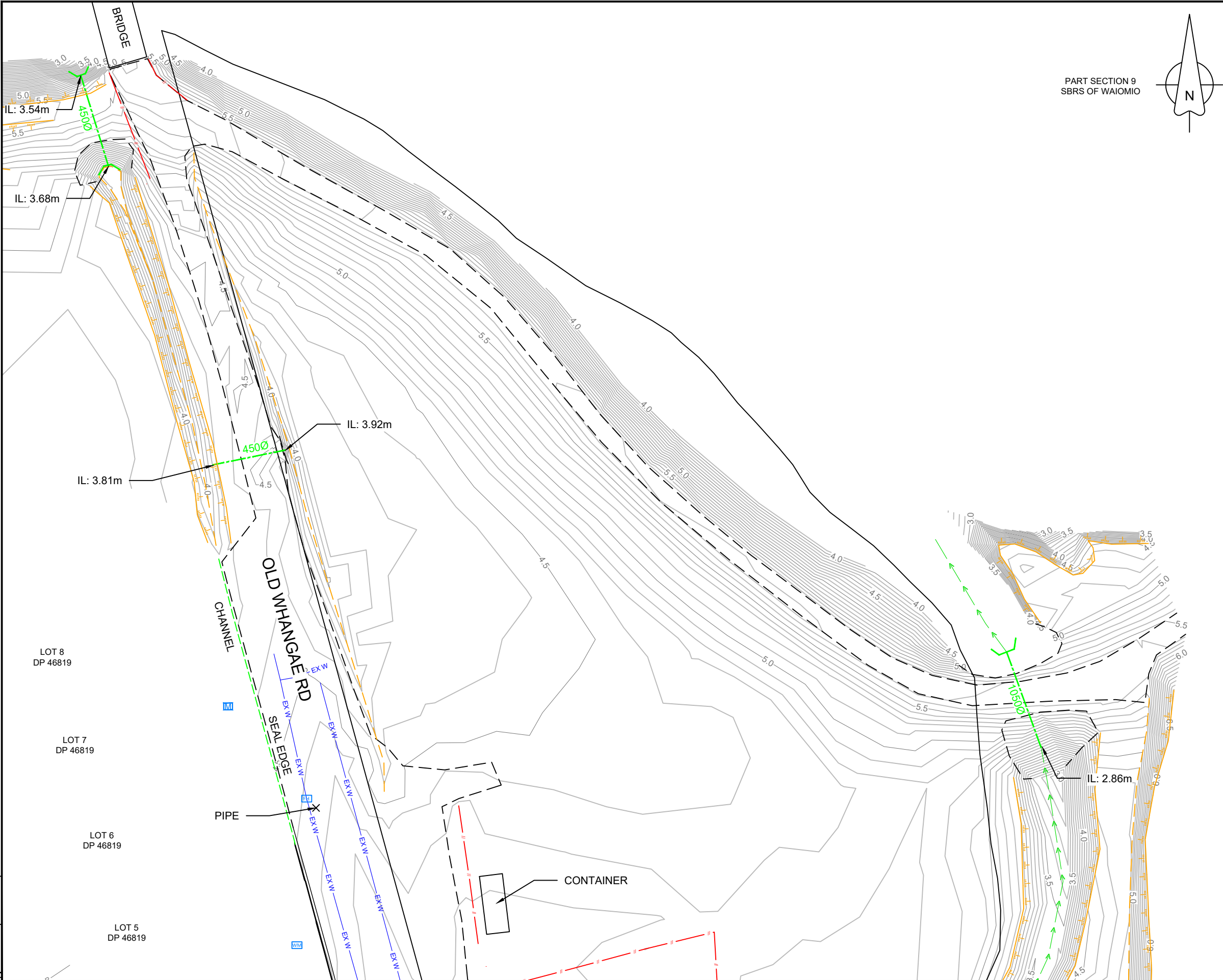
SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

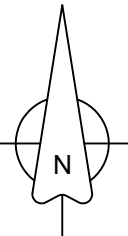
MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
COORDINATE SYSTEM: NZGD2000 MOUNT EDEN CIRCUIT
LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

- LEGEND:**
- P OH EX POWER OVERHEAD
 - P EX POWER UNDERGROUND
 - CH EX CHORUS
 - EX W EXISTING WATER
 - ABANDONED PIPE
 - EX SW EXISTING STORMWATER
 - EX SS EXISTING SS
 - EXISTING SW MH
 - EXISTING CESSPIT
 - EXISTING SS MH
 - EXISTING FIRE HYDRANT
 - EXISTING WATER METER
 - EXISTING VALVE
 - EXISTING POWER POLE
 - EXISTING POWER PILLAR
 - EXISTING TRANSFORMER
 - EXISTING TOP OF BANK
 - EXISTING BOTTOM OF BANK
 - EXISTING FENCE
 - EXISTING DRAIN
 - EXISTING CONTOURS

 WWW.HOSKINCIVIL.CO.NZ	C		PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE EXISTING SITE PLAN OVERVIEW	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
	B				REF NO 25006	SCALE 1:1000 @ A3	STATUS FOR CONSENT	
	A	1ST ISSUE			03-12-2025	DWG NUMBER RC100	REVISION A	
	REV.	REVISION DETAILS			JY AP			



PART SECTION 9
SBRS OF WAIOMIO



NOTES:

1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
COORDINATE SYSTEM: NZGD2000 MOUNT EDEN CIRCUIT
LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

LEGEND:

- P OH EX POWER OVERHEAD
- P EX POWER UNDERGROUND
- CH EX CHORUS
- EX W EXISTING WATER
- ABANDONED PIPE
- EX SW EXISTING STORMWATER
- EX SS EXISTING SS
- EXISTING SW MH
- EXISTING CESSPIT
- EXISTING SS MH
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING VALVE
- EXISTING POWER POLE
- EXISTING POWER PILLAR
- EXISTING TRANSFORMER
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING FENCE
- EXISTING DRAIN
- EXISTING CONTOURS



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C			
B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

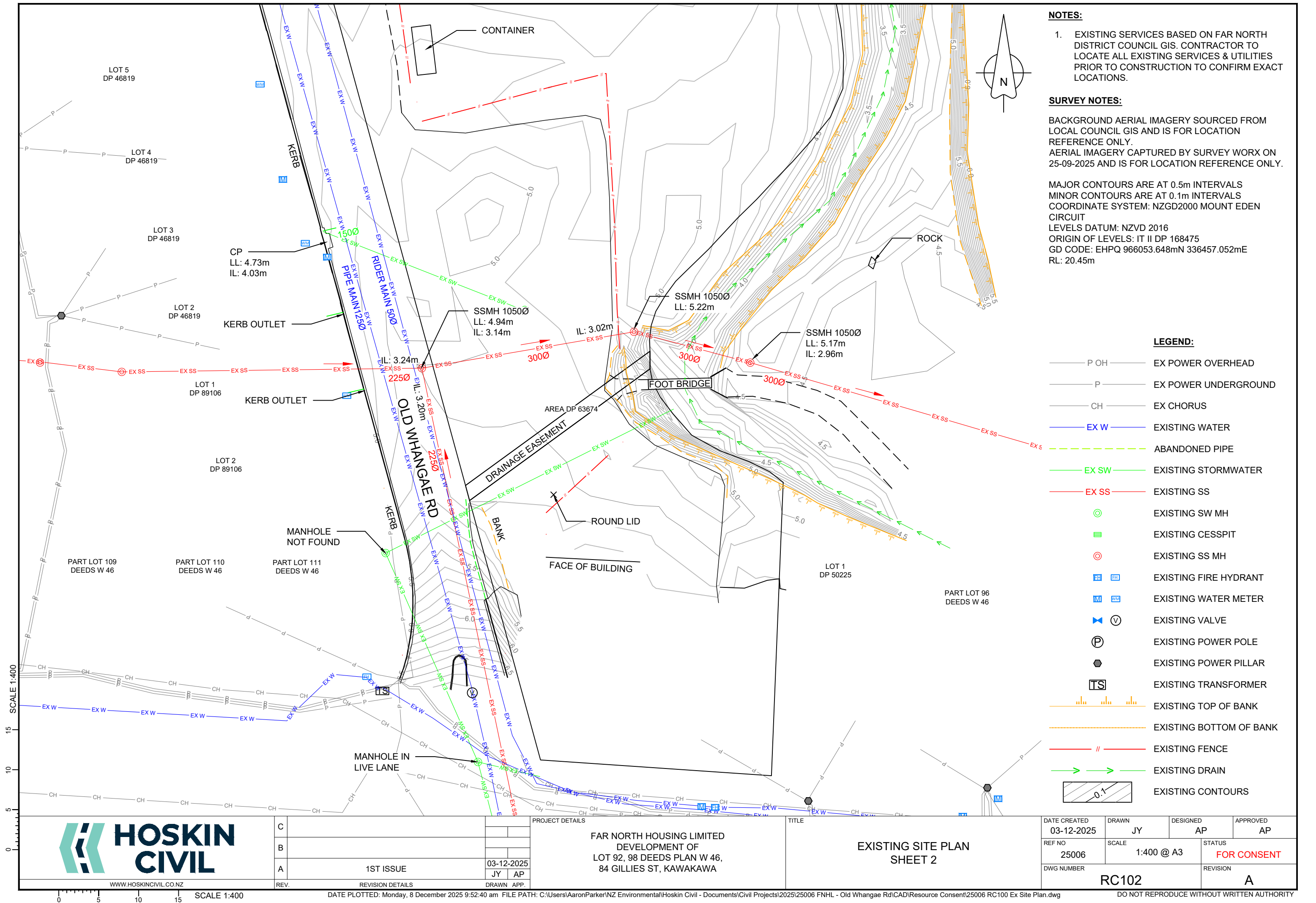
EXISTING SITE PLAN
SHEET 1

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:400 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC101	REVISION A	

SCALE 1:400

DATE PLOTTED: Monday, 8 December 2025 9:52:19 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC100 Ex Site Plan.dwg

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NOTES:

- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
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LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

LEGEND:

- P OH EX POWER OVERHEAD
- P EX POWER UNDERGROUND
- CH EX CHORUS
- EX W EXISTING WATER
- ABANDONED PIPE
- EX SW EXISTING STORMWATER
- EX SS EXISTING SS
- EXISTING SW MH
- EXISTING CESSPIT
- EXISTING SS MH
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING VALVE
- EXISTING POWER POLE
- EXISTING POWER PILLAR
- EXISTING TRANSFORMER
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING FENCE
- EXISTING DRAIN
- EXISTING CONTOURS



C			
B			
A	1ST ISSUE	JY	AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EXISTING SITE PLAN SHEET 2

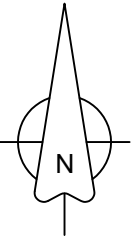
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REF NO 25006	SCALE 1:400 @ A3	STATUS FOR CONSENT	
DWG NUMBER RC102	REVISION A		

SCALE 1:400
15
10
5
0

SCALE 1:400

DATE PLOTTED: Monday, 8 December 2025 9:52:40 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC100 Ex Site Plan.dwg

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NOTES:
1. DEPTH CONTOURS SHOWN AT 0.5m INTERVALS.

BULK EARTHWORKS VOLUMES:
CUT = 0m³
FILL = 8965m³

THEREFORE EXCESS FILL REQUIRED = 8965m³

TOTAL EARTHWORKS AREA = 4790m²

- VOLUME NOTES:**
- VOLUME BASED ON COMPARISON BETWEEN SURVEY TOPO DATA TO FINISHED DESIGN LEVEL.
 - VOLUMES BASED ON SOLID MEASURE.
 - TOPSOIL STRIP & RESPREAD NOT TAKEN INTO ACCOUNT.
 - PAVEMENT DEPTH NOT TAKEN INTO ACCOUNT.
 - FOUNDATION DEPTH NOT TAKEN INTO ACCOUNT.

DEPTH RANGE KEY 500mm				
Lower_value	Upper_value			Colour
-1.5	to	-1	m	
-1	to	-.5	m	
-.5	to	0	m	
0	to	.5	m	
.5	to	1	m	
1	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	



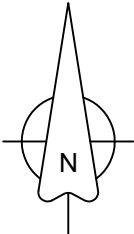
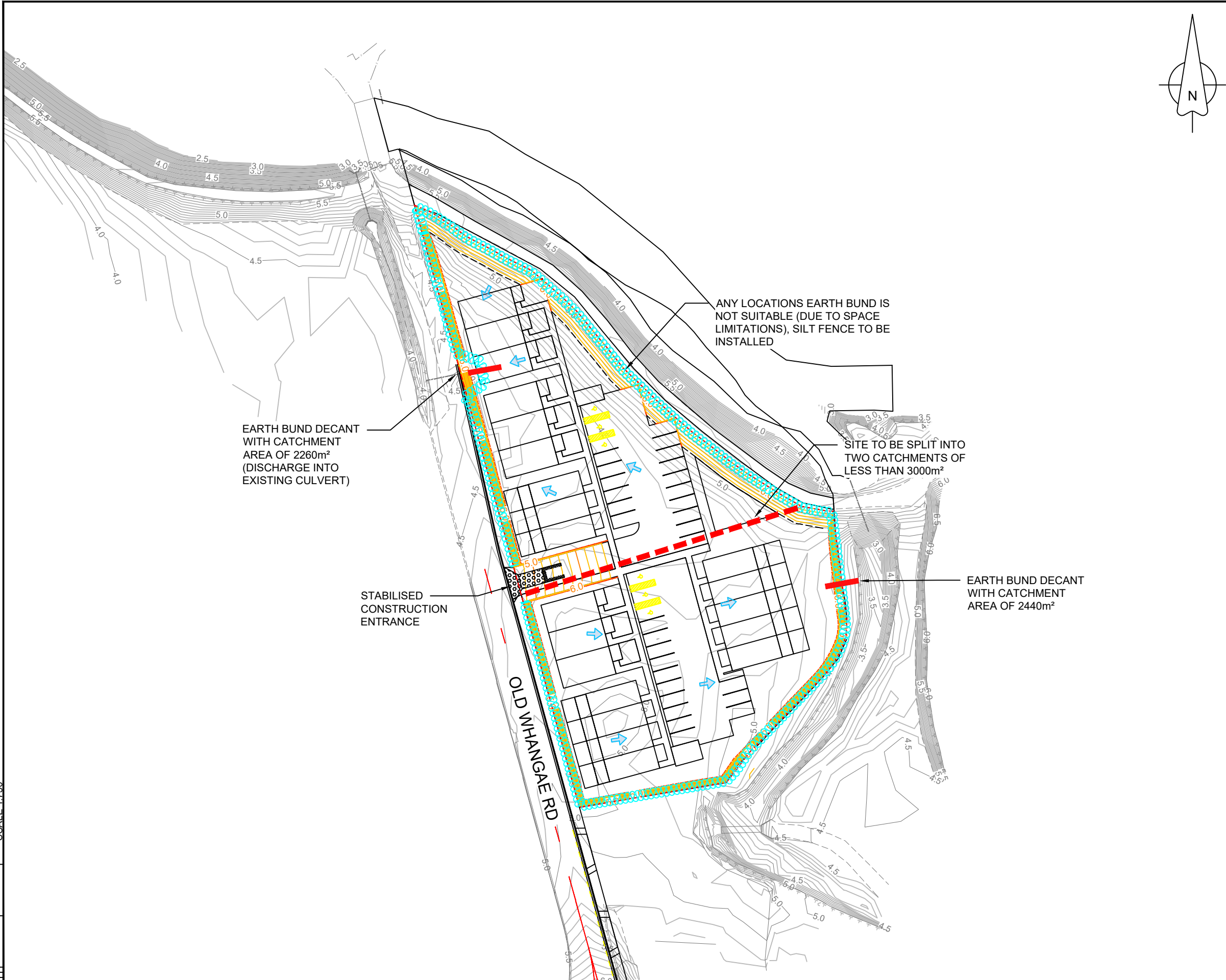
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C			
B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
BULK EARTHWORKS PLAN

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3	STATUS FOR CONSENT	
DWG NUMBER RC200		REVISION A	



- NOTES:**
- DESIGN CONTOURS AT 200mm INTERVALS.
 - EXISTING CONTOURS AT 200mm INTERVALS.
 - EROSION CONTROL - ALL SILT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH GD05 AND PLACED PRIOR TO COMMENCEMENT OF EARTHWORKS. SUCH MEASURES SHALL BE SUBJECT TO FURTHER ADDITIONS AND ALTERATIONS, WHERE CONSIDERED NECESSARY, AS DIRECTED BY THE PROJECT MANAGER OR NRC, DURING THE PROGRESSION OF WORKS. IT IS ADVISED TO CONTACT NRC PRIOR TO COMMENCEMENT OF EARTHWORKS, AFTER INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES TO ENSURE THEY HAVE BEEN INSTALLED TO THE SATISFACTION OF NRC.

- LEGEND:**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXTENT OF EARTHWORKS (4790m²)
 - SILT FENCE
 - OVERLAND FLOWPATH
 - EARTH BUND
 - EARTH BUND DECANT

SCALE 1:750



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SCALE 1:750

C			
B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL PLAN

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3		STATUS FOR CONSENT
DWG NUMBER RC210			REVISION A

STABILISED CONSTRUCTION ENTRANCE
SPECIFICATIONS:

APPLICATION

USE A STABILISED CONSTRUCTION ENTRANCE AT ALL POINTS OF CONSTRUCTION SITE INGRESS AND EGRESS WITH A CONSTRUCTION PLAN LIMITING TRAFFIC TO THESE ENTRANCES ONLY. THEY ARE PARTICULARLY USEFUL ON SMALL CONSTRUCTION SITES BUT CAN BE UTILISED FOR ALL PROJECTS.

DESIGN:

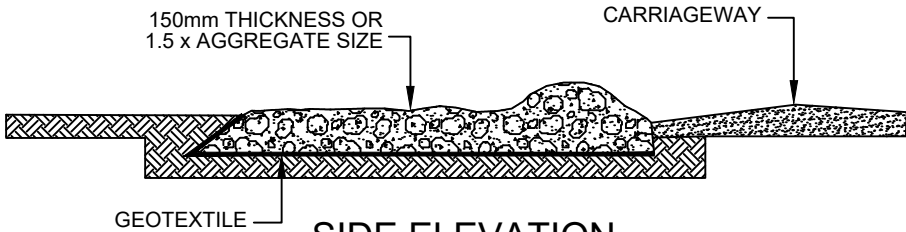
CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER UNSUITABLE MATERIAL AND PROPERLY GRADE IT.

- 1. LAY WOVEN GEOTEXTILE; PIN DOWN EDGES AND OVERLAP JOINTS.
- 2. PROVIDE DRAINAGE TO CARRY RUNOFF FROM THE STABILISED CONSTRUCTION ENTRANCE TO A SEDIMENT CONTROL MEASURE.
- 3. PLACE AGGREGATE TO THE SPECIFICATIONS BELOW AND SMOOTH IT.
- 4. STABILISED CONSTRUCTION ENTRANCE AGGREGATE SPECIFICATIONS:

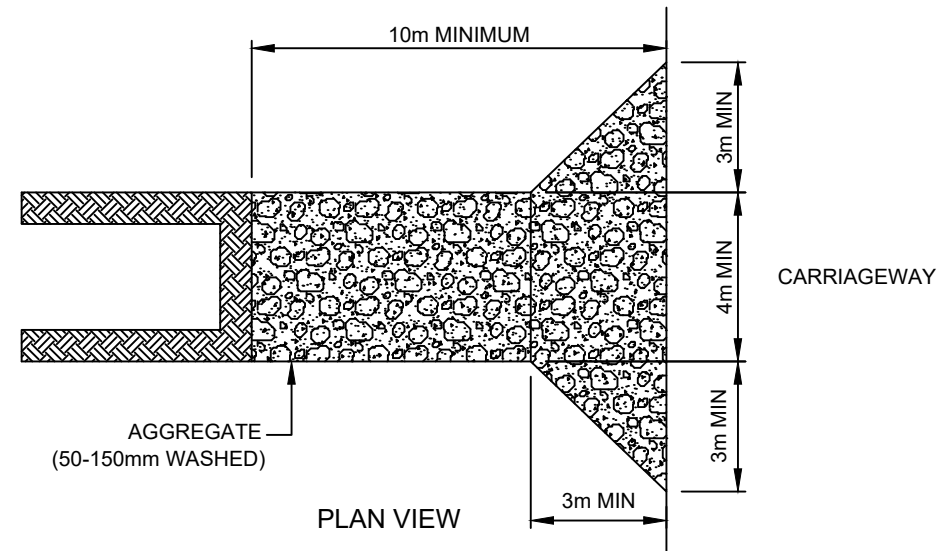
AGGREGATE SIZE	5-150mm WASHED AGGREGATE
THICKNESS	150mm MINIMUM OR 1.5 X AGGREGATE SIZE
LENGTH	10m MINIMUM LENGTH RECOMMENDED
WIDTH	4m MINIMUM

MAINTENANCE

- 1. MAINTAIN THE STABILISED CONSTRUCTION ENTRANCE IN A CONDITION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. AFTER EACH RAINFALL INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT FROM THE STABILISED CONSTRUCTION ENTRANCE AND CLEAN OUT AS NECESSARY.
- 2. WHEN WHEEL WASHING IS ALSO REQUIRED, ENSURE THIS IS DONE ON AN AREA STABILISED WITH AGGREGATE WHICH DRAINS TO AN APPROVED SEDIMENT RETENTION FACILITY.

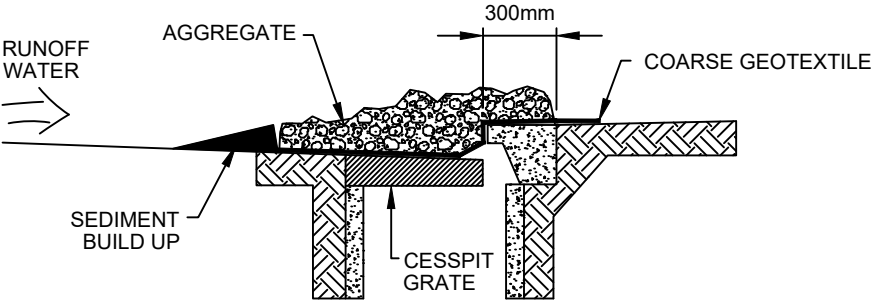


SIDE ELEVATION

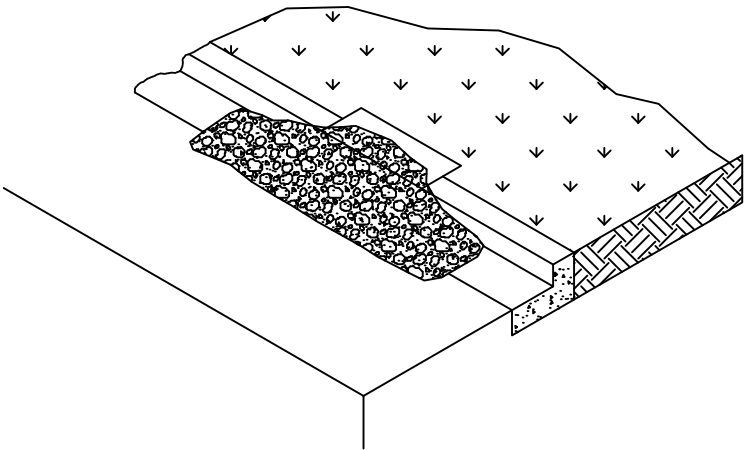


PLAN VIEW

STABILISED CONSTRUCTION ENTRANCE



CROSS SECTION



STORMWATER INLET PROTECTION
- FILTER MEDIA DESIGN



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REV.

REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

EROSION & SEDIMENT CONTROL DETAILS
SHEET 1

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE
NTS @ A3

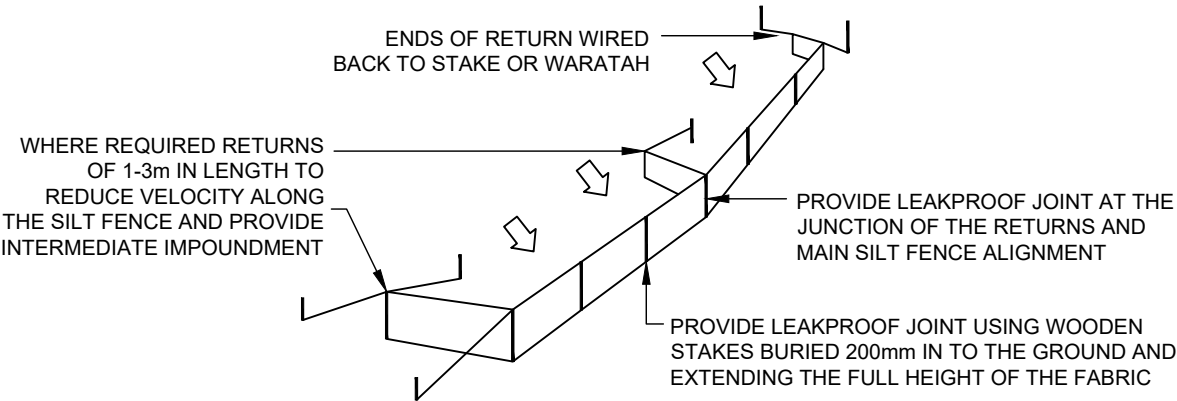
STATUS
FOR CONSENT

DWG NUMBER

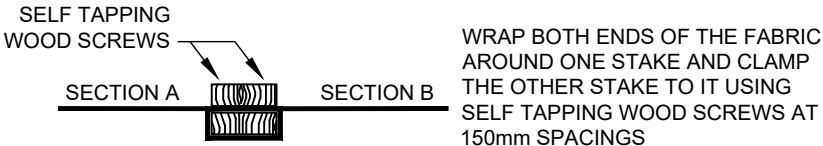
RC220

REVISION

A



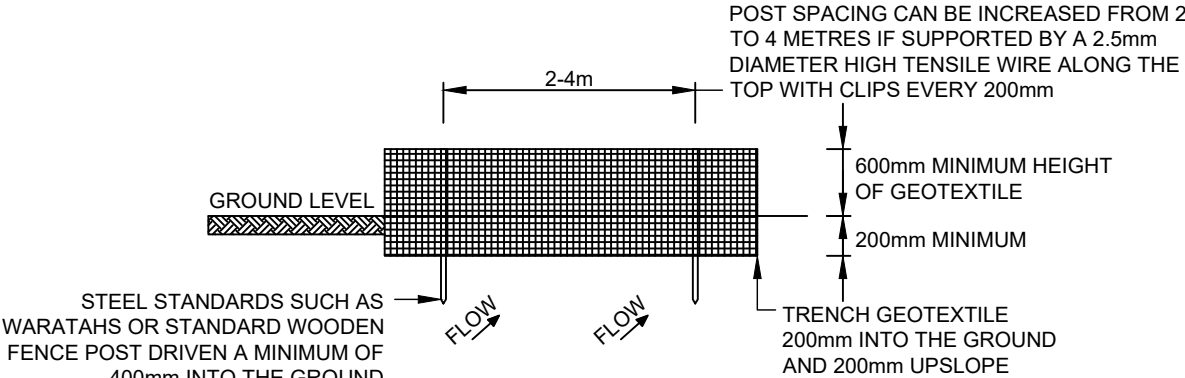
SILT FENCE WITH RETURNS AND SUPPORT WIRE



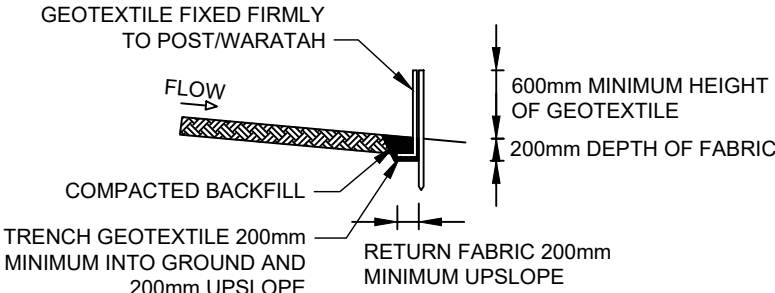
STANDARD FABRIC JOINT

SILT FENCE DESIGN CRITERIA:		
SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAX)	SPACING OF RETURNS (m)
< 2%	N/A	UNLIMITED
2-10%	40	60
10-20%	30	50
20-33%	20	40
33-50%	15	30
>50%	6	20

GRAB TENSILE STRENGTH: >440N (ASTM D4632)
TENSILE MODULUS: 0.140 pa (MINIMUM)
APPARENT OPENING SIZE: 0.1-0.5mm (ASTM D4751)

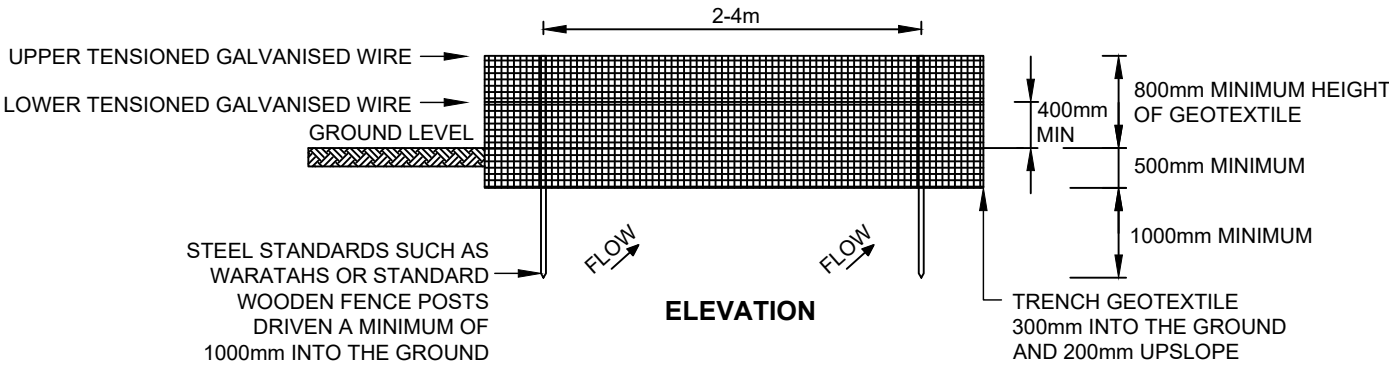


ELEVATION

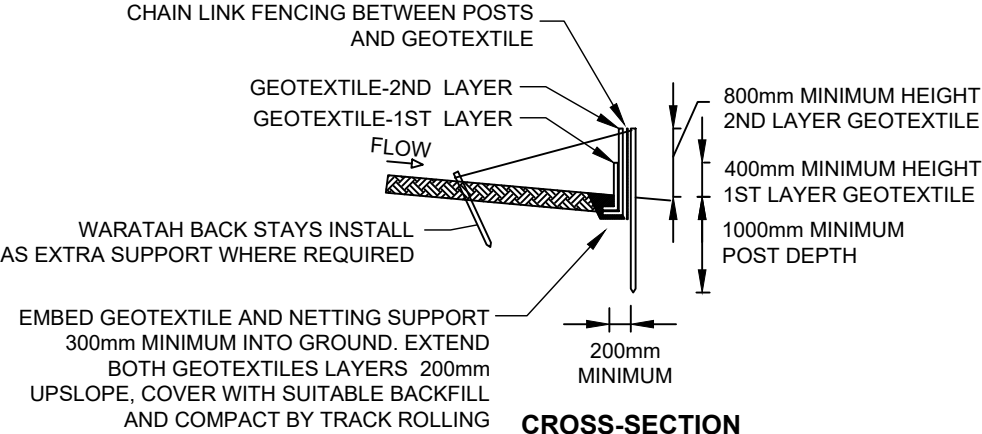


CROSS-SECTION

SILT FENCE CONSTRUCTION



ELEVATION



CROSS-SECTION

SUPER SILT FENCE DESIGN CRITERIA:

SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAX)	SPACING OF RETURNS (m)
0-10%	UNLIMITED	60
10-20%	60	50
20-33%	30	40
33-50%	30	30
>50%	15	20

SUPER SILT FENCE CONSTRUCTION



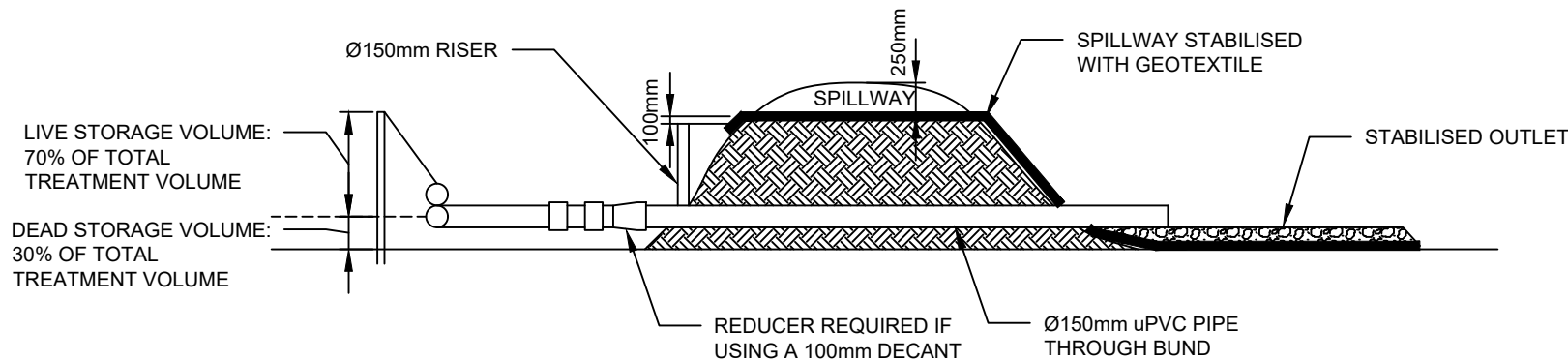
WWW.HOSKINCIVIL.CO.NZ

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B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL DETAILS
SHEET 2

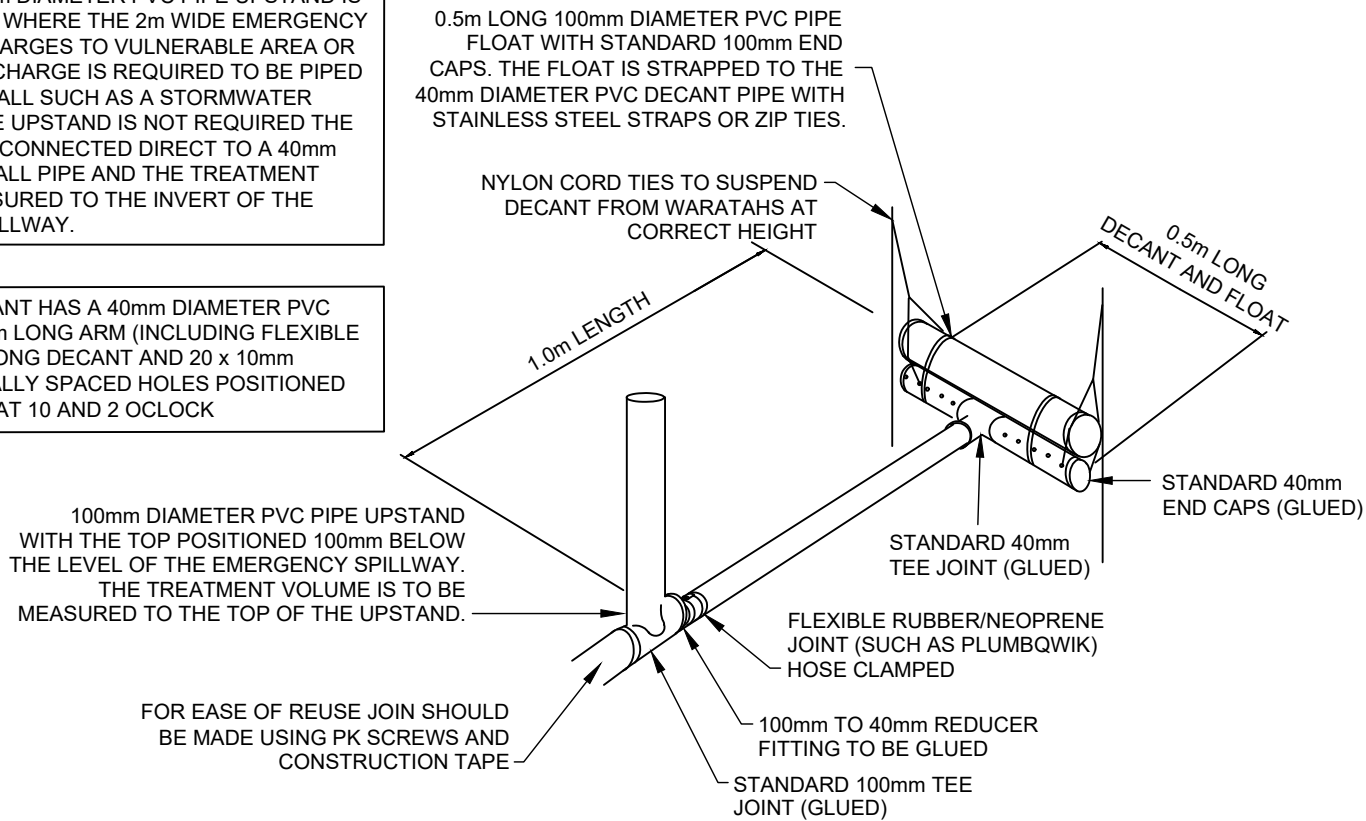
DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE NTS @ A3		STATUS FOR CONSENT
DWG NUMBER RC221			REVISION A



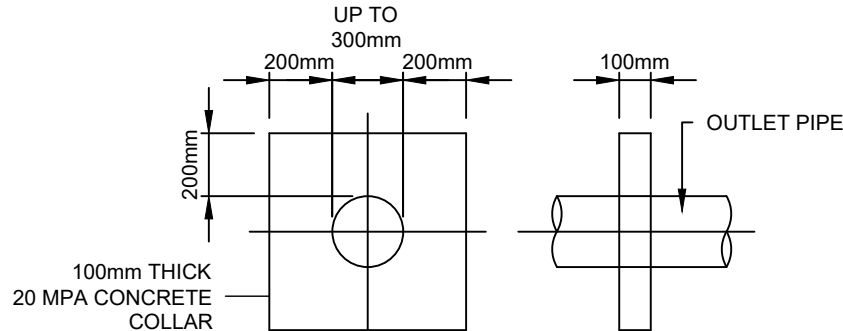
DECANTING EARTH BUND

NOTE: THE 100mm DIAMETER PVC PIPE UPSTAND IS ONLY REQUIRED WHERE THE 2m WIDE EMERGENCY SPILLWAY DISCHARGES TO VULNERABLE AREA OR WHERE THE DISCHARGE IS REQUIRED TO BE PIPED TO A SAFE OUTFALL SUCH AS A STORMWATER MANHOLE. IF THE UPSTAND IS NOT REQUIRED THE DECANT CAN BE CONNECTED DIRECT TO A 40mm DIAMETER OUTFALL PIPE AND THE TREATMENT VOLUME IS MEASURED TO THE INVERT OF THE EMERGENCY SPILLWAY.

NOTE: THE DECANT HAS A 40mm DIAMETER PVC PIPE WITH A 1.3m LONG ARM (INCLUDING FLEXIBLE JOINT), A 0.5m LONG DECANT AND 20 x 10mm DIAMETER EQUALLY SPACED HOLES POSITIONED HORIZONTALLY AT 10 AND 2 OCLOCK



40mm DECANT WITH UPSTAND FOR DECANTING EARTH BUND



ANTI-SEEP COLLAR



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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL DETAILS SHEET 3

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE NTS @ A3	STATUS FOR CONSENT	
DWG NUMBER RC222		REVISION A	



NOTES:

1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

50
40
30
20
10
0

SCALE 1:1000



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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
ROADING, RETAINING & FINISHED LEVELS PLAN OVERVIEW

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:1000 @ A3		STATUS FOR CONSENT
DWG NUMBER RC300			REVISION A

DATE PLOTTED: Monday, 8 December 2025 9:52:16 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC300 Roading Plan.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



- NOTES:**
- 1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
- EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

- LEGEND:**
- RETAINING WALL
 - DESIGN CONTOURS

SCALE 1:400



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SCALE 1:400

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B			
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DATE PLOTTED: Monday, 8 December 2025 9:52:09 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC300 Roading Plan.dwg

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
ROADING, RETAINING & FINISHED LEVELS PLAN SHEET 1

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:400 @ A3		STATUS FOR CONSENT
DWG NUMBER RC301			REVISION A

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



NOTES:

1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

SCALE 1:400



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SCALE 1:400

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A	1ST ISSUE	JY	AP
REV.	REVISION DETAILS	DRAWN	APP.

DATE PLOTTED: Monday, 8 December 2025 9:52:09 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC300 Rooding Plan.dwg

PROJECT DETAILS

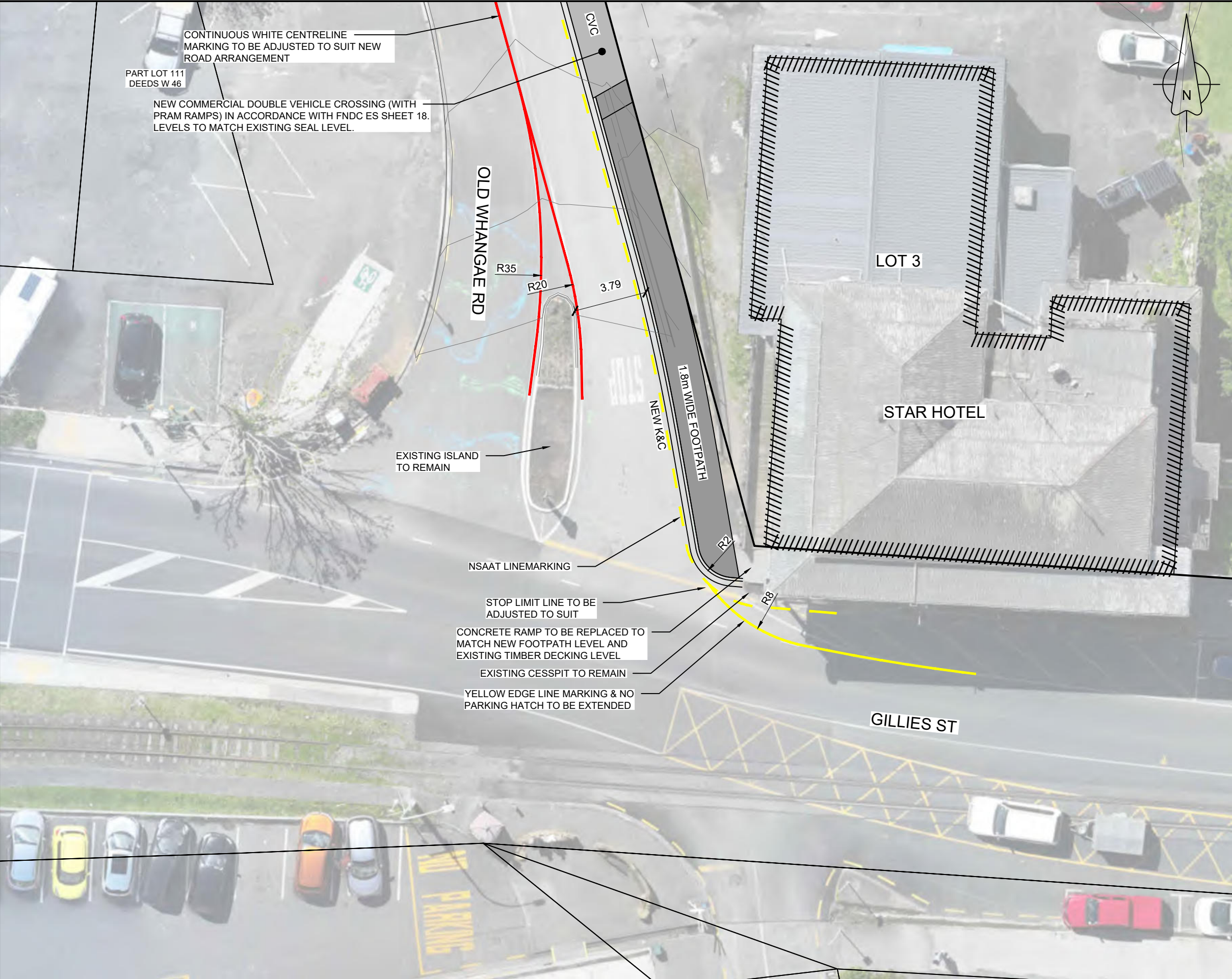
FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

ROADING, RETAINING &
FINISHED LEVELS PLAN
SHEET 2

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:400 @ A3	STATUS FOR CONSENT	
DWG NUMBER RC302		REVISION A	

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



- NOTES:**
- 1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
- EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

SCALE 1:200



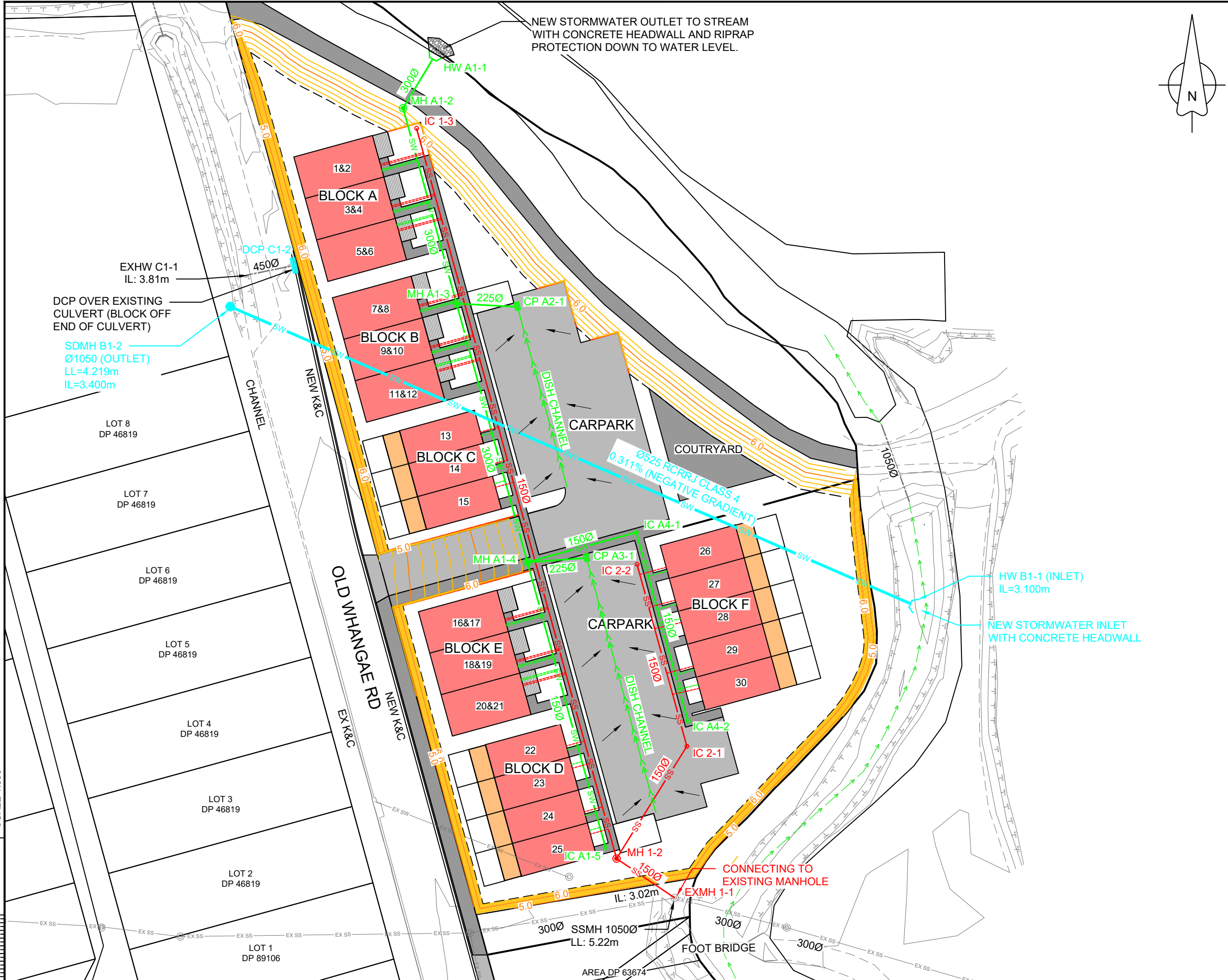
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	A	1ST ISSUE	03-12-2025	JY AP
	REVISION DETAILS		DRAWN APP.	

PROJECT DETAILS	
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	

TITLE
ROADING, RETAINING & FINISHED LEVELS PLAN SHEET 3

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:200 @ A3		STATUS FOR CONSENT
DWG NUMBER RC303			REVISION A



- NOTES:**
- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
 - ALL MANHOLES ARE Ø1050 UNLESS OTHERWISE STATED.
 - MANHOLE LIDS ARE TO BE ROTATED OUT OF PATHWAYS & CROSSINGS WHERE POSSIBLE.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
EX K&C = EXISTING KERB & CHANNEL
NEW K&C = NEW KERB & CHANNEL
CP = CESSPIT
DCP = DOUBLE CESSPIT
IC = INSPECTION CHAMBER
SWMH = STORMWATER MANHOLE
SSMH = SEWER MANHOLE

- LEGEND:**
- EX SW — EXISTING STORMWATER
 - EX SS — EXISTING SS
 - ⊙ — EXISTING SW MH
 - ⊞ — EXISTING CESSPIT
 - ⊙ — EXISTING SS MH
 - SW — PROPOSED SW PIPE (TO BE VESTED)
 - SW — PROPOSED SW PIPE (PRIVATE)
 - SS — PROPOSED SS PIPE (PRIVATE)
 - ⊙ — PROPOSED SW MH
 - ⊞ — PROPOSED SCRUFFY DOME
 - ⊞ — PROPOSED CESSPIT
 - ⊙ — PROPOSED SS MH
 - → — PROPOSED DISH CHANNEL
 - — EXISTING DRAIN
 - 0.2 — DESIGN CONTOURS



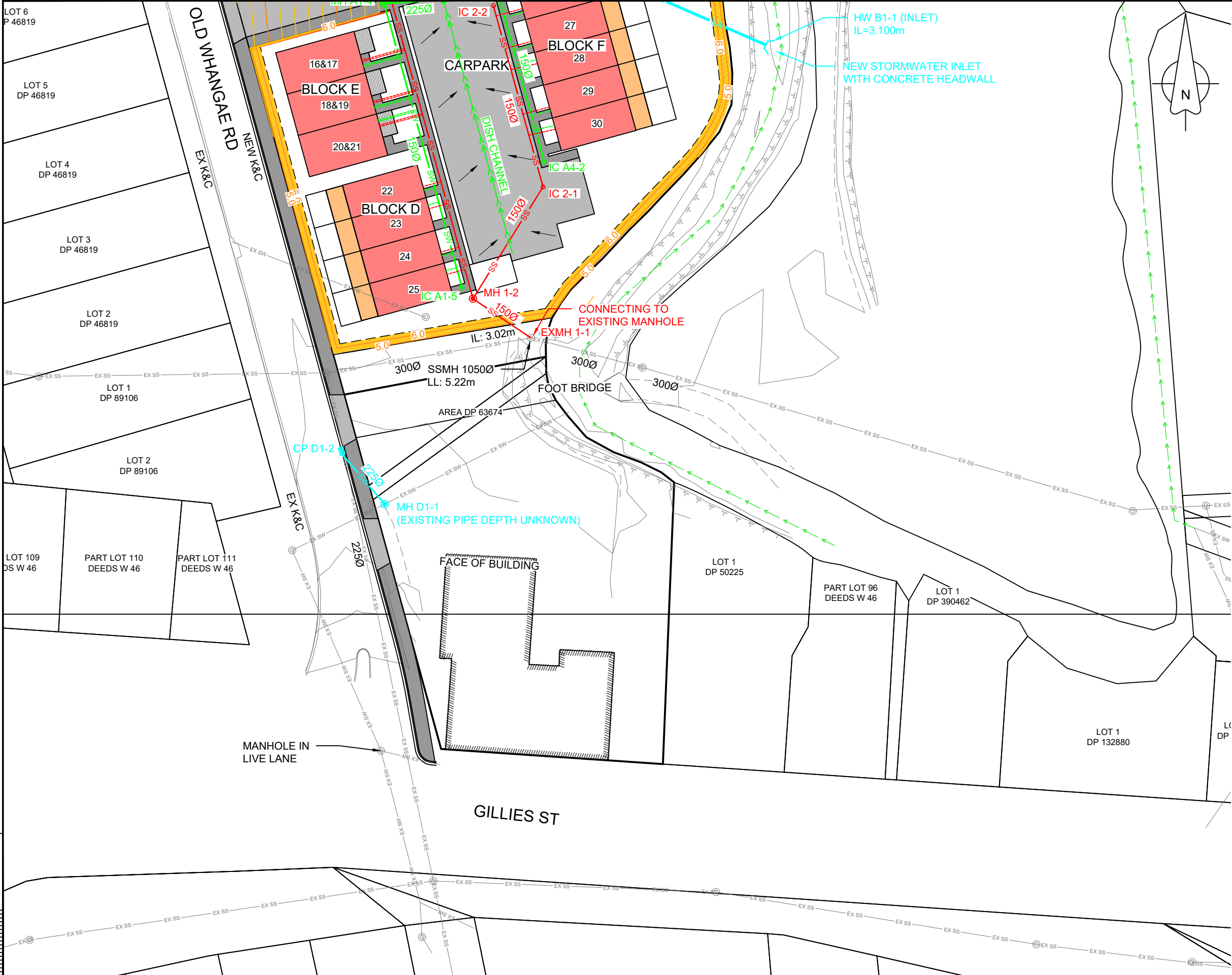
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
DRAINAGE PLAN SHEET 1

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3		STATUS FOR CONSENT
DWG NUMBER RC400			REVISION A



- NOTES:**
- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
 - ALL MANHOLES ARE Ø1050 UNLESS OTHERWISE STATED.
 - MANHOLE LIDS ARE TO BE ROTATED OUT OF PATHWAYS & CROSSINGS WHERE POSSIBLE.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
EX K&C = EXISTING KERB & CHANNEL
NEW K&C = NEW KERB & CHANNEL
CP = CESSPIT
DCP = DOUBLE CESSPIT
IC = INSPECTION CHAMBER
SWMH = STORMWATER MANHOLE
SSMH = SEWER MANHOLE

- LEGEND:**
- EX SW — EXISTING STORMWATER
 - EX SS — EXISTING SS
 - ⊙ — EXISTING SW MH
 - ⊞ — EXISTING CESSPIT
 - ⊙ — EXISTING SS MH
 - SW — PROPOSED SW PIPE (TO BE VESTED)
 - SW — PROPOSED SW PIPE (PRIVATE)
 - SS — PROPOSED SS PIPE (PRIVATE)
 - ⊙ — PROPOSED SW MH
 - ⊞ — PROPOSED SCRUFFY DOME
 - ⊞ — PROPOSED CESSPIT
 - ⊙ — PROPOSED SS MH
 - — PROPOSED DISH CHANNEL
 - — EXISTING DRAIN
 - 0.2 — DESIGN CONTOURS



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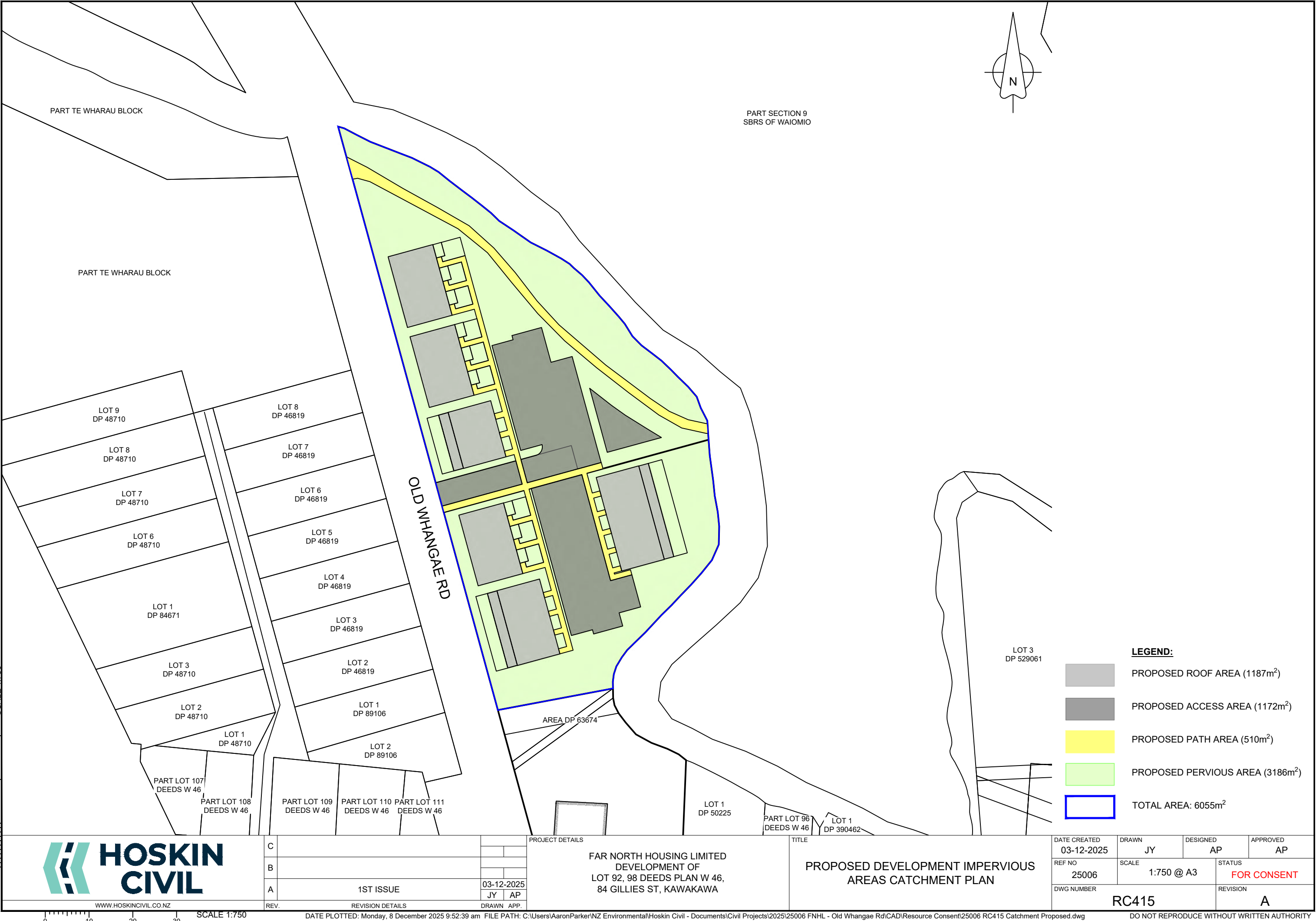
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
DRAINAGE PLAN SHEET 2

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3		STATUS FOR CONSENT
DWG NUMBER RC401			REVISION A





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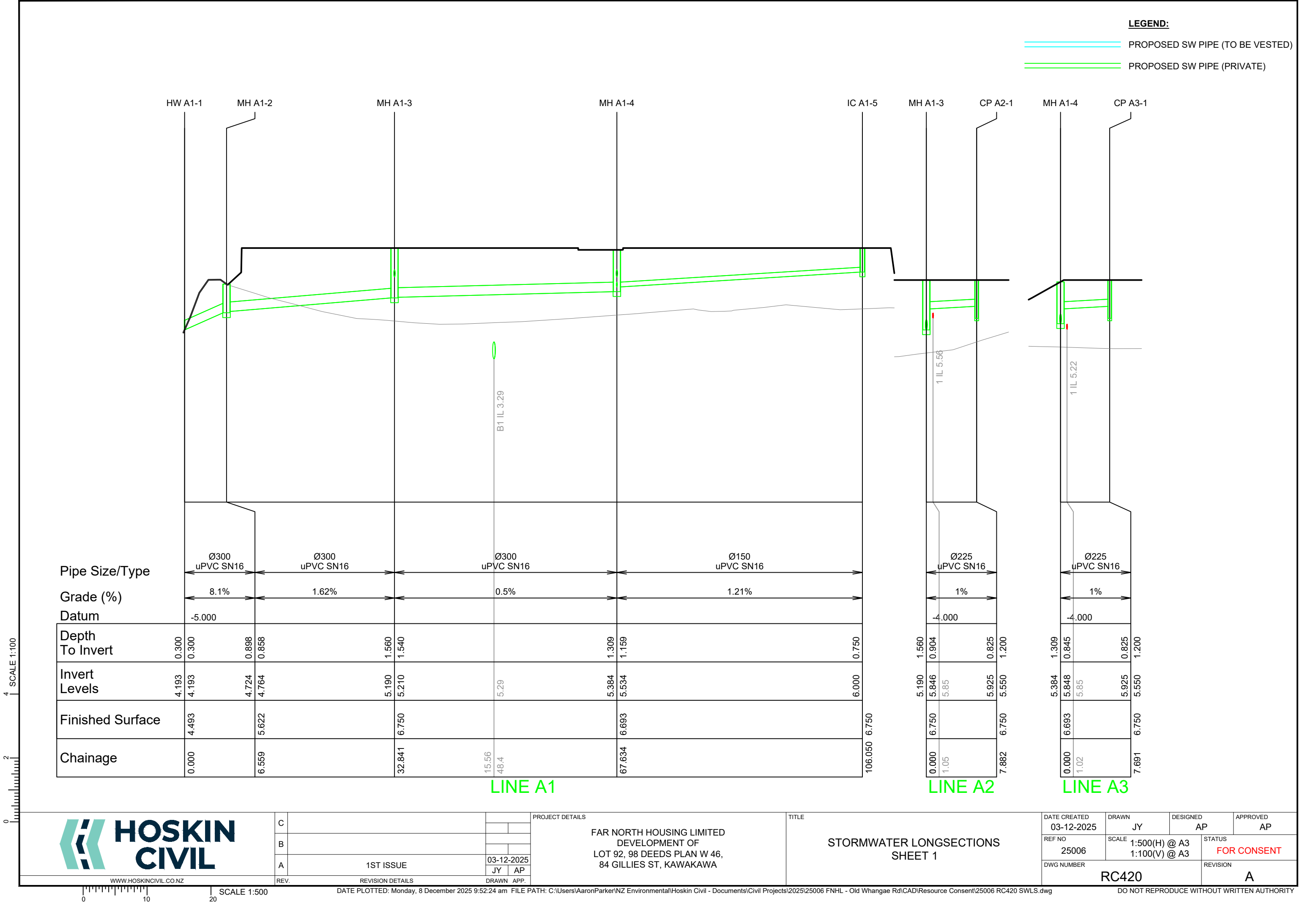
PROJECT DETAILS

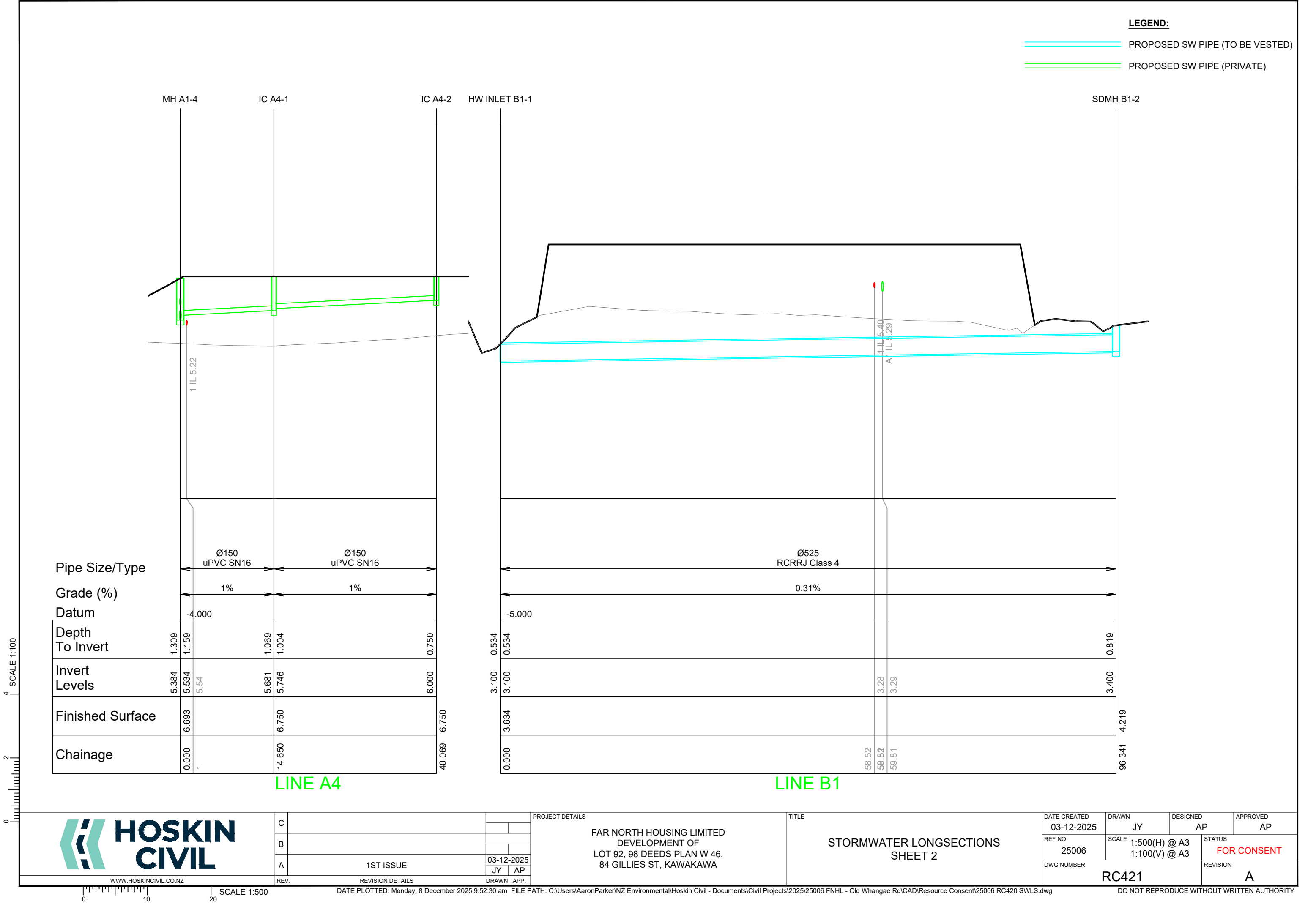
FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

PROPOSED DEVELOPMENT IMPERVIOUS
AREAS CATCHMENT PLAN

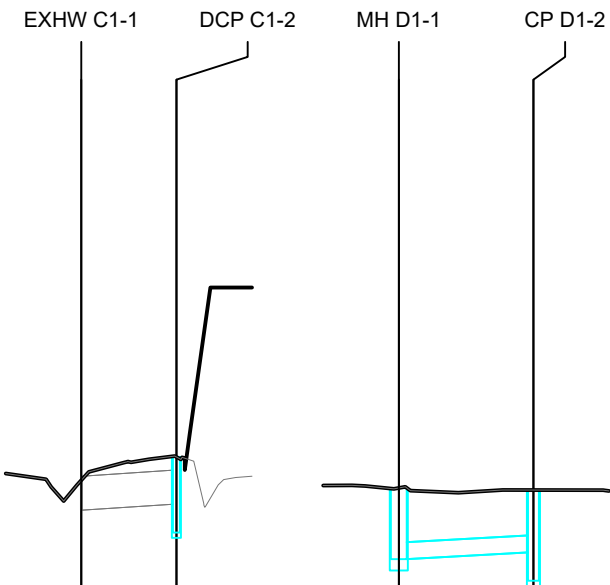
DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC415	REVISION A	





LEGEND:

- PROPOSED SW PIPE (TO BE VESTED)
- PROPOSED SW PIPE (PRIVATE)



Pipe Size/Type

Grade (%)

Datum

Depth
To Invert

Invert
Levels

Finished Surface

Chainage

LINE C1

LINE D1



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REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

STORMWATER LONGSECTIONS
SHEET 3

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE 1:500(H) @ A3
1:100(V) @ A3

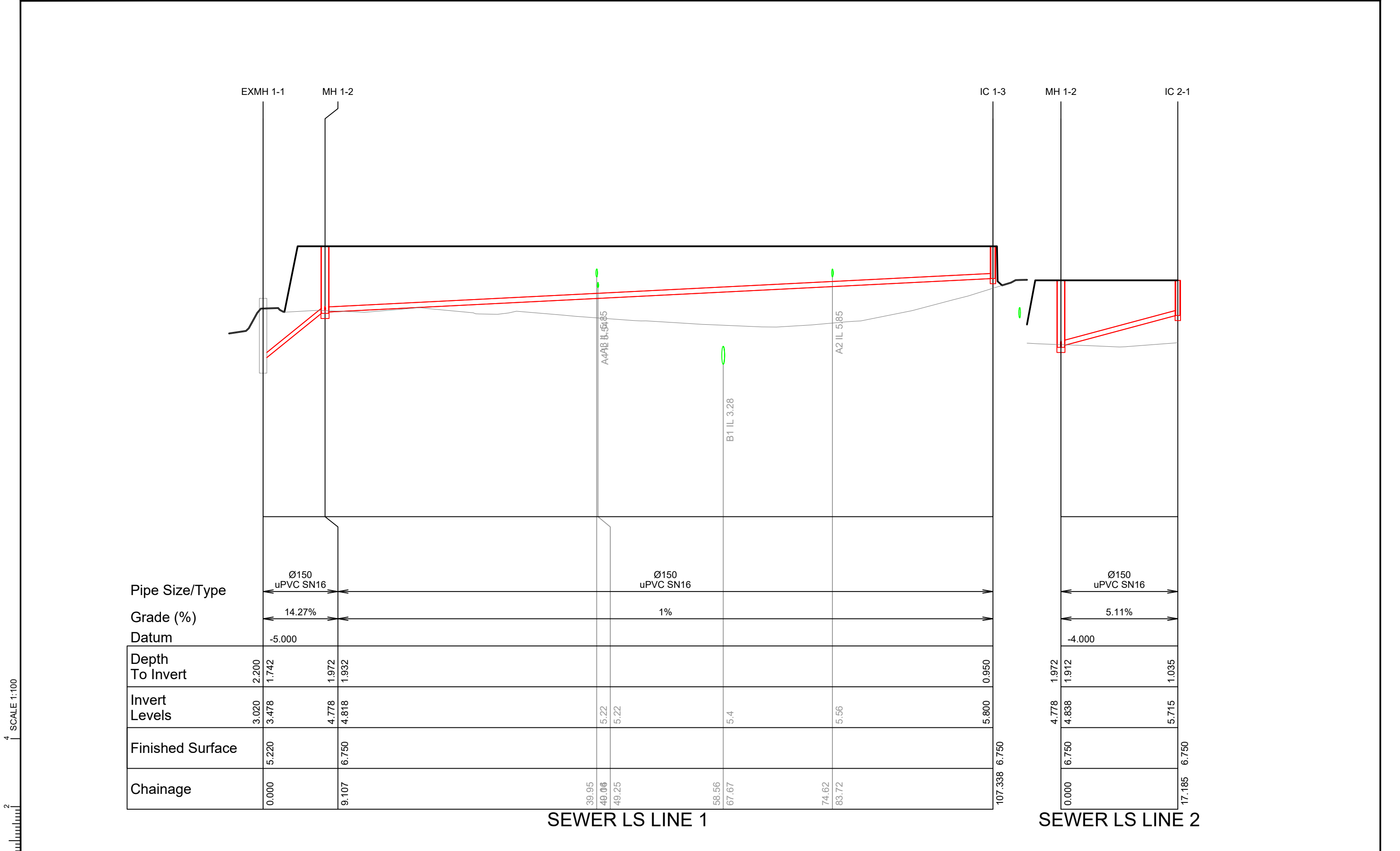
STATUS
FOR CONSENT

DWG NUMBER

RC422

REVISION

A



0 2 4 SCALE 1:100

IC 2-1

IC 2-2

Pipe Size/Type

Grade (%)

Datum

Depth
To Invert

Invert
Levels

Finished Surface

Chainage

Ø150
uPVC SN16
1%
-4.000

1.035	0.995	0.750
5.715	5.755	6.000
6.750		6.750
17.185		41.679

SEWER LS LINE 2



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REV.

REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

SANITARY SEWER LONGSECTIONS
SHEET 2

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE 1:500(H) @ A3
1:100(V) @ A3

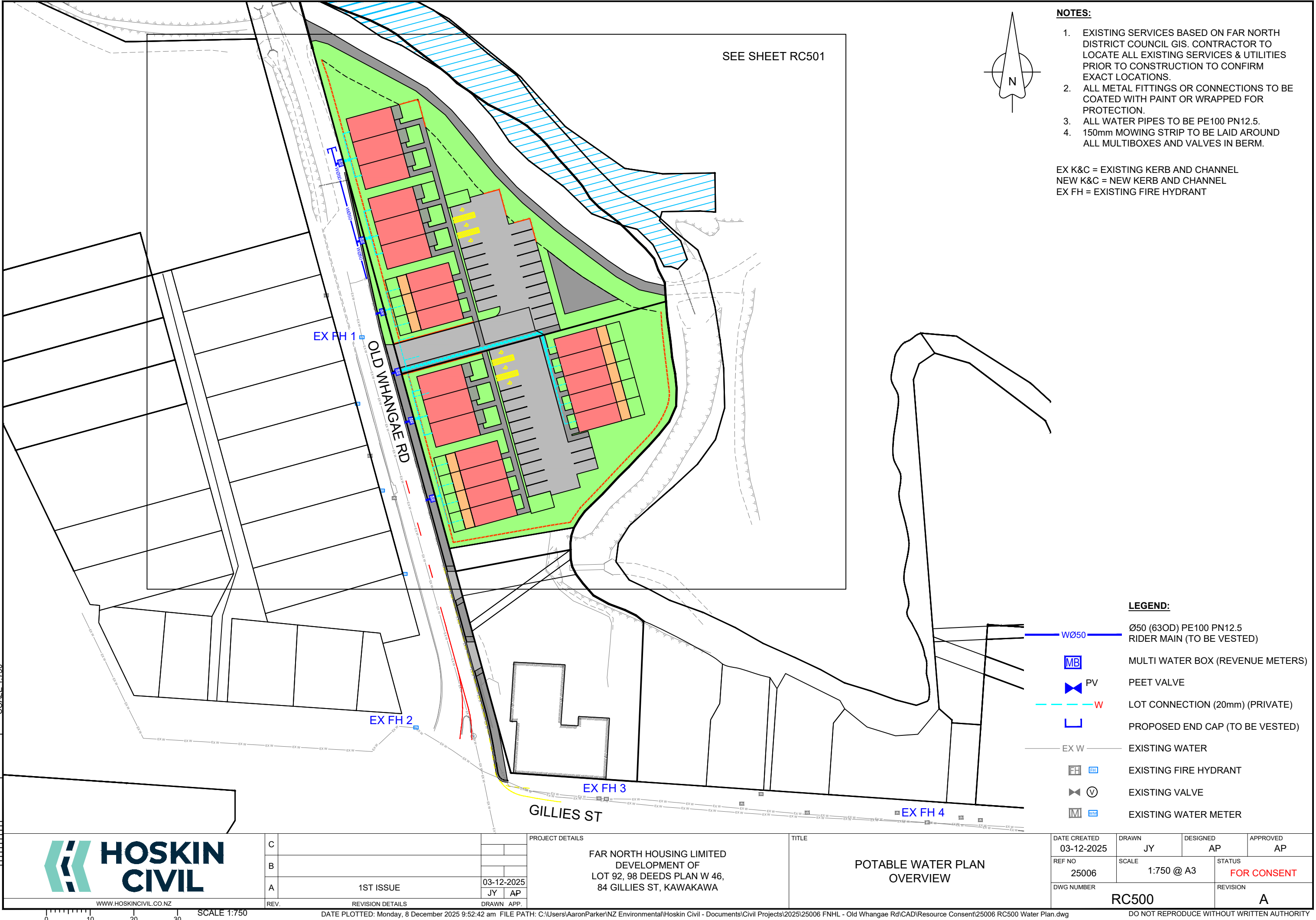
STATUS
FOR CONSENT

DWG NUMBER

RC431

REVISION

A



NOTES:

- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
- ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
- ALL WATER PIPES TO BE PE100 PN12.5.
- 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVES IN BERM.

EX K&C = EXISTING KERB AND CHANNEL
NEW K&C = NEW KERB AND CHANNEL
EX FH = EXISTING FIRE HYDRANT

LEGEND:

- WØ50 Ø50 (63OD) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
- MB MULTI WATER BOX (REVENUE METERS)
- PV PEET VALVE
- W LOT CONNECTION (20mm) (PRIVATE)
- PROPOSED END CAP (TO BE VESTED)
- EX W EXISTING WATER
- EX FH EXISTING FIRE HYDRANT
- EX V EXISTING VALVE
- EX M EXISTING WATER METER



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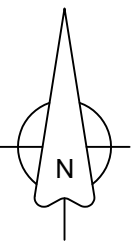
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
POTABLE WATER PLAN OVERVIEW

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3		STATUS FOR CONSENT
DWG NUMBER RC500			REVISION A

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY



NOTES:

1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
3. ALL WATER PIPES TO BE PE100 PN12.5.
4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVES IN BERM.

EX K&C = EXISTING KERB AND CHANNEL
NEW K&C = NEW KERB AND CHANNEL
EX FH = EXISTING FIRE HYDRANT

LEGEND:

- Ø50 (63OD) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
- MULTI WATER BOX (REVENUE METERS)
- PEET VALVE
- LOT CONNECTION (20mm) (PRIVATE)
- PROPOSED END CAP (TO BE VESTED)
- EXISTING WATER
- EXISTING FIRE HYDRANT
- EXISTING VALVE
- EXISTING WATER METER

PROPOSED END CAP

6 WAY MULTIBOX WITH
500 CONNECTION &
PEET VALVE

6 WAY MULTIBOX WITH
500 CONNECTION &
PEET VALVE

LOT 8
DP 46819

LOT 7
DP 46819

LOT 6
DP 46819

LOT 5
DP 46819

LOT 4
DP 46819

LOT 3
DP 46819

LOT 2
DP 46819

LOT 1
DP 89106

EX FH 1

OLD WHANGAE RD

EX K&C

NEW K&C
EX Ø100 WATER MAIN
EX Ø50 RIDER MAIN

CARPARK

COUTRYARD

CARPARK

FOOT BRIDGE

AREA DP 63674



C
B
A

1ST ISSUE

03-12-2025
JY AP

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

POTABLE WATER PLAN
SHEET 1

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE
1:500 @ A3

STATUS
FOR CONSENT

DWG NUMBER

RC501

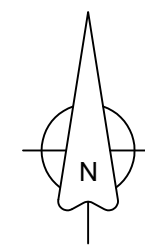
REVISION

A

SCALE 1:500

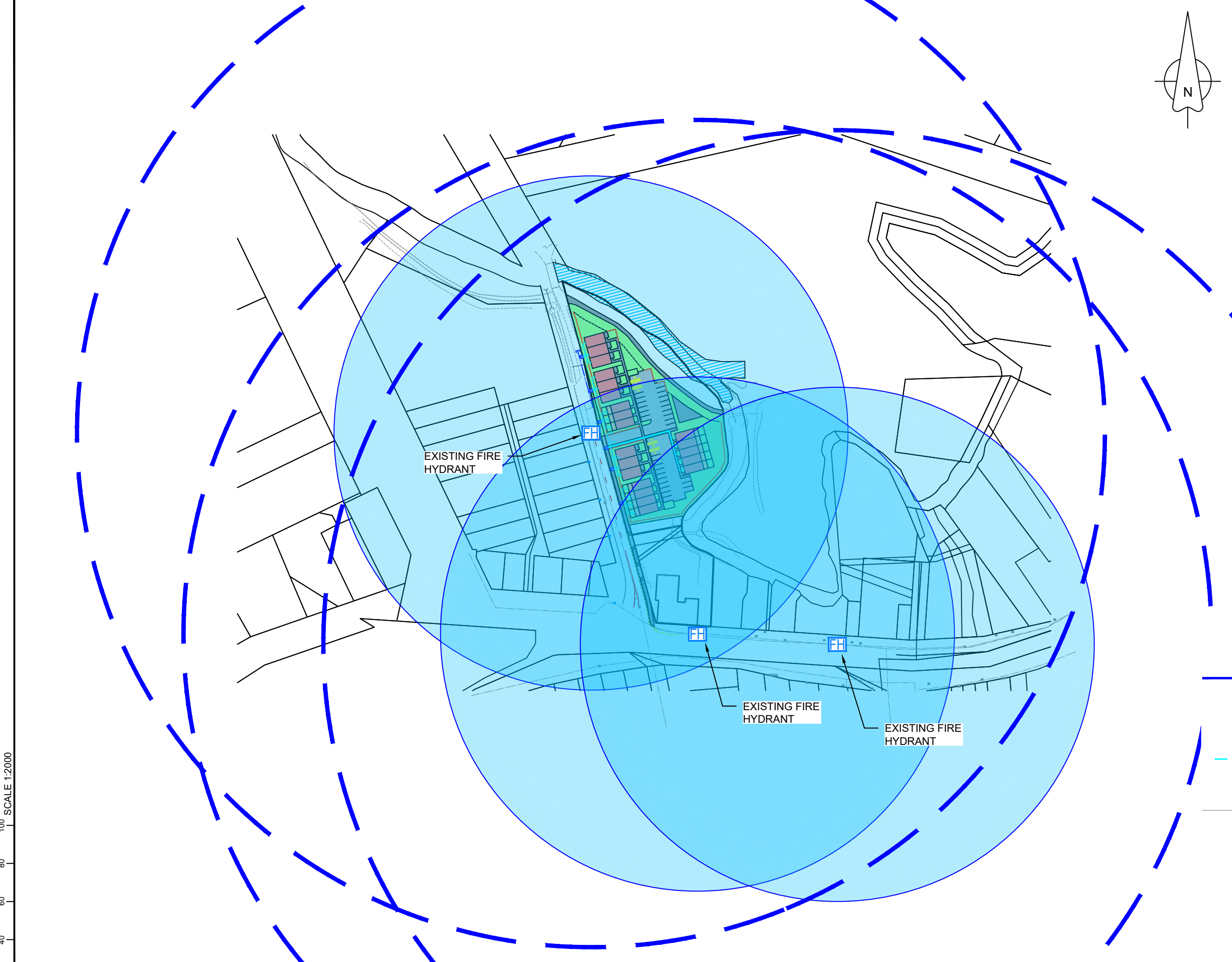
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DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY




- NOTES:**
1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 2. FIRE HYDRANT SUPPLY COMPLIES WITH FNDC ENGINEERING STANDARDS AND GUIDELINES 2004 – REVISED MARCH 2009 & SNZ PAS 4509:2003 REQUIREMENTS.

EX FH = EXISTING FIRE HYDRANT



- LEGEND:**
- WØ50 Ø50 (63OD) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
 - MB MULTI WATER BOX (REVENUE METERS)
 - PV PEET VALVE
 - W LOT CONNECTION (20mm) (PRIVATE)
 - PROPOSED END CAP (TO BE VESTED)
 - EX W EXISTING WATER
 - FH EXISTING FIRE HYDRANT
 - V EXISTING VALVE
 - M EXISTING WATER METER
 - 135m RADIUS
 - 270m RADIUS



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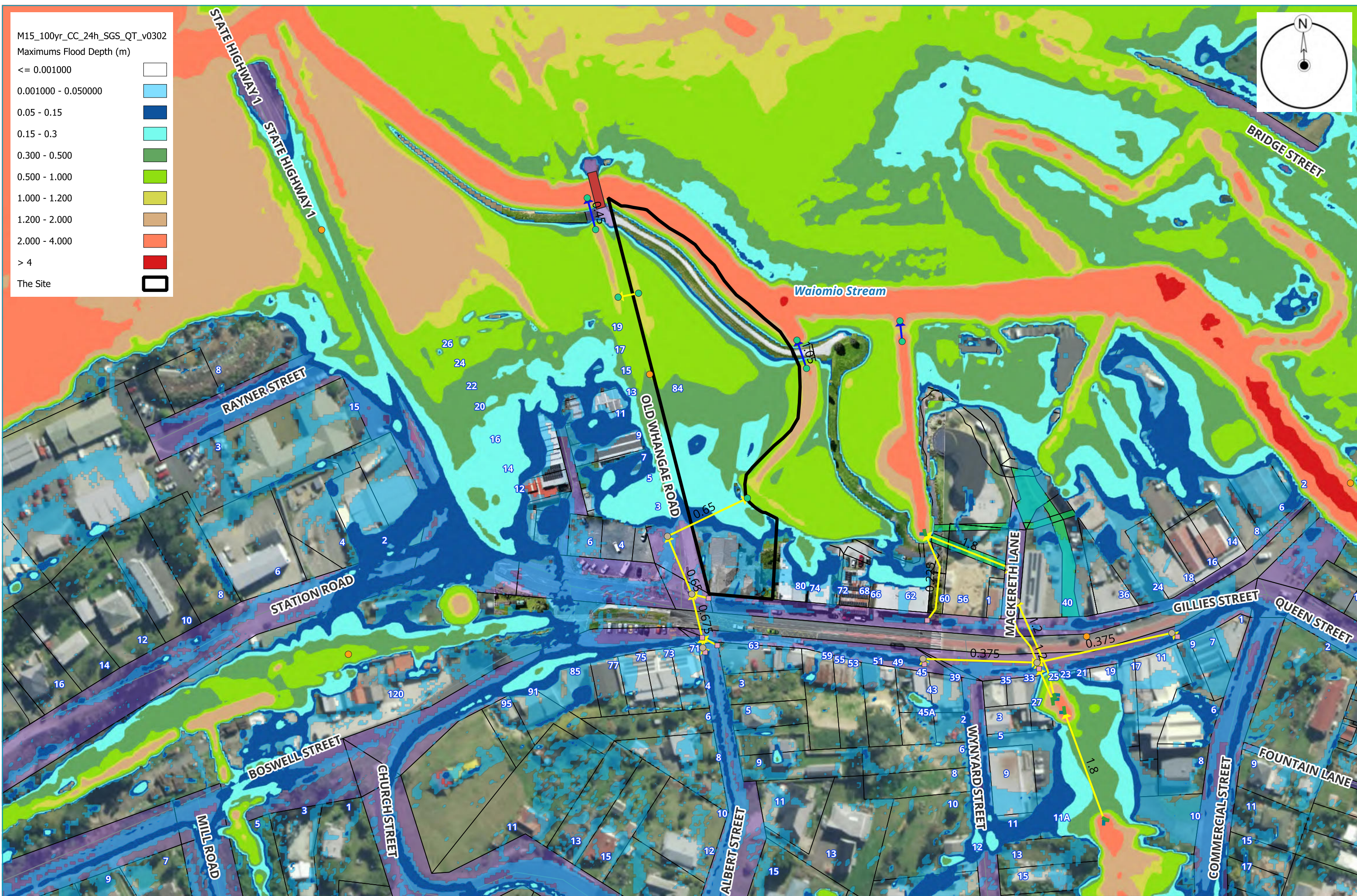
C				PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE POTABLE WATER FIRE HYDRANT PLAN	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
B						REF NO 25006	SCALE 1:2000 @ A3	STATUS FOR CONSENT	
A	1ST ISSUE	03-12-2025	JY AP			DWG NUMBER RC510	REVISION A		
REV.	REVISION DETAILS	DRAWN	APP.						

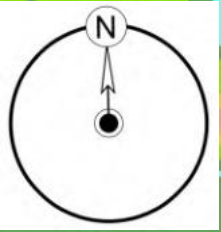
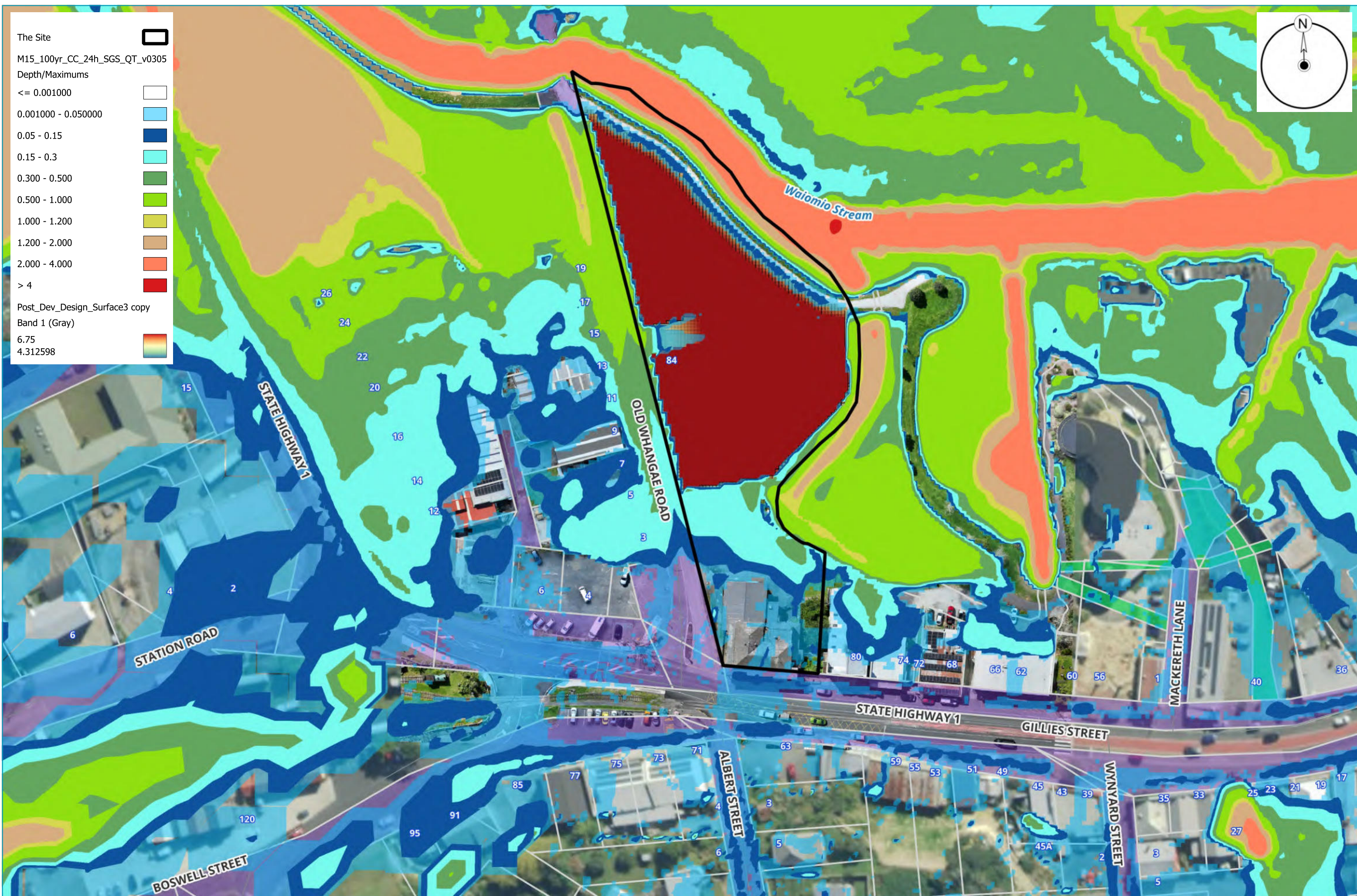
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6.3 Appendix C:

Flood Modelling Maps Outputs





REVISIONS	NO	DATE	DESCRIPTION	BY	CHK	CPeng
	00	31/10/25	FOR REVIEW	KK	KK	KK
	00	05/12/25	FOR REVIEW	KK	KK	KK

DRAWN: KK
DESIGNED: KK
CPENG: KK
DATE ISSUED: 05/12/2025
LOCATION: KAWAKAWA
REFERENCE:

CLIENT:
FAR NORTH HOUSING LIMITED

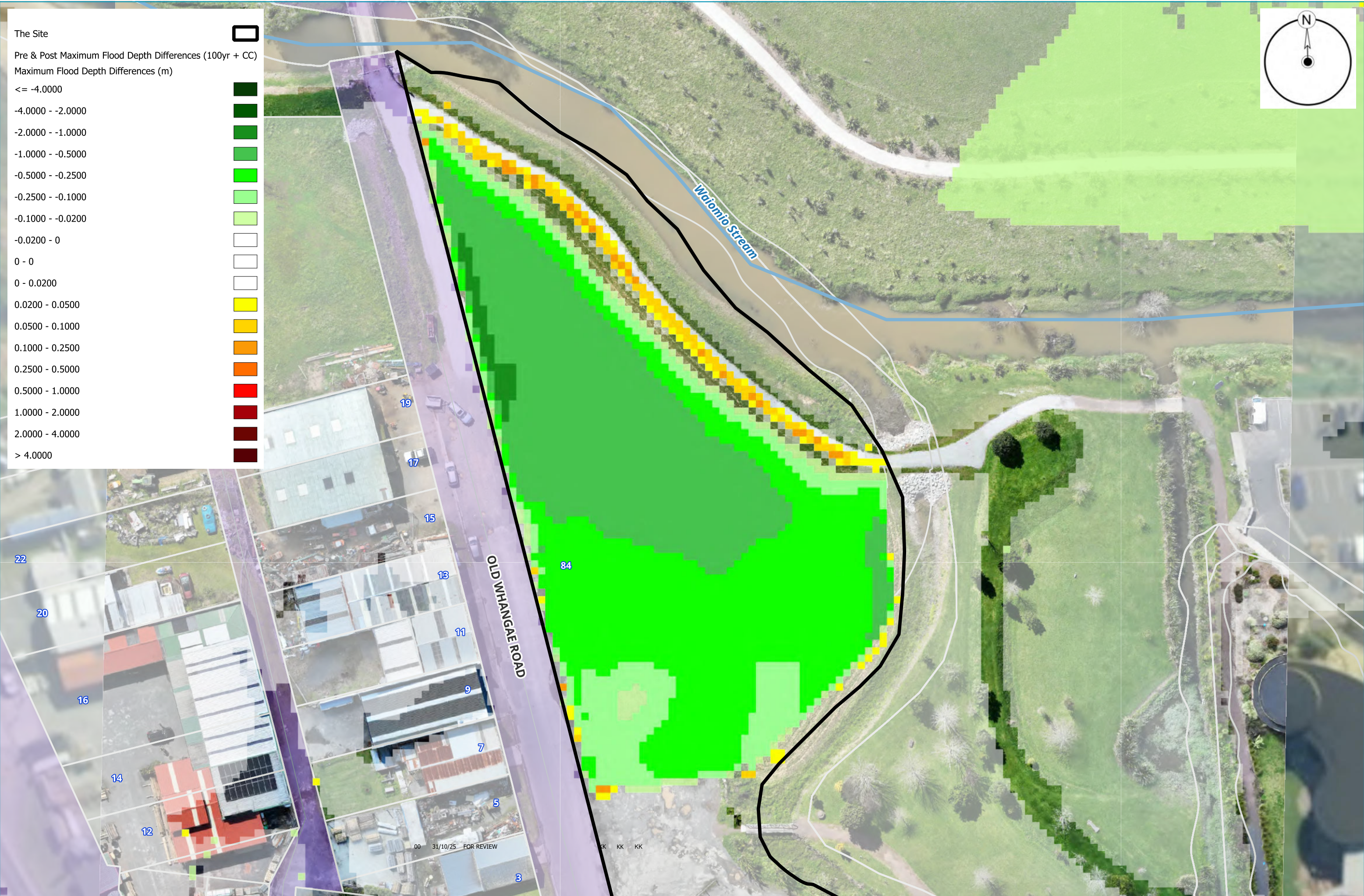


TRINEKEL
CIVIL ENGINEERING SOLUTIONS

PROJECT:
OLD WHANGAE ROAD MEDIUM DENSITY HOUSING KAWAKAWA

TITLE:
POST-DEVELOPMENT (1% AEP + CC) FLOOD DEPTH (MODEL 5)

SCALE: 1:1000										A3
<div><div></div><div>20</div><div>40 m</div></div>										
PROJECT #			AREADISC			SEQUENCE			REVISION	
0	7	8	S	W	C	1	0	2	0 1	



REVISIONS	NO	DATE	DESCRIPTION	BY	CHK	CPEng
	00	31/10/25	FOR REVIEW	KK	KK	KK
	01	05/12/25	FOR REVIEW	KK	KK	KK

CLIENT:
FAR NORTH HOLDINGS LIMITED



TRINEKEL
CIVIL ENGINEERING SOLUTIONS

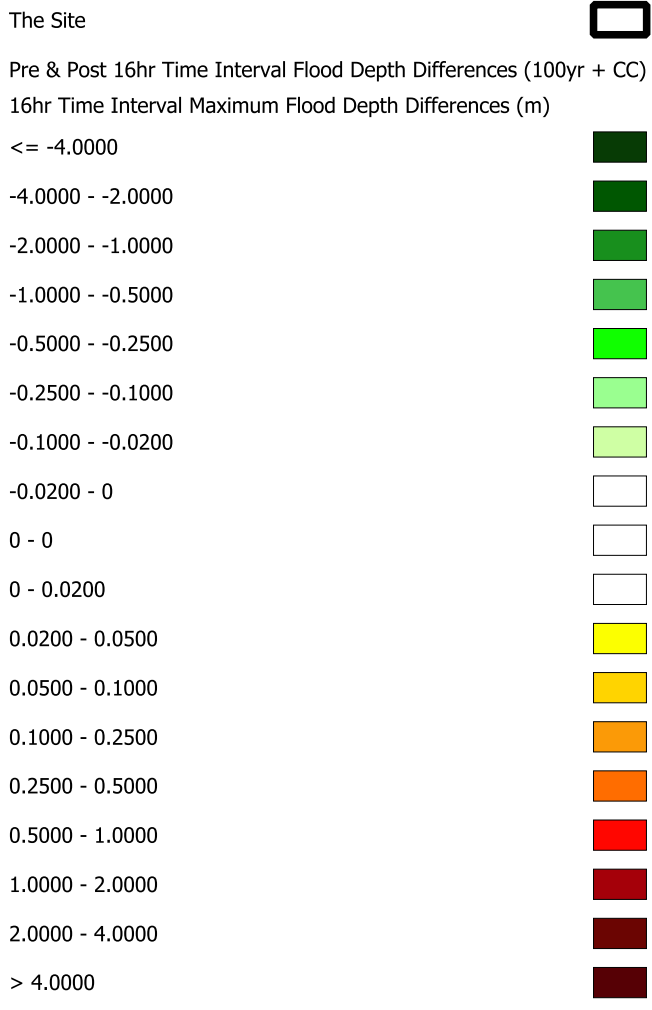
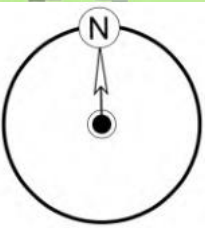
PROJECT:
OLD WHANGAE ROAD MEDIUM DENSITY HOUSING KAWAKAWA

TITLE:
FLOOD DEPTH DIFFERENCES (100yr + CC)

SCALE: 1:570
1020 m

A3

PROJECT #	AREADISC	SEQUENCE	REVISION
078	SWC	103	01



REVISIONS	NO	DATE	DESCRIPTION	BY	CHK	CPEng	DRAWN: KK	CLIENT: FAR NORTH HOLDINGS LIMITED		PROJECT: OLD WHANGAE ROAD MEDIUM DENSITY HOUSING KAWAKAWA	TITLE: 16hr TIME INTERVAL FLOOD DEPTH DIFFERENCES (100yr + CC)	SCALE: 1:570 10 20 m				A3						
	00	31/10/25	FOR REVIEW	KK	KK	KK	DESIGNED: KK															
	01	05/12/25	FOR REVIEW	KK	KK	KK	CPENG: KK															
							DATE ISSUED: 05/12/2025															
							LOCATION: KAWAKAWA															
							REFERENCE:					PROJECT # AREADISC SEQUENCE REVISION										
												0	7	8	S	W	C	1	0	4	0	1

6.4 Appendix C:

NRC Flood Level Report (Parcel ID 4991387), providing modelled flood information for the site.

Flood Level Report



Parcel ID: 4991387

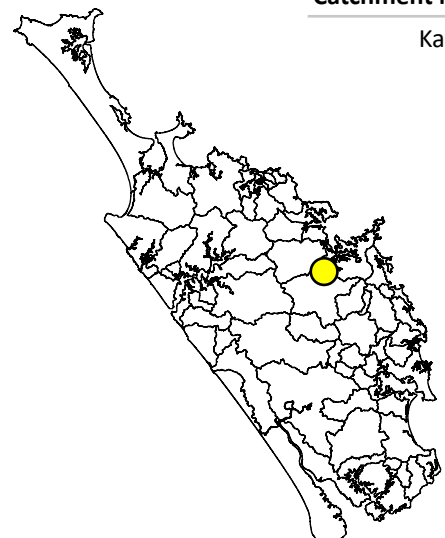
Title: NA523/225

Appellation: Lot 1 DP 63674

Survey Area: 7,588 m²

Catchment Name(s)

Kawakawa





Useful Flood Information Definitions

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

1% AEP - A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year.

2% AEP - A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.

5% AEP - A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year.

10% AEP - A flood of this size or larger has a 1 in 10 chance or a 10% probability of occurring in any year.

NZVD2016 - New Zealand Vertical Datum - The reference level used in our flood models to define ground level.

Flood Levels - Flood levels are used from our modelled flood level rasters. The flood levels are calculated above NZVD 2016 Datum.

Climate Change (CC) - NZCPS (2010) requires that the identification of coastal hazards includes consideration of sea level rise over at least a 100-year planning period. Climate change impacts, such as increased rain intensity, have been included in the flood scenarios. You can read more about the Climate Change forecasts included in each flood model in the technical reports on the NRC website.

Mean high water spring (MHWS) - describes the highest level that spring tides reach, on average.

Coastal Flood Hazard Zones (CFHZ)

Coastal flood hazard zones are derived using a range of data including tide gauge analysis, wind and wave data and models, and use empirical calculations to estimate extreme water levels around the coastline. The calculations include projected sea level rise scenarios based on the latest Ministry for the Environment guidance.

CFHZ 0 Coastal Flood Hazard Zone 0 - area currently susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event

CFHZ 1 Coastal Flood Hazard Zone 1 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-50 year storm event, taking into account a projected sea-level rise of 0.6m over the next 50 years

CFHZ 2 Coastal Flood Hazard Zone 2 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event, taking into account a projected sea-level rise of 1.2m over the next 100 years

CFHZ 3 Coastal Flood Hazard Zone 3 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event, taking into account a projected sea-level rise of 1.5m over the next 100 years (rapid sea level rise scenario)

REGIONWIDE and PRIORITY - RIVER FLOOD HAZARD ZONES (RFHZ)

River flood hazard zones are created to raise awareness of where flood hazard areas are identified, inform decision-making and to support the minimisation of the impacts of flooding in our region. The river flood hazard zones have been created using an assessment of best current available information, engaging national and international experts in the field, using national standards and guidelines and has been peer reviewed. This will provide a good indication of the areas at potential risk of flooding from a regional perspective. However, flood mapping is a complex process which involves some approximation of the natural features and processes associated with flooding.

River Flood Hazard Zone 1 – 10% AEP flood extent: an area with a 10% chance of flooding annually

River Flood Hazard Zone 2 – 2% AEP flood extent: an area with a 2% chance of flooding annually

River Flood Hazard Zone 3 – 1% AEP flood extent: an area with a 1% chance of flooding annually with the inclusion of potential Climate Change (CC) impact



Maximum	Minimum
---------	---------

Max Min flood levels are for raster extent shown on the map

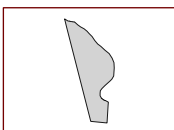
100 Year + CC

m NZVD

6.28 - 6.48

Parcel

Crown Copyright Reserved
Projection NZTM, Vertical Datum NZVD2016.
DISCLAIMER:
The North Island Council of Regional Authorities cannot guarantee that the information shown is accurate and should not be relied upon in any manner without proper consultation with its owner.



0 20 40 80 120 m

Disclaimers

Our modelling disclaimers are linked below:

<https://www.nrc.govt.nz/media/ko2dkgx/coastal-hazard-maps-disclaimer-june-2017.pdf>

<https://www.nrc.govt.nz/media/cqnnw12y/flood-map-disclaimer-2021.pdf>

Our regionwide modelling reports are linked below:

<https://www.nrc.govt.nz/environment/river-flooding-and-coastal-hazards/river-flooding/river-flood-hazard-maps/regionwide-river-catchments-analysis-technical-reports>

ARE YOU FLOOD READY?



01

Know your risk

Check what potential flood risks and other hazards that may impact your property.

The Natural Hazards Portal is a great place to start. It's a 'one-stop-shop' of information related to natural hazards within our region:

www.nrc.govt.nz/environment/natural-hazards-portal

The Environmental Data Hub provides river level and flow data, as well as warning levels, rainfall data, water quality, and more:

www.nrc.govt.nz/environment/environmental-data/environmental-data-hub

02

Have a plan

Make sure you have an evacuation plan, emergency kit and important phone numbers ready. Check out: <https://getready.govt.nz/en/prepared/> for tips on how to get ready.

03

Stay up to date

In a civil defence emergency situation, follow the updates on the Northland CDEM Group's Facebook page:

www.facebook.com/civildefencenorthland

Or follow updates from the embedded feed on the regional council website: www.nrc.govt.nz/civildefence

04

In an emergency

Remember, if life is threatened dial 111 to contact emergency services.



KAPP, K CPEng | CMEngNZ | IntPE(NZ)
Senior Civil Engineer

8 December 2025

Old Whangae Road Development, Kawakawa - Three Waters Report

Prepared for Far North Housing Limited
Hoskin Civil Report: 078-3WR-01_Rev00

LOCATION
113 Bank Street
Whangarei 0110

CIVIL ENGINEERING DESIGN

FOR RESOURCE CONSENT

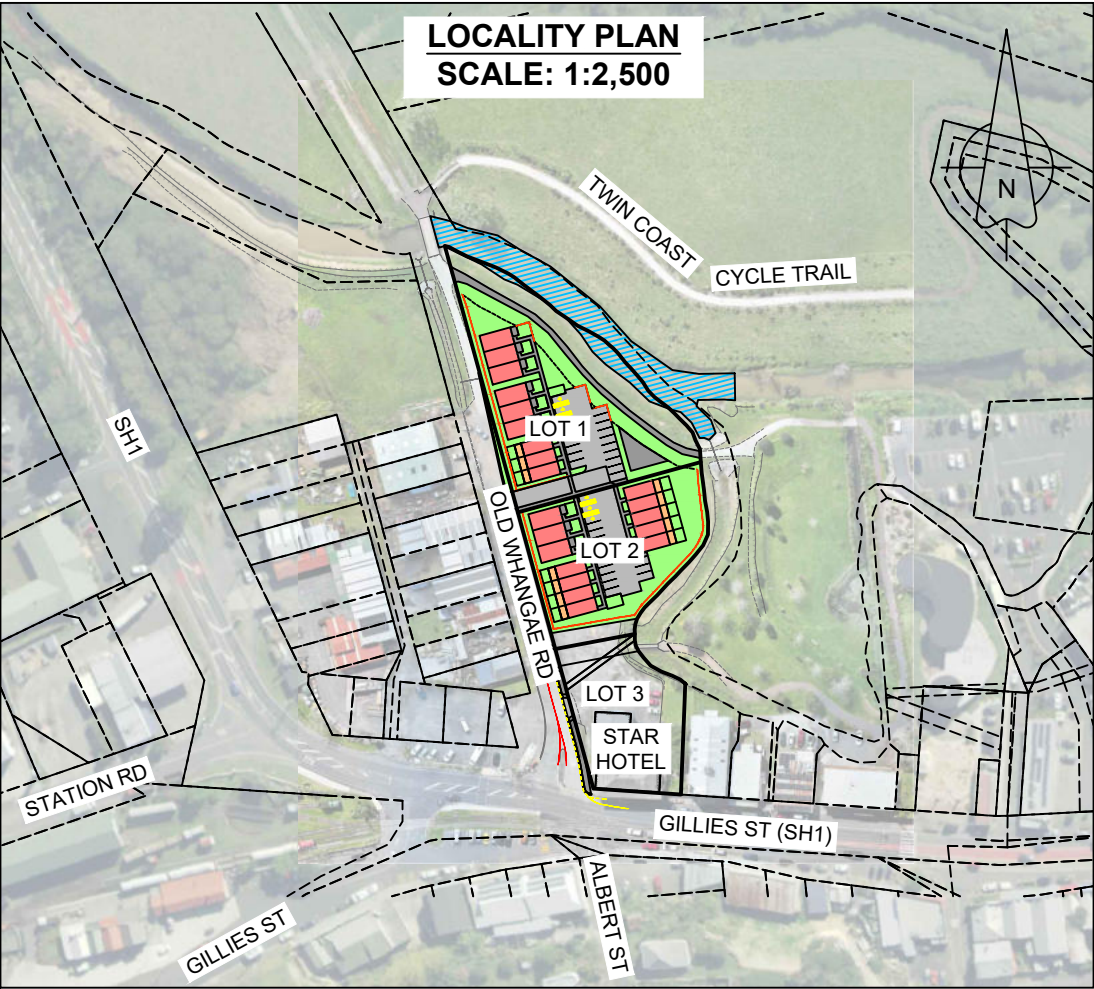
FAR NORTH HOUSING LTD

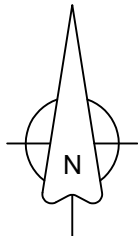
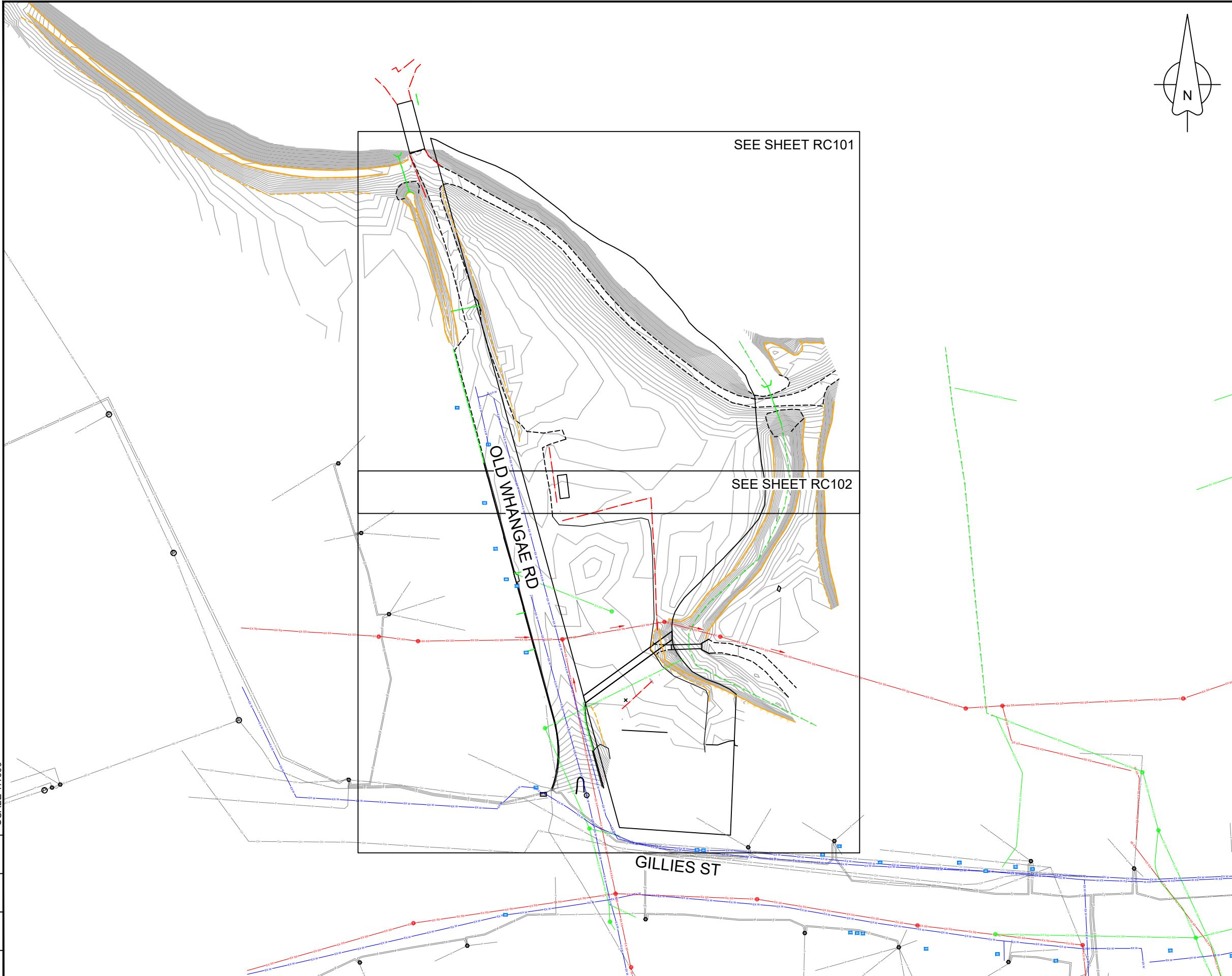
LOT 92, 98 DEEDS PLAN W 46,

84 GILLIES ST, KAWAKAWA

PROJECT REF: 25006

SCHEDULE OF DRAWINGS		
SHEET #	TITLE	REV
RC000	COVER SHEET	A
RC100	EXISTING SITE PLAN - OVERVIEW	A
RC101-102	EXISTING SITE PLAN - SHEETS 1 - 2	A
RC200	BULK EARTHWORKS PLAN	A
RC210	EROSION & SEDIMENT CONTROL PLAN	A
RC220-222	EROSION & SEDIMENT CONTROL DETAILS - SHEETS 1 - 3	A
RC300	ROADING, RETAINING & FINISHED LEVELS PLAN - OVERVIEW	A
RC301-303	ROADING, RETAINING & FINISHED LEVELS PLAN - SHEETS 1 - 3	A
RC400-401	DRAINAGE PLAN - SHEETS 1 - 2	A
RC410	EXISTING IMPERVIOUS AREAS CATCHMENT PLAN	A
RC415	PROPOSED DEVELOPMENT IMPERVIOUS AREAS CATCHMENT PLAN	A
RC420-422	STORMWATER LONGSECTIONS - SHEETS 1-3	A
RC430-431	SANITARY SEWER LONGSECTIONS - SHEETS 1-2	A
RC500	POTABLE WATER PLAN - OVERVIEW	A
RC501	POTABLE WATER PLAN - SHEET 1	A
RC510	POTABLE WATER FIRE HYDRANT PLAN	A





NOTES:


1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

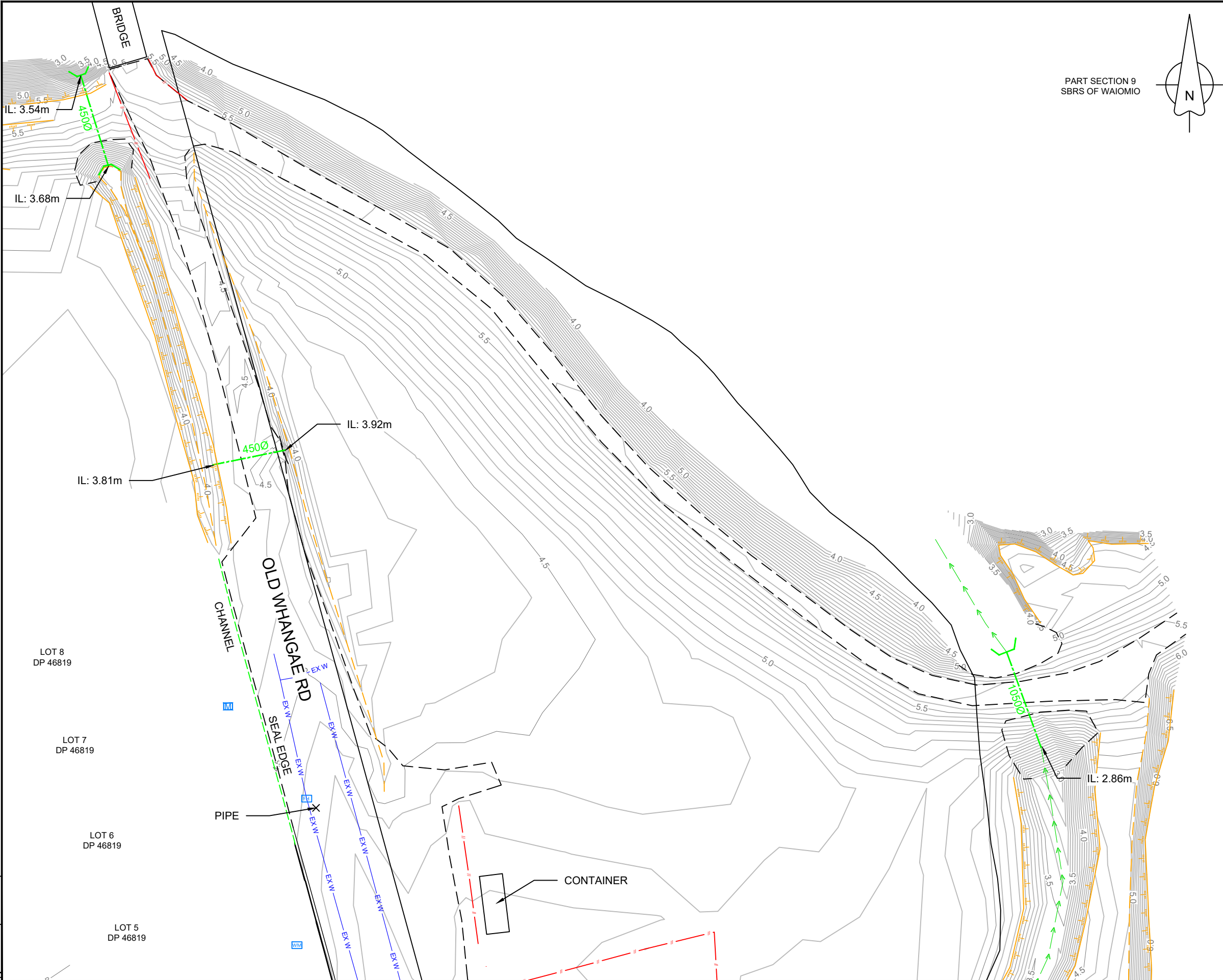
SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
COORDINATE SYSTEM: NZGD2000 MOUNT EDEN CIRCUIT
LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

- LEGEND:**
- P OH EX POWER OVERHEAD
 - P EX POWER UNDERGROUND
 - CH EX CHORUS
 - EX W EXISTING WATER
 - ABANDONED PIPE
 - EX SW EXISTING STORMWATER
 - EX SS EXISTING SS
 - EXISTING SW MH
 - EXISTING CESSPIT
 - EXISTING SS MH
 - EXISTING FIRE HYDRANT
 - EXISTING WATER METER
 - EXISTING VALVE
 - EXISTING POWER POLE
 - EXISTING POWER PILLAR
 - EXISTING TRANSFORMER
 - EXISTING TOP OF BANK
 - EXISTING BOTTOM OF BANK
 - EXISTING FENCE
 - EXISTING DRAIN
 - EXISTING CONTOURS

 WWW.HOSKINCIVIL.CO.NZ	C			PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE EXISTING SITE PLAN OVERVIEW	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP		
	B					REF NO 25006	SCALE 1:1000 @ A3	STATUS FOR CONSENT			
	A	1ST ISSUE	03-12-2025			DWG NUMBER RC100		REVISION A			
			JY			AP					
REV.	REVISION DETAILS		DRAWN			APP.					



NOTES:


1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

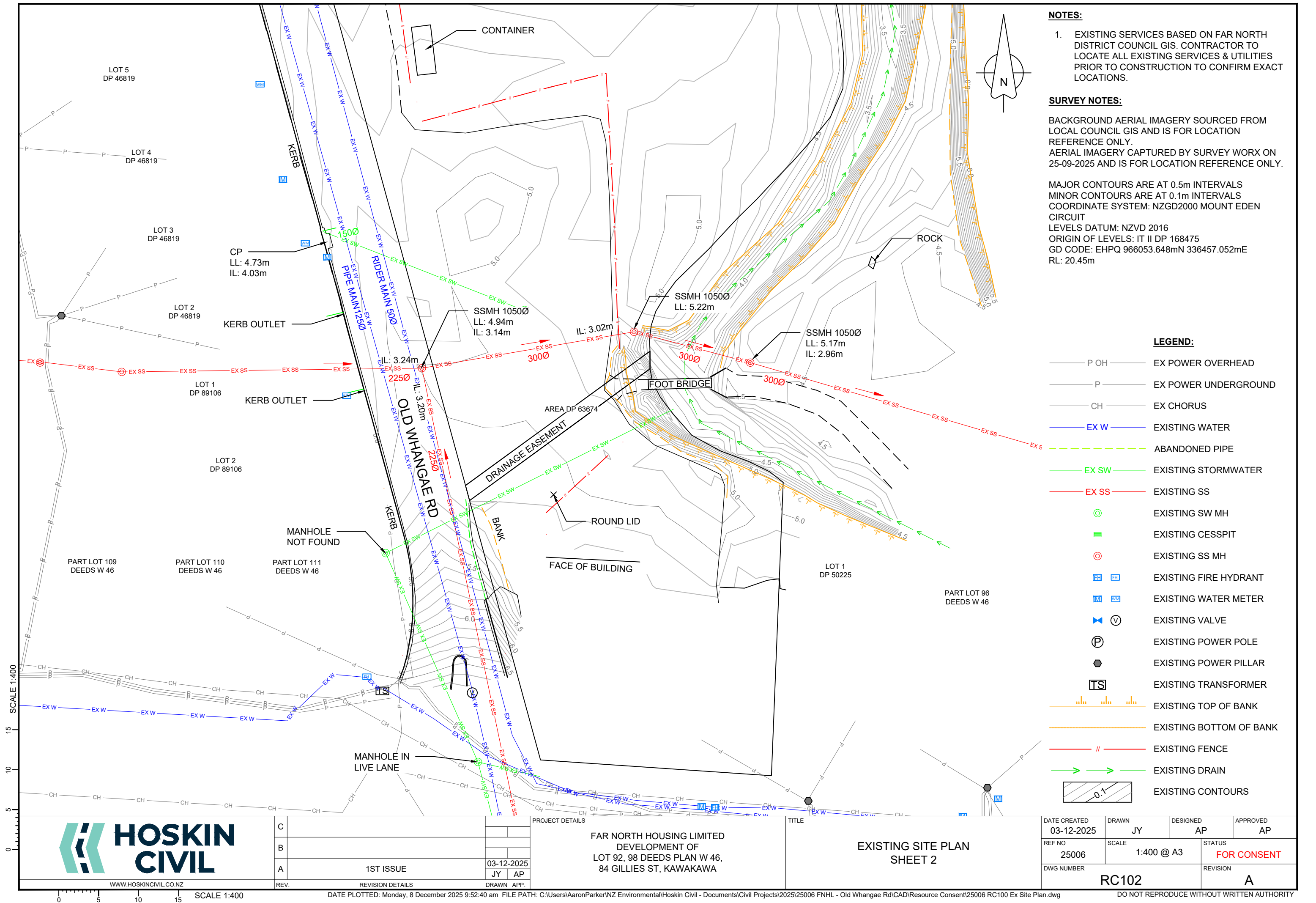
SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
COORDINATE SYSTEM: NZGD2000 MOUNT EDEN CIRCUIT
LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

LEGEND:	
	EX POWER OVERHEAD
	EX POWER UNDERGROUND
	EX CHORUS
	EXISTING WATER
	ABANDONED PIPE
	EXISTING STORMWATER
	EXISTING SS
	EXISTING SW MH
	EXISTING CESSPIT
	EXISTING SS MH
	EXISTING FIRE HYDRANT
	EXISTING WATER METER
	EXISTING VALVE
	EXISTING POWER POLE
	EXISTING POWER PILLAR
	EXISTING TRANSFORMER
	EXISTING TOP OF BANK
	EXISTING BOTTOM OF BANK
	EXISTING FENCE
	EXISTING DRAIN
	EXISTING CONTOURS

 WWW.HOSKINCIVIL.CO.NZ	C		PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE EXISTING SITE PLAN SHEET 1	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP	
	B								
	A	1ST ISSUE			03-12-2025				
					JY	AP			
REV.	REVISION DETAILS	DRAWN			APP.				



NOTES:

1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.

SURVEY NOTES:

BACKGROUND AERIAL IMAGERY SOURCED FROM LOCAL COUNCIL GIS AND IS FOR LOCATION REFERENCE ONLY.
AERIAL IMAGERY CAPTURED BY SURVEY WORX ON 25-09-2025 AND IS FOR LOCATION REFERENCE ONLY.

MAJOR CONTOURS ARE AT 0.5m INTERVALS
MINOR CONTOURS ARE AT 0.1m INTERVALS
COORDINATE SYSTEM: NZGD2000 MOUNT EDEN CIRCUIT
LEVELS DATUM: NZVD 2016
ORIGIN OF LEVELS: IT II DP 168475
GD CODE: EHPQ 966053.648mN 336457.052mE
RL: 20.45m

- LEGEND:**
- P OH EX POWER OVERHEAD
 - P EX POWER UNDERGROUND
 - CH EX CHORUS
 - EX W EXISTING WATER
 - ABANDONED PIPE
 - EX SW EXISTING STORMWATER
 - EX SS EXISTING SS
 - EXISTING SW MH
 - EXISTING CESSPIT
 - EXISTING SS MH
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 - EXISTING POWER PILLAR
 - EXISTING TRANSFORMER
 - EXISTING TOP OF BANK
 - EXISTING BOTTOM OF BANK
 - EXISTING FENCE
 - EXISTING DRAIN
 - EXISTING CONTOURS



C			
B			
A	1ST ISSUE	JY	AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

EXISTING SITE PLAN
SHEET 2

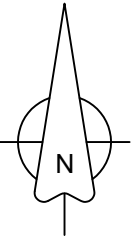
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REF NO 25006	SCALE 1:400 @ A3	STATUS FOR CONSENT	
DWG NUMBER RC102	REVISION A		

SCALE 1:400

SCALE 1:400

DATE PLOTTED: Monday, 8 December 2025 9:52:40 am FILE PATH: C:\Users\AaronParker\INZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC100 Ex Site Plan.dwg

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NOTES:
1. DEPTH CONTOURS SHOWN AT 0.5m INTERVALS.

BULK EARTHWORKS VOLUMES:
CUT = 0m³
FILL = 8965m³

THEREFORE EXCESS FILL REQUIRED = 8965m³

TOTAL EARTHWORKS AREA = 4790m²

- VOLUME NOTES:**
- VOLUME BASED ON COMPARISON BETWEEN SURVEY TOPO DATA TO FINISHED DESIGN LEVEL.
 - VOLUMES BASED ON SOLID MEASURE.
 - TOPSOIL STRIP & RESPREAD NOT TAKEN INTO ACCOUNT.
 - PAVEMENT DEPTH NOT TAKEN INTO ACCOUNT.
 - FOUNDATION DEPTH NOT TAKEN INTO ACCOUNT.

DEPTH RANGE KEY 500mm				
Lower_value	Upper_value			Colour
-1.5	to	-1	m	
-1	to	-0.5	m	
-0.5	to	0	m	
0	to	0.5	m	
0.5	to	1	m	
1	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	



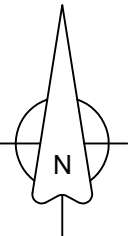
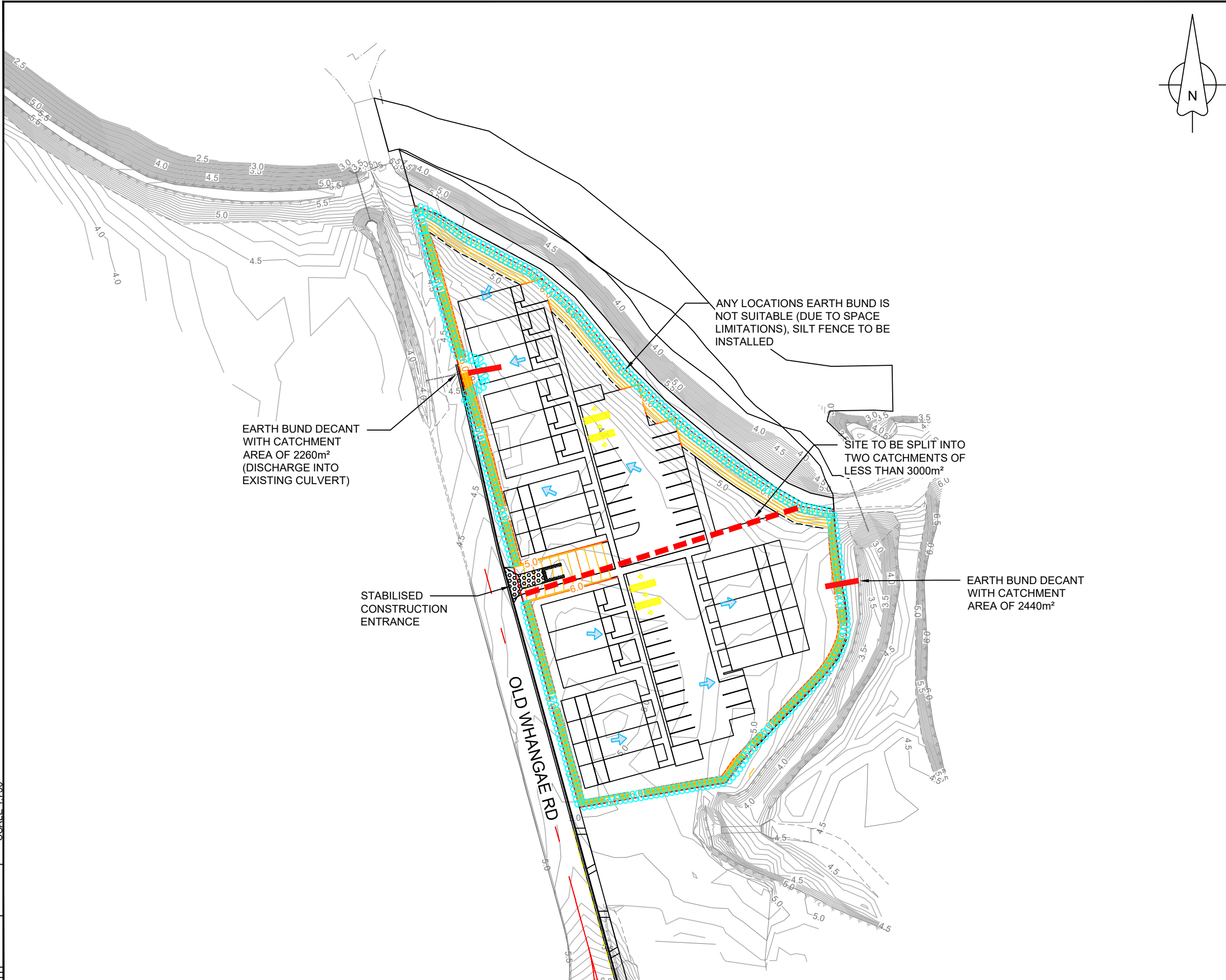
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
BULK EARTHWORKS PLAN

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC200	REVISION A	



- NOTES:**
1. DESIGN CONTOURS AT 200mm INTERVALS.
 2. EXISTING CONTOURS AT 200mm INTERVALS.
 3. EROSION CONTROL - ALL SILT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH GD05 AND PLACED PRIOR TO COMMENCEMENT OF EARTHWORKS. SUCH MEASURES SHALL BE SUBJECT TO FURTHER ADDITIONS AND ALTERATIONS, WHERE CONSIDERED NECESSARY, AS DIRECTED BY THE PROJECT MANAGER OR NRC, DURING THE PROGRESSION OF WORKS. IT IS ADVISED TO CONTACT NRC PRIOR TO COMMENCEMENT OF EARTHWORKS, AFTER INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES TO ENSURE THEY HAVE BEEN INSTALLED TO THE SATISFACTION OF NRC.

- LEGEND:**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXTENT OF EARTHWORKS (4790m²)
 - SILT FENCE
 - OVERLAND FLOWPATH
 - EARTH BUND
 - EARTH BUND DECANT

SCALE 1:750
30
20
10
0



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SCALE 1:750

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B			
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PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL PLAN

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3		STATUS FOR CONSENT
DWG NUMBER RC210			REVISION A

STABILISED CONSTRUCTION ENTRANCE
SPECIFICATIONS:

APPLICATION

USE A STABILISED CONSTRUCTION ENTRANCE AT ALL POINTS OF CONSTRUCTION SITE INGRESS AND EGRESS WITH A CONSTRUCTION PLAN LIMITING TRAFFIC TO THESE ENTRANCES ONLY. THEY ARE PARTICULARLY USEFUL ON SMALL CONSTRUCTION SITES BUT CAN BE UTILISED FOR ALL PROJECTS.

DESIGN:

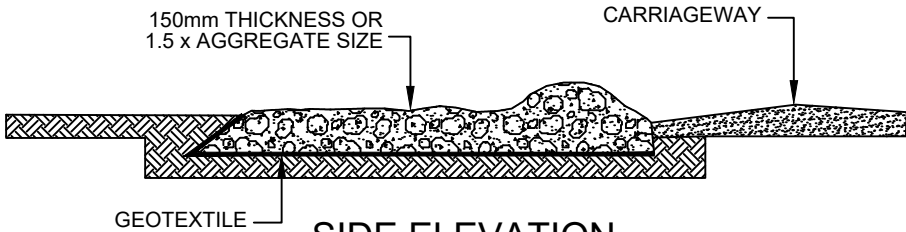
CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER UNSUITABLE MATERIAL AND PROPERLY GRADE IT.

- 1. LAY WOVEN GEOTEXTILE; PIN DOWN EDGES AND OVERLAP JOINTS.
- 2. PROVIDE DRAINAGE TO CARRY RUNOFF FROM THE STABILISED CONSTRUCTION ENTRANCE TO A SEDIMENT CONTROL MEASURE.
- 3. PLACE AGGREGATE TO THE SPECIFICATIONS BELOW AND SMOOTH IT.
- 4. STABILISED CONSTRUCTION ENTRANCE AGGREGATE SPECIFICATIONS:

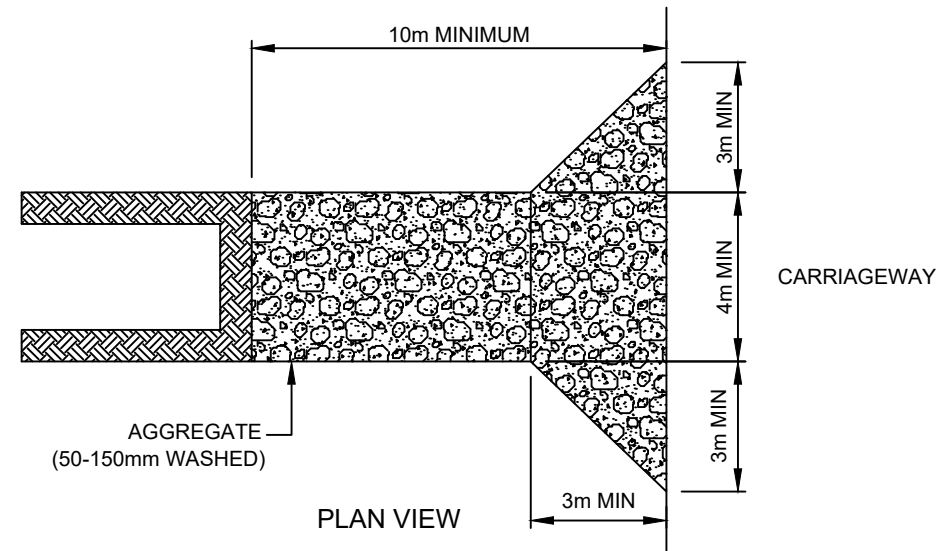
AGGREGATE SIZE	5-150mm WASHED AGGREGATE
THICKNESS	150mm MINIMUM OR 1.5 X AGGREGATE SIZE
LENGTH	10m MINIMUM LENGTH RECOMMENDED
WIDTH	4m MINIMUM

MAINTENANCE

- 1. MAINTAIN THE STABILISED CONSTRUCTION ENTRANCE IN A CONDITION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. AFTER EACH RAINFALL INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT FROM THE STABILISED CONSTRUCTION ENTRANCE AND CLEAN OUT AS NECESSARY.
- 2. WHEN WHEEL WASHING IS ALSO REQUIRED, ENSURE THIS IS DONE ON AN AREA STABILISED WITH AGGREGATE WHICH DRAINS TO AN APPROVED SEDIMENT RETENTION FACILITY.

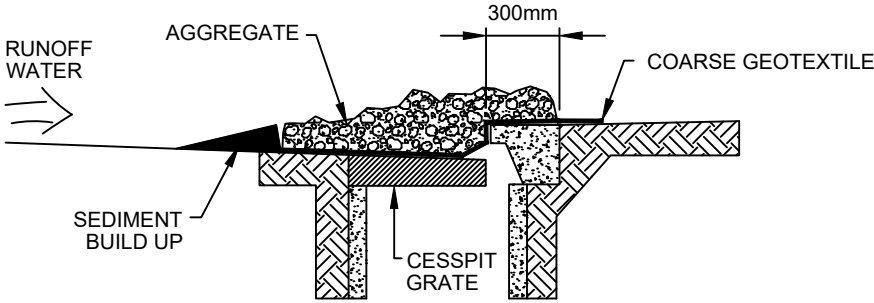


SIDE ELEVATION

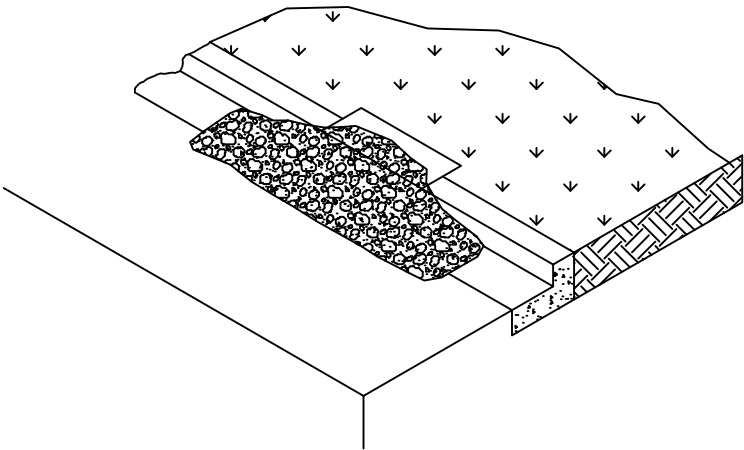


PLAN VIEW

STABILISED CONSTRUCTION ENTRANCE



CROSS SECTION



STORMWATER INLET PROTECTION
- FILTER MEDIA DESIGN



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REV.

REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

EROSION & SEDIMENT CONTROL DETAILS
SHEET 1

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE
NTS @ A3

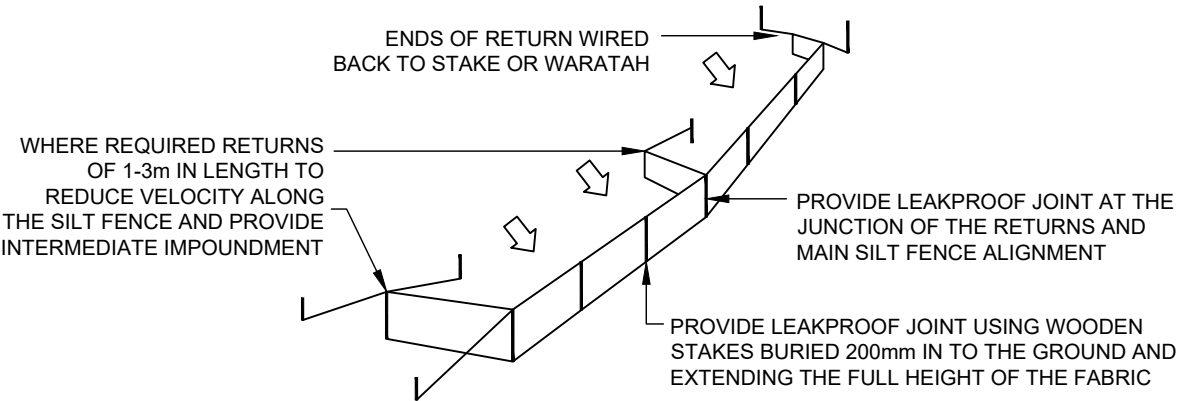
STATUS
FOR CONSENT

DWG NUMBER

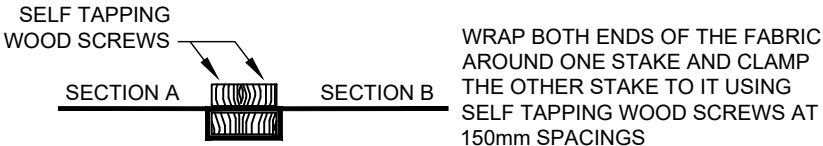
RC220

REVISION

A



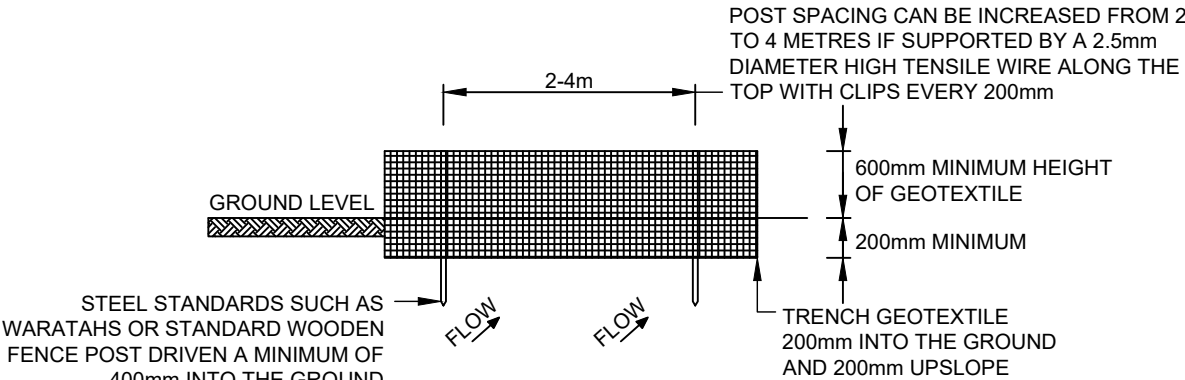
SILT FENCE WITH RETURNS AND SUPPORT WIRE



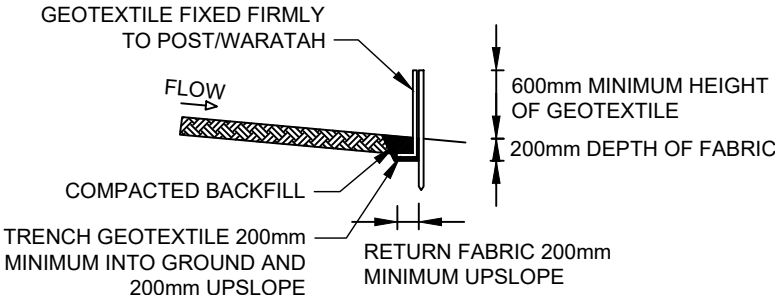
STANDARD FABRIC JOINT

SILT FENCE DESIGN CRITERIA:		
SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAX)	SPACING OF RETURNS (m)
< 2%	N/A	UNLIMITED
2-10%	40	60
10-20%	30	50
20-33%	20	40
33-50%	15	30
>50%	6	20

GRAB TENSILE STRENGTH: >440N (ASTM D4632)
TENSILE MODULUS: 0.140 pa (MINIMUM)
APPARENT OPENING SIZE: 0.1-0.5mm (ASTM D4751)

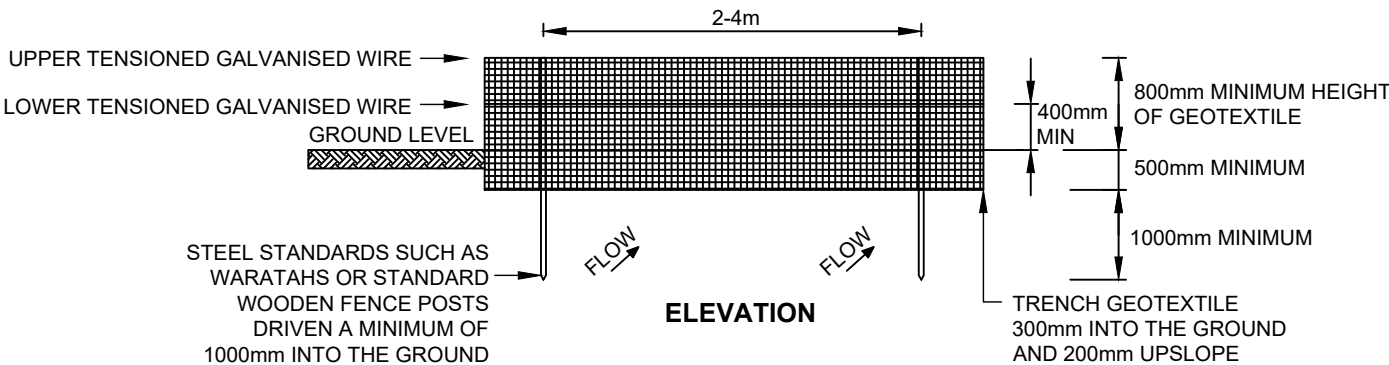


ELEVATION

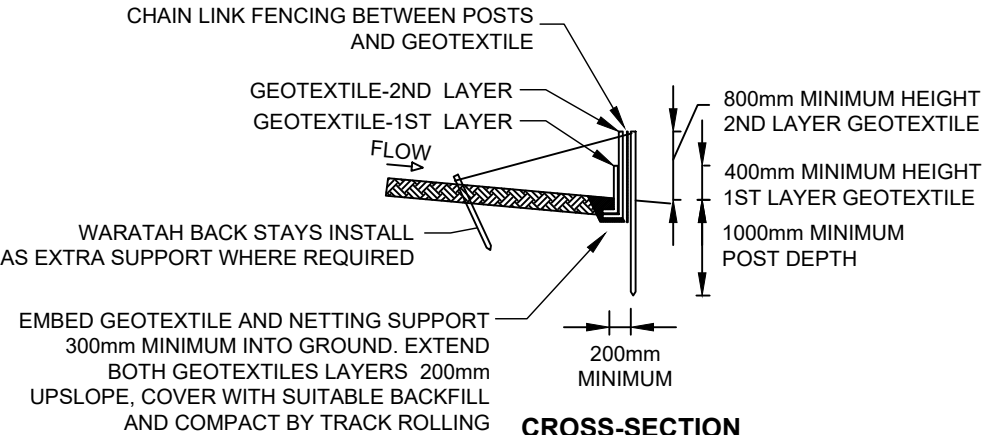


CROSS-SECTION

SILT FENCE CONSTRUCTION



ELEVATION



CROSS-SECTION

SUPER SILT FENCE DESIGN CRITERIA:

SLOPE STEEPNESS %	SLOPE LENGTH (m) (MAX)	SPACING OF RETURNS (m)
0-10%	UNLIMITED	60
10-20%	60	50
20-33%	30	40
33-50%	30	30
>50%	15	20

SUPER SILT FENCE CONSTRUCTION



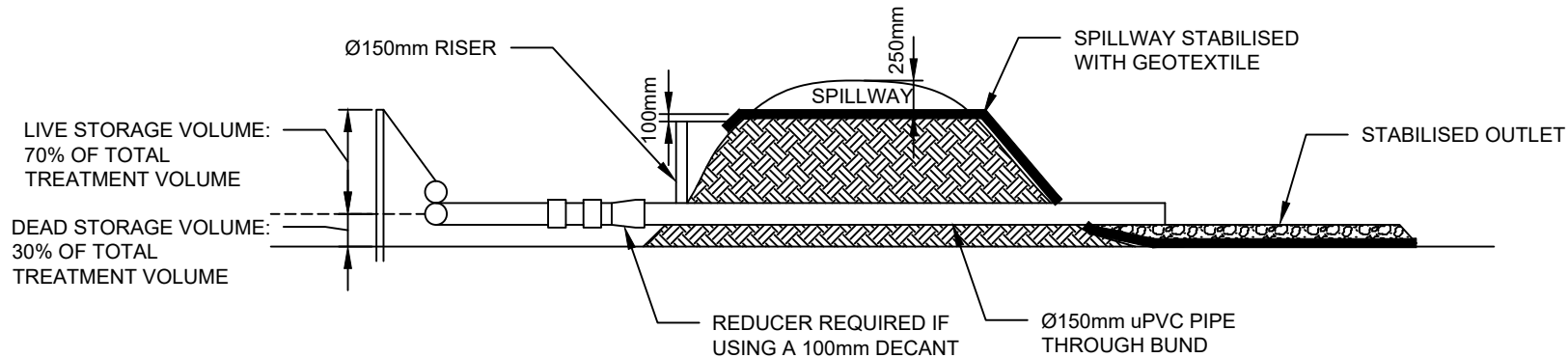
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B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL DETAILS
SHEET 2

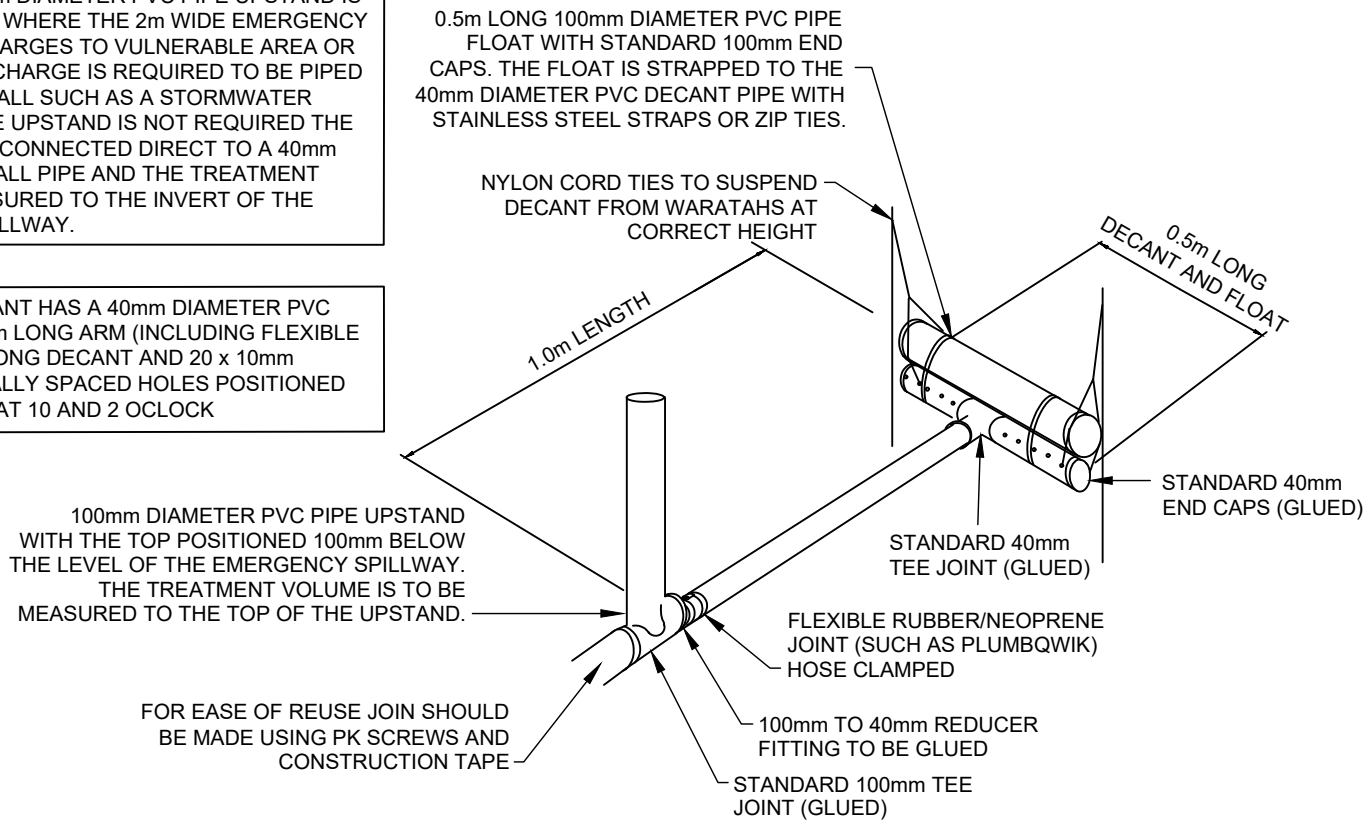
DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE NTS @ A3	STATUS FOR CONSENT	
DWG NUMBER RC221		REVISION A	



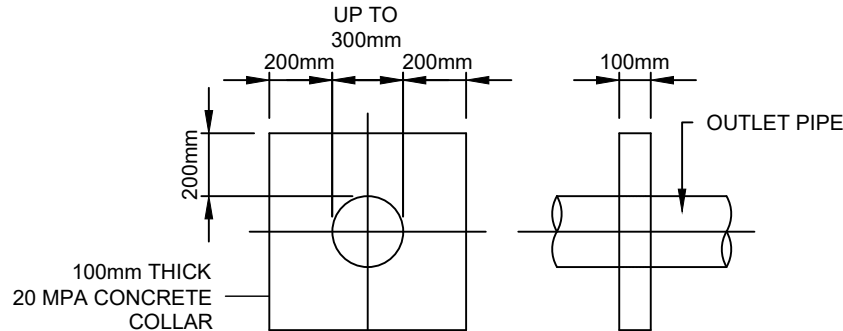
DECANTING EARTH BUND

NOTE: THE 100mm DIAMETER PVC PIPE UPSTAND IS ONLY REQUIRED WHERE THE 2m WIDE EMERGENCY SPILLWAY DISCHARGES TO VULNERABLE AREA OR WHERE THE DISCHARGE IS REQUIRED TO BE PIPED TO A SAFE OUTFALL SUCH AS A STORMWATER MANHOLE. IF THE UPSTAND IS NOT REQUIRED THE DECANT CAN BE CONNECTED DIRECT TO A 40mm DIAMETER OUTFALL PIPE AND THE TREATMENT VOLUME IS MEASURED TO THE INVERT OF THE EMERGENCY SPILLWAY.

NOTE: THE DECANT HAS A 40mm DIAMETER PVC PIPE WITH A 1.3m LONG ARM (INCLUDING FLEXIBLE JOINT), A 0.5m LONG DECANT AND 20 x 10mm DIAMETER EQUALLY SPACED HOLES POSITIONED HORIZONTALLY AT 10 AND 2 OCLOCK



40mm DECANT WITH UPSTAND FOR DECANTING EARTH BUND



ANTI-SEEP COLLAR



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B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EROSION & SEDIMENT CONTROL DETAILS SHEET 3

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE NTS @ A3	STATUS FOR CONSENT	
DWG NUMBER RC222		REVISION A	



NOTES:

1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

50
40
30
20
10
0

SCALE 1:1000



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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
ROADING, RETAINING & FINISHED LEVELS PLAN OVERVIEW

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:1000 @ A3		STATUS FOR CONSENT
DWG NUMBER RC300			REVISION A

DATE PLOTTED: Monday, 8 December 2025 9:52:16 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC300 Roading Plan.dwg

DO NOT REPRODUCE WITHOUT WRITTEN AUTHORITY





NOTES:

1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

 RETAINING WALL

 DESIGN CONTOURS

SCALE 1:400



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SCALE 1:400

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A	1ST ISSUE	03-12-2025 JY AP
REV.	REVISION DETAILS	DRAWN APP.

DATE PLOTTED: Monday, 8 December 2025 9:52:09 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC300 Roadng Plan.dwg

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

ROADING, RETAINING &
FINISHED LEVELS PLAN
SHEET 1

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:400 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC301	REVISION A	

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NOTES:

1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

SCALE 1:400



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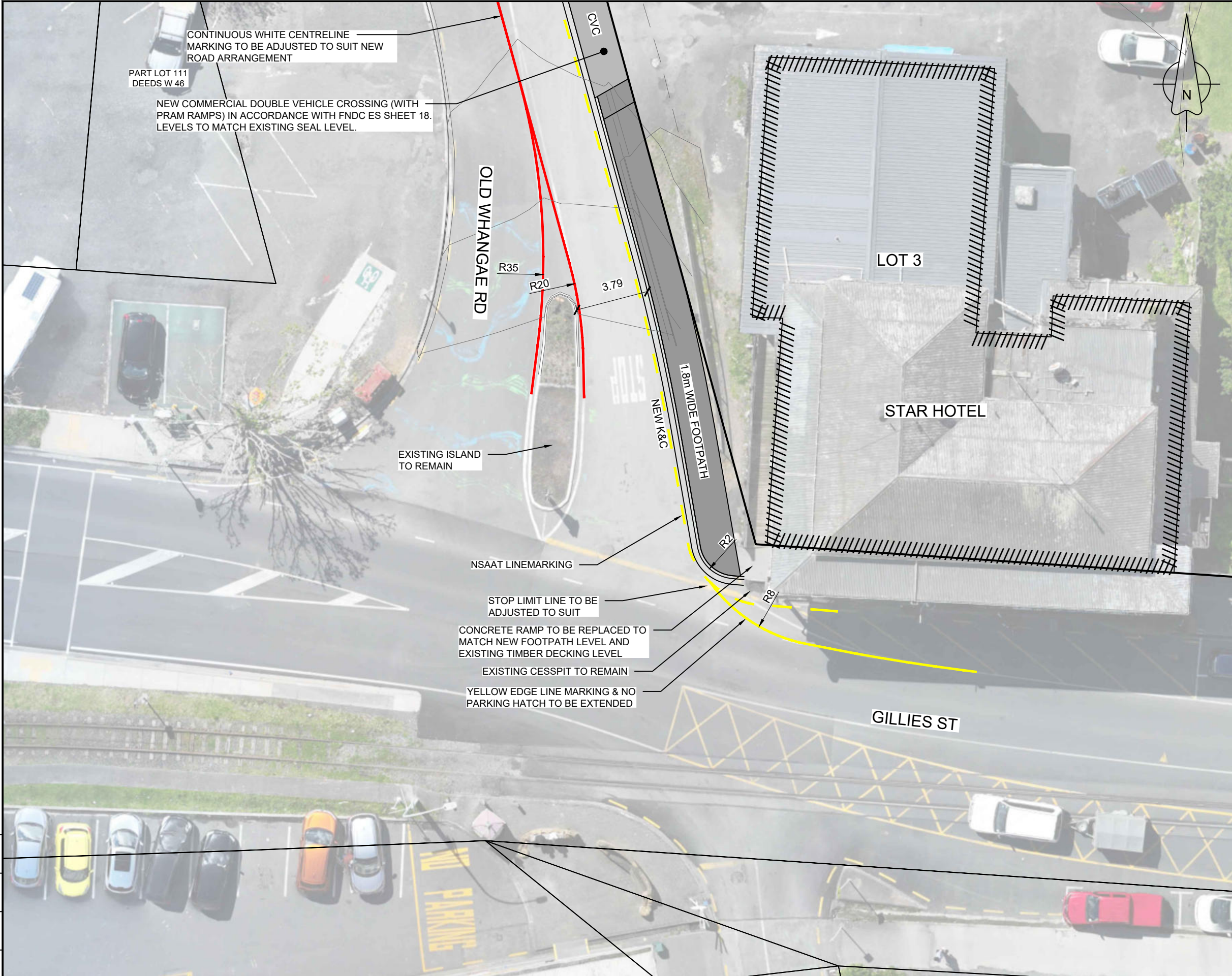
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A	1ST ISSUE	JY	AP
REV.	REVISION DETAILS	DRAWN APP.	

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
ROADING, RETAINING & FINISHED LEVELS PLAN SHEET 2

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:400 @ A3		STATUS FOR CONSENT
DWG NUMBER RC302			REVISION A



NOTES:


1. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.

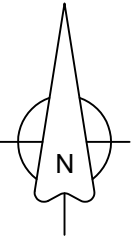
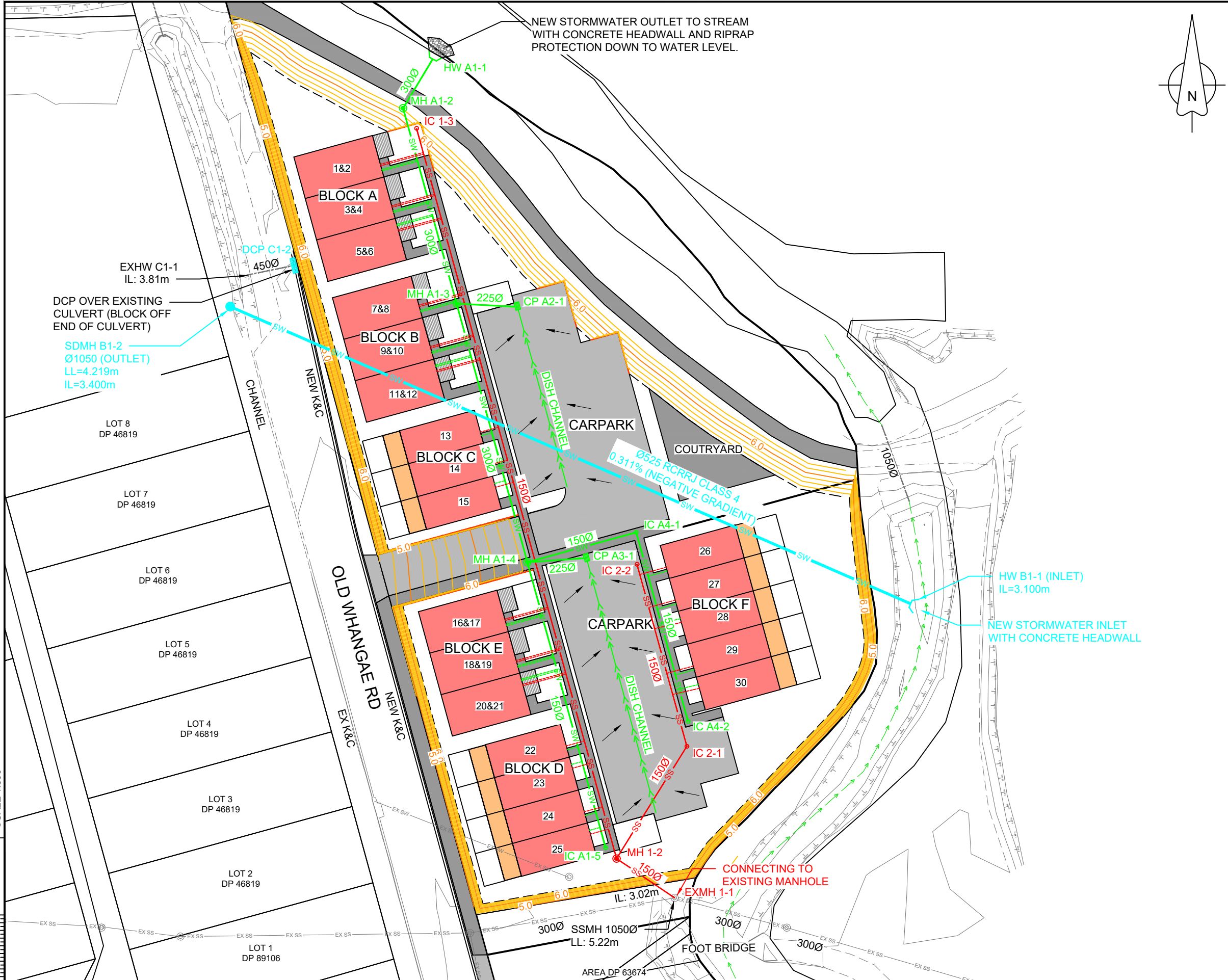
EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
NEW K&C = NEW KERB AND CHANNEL
CVC = COMMERCIAL VEHICLE CROSSING

LEGEND:

RETAINING WALL

DESIGN CONTOURS

 WWW.HOSKINCIVIL.CO.NZ	C			PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE ROADING, RETAINING & FINISHED LEVELS PLAN SHEET 3	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
	B					REF NO 25006	SCALE 1:200 @ A3	STATUS FOR CONSENT	
	A	1ST ISSUE	03-12-2025			DWG NUMBER		REVISION	
			JY AP			RC303		A	
REV.		REVISION DETAILS				DRAWN		APP.	



- NOTES:**
- 1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - 2. DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
 - 3. ALL MANHOLES ARE Ø1050 UNLESS OTHERWISE STATED.
 - 4. MANHOLE LIDS ARE TO BE ROTATED OUT OF PATHWAYS & CROSSINGS WHERE POSSIBLE.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
EX K&C = EXISTING KERB & CHANNEL
NEW K&C = NEW KERB & CHANNEL
CP = CESSPIT
DCP = DOUBLE CESSPIT
IC = INSPECTION CHAMBER
SWMH = STORMWATER MANHOLE
SSMH = SEWER MANHOLE

LEGEND:

- EX SW — EXISTING STORMWATER
- EX SS — EXISTING SS
- ⊙ — EXISTING SW MH
- ⊞ — EXISTING CESSPIT
- ⊙ — EXISTING SS MH
- SW — PROPOSED SW PIPE (TO BE VESTED)
- SW — PROPOSED SW PIPE (PRIVATE)
- SS — PROPOSED SS PIPE (PRIVATE)
- ⊙ — PROPOSED SW MH
- ⊞ — PROPOSED SCRUFFY DOME
- ⊞ — PROPOSED CESSPIT
- ⊙ — PROPOSED SS MH
- → — PROPOSED DISH CHANNEL
- — EXISTING DRAIN
- 0.2 — DESIGN CONTOURS

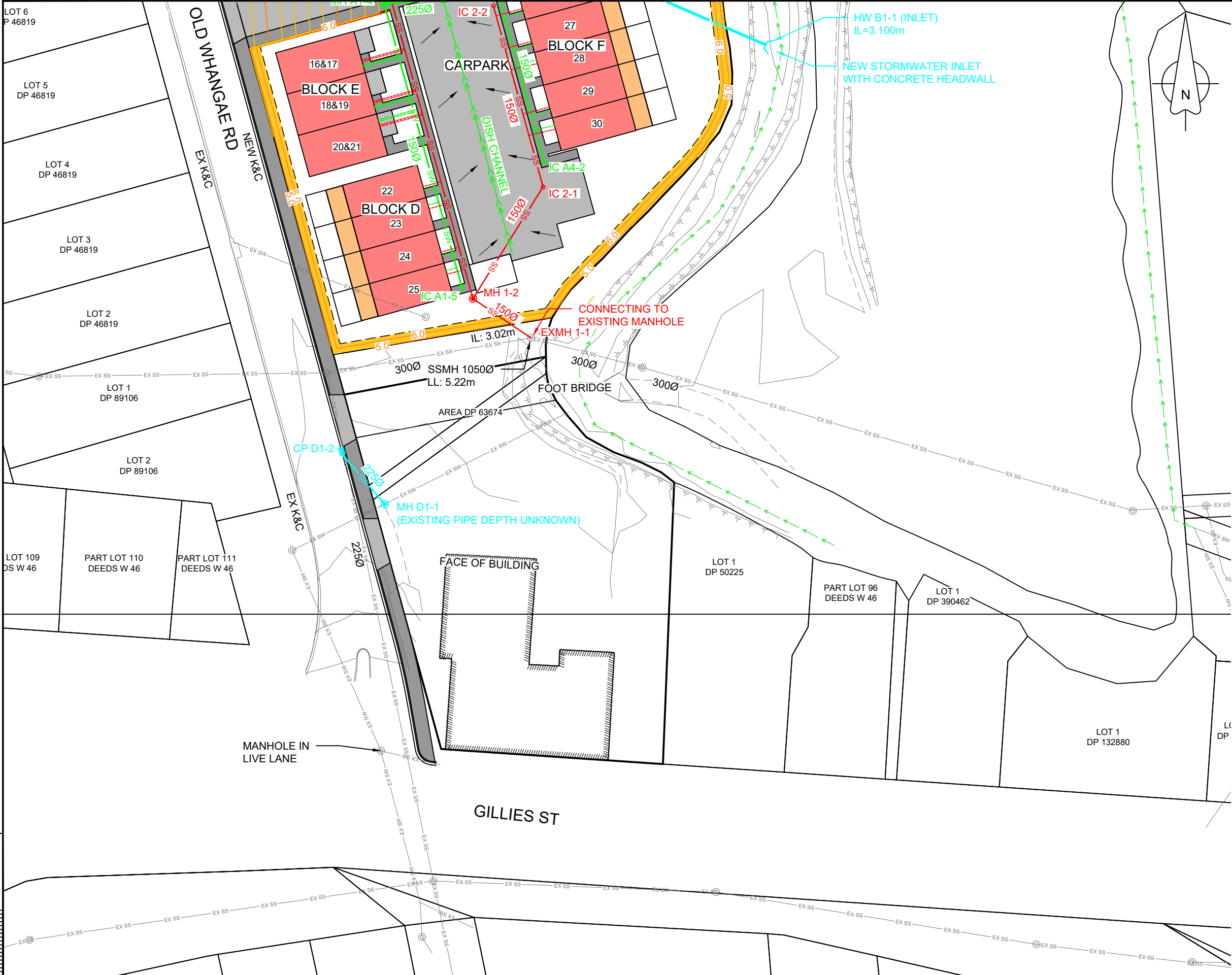


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A	1ST ISSUE	03-12-2025 JY AP
REV.	REVISION DETAILS	DRAWN APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
DRAINAGE PLAN SHEET 1

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3		STATUS FOR CONSENT
DWG NUMBER RC400			REVISION A



- NOTES:**
- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - DESIGN CONTOURS SHOWN AT 200mm INTERVALS.
 - ALL MANHOLES ARE Ø1050 UNLESS OTHERWISE STATED.
 - MANHOLE LIDS ARE TO BE ROTATED OUT OF PATHWAYS & CROSSINGS WHERE POSSIBLE.

EX K&C = EXISTING KERB AND CHANNEL
EX FP = EXISTING FOOTPATH
EX K&C = EXISTING KERB & CHANNEL
NEW K&C = NEW KERB & CHANNEL
CP = CESSPIT
DCP = DOUBLE CESSPIT
IC = INSPECTION CHAMBER
SWMH = STORMWATER MANHOLE
SSMH = SEWER MANHOLE

- LEGEND:**
- EX SW — EXISTING STORMWATER
 - EX SS — EXISTING SS
 - ⊙ — EXISTING SW MH
 - ⊞ — EXISTING CESSPIT
 - ⊙ — EXISTING SS MH
 - SW — PROPOSED SW PIPE (TO BE VESTED)
 - SW — PROPOSED SW PIPE (PRIVATE)
 - SS — PROPOSED SS PIPE (PRIVATE)
 - ⊙ — PROPOSED SW MH
 - ⊞ — PROPOSED SCRUFFY DOME
 - ⊞ — PROPOSED CESSPIT
 - ⊙ — PROPOSED SS MH
 - — PROPOSED DISH CHANNEL
 - — EXISTING DRAIN
 - 0.2 — DESIGN CONTOURS



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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
DRAINAGE PLAN SHEET 2

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:500 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC401	REVISION A	



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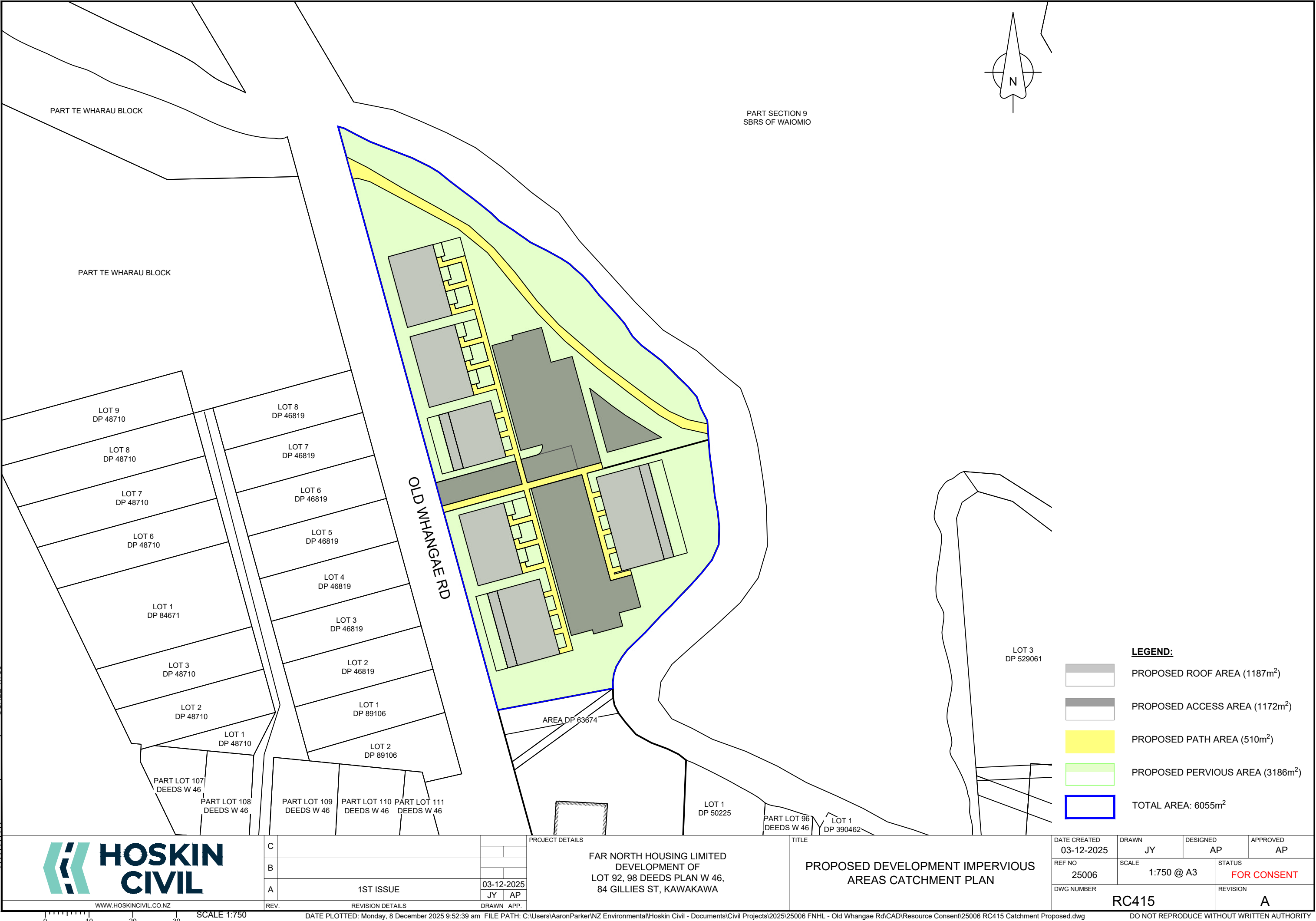
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C			
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
EXISTING IMPERVIOUS AREAS CATCHMENT PLAN

DATE DRAWN 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3		STATUS FOR CONSENT
DWG NUMBER RC410			REVISION A

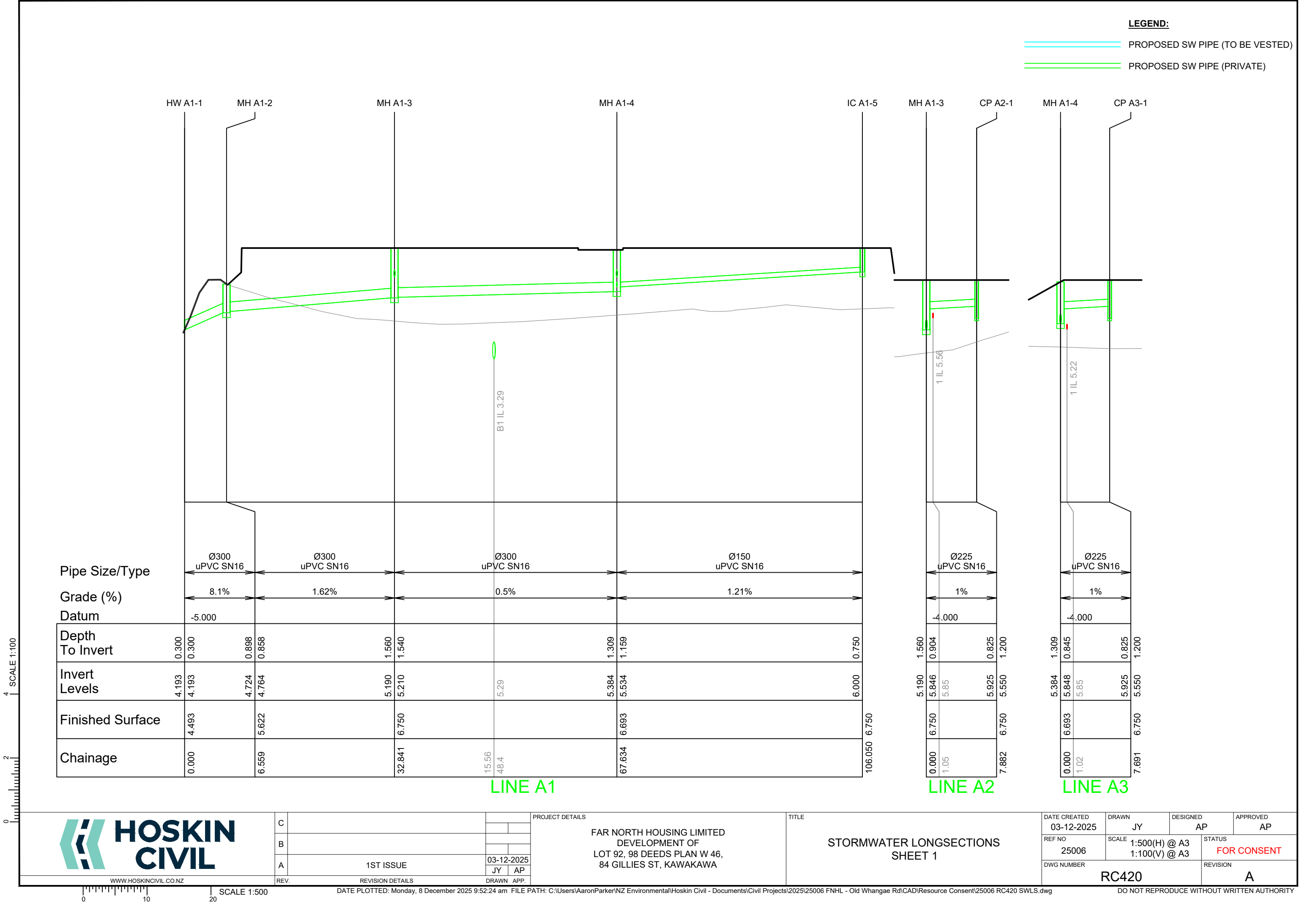


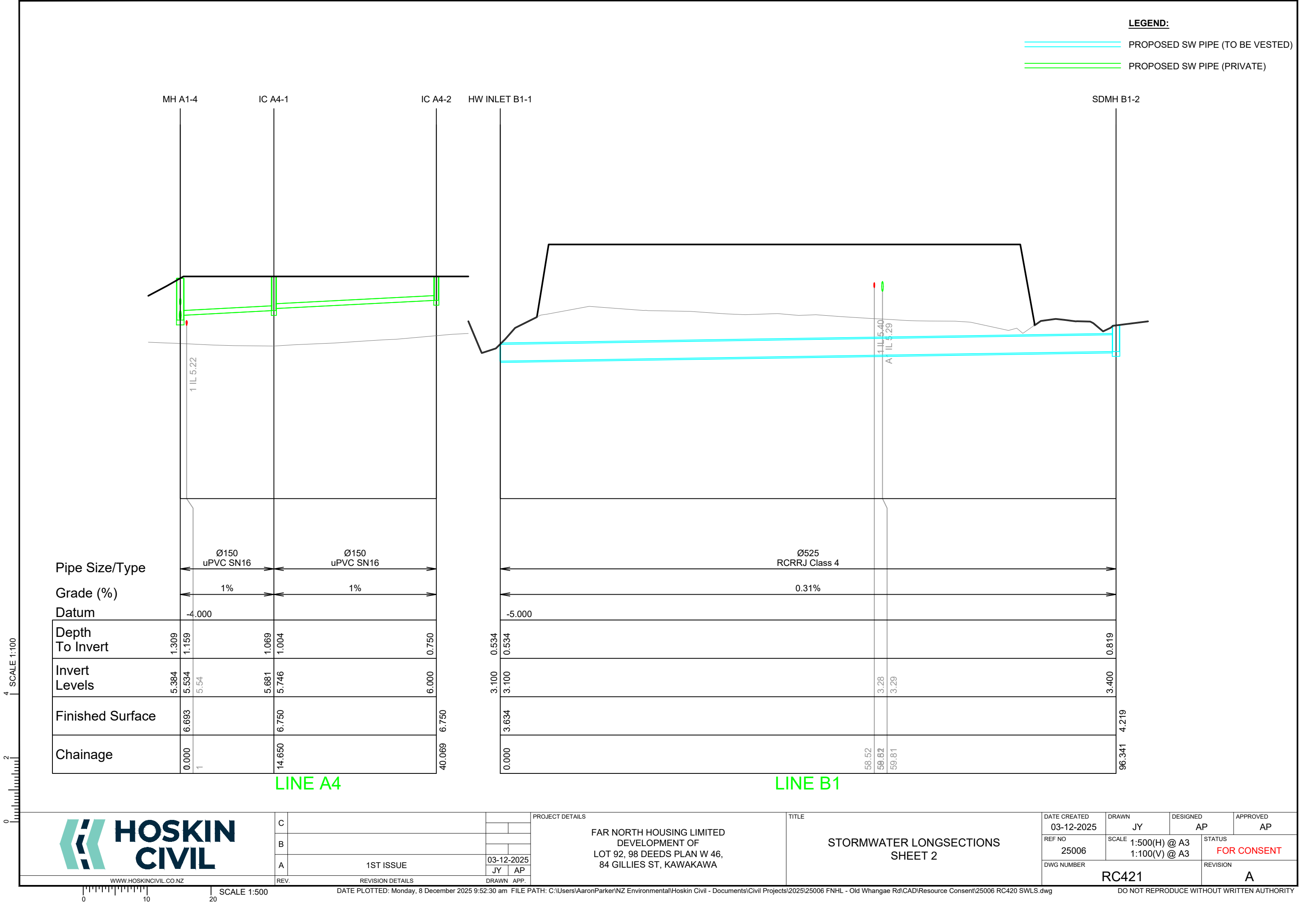
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B			
A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
PROPOSED DEVELOPMENT IMPERVIOUS AREAS CATCHMENT PLAN

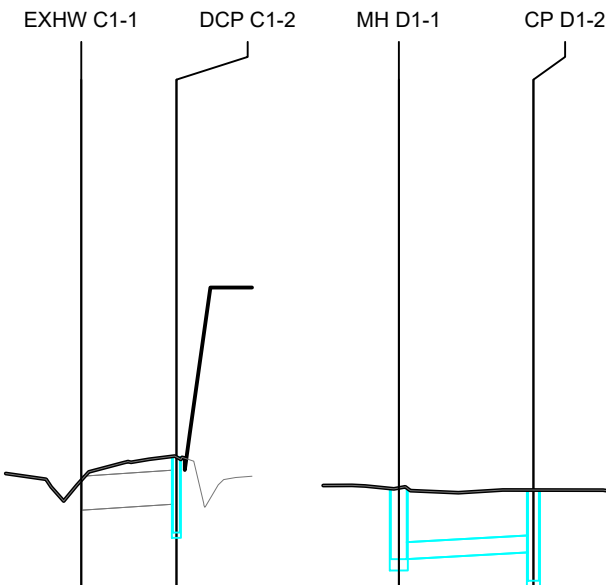
DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3	STATUS FOR CONSENT	
DWG NUMBER	RC415	REVISION A	





LEGEND:

- PROPOSED SW PIPE (TO BE VESTED)
- PROPOSED SW PIPE (PRIVATE)



Pipe Size/Type

Grade (%)

Datum

Depth
To Invert

Invert
Levels

Finished Surface

Chainage

LINE C1

LINE D1



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REV.

REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

STORMWATER LONGSECTIONS
SHEET 3

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE 1:500(H) @ A3
1:100(V) @ A3

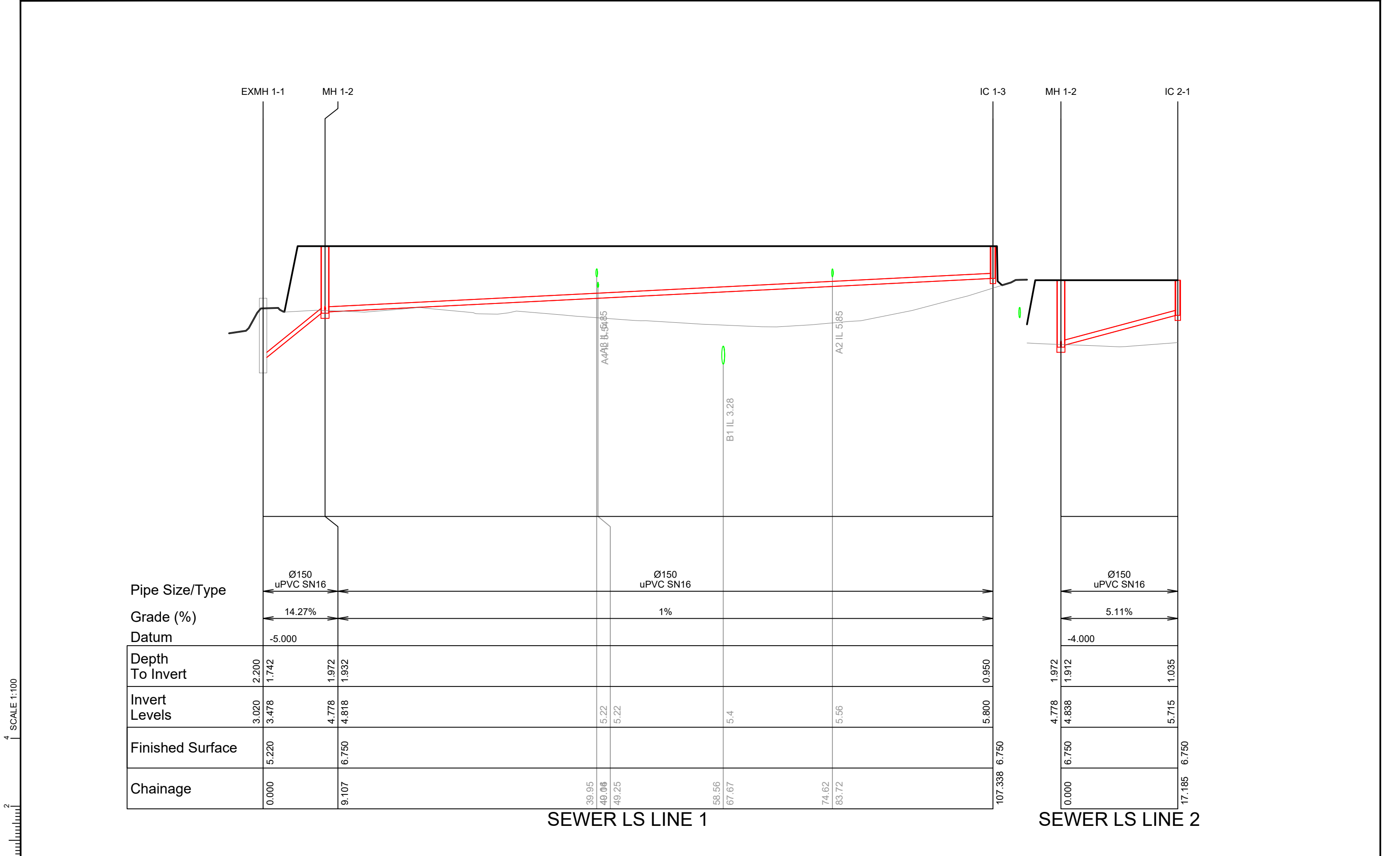
STATUS
FOR CONSENT

DWG NUMBER

RC422

REVISION

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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

TITLE
SANITARY SEWER LONGSECTIONS SHEET 1

DATE CREATED 03-12-2025		DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006		SCALE 1:500(H) @ A3 1:100(V) @ A3		STATUS FOR CONSENT
DWG NUMBER RC430				REVISION A

0 10 20 SCALE 1:500

DATE PLOTTED: Monday, 8 December 2025 9:52:12 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC430 SSLS.dwg

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0 2 4 SCALE 1:100

IC 2-1

IC 2-2

Pipe Size/Type

Grade (%)

Datum

Depth
To Invert

Invert
Levels

Finished Surface

Chainage

Ø150
uPVC SN16
1%
-4.000

1.035	0.995	0.750
5.715	5.755	6.000
6.750		6.750
17.185		41.679

SEWER LS LINE 2



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C

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A

REV.

REVISION DETAILS

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

SANITARY SEWER LONGSECTIONS
SHEET 2

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE 1:500(H) @ A3
1:100(V) @ A3

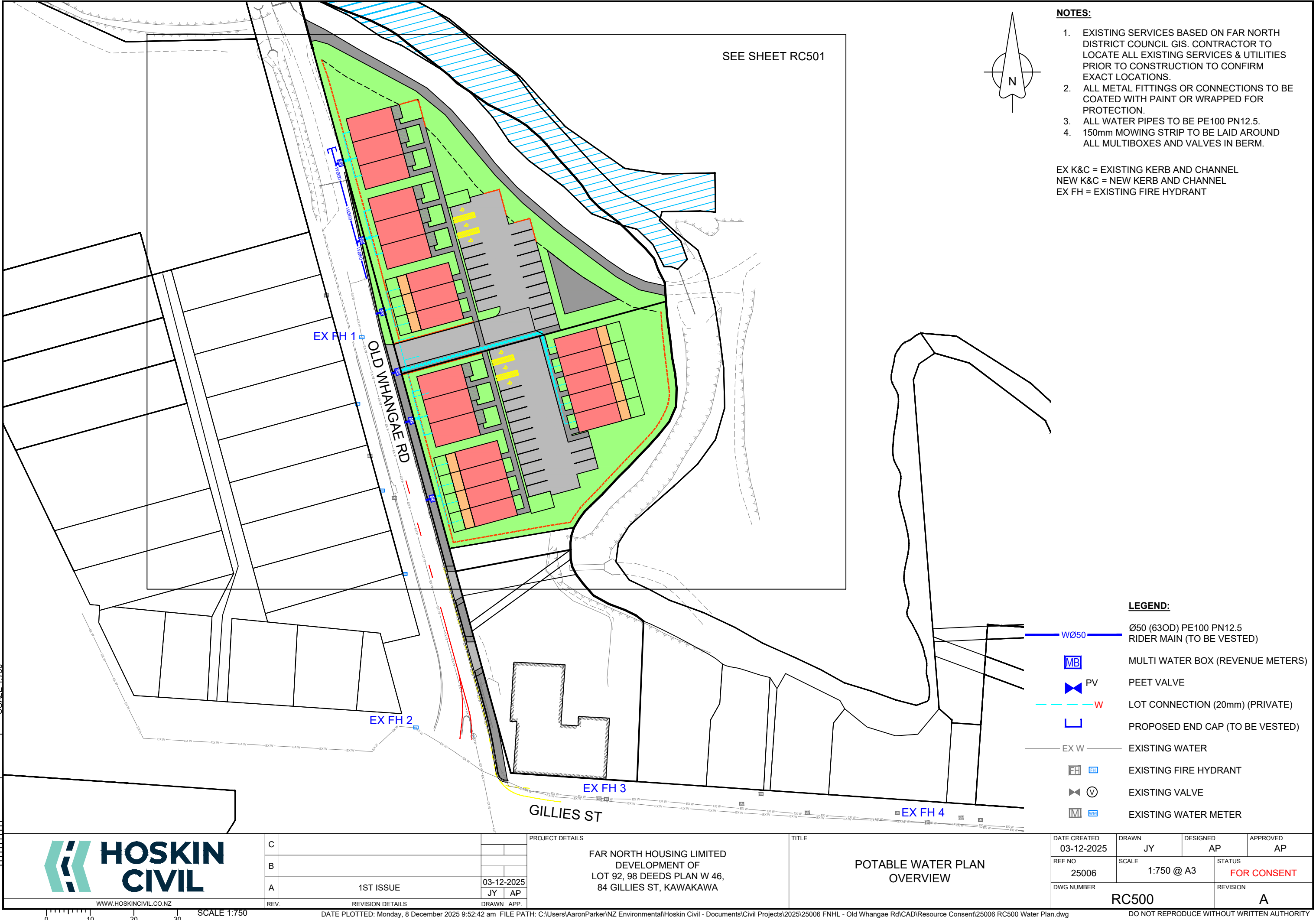
STATUS
FOR CONSENT

DWG NUMBER

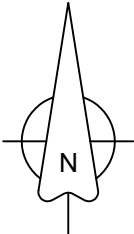
RC431

REVISION

A



SEE SHEET RC501



- NOTES:**
- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
 - ALL WATER PIPES TO BE PE100 PN12.5.
 - 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVES IN BERM.
- EX K&C = EXISTING KERB AND CHANNEL
NEW K&C = NEW KERB AND CHANNEL
EX FH = EXISTING FIRE HYDRANT

- LEGEND:**
- Ø50 (63OD) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
 - MULTI WATER BOX (REVENUE METERS)
 - PEET VALVE
 - LOT CONNECTION (20mm) (PRIVATE)
 - PROPOSED END CAP (TO BE VESTED)
 - EXISTING WATER
 - EXISTING FIRE HYDRANT
 - EXISTING VALVE
 - EXISTING WATER METER



C			
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A	1ST ISSUE	03-12-2025	JY AP
REV.	REVISION DETAILS	DRAWN	APP.

PROJECT DETAILS
FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA

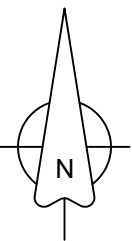
TITLE
POTABLE WATER PLAN OVERVIEW

DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
REF NO 25006	SCALE 1:750 @ A3	STATUS FOR CONSENT	
DWG NUMBER RC500		REVISION A	

SCALE 1:750

DATE PLOTTED: Monday, 8 December 2025 9:52:42 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC500 Water Plan.dwg

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NOTES:

1. EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
2. ALL METAL FITTINGS OR CONNECTIONS TO BE COATED WITH PAINT OR WRAPPED FOR PROTECTION.
3. ALL WATER PIPES TO BE PE100 PN12.5.
4. 150mm MOWING STRIP TO BE LAID AROUND ALL MULTIBOXES AND VALVES IN BERM.

EX K&C = EXISTING KERB AND CHANNEL
NEW K&C = NEW KERB AND CHANNEL
EX FH = EXISTING FIRE HYDRANT

LEGEND:

- WØ50 — Ø50 (630D) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
- MB MULTI WATER BOX (REVENUE METERS)
- PV PEET VALVE
- W — LOT CONNECTION (20mm) (PRIVATE)
- PROPOSED END CAP (TO BE VESTED)
- EX W — EXISTING WATER
- FH EXISTING FIRE HYDRANT
- EXISTING VALVE
- M EXISTING WATER METER

PROPOSED END CAP

6 WAY MULTIBOX WITH
500 CONNECTION &
PEET VALVE

6 WAY MULTIBOX WITH
500 CONNECTION &
PEET VALVE

LOT 8
DP 46819

LOT 7
DP 46819

LOT 6
DP 46819

LOT 5
DP 46819

LOT 4
DP 46819

LOT 3
DP 46819

LOT 2
DP 46819

LOT 1
DP 89106

EX FH 1

OLD WHANGAE RD

EX K&C

NEW K&C

EX Ø100 WATER MAIN

EX Ø50 RIDER MAIN

CARPARK

COUTRYARD

CARPARK

FOOT BRIDGE

AREA DP 63674



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C
B
A

1ST ISSUE

REV.

REVISION DETAILS

03-12-2025
JY AP

DRAWN APP.

PROJECT DETAILS

FAR NORTH HOUSING LIMITED
DEVELOPMENT OF
LOT 92, 98 DEEDS PLAN W 46,
84 GILLIES ST, KAWAKAWA

TITLE

POTABLE WATER PLAN
SHEET 1

DATE CREATED
03-12-2025

DRAWN
JY

DESIGNED
AP

APPROVED
AP

REF NO
25006

SCALE
1:500 @ A3

STATUS
FOR CONSENT

DWG NUMBER

RC501

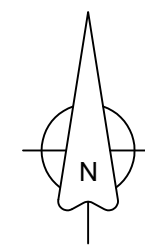
REVISION

A

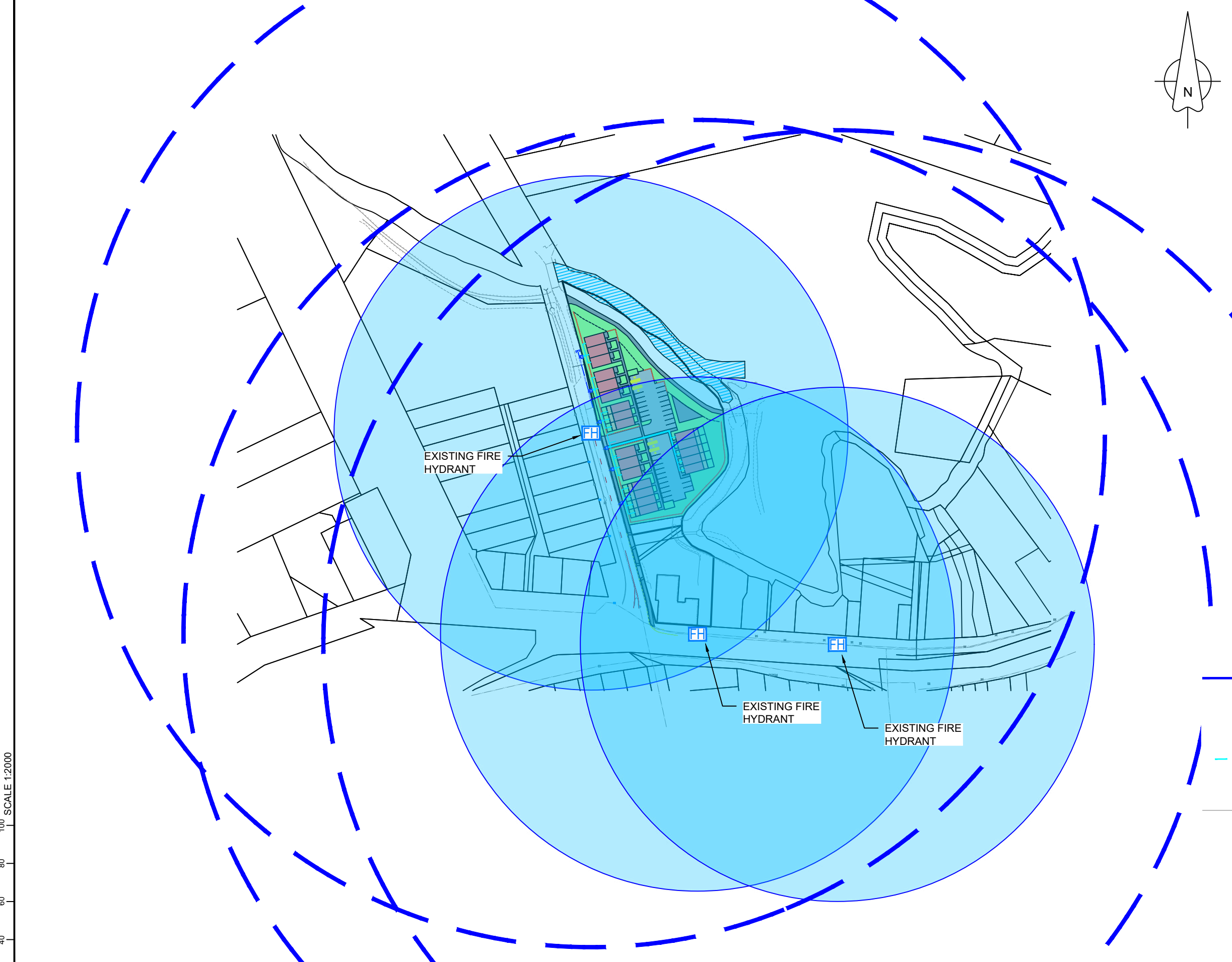
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- NOTES:**
- EXISTING SERVICES BASED ON FAR NORTH DISTRICT COUNCIL GIS. CONTRACTOR TO LOCATE ALL EXISTING SERVICES & UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM EXACT LOCATIONS.
 - FIRE HYDRANT SUPPLY COMPLIES WITH FNDC ENGINEERING STANDARDS AND GUIDELINES 2004 – REVISED MARCH 2009 & SNZ PAS 4509:2003 REQUIREMENTS.
- EX FH = EXISTING FIRE HYDRANT



- LEGEND:**
- WØ50 Ø50 (63OD) PE100 PN12.5 RIDER MAIN (TO BE VESTED)
 - MB MULTI WATER BOX (REVENUE METERS)
 - PV PEET VALVE
 - W LOT CONNECTION (20mm) (PRIVATE)
 - PROPOSED END CAP (TO BE VESTED)
 - EX W EXISTING WATER
 - EX FH EXISTING FIRE HYDRANT
 - EX V EXISTING VALVE
 - EX M EXISTING WATER METER
 - 135m RADIUS
 - 270m RADIUS

 WWW.HOSKINCIVIL.CO.NZ	C		PROJECT DETAILS FAR NORTH HOUSING LIMITED DEVELOPMENT OF LOT 92, 98 DEEDS PLAN W 46, 84 GILLIES ST, KAWAKAWA	TITLE POTABLE WATER FIRE HYDRANT PLAN	DATE CREATED 03-12-2025	DRAWN JY	DESIGNED AP	APPROVED AP
	B				REF NO 25006	SCALE 1:2000 @ A3	STATUS FOR CONSENT	
	A	1ST ISSUE			03-12-2025 JY | AP	DWG NUMBER	REVISION A	
	REV.				REVISION DETAILS		DRAWN APP.	

0 20 40 60 80 100 SCALE 1:2000

DATE PLOTTED: Monday, 8 December 2025 9:52:21 am FILE PATH: C:\Users\AaronParker\NZ Environmental\Hoskin Civil - Documents\Civil Projects\2025\25006 FNHL - Old Whangae Rd\CAD\Resource Consent\25006 RC510 FH Plan.dwg

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Subject: DO NOT REPLY – Waka Kotahi NZ Transport Agency - A new Environmental Planning request has been logged with Case Ref - Application-2025-1621 CRM:0093197409

Date: Monday, 1 December 2025 at 10:16:34 AM New Zealand Daylight Time

From: Environmental Planning

To: Steve Sanson

Dear Far North Holdings Limited,

Thank you for your application. Your reference number is:

Your application has been assigned to the Environmental Planning Team and you should expect to receive a response within the next 20 working days. If you have any further queries or concerns on this matter, please do not hesitate to contact us via email quoting case ref: Application-2025-1621 or visit our [website](#).

Kind Regards,

Environmental Planning Team

System Design and Delivery

E environmentalplanning@nzta.govt.nz / **w** <http://www.nzta.govt.nz>

This message, together with any attachments, may contain information that is classified and/or subject to legal privilege. Any classification markings must be adhered to. If you are not the intended recipient, you must not peruse, disclose, disseminate, copy or use the message in any way. If you have received this message in error, please notify us immediately by return email and then destroy the original message. This communication may be accessed or retained by NZ Transport Agency Waka Kotahi for information assurance purposes.

Concept Development Meeting Minutes

Date: 16-Jul-2025
Concept Number: CDM-2026-1
Address: 84 Gillies Street, Kawakawa 0210
Duration of Meeting:

1. Meeting Attendees

Council:

- Nikki Callinan – Senior Planner
- Nick Williamson- Team Leader, Resource Consents
- Rinku Mishra – Senior Resource Consents Engineer

Applicant:

- Steve Sanson – BayPlan

2. Proposal & Documents Submitted for CDM

- The application includes plans referenced as A101 (Proposed Site Plan - Option 3) and A A002 (3D Perspectives), both prepared by eclipse architecture / Far North Holdings Limited and dated 19/06/2024, along with A A211 (Typical Floor Plans), also by eclipse architecture / Far North Holdings Limited, dated 20/02/2024

3. Detail of Proposal – as outlined by the applicant at the meeting

Steven Sanson provided an overview of the proposed 30-unit medium-density housing development at 84 Gillies Street, Kawakawa, as detailed in the submitted plans.

The proposal includes a mix of one-bedroom and two-bedroom units, with associated carparking. Detailed that recent stop bank works had been completed by NRC.

4. Discussion – at the meeting

Infrastructure Development Fund

- Infrastructure development fund - this funding will support road extensions and significant water infrastructure upgrades for an expected 300 houses. This site makes up a potential site that could be developed to add to the 300 houses

Planning

- ODP Zoning vs. PDP Zoning: Clarification sought on the implications of the Operative District Plan (ODP) zoning versus the Proposed District Plan (PDP) zoning for the site.

The existing site under the ODP is zoned Rural Production. However, it was noted that the site is cut off from wider farmland and rural use, sitting by itself opposite an industrial area. It was likely originally zoned this way to be low-zoned land and not highly developable for residential use. However, it will not be able to be used for rural purposes as it is not part of the wider farmland and is in close proximity to the main centre of Kawakawa and the industrial area which will be taken into consideration when assessing the proposal.

Under the PDP, the site is proposed to be zoned Mixed Use. The objectives of this zone were discussed, particularly that it is intended as a focal point for commercial, community, and civic activities, with residential development complementing these activities (MUZ-O2). It was noted that residential activity is typically encouraged above commercial activities to ensure active street frontages (MUZ-O5). The proposed development is entirely residential and does not include commercial components. It would be helpful to include an assessment of market demand with the application that why the residential use of the site and not including commercial aligns with the Mixed Use Zone and does not detract from the commercial focus of the Zone especially with the proximity to the town centre.

It was acknowledged that the proposed development demonstrates a more aligned approach to the Mixed Use zone under the PDP than the existing Rural Production zone, and this will be taken into account when weighing the proposal for the planner's assessment.

Factors about design:

- The Mixed Use zone also focuses on active street frontages. Given the 2m retaining wall and current lack of landscaping shown along the boundary, the proposed dwellings do not currently demonstrate the active street frontage intended by the zone, especially with the pedestrian frontage overlay on this site. As this street also connects to the cycle trail, it would be beneficial for the application to clearly demonstrate efforts to enhance connectivity and create a more active street frontage, including appropriate landscaping along the retaining wall.
- In the application would be good to see if lighting has been considered for safety in the car parks and also safety considerations such as CPTED for pedestrians walking to dwellings, do they all have to enter from the front of the site alongside the retaining walls or are rear doors closer to the carparking areas included?
- Are there communal rubbish areas and are these fenced and hidden or is each unit dealing with own rubbish where will this be put?
- The dwellings are opposite an industrial area, how will reverse sensitivity effects be dealt with, is there acoustic ventilation or other mitigation included for noise attenuation and the effects from the close proximity of the industrial area.

Engineering – Resource Consent Engineer

- *Roading*
 - Access to SH- Consultation from NZTA will be required.
 - Shared Access: Compliance with EES Table 3.7 and section 3 (e.g., Width, formation & gradient). Road name required for 4+ users.
 - Road to vest- Consultation with roading will be required.

- Parking Flooding: Is it acceptable for car parks to be underwater during a 100-year flood event? Emergency vehicle entrance for any flood emergency time.
- *Water*
 - Infrastructure engineer approval required. Yes, demonstrate capacity and Fire Fighting Supply (FFS) cover.
 - Onsite supply? Borehole supply? Shared supply? Not required.
- *Wastewater*
 - Are council services available? Low pressure zone / gravity. Public or privately owned? Infrastructure engineer approval required.
 - If yes, demonstrate capacity in detail in the Site Suitability report.
 - Any risk of infiltration or cross-connection with floodwater been accounted for, to avoid any mixing of Stormwater (SW) and Wastewater (WW).
 - Onsite services? [No information provided for this point in your text]
- *Stormwater*
 - Are council services available? Infrastructure engineer approval required. Yes for half area, demonstrate capacity. For half area, it's out of area of benefit.
 - Attenuation to comply with Section 4 in the EES. [No information provided for this point in your text]
 - Onsite disposal / Discharge Strategy: How is stormwater being managed to prevent adding to downstream flood risk? Can the full site comply with EES Section 4 attenuation requirements? Are treatment devices or detention needed on-site? How above the attenuation device required to be on site to prevent from any flooding impact?
 - Floodplain Compensation: Has any modelling or volume calculation been done to ensure floodplain storage lost to building platforms is fully compensated elsewhere on the site?
 - Impervious Surface Management: Will all paved areas (courtyards, driveways, car parks) be permeable or require on-site storage and treatment?
- *Site Suitability/Geotechnical Reports*
 - Land Stability (Low/Medium/High)
 - Site Stability: What is the geotechnical classification of each zone across the site? (Noted as potentially medium hazard). Will CPEng supervision be required during earthworks? Will retaining walls along the flood embankments require special design?
 - Earthworks Volume: What is the estimated cut/fill balance for achieving flood mitigation and platform raising? Will NRC consent be required for bulk earthworks, and when should this be applied for?
 - All reports are to comply with Section 2 in the EES.
- *Other (Flooding)*
 - Flooding / Flood Site Engineering Questions: Flood hazard assessment and model (HecRas or any similar software) - by CPEng.
 - Flood Impact: What are the confirmed flood depths for the 10-year and 100-year events across the site? What mitigation methods are acceptable to Council for displacement of floodwaters? How will floodwaters interact with the proposed batters and raised building platforms? What will be the effect of the block platform, how it will divert water to the other property? Can updated hydraulic modelling confirm whether

floodwaters will affect downstream or adjacent properties?
What are the velocity and depth thresholds for safe evacuation and do the current designs meet them?

- Finished Floor Levels: What is the required minimum freeboard above the 100-year flood level? Will raised floor levels trigger accessibility issues or additional retaining structures? Can car park areas be used in a flood event if buildings are raised? Are cars protected?
- Emergency Access: What are the expected flood depths and velocities on Old Whangae Road during a 100-year flood—can fire and ambulance vehicles access the site? Has a functional emergency evacuation route been identified? Is there a need for an elevated internal driveway or an emergency exit route elevated above flood levels?

Engineer – IAM

Wastewater

- A capacity assessment for both water and wastewater will need to be provided to confirm the current system will be able to accommodate the additional demand from the development.
- In the case that an upgrade is required to accommodate the additional demand, all upgrades will be at the cost of the applicant and a Development Agreement will need to be put in place to account for this.

Water

- Hydrant testing will be required to confirm capacity.

Stormwater

- Stormwater connection to Council's reticulated system is only available for the southern most units (3 X 1 Beds).

Reserves Planner

An esplanade waiver would be required to be approved or esplanade reserve may be provided.

- (iii) where any land use requires a resource consent for an activity or activities and the Council considers it necessary to require an esplanade reserve or strip for any of the purposes outlined in s229 of the Act, an esplanade reserve or strip may be required;



5. Conclusion and Next Steps

- Include all necessary supporting technical reports, such as a detailed Assessment of Environmental Effects (AEE), potentially a Market Demand Assessment, Traffic Impact Assessment (TIA), Stormwater Management Plan (SWMP), Geotechnical Report, and a Flood Hazard Assessment and Model.

Please Note:

The views and opinions by Council Officers at the Concept Development Meetings and in these associated notes provide their preliminary view only. A final determination on whether Council can support the consent or not, and whether the resource consent application will be processed on a notified or non-notified base can only be made upon receipt of a formal application, site visit and review.

Chorus NZ Ltd
4 Graham Street
Auckland CBD
Auckland

Adrian Tonks
Far North Holdings Limited
5449A State Highway 12
Kaikohe, 0472

01/12/2025

Hi Adrian,

Thank you for providing an indication of your development plans in the Kawakawa area. I can confirm that we have infrastructure in the general land area that you are proposing to develop at 84 Gillies Street, Kawakawa (Old Whangae Road). Chorus will be able to extend our network to provide connection availability. However, please note that this undertaking would of course be subject to Chorus understanding the final total property connections that we would be providing, roll-out of property releases/dates and what investment may or may not be required from yourselves and Chorus to deliver the infrastructure to and throughout the site in as seamless and practical way as possible.

The cost can only be finalised at the time that you are ready to proceed.

Chorus is happy to work with you on this project as the network infrastructure provider of choice. What this ultimately means is that the end customers (business and homeowners) will have their choice of any retail service providers to take their end use services from once we work with you to provide the physical infrastructure.

Please reapply with a detailed site plan once you are ready to proceed.

Kind Regards,



Merita Tagaloa
Group Account Manager
Chorus NZ Ltd



Top Energy Limited

Level 2, John Butler Centre
60 Kerikeri Road
P O Box 43
Kerikeri 0245
New Zealand
PH +64 (0)9 401 5440
FAX +64 (0)9 407 0611

28 November 2025

Far North Housing Ltd
PO Box 7
Opua 0241

Dear Sir / Madam

**RE: Proposed new connection – 84 Gillies Ave, Kawakawa
Top Energy Reference 109189**

Thank you for your application for a new connection at the above address. We have reviewed your application against our records and found that the current network arrangement cannot meet the needs of your application without an upgrade, extension, or alteration to the network.

Any upgrade, extension or alteration to the network requires an engineering design to identify a suitable solution and ensure that the work complies with the Top Energy standards and Electricity Regulations, which ensures that it is fit for purpose, safe and compliant.

The design shall allow for the required lines/cables and equipment to provide a suitable fused service connection point at or near the boundary of the above property, or at a location as agreed. The design shall be based on the capacity requested in your application.

Top Energy offer a design service and our quotation to provide a detailed engineering design solution for the preliminary proposal below is \$2,200, excluding GST.

Due to current workload and job complexity, we estimate the detailed design to take 12-14 weeks to produce. Should you engage Top Energy to undertake the design one of our staff will contact you and, if required, arrange a site meeting to discuss the design options. Once the design is completed a fixed price quotation will be prepared for the construction work.

If you wish to engage Top Energy to carry out the detailed engineering design for the above reticulation proposal, please contact our Estimating Team on 0800 867 363 or by email at ciw@topenergy.co.nz who will issue an invoice for the quoted amount.

Term and Conditions

Our design quotation is firm for 30 days from the date of this letter. Our normal terms are payment in full prior to material procurement and commencement of work.

Preliminary design proposal (subject to detailed design investigation):

- Review the existing transformer T04015 and, if required, upgrade to provide the capacity requested in the application
- Extend approx. 100m of low voltage underground cable from the above transformer to a new fused service connection pillar on the roadside boundary of lot 1 and lot 2
- Provide for a 3 phase 160 amp per phase fuse connection point per lot at the above pillar.

An estimate for the above proposed works is between \$100,000 & \$120,000 (GST exclusive)

Ownership

Top Energy will retain ownership of the new lines/cable, transformer and associated equipment up to and including the fuse service connection pillars and therefore undertake the required inspection and maintenance tasks as required by the Electricity Regulations.

Should no reply be received within 90 days this job will be closed. A new application fee will be required after the job is closed.

If you have any queries or wish to discuss the proposal further, please contact our Estimating Team on 0800 867 363.

Regards

Top Energy Estimating Team