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

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

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

1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement? ◯ **Yes** ✔ **No**

2. Type of Consent being applied for

(more than one circle can be ticked):

- ✔ **Land Use**
- ◯ **Fast Track Land Use***
- ◯ **Subdivision**
- ◯ **Consent under National Environmental Standard** (e.g. Assessing and Managing Contaminants in Soil)
- ◯ **Discharge**
- ◯ **Change of Consent Notice (s.221(3))**
- ◯ **Extension of time (s.125)**
- ◯ **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** If we qualify it will be great to have this.

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: Angela Vujcich

Email:

Phone number:

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

6. Address for Correspondence

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

Name/s: CPPC Planning - Claire Phillips

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.***

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: Whakatere Investments Ltd / Whakatere Ki Koranui Trust

Property Address/ Location: 91 Mangakahia Rd, Kaikohe

Postcode

8. Application Site Details

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

Name/s: Whakatere Investments Ltd

Site Address/ Location: 91 Mangakahia Rd, Kaikohe

Postcode

Legal Description: Lot 2 DP 191875 **Val Number:**

Certificate of title:

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 let advise when site visit will be planned - so we are able to provide the Trust notice.

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.

To relocate 8 (including 3 duplex's) brand new pre built dwellings to site.
Please refer to the AEE for further details.

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

10. Would you like to request Public Notification?

◯ **Yes** ✔ **No**

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

(more than one circle can be ticked):

- ◯ **Building Consent** Enter BC ref # here (if known)
- ◯ **Regional Council Consent (ref # if known)** Ref # here (if known)
- ◯ **National Environmental Standard consent** Consent here (if known)
- ◯ **Other (please specify)** Specify 'other' here

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

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

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

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

- ◯ **Subdividing land**
- ◯ **Changing the use of a piece of land**
- ◯ **Disturbing, removing or sampling soil**
- ◯ **Removing or replacing a fuel storage system**

13. Assessment of Environmental Effects:

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

Your AEE is attached to this application ✔ **Yes**

13. Draft Conditions:

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

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

14. Billing Details:

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

Name/s: (please write in full) Advance Build Ltd

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.

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) Angela Vujcich

Signature:
(signature of bill payer)

Date 04-Mar-2026

MANDATORY

15. Important Information:

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

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

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

15. Important information continued...

Declaration

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

Name: (please write in full) Angela Vujcich

Signature:

Date 04-Mar-2026

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.

CPPC PLANNING
PLANNING DEVELOPMENT CONSULTANT

PO Box 550, Warkworth 0941
Mobile: 021 302 340
Email: claire.phillips1@xtra.co.nz
Web: www.cppcplanning.co.nz

RESOURCE CONSENT APPLICATION FOR 91 MANGAKAHIA ROAD, KAIKOHE

MARCH 2026

CONTENTS

APPLICANT DETAILS

Applicant:	Advance Build
Owners:	Whakatere Investments Limited
Site Address:	Mangakahia Road, Kaikohe
Legal Description:	Lot 2 DP 191875
Site Area:	1.5504 hectares
Consent:	Land Use
Activity:	Land use consent for the relocation eleven new prebuilt papakainga dwellings and servicing.
District Plan Zones:	
Operative District Plan	
	Zone
	Industrial
Proposed District plan	
	Zone
	Light Industrial
Address for Service:	Claire Phillips Consultant Planner CPPC Planning PO Box 550, Warkworth, 0941, New Zealand Mobile: 021302340 Email: claire.phillips1@xtra.co.nz

Consent is being sought pursuant to section 88 of the Resource Management Act 1991 for the relocation eleven new prebuilt papakainga dwellings with associated servicing and access from State Highway 15 (Mangakahia Road).

The proposal involves the following elements:

- The construction of eleven new papakainga dwellings are proposed at the factory, then relocated to the application site. There are three typologies:

Four bedroom Papakainga (H1, H2, H3)

- Each dwelling will have a floor area of 130.7m^2 and will contain four bedrooms, bathrooms, laundry with rear entry, kitchen, dining and living area. There is a deck area located to the north.

Figure 3: Perspective of Three bedroom Papakainga (H1, H2 and H3)

Three bedroom Papakainga (H3, H4, H5)

- Each dwelling will have a floor area of 95.3m^2 and will contain three bedrooms, bathroom, laundry with rear entry, kitchen, dining and living area. There is a deck area located to the north.

Figure 2: Perspective of Three bedroom Papakainga (H3, H4 and H5)

Duplex (H6 & H7, H8 & H9 and H10 & H11)

- There are three duplex that contain two dwellings – Each duplex has a floor area of 101.2m^2. One of the dwellings contains two bedrooms, bathroom/laundry with rear entry, kitchen, dining and living area. The second dwelling contains one bedroom, bathroom/laundry with rear entry, kitchen and living room. There is a communal deck area located to the north.

Figure 3: Perspective of Three bedroom Papakainga (H6 & H7, H8 & H9 and H10 & H11)

- The new papakainga dwellings are to be constructed out of weathergroove cladding, aluminum joinery and colorsteel roofing with a mixture of colours and complimentary with one another.

- Each papakainga will be serviced with Council's reticulated water supply.

- The domestic wastewater from the new papakainga dwellings will drain to four new onsite wastewater management systems detailed in this report. The land where the disposal of secondary treated wastewater is proposed is relatively flat and the area is currently covered with grass and scrub. There are no overland flow paths, surface waters or flood plains in the area proposed for onsite wastewater management.

- To provide for driveway access to the papakainga dwellings earthworks are to be undertaken over an area of 1865m^2 and with a volume of 1139m^3. Any earthworks will be undertaken in accordance with Council's Guidance Document GD05 which provides guidance on erosion and sediment control. In particular this proposal will utilize silt fencing and a stabilized crossing with Mangakahia Road. Further earthworks are proposed to be undertaken during good weather conditions.

- The proposal involves impervious surfaces of 2870.90m^2, which includes the proposed papakainga dwellings, parking and new driveway and access. Collection of roof runoff via downpipes and accessway/paving runoff via cesspits through a sealed pipe network shall discharge to the pond. The accessway shall be shaped that overland flows are directed to a 0.5m wide by 0.2m deep rock lined swale, with 1V:2H sides, that discharges to the pond.

- To provide access to the proposed development an upgraded crossing and driveway is proposed from Mangakahia Road (State Highway 15). The internal driveway is proposed to have a width of 5.5 metres (Section 1) then sections 3 are proposed to have a width of 3.0 metres. Consultation with NZTA has been undertaken and approval is imminent. The driveway is to be formed to Council standards. Based on the plan, vehicle movements associate with Papakainga will be in the vicinity of 55 traffic vehicle intensity (TIF).

- It is noted that we consenting is underway with the Northland Regional Council for wastewater.

RECORD OF TITLE

The subject property is currently legally described as Lot 2 DP 191875 with an area of 1.5504 hectares and is contained with Identifier NA121A/976. There are no interests on the site.

SITE DESCRIPTION

The property is currently vacant of buildings, however there is an existing gravel access from Mangakahia Road (State Highway 16). The site is reaonsably flat, with pasture grasses.

The property is located on the periphery of the Kaikohe township.

Figure 4: Aerial Photo of site and locality – Source – Google maps

FAR NORTH DISTRICT COUNCIL – OPERATIVE DISTRICT PLAN

The subject site is zoned Industrial as shown on the portion of planning map below:

Figure 5: Zone Map – Source – Far North Operative District Plan

Chapter 7 – Urban Environment

Section 8 – Industrial Zone

- Rule 7.8.5.1.3 states …*Any new residential activity involving permanent or non-permanent accommodation shall be developed in such a way that the attenuation of noise between any boundary and living room is no less than 20 dB, and between any boundary and any room used for sleeping is no less than 30 dB. In the absence of forced ventilation or air-conditioning, these reductions shall be achieved with any exterior windows open."* The papakainga dwelling will not be complying with this standard as they will not be installed forced ventilation, therefore the proposal is a **Restricted Discretionary Activity** under Rule 7.8.5.3.3.

Chapter 12 Natural and Physical Resources

Section 3 – Soils and Minerals

- Excavation and/or filling within the industrial zone is permitted provided it does not exceed 200m^3 in any 12 month period per site under rule 12.3.6.1.3. The proposal involves

earthworks with a volume of 1139m^3 and is therefore a **Restricted Discretionary Activity** under Rule 12.3.6.2(a).

Chapter 15 -Transportation

Section 1 – Traffic, Parking and Access

- Based on Appendix 3A Traffic Intensity Factor (TIF), each papakainga house equates to 5 one-way vehicle movements. As there will be 11 papakainga houses on-site, there will be a total TIF of 55. Rule 15.1.6A states that a Industrial Zoned property allows for a total TIF of 200 as a permitted activity.

- Based on Appendix 3C Parking Spaces Required (PSR), 1 space for the first house plus one space per 2 additional house. As there will be 11 papakainga houses on-site, there will be 6 parking spaces required under Rule 15.1.6B.1.1. Each new papakainga dwelling has at least one space per dwelling therefore complies as a permitted activity.

- Access is proposed onto State Highway 15, being a limited access road, which triggers consent as a **Discretionary Activity** under Rule 15.1.6C.2.

- Rule 15.1.6C.1.1(a) states that the construction of private accessway is to be undertaken in accordance with Appendix 3B-1 in Part 4 of this Plan. Appendix 3B-1 states that for greater than 5 household equivalents requires a carriageway width of 8.0 metres. In this instance, the carriageway width is proposed to be 5.0 metres and reduces to 3.0 metres. To infringe this standard is a **Discretionary Activity** under Rule 15.1.6C.2(a).

FAR NORTH DISTRICT COUNCIL – PROPOSED DISTRICT PLAN

The Far North Proposed District Plan was notified on July 27, 2022. Only some parts of this plan have legal effects and only those rules where relevant are assessed below.

The subject site is zoned Industrial as shown on the portion of planning map below:

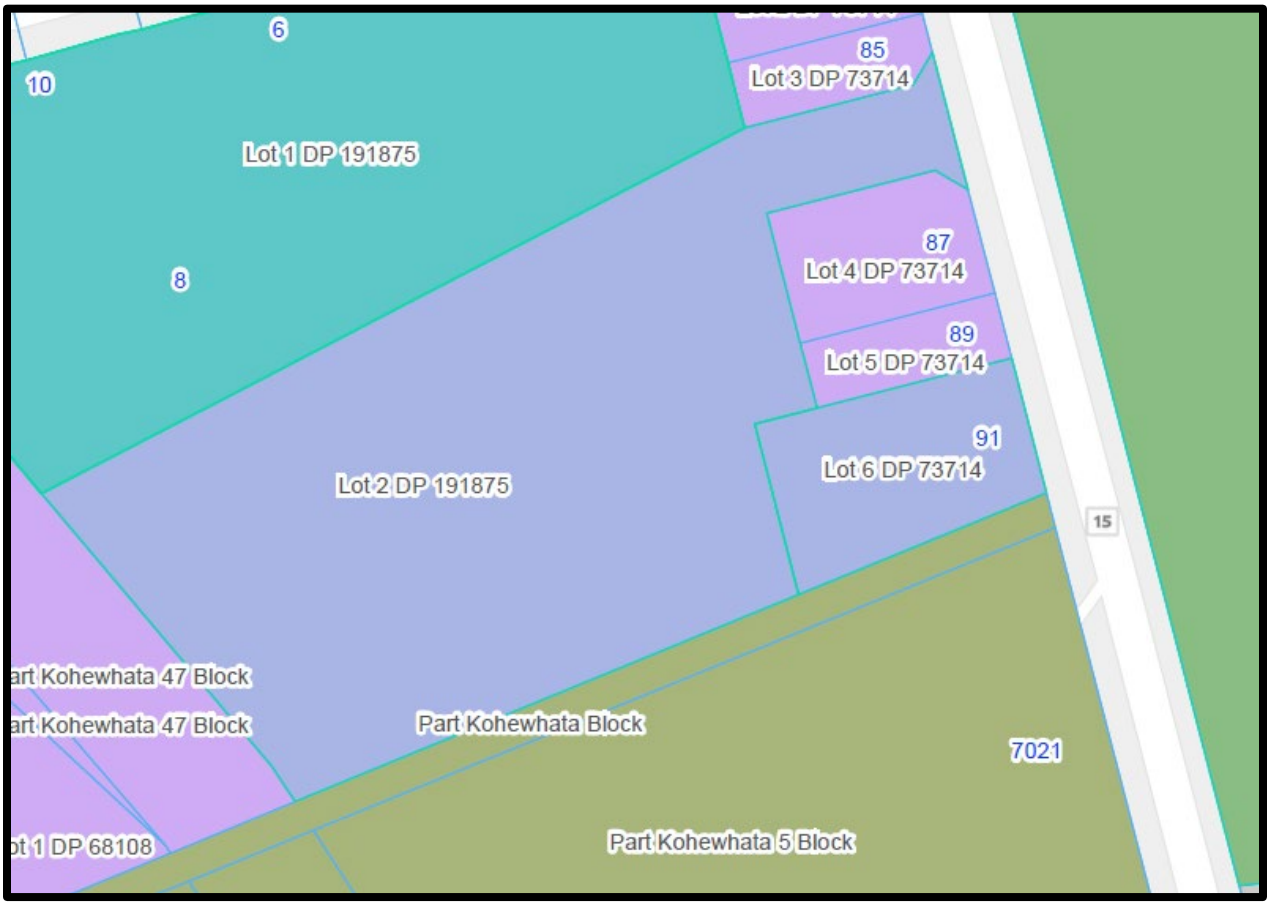


Figure 6: Zone Map Source – Far North Proposed District Plan

PART 2 – DISTRICT-WIDE MATTERS - NATURAL ENVIRONMENT VALUES - Natural character

- No parts of this chapter have legal effect.

Part 2 – District Wide – General District Wide Matter Earthworks

- Earthworks that comply with the standards in EW-S5 Erosion and Sediment Control are permitted under rule EW-R13. As demonstrated on the plans and within this application, the proposal involves the installation of a stabilized crossing and silt fencing, that is commensurate of the level of earthworks proposed. Accidental discovery protocol will be employed should discovery occur.

PART 3 – AREA-SPECIFIC MATTERS – ZONES – Industrial Zone – Ligh Industrial

- No parts of this chapter have legal effect.

Note: The above only reflects those rules that have immediate legal effect. If the Council considers that more rules require assessment, I am sure you will let us know.

Overall, the proposal is considered to be a Discretionary Activity.

PUBLIC NOTIFICATION ASSESSMENT

ASSESSMENT OF STEPS 1 TO 4 (SECTION 95A)

Section 95A specifies the steps the council is to follow to determine whether an application is to be publicly notified. These steps are addressed in the statutory order below.

STEP 1: MANDATORY PUBLIC NOTIFICATION IN CERTAIN CIRCUMSTANCES

Step 1 states that no mandatory notification is required as:

- the applicant has not requested that the application is publicly notified (s95A(3)(a));
- there are no outstanding or refused requests for further information (s95C and s95A(3)(b)); and
- The application does not involve any exchange of recreation reserve land under s15AA of the Reserves Act 1977 (s95A(3)(c)).

In this case the applicant does not request notification.

STEP 2: IF NOT REQUIRED BY STEP 1, PUBLIC NOTIFICATION PRECLUDED IN CERTAIN CIRCUMSTANCES

Step 2 states that the application is not precluded from public notification as:

- The activities are not subject to a rule or national environmental standard (NES) which precludes public notification (s95A(5)(a)); and
- The application does not exclusively involve one or more of the activities described in s95A(5)(b).

In this case, the proposal is not precluded from notification.

STEP 3: IF NOT PRECLUDED BY STEP 2, PUBLIC NOTIFICATION REQUIRED IN CERTAIN CIRCUMSTANCES

The application is not required to be publicly notified as the activity are not subject to any rule or a NES that requires public notification (s95A(8)(a)).

The following assessment addresses the adverse effects of the activities on the environment, as public notification is required if the activities will have or are likely to have adverse effects on the environment that are more than minor (s95A(8)(b)).

STEP 4: PUBLIC NOTIFICATION IN SPECIAL CIRCUMSTANCES

If an application has not been publicly notified as a result of any of the previous steps, then the council is required to determine whether special circumstances exist that warrant it being publicly notified (s95A (9)).

Special circumstances are those that are:

- exceptional, abnormal or unusual, but something less than extraordinary or unique.
- outside of the common run of applications of this nature; or
- circumstances which make notification desirable.

In this instance I have turned my mind specifically to the existence of any special circumstances and conclude that there is nothing exceptional or unusual about the application, and that the proposal has nothing out of the ordinary run of things to suggest that public notification should occur.

ASSESSMENT OF ENVIORNMENTAL EFFECTS

EXISTING ENVIRONMENT AND PERMITTED BASELINE

ENVIRONMENT

The 'Environment' includes the 'Existing Environment' which includes all lawfully established activities that exist – and the 'Future Environment' which includes the effects of activities enabled by an unimplemented consent where the consent is 'live' that have not lapsed and there are no reasons why the consent is not likely to be implemented.

These activities and their constituent effects form part of the existing (lawfully established) environment.

In this case the site and locality have been described in the site description above.

PERMITTED BASELINE

RMA states that for the purposes of formulating an opinion as to whether the adverse effects on the environment will be minor or more than minor a consent authority may disregard an adverse effect of an activity on the environment if the plan permits an activity with that effect. In this case the site is within Industrial Zone and the following activities are provided for as it relates to this application:

- Residential activity provided that it complies with noise mitigation measures such as forced ventilation.
- All access of a State Highway requires consent
- The traffic intensity value for each dwelling is 5 vehicle movements, the proposal results in 55 vehicle movements, with 200 movements permitted from the site.
- Earthworks up to 200m^3 and with a cut/fill less than 1.5 metres in height.

ASSESSMENT OF EFFECTS

Having regard to the above and after an analysis of the application, including any proposed mitigation measures, the adverse effects of the activity on the environment are identified and discussed below.

CHARACTER AND AMENITY VALUES

In this case, the site is within the Industrial Zone, known for a wide range of urban activities, such as the sale yards to the east, Northland Salvage to the North as well as Northland COF. The property itself is vacant of buildings as noted above, however to the east is a cluster of residential buildings. Further to the west and south is essential rural land with rural land uses.

The future development will be integrated into the site through design and scale. The development will not result in buildings that could be considered dominant or out of character, particularly when viewed in conjunction with other dwellings or papakainga of this nature.

Whilst the dwellings do not propose to be ventilated to avoid outright effects on the use of other industrial sites, it is considered that although the site is zoned Industrial, it is not in a pure industrial use site. Further the proposed occupants of the papakainga are well aware of the existing activities operating in the vicinity of this site. The applicant are agreeable to a consent condition noting that the occupants of the papakainga will not complain about noise resulting from permitted industrial uses on adjacent sites.

These factors when combined with the minor nature of the infringement, ensures that any effects on are considered to be less than minor. There will be no obvious differences which differentiate the infringement from that of a complying activity, particularly when viewed from adjacent properties.

Overall, it is considered that the adverse effects of the proposed papakainga on the existing character and amenity will be less than minor.

CULTURAL/HISTORIC HERITAGE

There are no known heritage sites or archaeological sites within the area adjacent to the application site.

In accordance with standard protocols accidental discovery, work must cease immediately, and Council and Heritage NZ notified should any archaeological or heritage site be uncovered during

the earthworks. Given this standard and the relatively unlikely nature of any archaeological site being uncovered, it is considered that the effects of the proposal on cultural matters will be less than minor.

The proposal will not have effects on the cultural or heritage values of the area.

EARTHWORKS

To provide for driveway access to the papakainga dwellings earthworks are to be undertaken over an area of 1865m^2 and with a volume of 1139m^3. Any earthworks will be undertaken in accordance with Council's Guidance Document GD05 which provides guidance on erosion and sediment control. In particular this proposal will utilize silt fencing and a stabilized crossing with Mangakahia Road. Further earthworks are proposed to be undertaken during good weather conditions.

The main adverse effects on the environment that could potentially arise from earthworks relate to the silt discharge from the earthworks site. The building platform is vacant of any vegetation apart from pasture. If silt is uncontrolled, it can create adverse effects on water quality of a waterway.

The effect of the proposed earthworks on water quality and quantity will be largely avoided by the location of the proposed earthworks being relatively distant from any waterways.

The applicant is to install measures to control and/or mitigate any silt/stormwater run-off. In particular the applicant proposes to install appropriate silt fencing until the completion of the dwelling construction. Further the earthworks will be undertaken during good weather in order to minimise sediment run-off.

The applicant intends to implement erosion and sediment control measures in accordance with the Auckland Councils GD05, which in this case includes silt fencing as well as a stabilised crossing. It is envisaged that a finalised erosion and sediment control plan will be required as a condition of consent.

In terms of off-site effects such as noise, dust, vibration, and traffic generation, these effects on the surrounding environment will be no more than minor, given that the majority of earthworks are cut to fill on the site and because of the central location of the works within the site.

Overall, it is considered that the proposed earthworks will not compromise the use of the surrounding land for any other permitted or controlled activities and the potential off-site effects of the earthworks such as noise, dust, vibration, and traffic generation are considered to be no more than minor.

TRAFFIC AND ACCESS EFFECTS

The internal driveway is proposed to have a width of 5.0 metres (Section 1) then sections 3 are proposed to have a width of 3.0 metres. Given the standards are designed for industrial uses rather than residential, the width of the driveway is short by some 3.0 metres. However for the purposes of residential use, the formation of 5.5 metres is considered to provide sufficient width to allow for two way traffic in an out of the site. The internal roading is also fit for purpose and will be formed to an appropriate standard.

The level of traffic that will frequent the site is appropriate and consistent with other rural properties, being well within the envisaged or allowable 55 vehicle movements. Each dwelling will have the provision for a parking spaces along with appropriate on-site manoeuvring, ensuring vehicles leave the site forward facing. RS Eng Ltd have confirmed that traffic and access is suitable.

To provide access to the proposed development an upgraded crossing and driveway is proposed from Mangakahia Road (State Highway 15). The New Zealand Transport Agency has reviewed the proposal and confirmed the could provide a s95E written approval subject to:

- *The accessway must be designed and constructed to the local council engineering standards applicable to urban 50km/h environments.*
- *Provide detailed drawings for the tie-in to the road carriageway.*
- *Existing 225mm diameter culvert is required to be upgraded to 375mm diameter to ensure adequate conveyance capacity and resilience given the traffic volume that this proTraversable headwalls will need to be install at each end of the culvert.*
- *Provide internal stormwater management.*
- *As only the northern crossing is proposed, describe how access via the southern frontage will be prevented.*

The applicant has agreeable to these conditions and has requested a formalised letter, which will be sent to Council once it is received.

Construction machinery will be delivered to the site for the earthworks and once the earthworks and associated impervious surfaces are completed the construction machinery will be removed. The traffic movements to and from the site will be minimal and not outside the level anticipated in a Rural Production zone.

It is considered that any adverse traffic or roading effects will be less than minor.

NATURAL HAZARDS AND SERVICING EFFECTS

Each papakainga will be serviced with Council's reticulated water supply.

The domestic wastewater from the new papakainga dwellings will drain to four new onsite wastewater management systems detailed in this report. The land where the disposal of secondary treated wastewater is proposed is relatively flat and the area is currently covered with grass and scrub. There are no overland flow paths, surface waters or flood plains in the area proposed for onsite wastewater management.

The proposal involves impervious surfaces of 2870.90m^2, which includes the proposed papakainga dwellings, parking and new driveway and access. The applicant has had RS Eng Ltd have prepared a Civil Suitability Assessment dated 24 February 2026. Collection of roof runoff via downpipes and accessway/paving runoff via cesspits through a sealed pipe network shall discharge to the pond. The accessway shall be shaped that overland flows are directed to a 0.5m wide by 0.2m deep rock lined swale, with 1V:2H sides, that discharges to the pond.

Water Flow NZ Ltd has proposed an on-site septic system for each zone for effluent disposal and will be designed in accordance with TP 58. Details of on-site wastewater can be found in the report prepared by Water Flow NZ Ltd. Regional consent is being sought by others for wastewater.

The proposal involves impervious surfaces of 5650.8m^2, which includes the proposed dwellings, existing dwelling and driveways. All stormwater/water from the roof is to be collected for portable water supply with an on-site detention tank to mitigate post development flows.

It is considered that the effects of the natural hazards and servicing of the site will be less than minor.

SUMMARY

In summary, having assessed the adverse effects of the activity on the environment, it is considered that the proposed new pre-built papakainga housing with associated earthworks and servicing will have less more than minor adverse effects on the environment. In particular the proposal is considered to be consistent with the type of building anticipated within this coastal living environment.

ASSESSMENT OF STEPS 1 TO 4 (SECTION 95B)

If the application is not publicly notified under s95A, the council must follow the steps set out in s95B to determine whether to limited notify the application. These steps are addressed in the statutory order below.

STEP 1: CERTAIN AFFECTED PROTECTED CUSTOMARY RIGHTS GROUPS MUST BE NOTIFIED

Step 1 requires limited notification where there are any affected protected customary rights groups or customary marine title groups or affected persons under a statutory acknowledgement affecting the land (ss95B (2) and 95B (3)).

The application site is not affected by customary rights.

STEP 2: IF NOT REQUIRED BY STEP 1, LIMITED NOTIFICATION PRECLUDED IN CERTAIN CIRCUMSTANCES

Step 2 describes that limited notification is precluded where all applicable rules and NES preclude public notification; or the application is for a controlled activity (other than the subdivision of land) or a prescribed activity (ss95B (5) and 95B (6)).

The proposal is a Discretionary activity and there are no rules precluding notification.

STEP 3: IF NOT PRECLUDED BY STEP 2, CERTAIN OTHER AFFECTED PERSONS MUST BE NOTIFIED

Step 2 requires that where limited notification is not precluded under step 2 above, a determination must be made as to whether any of the following persons are affected persons:

- In the case of a boundary activity, an owner of an allotment with an infringed boundary.
- In the case of a prescribed activity under s360H(1(b), a prescribed person; and
- In the case of any other activity, a person affected in accordance with s95E.

The application is not for a boundary or prescribed activity, and therefore an assessment in accordance with s95E is required. This assessment is set out below.

Overall, it is considered that any adverse effects in relation to adjacent properties will be less than minor, and accordingly that no persons are adversely affected.

STEP 4: FURTHER NOTIFICATION IN SPECIAL CIRCUMSTANCES

In addition to the findings of the previous steps, the council is also required to determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined as eligible for limited notification.

There are not considered to be any special circumstances that would warrant notification.

SECTION 95E STATUTORY MATTERS

As required by step 3 above, certain other affected persons must be notified, and the following assessment addresses whether there are any affected persons in accordance with s95E. A person is affected if the effects of the activity on that person are minor or more than minor (but not less than minor).

In deciding who is an affected person under section 95E:

- Adverse effects permitted by a rule in a plan or NES (the permitted baseline) may be disregarded.

It is considered that there is no useful baseline that can be applied as the land needs to be earth worked to provide building platforms and subdivision of the land would also require resource consent.

- The adverse effects on those persons who have provided their written approval must be disregarded.

Because of the minor scale of the proposal no written approvals have been sought for this proposal.

The sections below set out an assessment in accordance with section 95E, including identification of adjacent properties, and an assessment of adverse effects.

ADJACENT PROPERTIES

The adjacent properties to be considered in the limited notification assessment under section 95B and 95E are set out below:

NZTA has provided input into the proposal, with their approval forthcoming.

No other persons are considered to be adversely affected by the activity because:

- The design of the proposal has been designed to be sympathetic with the residential environment, through nestling into the site through earthworks and integrated as a result of the design and materials proposed.

- The proposal retains sufficient separation distances between the neighbouring dwellings (consistent with other locations within this locality) and will not compromise the existing levels of amenity or urban character enjoyed by adjacent properties to a minor or more than minor extent.

- The proposal will be consistent in the rural character and scale to other dwellings located within the local vicinity and will comply with all the relevant development standards so will not generate adverse effects in terms of shading, overbearance and overlooking to the adjoining properties.

- Any potential adverse noise, dust and sedimentation effects generated during the land disturbance and construction phase will be temporary in nature and can be suitably managed through appropriate erosion and sediment control measures.

- Suitable erosion and sediment control methods will be utilized to ensure that the effects on the adjacent sites as a result of the earthworks will be less than minor.

- During the construction, there will be traffic, however these movements are considered consistent with the permitted level of traffic movements associated with a residential building. The proposal is not expected to greatly increase the amount of vehicular traffic to and from the site beyond what can generally be associated with a rural residential activity.

- Any construction related effects will be temporary and transient and less than minor.

- Whilst the dwellings do not propose to be ventilated to avoid outright effects on the use of other industrial sites, it is considered that although the site is zoned Industrial, it is not in a pure industrial use site. Further the proposed occupants of the papakainga are well aware of the existing activities operating in the vicinity of this site. The applicant are agreeable to a consent condition noting that the occupants of the papakainga will not complain about noise resulting from permitted industrial uses on adjacent sites.

The matters that require consideration in assessing this application are set out in section 104 of the Resource Management Act 1991. These matters include the actual and potential effects of the allowing the activity on the environment and the relevant rules and assessment criteria.

OBJECTIVES AND POLICIES

FAR NORTH DISTRICT COUNCIL – OPERATIVE DISTRICT PLAN

The following objectives and policies are considered relevant when considering this application:

Chapter 7 Urban Environment – Section 8 Industrial Zone

- *Objectives 7.8.3.1*
- *Policies 7.8.4.1 to 7.8.4.5*

The site sits within the Industrial Zone, which in this locality is characterised by a mix of activities including the sale yards to the east, Northland Salvage to the north, and Northland COF, but is otherwise notably under-utilised for industrial purposes. The immediate environment includes a cluster of residential dwellings to the east and rural land to the west and south, creating a transitional interface rather than a consolidated industrial node.

Within this context, the proposed papakāinga development has been designed to integrate into the site through appropriate scale, form, and layout, ensuring that the buildings will not appear dominant or out of character when viewed alongside existing dwellings and rural activities. While papakāinga represents a sensitive residential activity, the mixed character and low level of industrial utilisation in this area reduce the likelihood of reverse-sensitivity conflicts, and the applicant's agreement to a condition acknowledging existing industrial activities further mitigates potential effects. When considered against the Industrial Zone objectives and policies, the proposal aligns with the broader direction to avoid adverse effects on adjoining activities (Objective 7.8.3.1) and to ensure that activities are acceptable in relation to their surrounding context (Policies 7.8.4.1 and 7.8.4.2). The development can also meet the amenity-related policies (7.8.4.3–7.8.4.5) through appropriate design and stormwater management. Given the under-utilised nature of the zone in this location, the transitional character of the surrounding environment, and the minor nature of the infringement, the proposal is considered appropriate and consistent with the general direction of the objectives and policies. Overall, the adverse effects on character and amenity will be less than minor, and the papakāinga represents a suitable and contextually compatible use of the site.

Chapter 12 Natural and Physical Resources – Section 3 – Soils and Minerals

- *Objectives 12.3.3*
- *Policies 12.3.4*

The proposed earthworks covering 1,865 m^2 and involving 1,139 m^3 of cut and fill, are consistent with Objective 12.3.3, which seeks to ensure that land disturbance avoids, remedies, or mitigates adverse effects on the environment. The works are located on pasture land, well separated from waterways, meaning the risk of sediment entering natural water bodies is inherently low. The applicant proposes to implement erosion and sediment control measures in accordance with GD05, including silt fencing, a stabilised entrance, and undertaking works during favourable weather. These measures ensure that potential effects on water quality, land stability, and the surrounding environment are appropriately managed.

The proposal also aligns with Policies 12.3.4, which require earthworks to be undertaken in a manner that avoids off-site effects such as sedimentation, dust, noise, and traffic impacts. The controls proposed, particularly silt fencing and staged works, will effectively manage sediment run-off, while the central location of the earthworks within the site ensures that noise, dust, and vibration effects on neighbouring properties remain minor. The scale of earthworks is proportionate to the development and does not compromise the ability of surrounding land to be used for permitted activities.

Overall, the earthworks are consistent with the direction of the objectives and policies, as they incorporate appropriate mitigation, avoid adverse effects on water quality and neighbouring properties, and maintain the environmental integrity of the site and surrounding land.

Chapter 15 Transportation

- *Objectives 15.1.3*
- *Policies 15.1.4*

The proposal aligns with Objectives 15.1.3 because it uses an existing State Highway 15 access, avoids the need for new vehicle crossings, and will be upgraded to Council standards, ensuring that traffic effects on the natural and physical environment are minimised as required by Objective 15.1.3.1. The activity is not a tourist destination, so Objective 15.1.3.2 is not engaged, and each dwelling can provide an on-site parking space, meeting Objective 15.1.3.3. No loading facilities are required for this residential papakāinga, consistent with Objective 15.1.3.4, and the use of the existing access arrangement supports safe and efficient movement for vehicles and pedestrians in accordance with Objective 15.1.3.5.

The proposal also meets the direction of Policies 15.1.4, which require that traffic effects be evaluated (Policy 15.1.4.1) and that parking be provided at a scale and location appropriate to the activity (Policy 15.1.4.3). As there are no existing parking spaces on the site, Policy 15.1.4.4 is satisfied, and because the activity is residential rather than commercial or industrial, Policy 15.1.4.5 relating to loading spaces does not apply. The use of a single upgraded access point on SH15 ensures compliance with Policy 15.1.4.6, which seeks to regulate the number, size, and placement of vehicle access points for safety.

Pedestrian and cycle movements are appropriately considered through the internal layout and the low-intensity nature of the activity, aligning with Policy 15.1.4.7. No alternative parking arrangements are required, satisfying Policy 15.1.4.8. Overall, the papakāinga development meets the relevant objectives and policies of Section 15.1 by minimising traffic effects, providing adequate parking, ensuring safe access, and avoiding the need for loading facilities.

In summary it is concluded that this proposal satisfies the relevant matters requiring consideration under section 104.

FAR NORTH DISTRICT COUNCIL – PROPOSED DISTRICT PLAN

Part 2 – District Wide – General District Wide Matter Earthworks

- *Objectives EW-O1 – EW-O3*
- *Policies EW-P1 – EW-P8*

Earthworks Objectives EW-O1 to EW-O4, as they are designed to avoid and minimise adverse environmental effects while enabling necessary land modification to support papakāinga development. The works are located on pasture land, well separated from waterways, ensuring that the risk of sediment discharge is inherently low, which aligns with EW-O1 (protecting water quality) and EW-O2 (avoiding adverse effects on natural and physical resources). The scale and location of the earthworks, primarily cut-to-fill within the central portion of the site, ensure that landform modification is limited to what is necessary for safe access and building platforms, consistent with EW-O3 (minimising unnecessary landform change). Temporary effects such as noise, dust, vibration, and traffic will be minor and short-term, maintaining the amenity and functioning of surrounding land uses in accordance with EW-O4.

The proposal also complies with the Earthworks Policies EWP1 to EWP8, which require earthworks to be undertaken in a manner that avoids or mitigates off-site effects and protects environmental values. The applicant proposes to implement erosion and sediment control measures in accordance with GD05, including silt fencing, a stabilised entrance, and undertaking works during favourable weather. These measures satisfy EWP1 to EWP4, which emphasise best-practice sediment control, protection of water quality, and containment of run-off within the site. The location of the works away from sensitive environments ensures compliance with EWP5, which seeks to maintain land stability and natural drainage patterns. Temporary construction effects such as noise, dust, and vibration will be minor and managed appropriately, meeting the intent of EWP6 and EWP7, which require earthworks to avoid adverse effects on neighbouring properties and maintain amenity. The proposal also aligns with EWP8, as the earthworks will not compromise the safety or efficiency of the surrounding environment or the ability of adjoining land to be used for permitted activities.

Together, the objectives and policies support earthworks that are necessary, well-managed, and environmentally responsible. The proposed works meet this direction by incorporating appropriate controls, avoiding sensitive areas, and ensuring that any temporary effects are minor. The earthworks therefore comply with the combined intent of EW-O1 to EW-O4 and EWP1 to EWP8 and are appropriate within the context of the site and the wider environment.

PART 3 – AREA-SPECIFIC MATTERS – ZONES – Industrial Zone – Ligh Industrial

- *Objectives LIZ-O1 – LIZ-O5*
- *Policies LIZ-P1 – LIZ-P6*

The proposal is consistent with the combined intent of Objectives LIZ-O1 to LIZ-O5 and Policies LIZ-P1 to LIZ-P6 of the Light Industrial Zone because it represents a contextually appropriate activity within an area that is not functioning as a fully industrial node. The zone in this location is under-utilised and characterised by a mix of industrial, rural, and residential activities, meaning the papakāinga development will not displace or constrain established industrial operations. The scale, form, and layout of the dwellings ensure that the development maintains the amenity and character anticipated by the zone, aligning with LIZ-O2 and LIZ-O4, while the acceptance of existing industrial effects by future occupants supports LIZ-O3, which seeks to ensure that industrial activities can continue to operate without unreasonable restriction.

The proposal also aligns with the policy direction in LIZ-P1 to LIZ-P6, which emphasises compatibility of activities, avoidance of reverse-sensitivity effects, and maintenance of environmental and amenity standards. The papakāinga is designed to integrate into the mixed-use environment, and the applicant's willingness to accept a condition acknowledging existing industrial activities ensures consistency with LIZ-P1 and LIZ-P2. The modest scale and residential character of the buildings maintain the visual and functional expectations of the zone interface, giving effect to LIZ-P3 and LIZ-P4. Stormwater and site management measures ensure that the development avoids adverse environmental effects, consistent with LIZ-P5, while safe and efficient access arrangements satisfy LIZ-P6.

Overall, the proposal is considered to be an appropriate and compatible activity within this part of the Light Industrial Zone. The under-utilised nature of the surrounding industrial land, combined with the proposal's design response and acceptance of existing industrial effects, ensures that the development aligns with the general direction of the objectives and policies and will not compromise the functioning, amenity, or future use of the zone.

In summary it is concluded that this proposal satisfies the relevant matters requiring consideration under section 104.

NATIONAL POLICY STATEMENT FOR NATURAL HAZARDS 2025

The proposal is consistent with the National Policy Statement for Natural Hazards 2025 (NPS-NH 2025) because it avoids locating new development in areas subject to unacceptable natural hazard risk and ensures that any residual risk is appropriately managed. The NPS-NH 2025 places strong emphasis on avoiding the creation or exacerbation of natural hazard risk, directing decision-makers to ensure that land use and development do not increase exposure to hazards over the long term. In this case, the site is not subject to flooding, overland flow, coastal hazards, or instability that would elevate natural hazard risk, and the proposed papakāinga dwellings and associated earthworks are located on stable land with no identified hazard constraints. This aligns with the NPS direction to locate development away from areas where natural hazard risk is unacceptable.

The NPS-NH 2025 also requires that development be designed and managed to reduce vulnerability and increase resilience to natural hazards. The proposal achieves this by situating the dwellings on flat, stable land, outside any mapped hazard areas, and by ensuring that earthworks do not alter natural drainage patterns or create new hazard pathways. The earthworks are modest, controlled, and undertaken in accordance with recognised best-practice erosion and sediment control measures, ensuring that the development does not increase susceptibility to erosion, instability, or downstream effects. This is consistent with the NPS requirement to avoid increasing the likelihood or consequences of natural hazard events.

A further key direction of the NPS-NH 2025 is to ensure that development does not increase risk to other properties or infrastructure. The proposal complies with this requirement because the earthworks are contained within the site, do not modify landform in a way that would redirect stormwater or debris flows, and do not introduce any new hazard exposure to neighbouring land. The development therefore maintains the existing level of risk for surrounding properties and infrastructure, consistent with the NPS requirement to avoid transferring or compounding natural hazard risk.

Overall, the proposal is consistent with the intent and direction of the NPS-NH 2025. The site is not subject to natural hazards, the development avoids creating new risk, and the design and earthworks management approach ensures that the long-term safety and resilience of people, property, and the environment are maintained.

NATIONAL POLICY STATEMENT ON URBAN DEVELOPMENT 2022 (NPS:UD)

The National Policy Statement on Urban Development 2022 (NPS-UD) has limited direct application to Kaikohe, but several provisions remain relevant when considering whether development supports well-functioning urban environments. Kaikohe is identified in the NPS-UD as a Tier 3 urban environment, meaning the more directive intensification requirements for Tier

1 and 2 centres do not apply. However, the overarching objectives—particularly those relating to enabling housing choice, supporting Māori aspirations, and ensuring that planning decisions respond to local needs—still guide decision-making.

Objective 1 seeks well-functioning urban environments that meet the needs of people and communities both now and in the future. The proposed papakāinga contributes positively to this direction by providing culturally appropriate housing for Māori in a location where demand exists and where the development can integrate with existing infrastructure. Kaikohe has a strong Māori population and a recognised need for diverse and affordable housing typologies; papakāinga directly supports this outcome.

Objective 2 and Policy 1 emphasise that planning decisions should enable Māori to express their cultural traditions and norms through development. Papakāinga is a recognised form of Māori housing that aligns with these provisions, and enabling it within Kaikohe supports the NPS-UD's direction to provide for Māori housing outcomes and community wellbeing. The proposal therefore gives effect to the NPS-UD's requirement to recognise and provide for Māori housing aspirations within urban environments.

The NPS-UD also requires that development be located where it can be efficiently serviced and where it does not undermine the functioning of the wider urban environment. Kaikohe's scale, infrastructure capacity, and mixed-use character mean that the proposed development can be accommodated without adverse effects on the transport network, infrastructure, or surrounding land uses. The proposal therefore aligns with the NPS-UD's broader intent to support compact, efficient, and resilient urban form, even though Kaikohe is not subject to the more intensive requirements applied to larger centres.

Overall, while the NPS-UD does not impose mandatory intensification requirements on Kaikohe, the proposal is consistent with its high-level objectives. It supports Māori housing aspirations, contributes to a well-functioning urban environment, and represents an appropriate form of development within the Kaikohe context.

NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT 2020 (NPSFM)

The NPSFM aims to maintain and enhance freshwater quality. In this case the site does not contain any wetlands.

S106A CONSENT AUTHORITY MAY REFUSE LAND USE CONSENT IN CERTAIN CIRCUMSTANCES

Section 106A of the Resource Management Act requires the consent authority to consider whether land subject to a land-use proposal is, or is likely to be, affected by natural hazards, and whether the activity would expose people or property to an unacceptable level of risk. In this case, the site is not identified as being subject to flooding, overland flow, instability, coastal hazards, or any other mapped natural hazard. The land is generally flat, stable, and already in pastoral use, meaning there is no evidence of existing or potential hazard conditions that would compromise the safety or suitability of the proposed papakāinga development.

The proposal does not introduce any new hazard pathways or increase the vulnerability of people or property. The earthworks required for access and building platforms are modest, contained within the site, and will not alter natural drainage patterns or create instability. As a result, the development does not increase the likelihood or consequences of a natural hazard event occurring on the site or adjoining land.

Given the absence of natural hazard constraints and the low-risk nature of the works, the proposal does not expose future occupants or neighbouring properties to unacceptable natural hazard risk. The activity therefore meets the statutory test under Section 106A, and there are no natural hazard-related grounds for declining consent.

PART II OF THE RESOURCE MANAGEMENT ACT

Part II of the Act sets out the Purpose and Principles. This proposal is in keeping with Part II as the effects of the proposal on the environment will be minor and the proposal will not compromise the ability of this site to be used by existing and future generations, also the life supporting capacity of air, water, soil and ecosystems will not be compromised.

Section 5 of the Resource Management Act 1991 (the Act) describes the Purpose and Principles of the Act and provides a definition of 'sustainable management' which includes reference to managing the use and development of natural and physical resources at a rate that allows people and communities to provide for their wellbeing, whilst avoiding, remedying and mitigating any adverse effects of activities on the environment.

This involves sustaining resource potential (excluding minerals), safeguarding the life supporting capacity of air, water, soil and ecosystems and avoiding, remedying or mitigating adverse effects. The effects of this proposal on the environment have been described above.

The proposal is considered to be consistent with the Purposed and Principles outlined above as the effects on character and amenity will be no more than minor. Further any potential effects can be adequately avoided, remedied and mitigated.

Section 6 of the Act requires all persons exercising functions and powers under the Act to recognise and provide for matters of national importance in relation to the natural character of the coastal environment, wetlands, lakes and rivers and the protection of them from inappropriate subdivision use and development. Outstanding natural features and landscapes are also to be protected from inappropriate subdivision, use and development.

The proposal is considered to be consistent with section 6 of the Act as there are considered to be no matters of national importance on this site.

Section 7 relates to other matters that are to which regard must be had in achieving the sustainable management of natural and physical resources: The proposed shed is considered to be consistent with the provisions of the section of the Act.

Section 8 requires that account shall be taken of the principles of the Treaty of Waitangi. The proposal is considered to be consistent with the matters outlined in Section 8.

Overall, it is considered that the proposal is in keeping with Part II of the Resource Management Act 1991.

CONCLUSION

It is concluded that the proposal will have less than minor adverse effects on the surrounding environment. Further the proposed activity is in keeping with the relevant assessment criteria, objectives and policies set out in Far North District Plan and Proposed District Plan.

As a result of the above granting consent to this proposal will be in keeping with the provisions set out in Part II of the Resource Management Act 1991 and sections 104 and 104B.

Appendix 1 – Record of Title

Appendix 2 – Plans

Appendix 3 – Site Suitability Report

Appendix 4 – Geotechnical Report

Appendix 5 – On-Site Wastewater Report

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

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

R.W. Muir
Registrar-General
of Land

Identifier **NA121A/976**

Land Registration District **North Auckland**

Date Issued 04 November 1998

Prior References
NA29C/1293

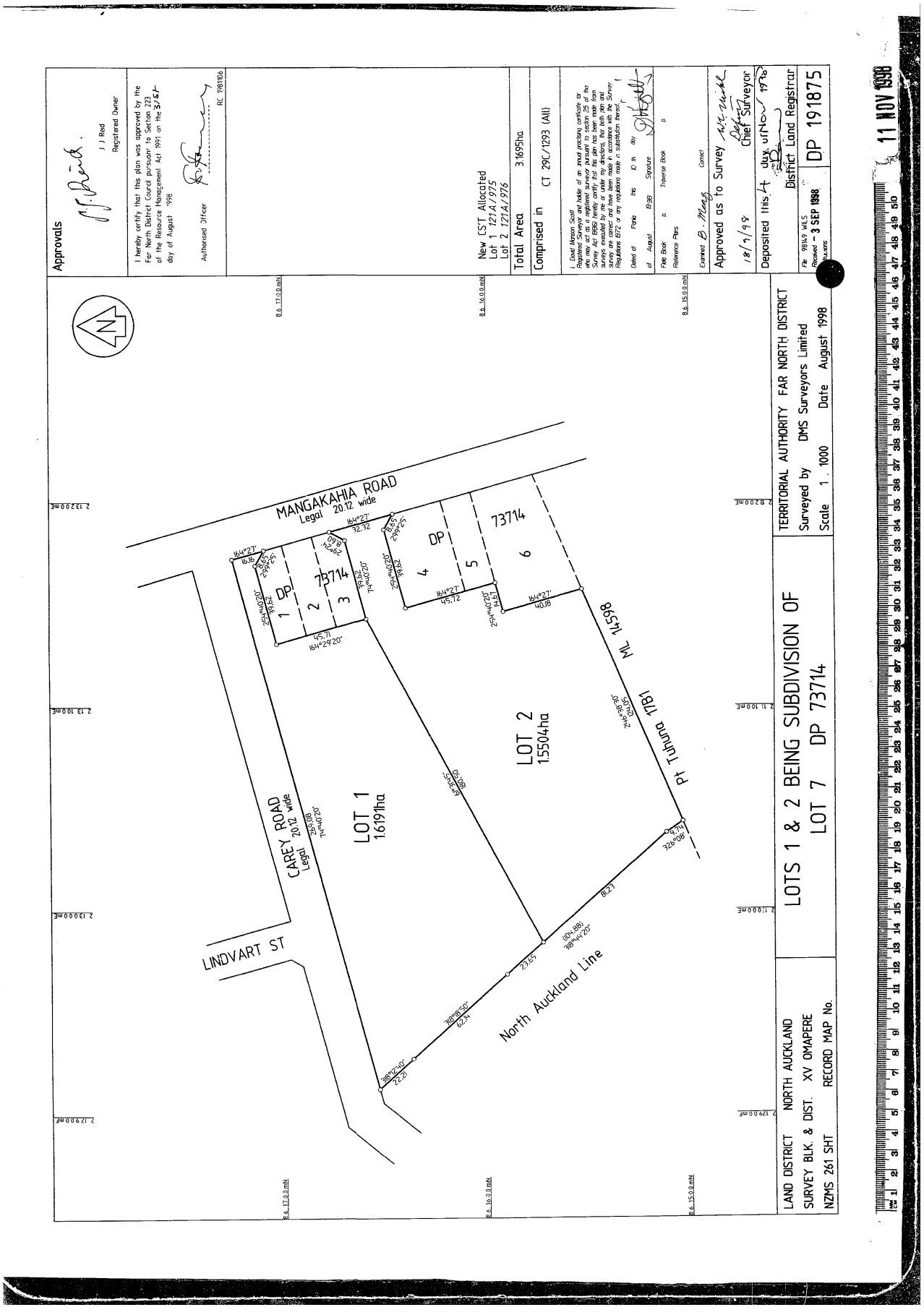
Estate Fee Simple

Area 1.5504 hectares more or less

Legal Description Lot 2 Deposited Plan 191875

Registered Owners
Whakatere Investments Limited

Interests


Approvals
J J Reid
Registered Owner
Authorised Officer
RC 7081906
New CST Allocated
Lot 1 121A/975
Lot 2 121A/976
Total Area 3.1695ha
Comprised in CT 29C/1293 (All)
Approved as to Survey
Chief Surveyor
Deposited this
District Land Registrar
DP 191875
MANGAKAHIA ROAD
Legal 20.12 wide
CAREY ROAD
Legal 20.12 wide
LINDVART ST
North Auckland Line
Pt Tuhuna 1181
ML 14598
LOT 1
1.6191ha
LOT 2
1.5504ha
DP 73714
LOTS 1 & 2 BEING SUBDIVISION OF
LOT 7 DP 73714
TERRITORIAL AUTHORITY FAR NORTH DISTRICT
Surveyed by DMS Surveyors Limited
Scale 1 : 1000 Date August 1998
LAND DISTRICT NORTH AUCKLAND
SURVEY BLK. & DIST. XV OMAPERE
NZMS 261 SHT RECORD MAP No.
11 NOV 1998

Advance build

A smarter move

Proposed New Project

91 Mangakahia Road, Kaikohe

For: Whakatere ki Koranui Trust

CONTENTS

Concept Plans

Concept 1
February 2026

FINAL WORKING DRAWINGS TAKE PRECEDENCE OVER CONCEPT PLANS. ALL LANDSCAPING, PLANTING, LIGHTING & FENCING IS SHOWN FOR IMAGING PURPOSES ONLY

REVISION:	C01
PROJECT NO.	1317
DRAWN BY:	NMB
HC:	JCS

NB: Boundary Lines are Indicative Only

REVISION:	BY:	DATE:
Drawn	NMB	Jan 09 2026

Advance build

A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Location Plan

SCALE: NTS

PROJECT #:	PAGE:	REVISION:
1317	01	C01

Site Information

91 Mangakahia Road, Kaikohe
Lot 2 DP 191875
High Wind Zone
Corrosion Zone B
Earthquake Zone 1
Zone: Commercial

Site area: 15504m²
Driveway, Parking & Paths area: 1850m²
New buildings coverage: 1016.9m²
Existing buildings coverage: Nil
Total Building coverage: 1016.9m² = 6.44%
Total impermeable surfaces: 2870.9m² = 18.52%
Earthworks:
- Max Cut Depth= 1200mm
- Max Fill Depth= 500mm
- Total Site Cut Area= 1650m²
- Total Site Cut Volume= 1009m³
- Total Site Fill Area= 215m²
- Total Site Fill Volume= 130m³

Remaining spoils to stay on site as landscaping bunds

N

REVISION:	BY:	DATE:
Drawn	NMB	Oct 16 2025
Rev	NMB	Feb 20 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Overall Site Plan

SCALE: 1 : 700 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	01A	C01

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N

TEST BOREHOLE

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

ECONO-TREAT ET-60C
SERVICES HOUSES 1 & 2
LOCATION TBC, >3.0m FROM
BUILDINGS

LAND APPLICATION SYSTEM:
165m2 SOAKAGE BEDS. 3 BEDS AT 3mW x 18.3mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
66m2 SOAKAGE BED. 1 BED AT 3mW x 22mL
LAID ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

RESERVE DISPOSAL
AREAS (~30%)

ECONO-TREAT ET-60C
SERVICES HOUSES 3, 4 & 5
LOCATION TBC, >3.0m FROM
BUILDINGS

TEST BOREHOLE

32mm PE SUPPLY PIPELINE

32mm PE
SUPPLY
PIPELINE

ECONO-TREAT ET-60C
SERVICES HOUSES 6, 7, 8 & 9
LOCATION TBC, >3.0m FROM
BUILDINGS

ECONO-TREAT ET-52C-WM
SERVICES HOUSES H10 & H11
LOCATION TBC, >3.0m FROM
BUILDINGS

H1
4 Bed

H2
4 Bed

H3
3 Bed

H4
3 Bed

H5
3 Bed

H6 & H7
2+1 Duplex

H8 & H9
2+1 Duplex

H10 & H11
2+1 Duplex

Engineered
Stormwater
Pond

1500w RipRap
Emergency
Spillway

STORMWATER
MANAGEMENT
DRY POND

Basketball Half Court

Playground

Mangakahia Road

J1

39.623
8.615
32.333
8.452
39.623
30.485
15.237
14.676
40.186
124.064
91.257
53.478
37.149
87.983
39.072

REVISION:	BY:	DATE:
Drawn	NMB	Oct 16 2025
Rev	NMB	Feb 05 2026
Rev	NMB	Feb 20 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Plan

SCALE: 1 : 700 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	02	C01

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- Total Site Fill Volume= 130m³

Remaining spoils to stay on site as landscaping bunds

N

Mangakahia Road

H1
4 Bed

H2
4 Bed

H3
3 Bed

H4
3 Bed

H5
3 Bed

H6 & H7
2+1 Duplex

H8 & H9
2+1 Duplex

H10 & H11
2+1 Duplex

Engineered Stormwater Pond

Basketball Half Court

Playground

87.983

39.072

55.478

81.257

97.48

39.623

8.615

32.333

8.642

39.623

30.485

15.257

14.676

41.186

124.064

REVISION:	BY:	DATE:
Drawn	NMB	Jan 09 206

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Plan - No Services

SCALE: 1 : 700 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	03	C01

Site Information

91 Mangakahia Road, Kaikohe
Lot 2 DP 191875
High Wind Zone
Corrosion Zone B
Earthquake Zone 1
Zone: Commercial

Site area: 15504m²
Driveway, Parking & Paths area: 1850m²
New buildings coverage: 1016.9m²
Existing buildings coverage: Nil
Total Building coverage: 1016.9m² = 6.44%
Total impermeable surfaces: 2870.9m² = 18.52%
Earthworks:

- Max Cut Depth= 1200mm
- Max Fill Depth= 500mm
- Total Site Cut Area= 1650m²
- Total Site Cut Volume= 1009m³
- Total Site Fill Area= 215m²
- Total Site Fill Volume= 130m³

Remaining spoils to stay on site as landscaping bunds

N

Site Legend	
	100mm SW Connection
	150mm SW Main
	RipRap Outlet
	Culvert
	SW Attenuation Pond
	20mm Water Connection
	New Water Meter
	Existing Water Meter
	Hydrant
	Concrete
	Metal

Mangakahia Road

H1 4 Bed
H2 4 Bed
H3 3 Bed
H4 3 Bed
H5 3 Bed
H6 & H7 2+1 Duplex
H8 & H9 2+1 Duplex
H10 & H11 2+1 Duplex

Basketball Half Court
Playground

Engineered Stormwater Pond
1500w RipRap Emergency Spillway

87.983
39.072
55.478
81.257
9.748
39.623
8.615
32.333
8.642
30.485
15.257
14.676
41.186
124.064

REVISION:	BY:	DATE:
Drawn	NMB	Jan 09 2026
Rev	NMB	Feb 03 2026
Rev	NMB	Feb 20 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Plan - S/W & Water

SCALE: 1 : 700 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	04	C01

Site Information

91 Mangakahia Road, Kaikohe
Lot 2 DP 191875
High Wind Zone
Corrosion Zone B
Earthquake Zone 1
Zone: Commercial

Site area: 15504m²
Driveway, Parking & Paths area: 1850m²
New buildings coverage: 1016.9m²
Existing buildings coverage: Nil
Total Building coverage: 1016.9m² = 6.44%
Total impermeable surfaces: 2870.9m² = 18.52%
Earthworks:

- Max Cut Depth= 1200mm
- Max Fill Depth= 500mm
- Total Site Cut Area= 1650m²
- Total Site Cut Volume= 1009m³
- Total Site Fill Area= 215m²
- Total Site Fill Volume= 130m³

Remaining spoils to stay on site as landscaping bunds

N

TEST BOREHOLE

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

ECONO-TREAT ET-60C
SERVICES HOUSES 1 & 2
LOCATION TBC, >3.0m FROM
BUILDINGS

LAND APPLICATION SYSTEM:
165m2 SOAKAGE BEDS. 3 BEDS AT 3mW x 18.3mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
66m2 SOAKAGE BED. 1 BED AT 3mW x 22mL
LAID ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

RESERVE DISPOSAL
AREAS (~30%)

ECONO-TREAT ET-60C
SERVICES HOUSES 3, 4 & 5
LOCATION TBC, >3.0m FROM
BUILDINGS

TEST BOREHOLE

32mm PE SUPPLY PIPELINE

32mm PE
SUPPLY
PIPELINE

ECONO-TREAT ET-52C-WM
SERVICES HOUSES H10 & H11
LOCATION TBC, >3.0m FROM
BUILDINGS

ECONO-TREAT ET-60C
SERVICES HOUSES 6, 7, 8 & 9
LOCATION TBC, >3.0m FROM
BUILDINGS

H1
4 Bed

H2
4 Bed

H3
3 Bed

H4
3 Bed

H5
3 Bed

H6 & H7
2+1 Duplex

H8 & H9
2+1 Duplex

H10 & H11
2+1 Duplex

Engineered
Stormwater
Pond

STORMWATER
MANAGEMENT
DRY POND

Basketball Half Court

Playground

J1

Mangakahia Road

8.615
39.623
32.333
8.452
39.623
30.485
15.237
14.676
40.186
124.064
97.748
81.257
53.478
87.983
39.072

Site Legend

	32mm Sewer Connection	
	100mm Sewer Connection	
	Existing Sewer Main	
	Sewer Treatment Plant	
	Sewer Manhole	
	Septic Field	
	Septic Field- Reserve Area	
	Plinth	
	Mains Cable Connection	
	Sub Main Connection	

REVISION:	BY:	DATE:
Drawn	NMB	Jan 09 2026
Rev	NMB	Feb 05 2026
Rev	NMB	Feb 13 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Plan - Sewer & Power

SCALE: 1 : 700 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	05	C01

Site Information

91 Mangakahia Road, Kaikohe
Lot 2 DP 191875
High Wind Zone
Corrosion Zone B
Earthquake Zone 1
Zone: Commercial

Site area: 15504m²
Driveway, Parking & Paths area: 1850m²
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- Total Site Cut Area= 1650m²
- Total Site Cut Volume= 1009m³
- Total Site Fill Area= 215m²
- Total Site Fill Volume= 130m³

Remaining spoils to stay on site as landscaping bunds

N

Site Legend	
	Description
	Cut Area
	Fill Area
	Landscaping Bund

Mangakahia Road

H1
4 Bed

H2
4 Bed

H3
3 Bed

H4
3 Bed

H5
3 Bed

H6 & H7
2+1 Duplex

H8 & H9
2+1 Duplex

H10 & H11
2+1 Duplex

Basketball Half Court

Playground

Engineered Stormwater Pond

1500w RipRap Emergency Spillway

39.072
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124.064
81.257
55.478
9.746

REVISION: BY: DATE:
Drawn NMB Feb 26 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Plan - Cut & Fill

SCALE: 1 : 1000 (A3 Original)

PROJECT #: 1317
PAGE: 06
REVISION: C01

Proposed New Project

91 Mangakahia Road, Kaikohe

For: Whakatere ki Koranui Trust

Concept Plans

Concept 1

February 2026

FINAL WORKING DRAWINGS TAKE PRECEDENCE OVER CONCEPT PLANS. ALL LANDSCAPING, PLANTING, LIGHTING & FENCING IS SHOWN FOR IMAGING PURPOSES ONLY

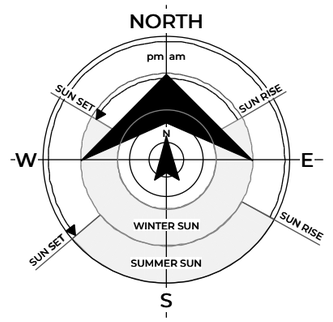
Advance build

A smarter move

CONTENTS

REVISION:	C01
PROJECT NO.	1317
DRAWN BY:	NMB
HC:	JCS

NB: Boundary Lines are Indicative Only



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
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Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Location Plan

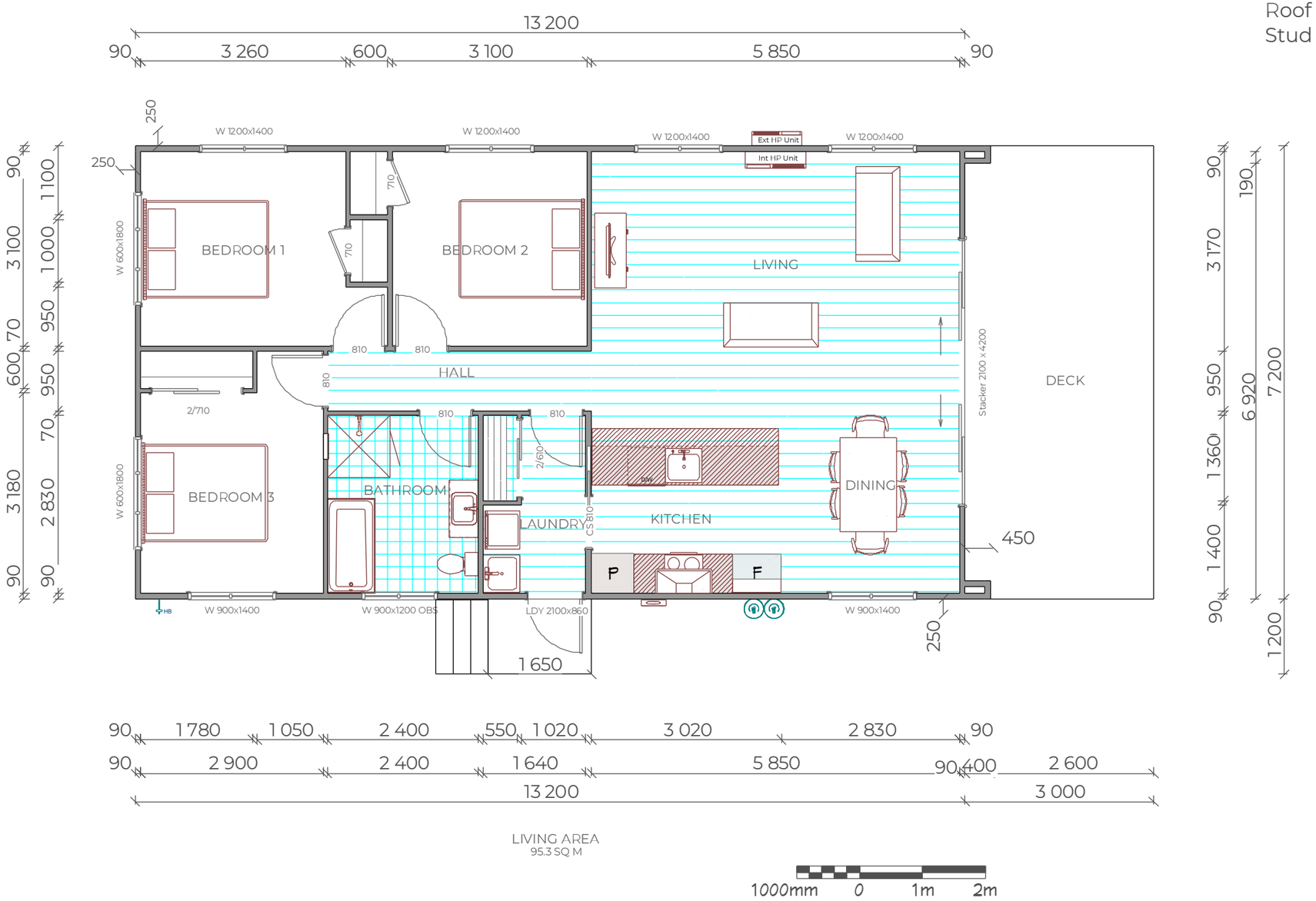
SCALE: NTS

PROJECT #:	PAGE:	REVISION:
1317	01	C01

1
4 2
3

Elevations

Roof Pitch 15 deg
Stud height - 2.4m Flat Ceiling



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Floor Plan

SCALE: 1 : 75 (A3 Original)

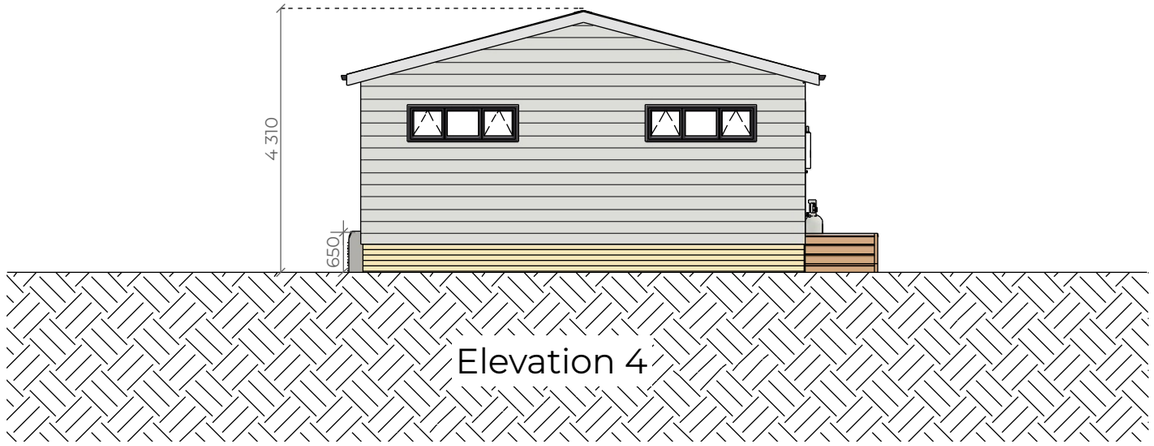
PROJECT #:	PAGE:	REVISION:
1317	02	P01

Roof Pitch 15 deg
Stud height - 2.4m Flat Throughout

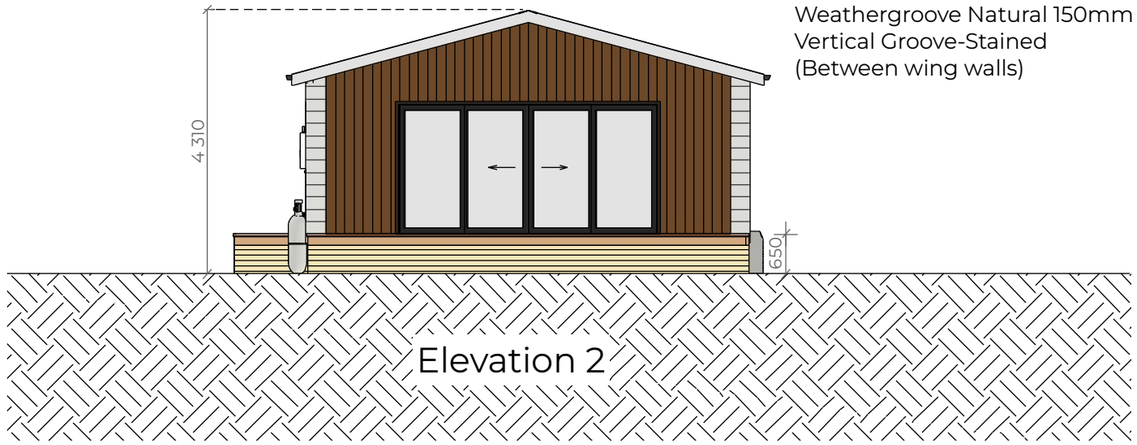
Weathertex Primelok Smooth 200mm

Armorsteel 5-Rib, Standard 0.40mm

Elevation 1



Elevation 4



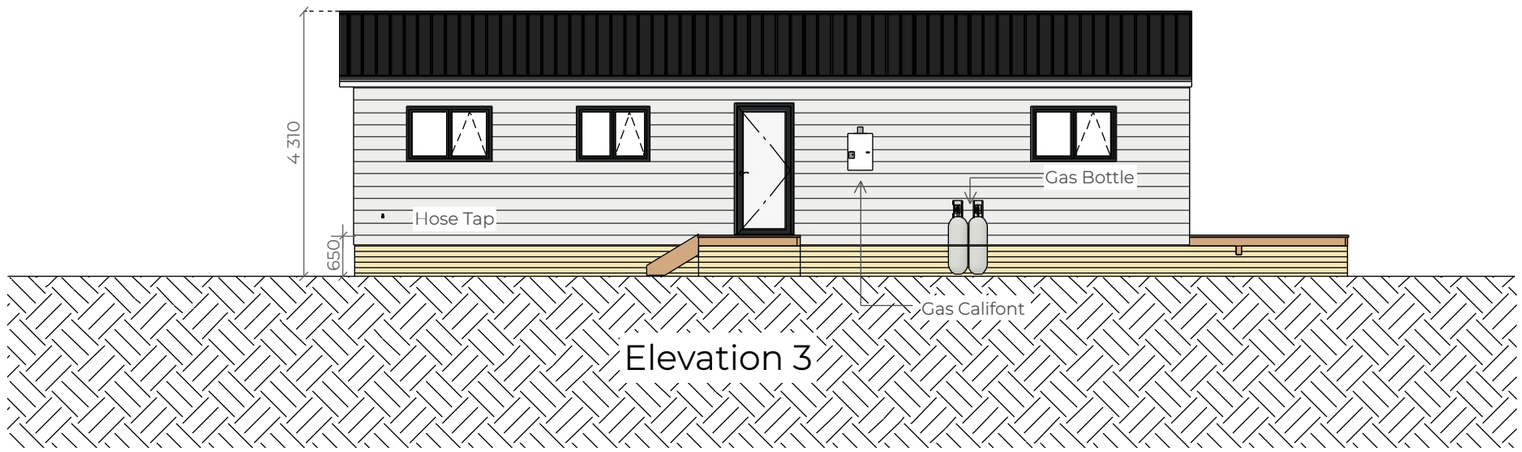
Elevation 2

Weathergroove Natural 150mm
Vertical Groove-Stained
(Between wing walls)

Low-E Light Bridge,
Double Glazed Windows

140x35 Premium smooth H3 Pine decking - uncoated, Nail fixed

140x20 PG H3 Pine baseboards Unpainted



Elevation 3

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Elevations

SCALE: 1 : 100 (A3 Original)

PROJECT #:	PAGE:	REVISION:
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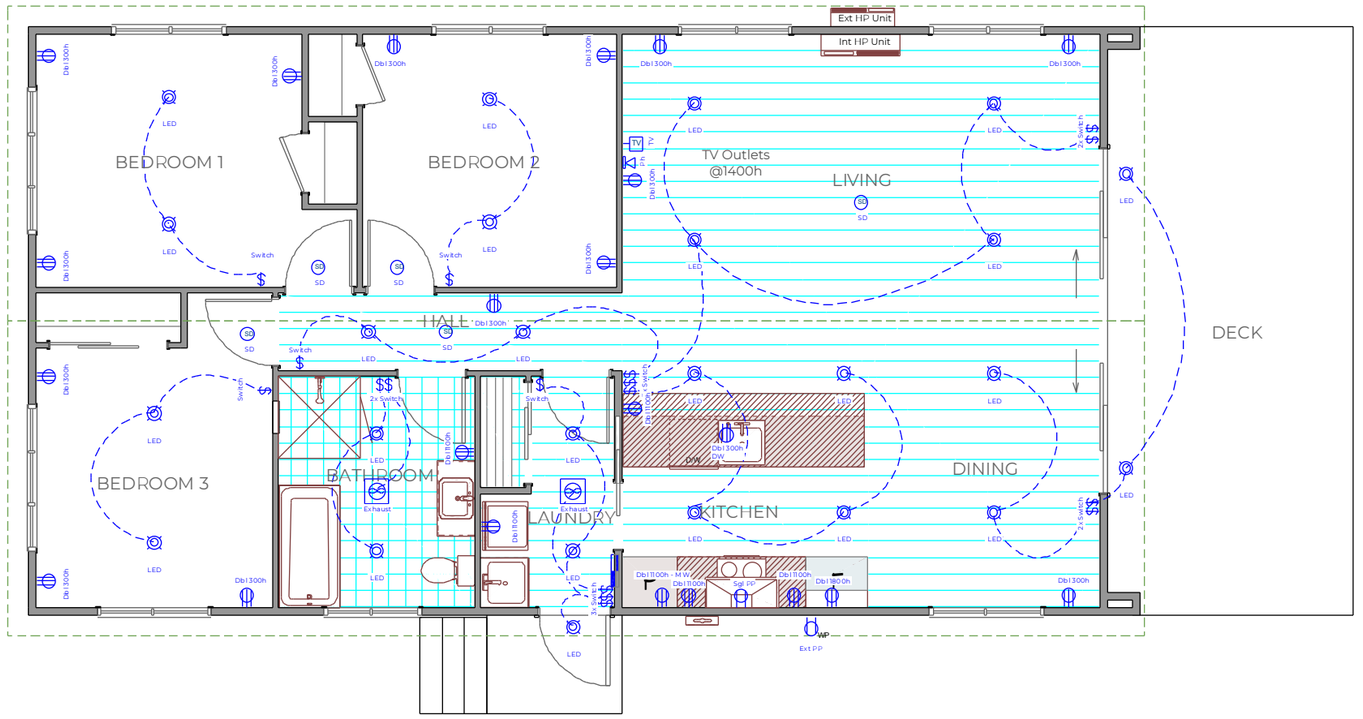

LIVING AREA
95.3 SQ M

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
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Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Electrical Plan

SCALE: 1 : 75 (A3 Original)

PROJECT #:	PAGE:	REVISION:
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All Windows and Doors at 2.1m Lintel Height

All Exterior Doors Rebated for Flush Entry

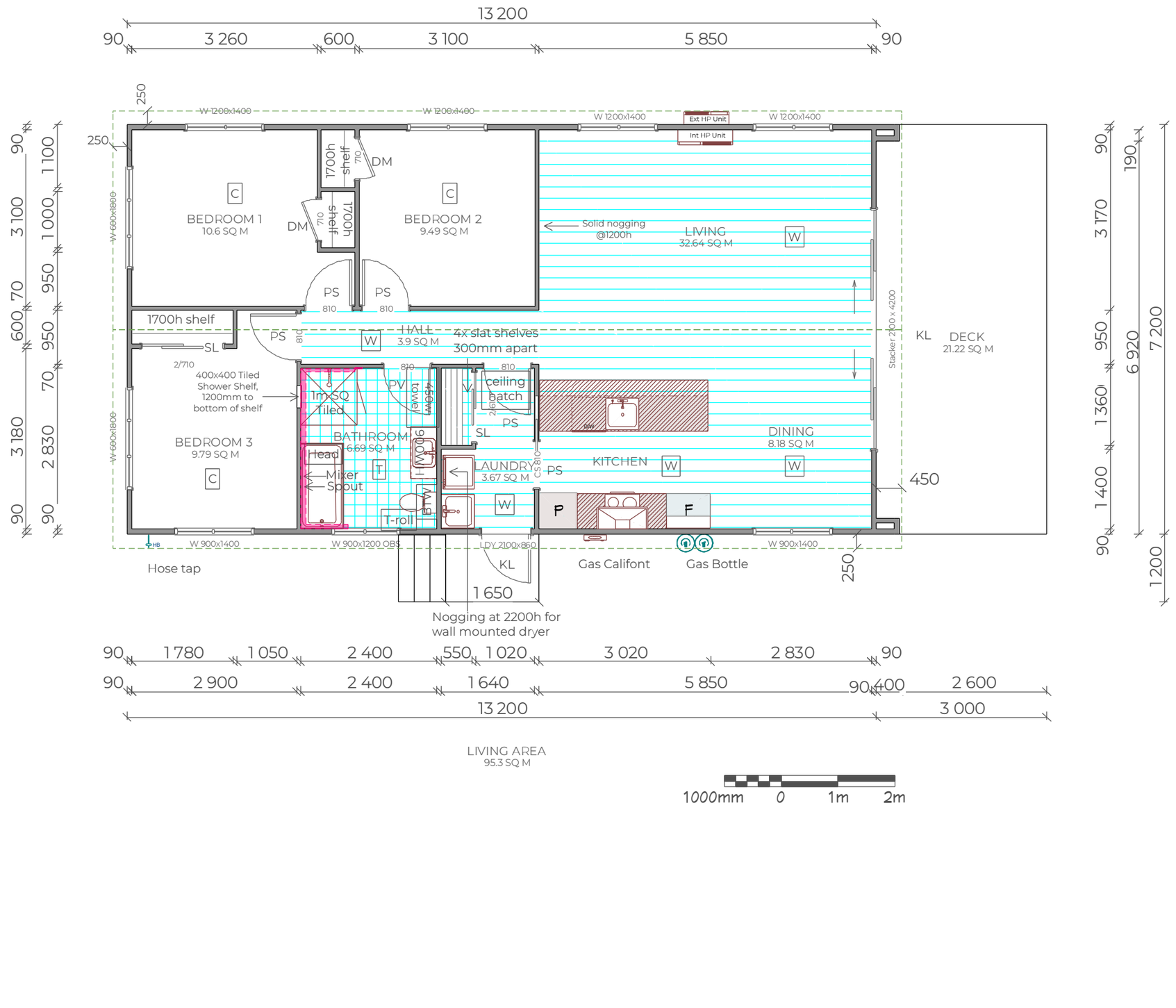
Bath & Shower Wall Tiles (refer to specs for details)

Floorcoverings
C=Carpet
T=Tiles
W=Wooden Planking

Interior Door Handles
SL=Sliding
PS=Passage
PV=Privacy
DM=Dummy

Exterior Door Handles
KL=Keyed Lock

Ceiling Height
2.4m Flat Throughout



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Fittings Plan

SCALE: 1 : 75 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	05	C01

Advance build

0800 327 828 Tel:09 4087 232
PO Box 59, Awanui 0451
www.advancebuild.co.nz

JOB TITLE:

DRAWING TITLE:

#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

FULL ADDRESS:

NOTES:

Verify all dimensions on site before commencing work. Refer to figured dimensions.

Refer any discrepancies to Advance manufacturing Ltd.

STAGE: **CREATED:** 16.06.2025

VERSION: C01

REVISION: BY: DATE:

Drawn

DESIGNER:

TECHNICIAN:

JOB # **SCALE:**

SHEET: 1

Advance build

0800 327 828 Tel:09 4087 232
PO Box 59, Awanui 0451
www.advancebuild.co.nz

JOB TITLE:

DRAWING TITLE:
#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

FULL ADDRESS:

NOTES:
Verify all dimensions on site before commencing work. Refer to figured dimensions.

Refer any discrepancies to Advance manufacturing Ltd.

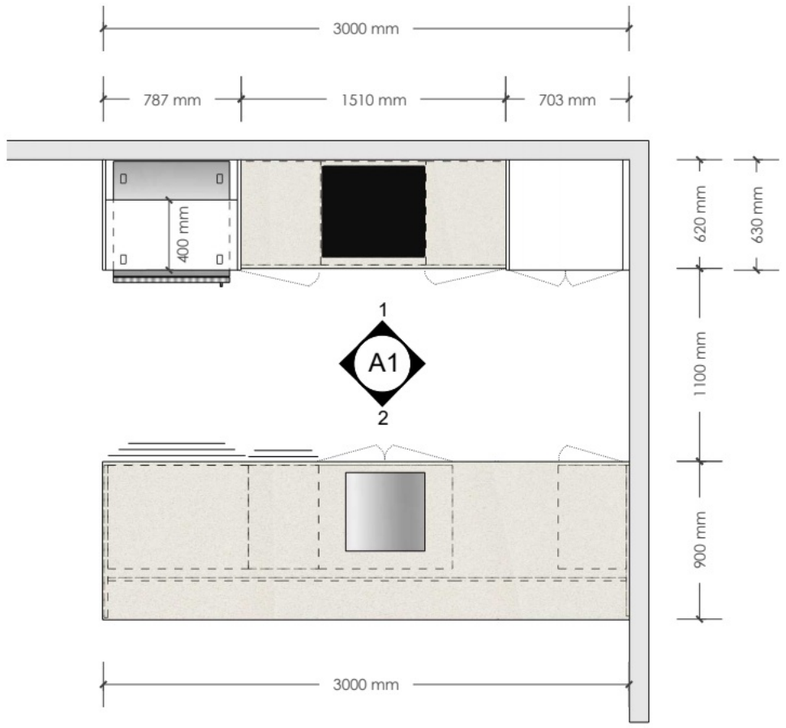
STAGE: **CREATED:** 16.06.2025
VERSION: C01
REVISION: BY: DATE:
Drawn

DESIGNER:

TECHNICIAN:

JOB **SCALE:**

SHEET: 2



KITCHEN SPECIFICATIONS:

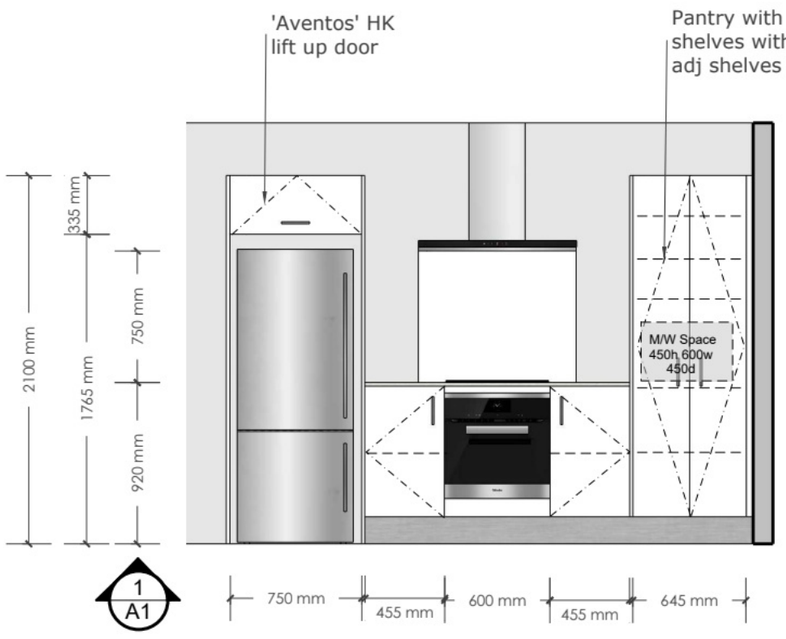
CABINET INTERIORS: 16mm Moisture-resistant MDF. Colour: White. Finish: Naturale.
DOORS, DRAWERS & FACE PANELS: 18mm Melamine with matching laser edging. 'AB Standard' range. Colour: Prime White. Finish: Embossed.
BENCHTOP: 20mm Silestone. 'AB Mid' range. Colour: Blanco Maple. Finish: Polished.
HANDLES: 'AB Mid' range. Model: Archant Anzio. Length: 160mm. Finish: Brushed Nickel.
SINK: Acero 'DV105' 450mm sink insert, undermounted.
SINK CABINET: Fitted with space saving waste, 1x adjustable shelf and 1x towel rail.
DRAWERS: White full extension soft close drawer system.
HINGES: Soft close fully adjustable hinges.
KICKBOARD: 150mm brushed stainless, moisture-resistant.
SPLASH BACK: 750h x 900w back painted toughened glass. 'AB Standard' range. Colour: Resene Alabastar.
BULKHEAD: None.
SCOTIA/GIB COVE: None.
FLOORING: TBC.

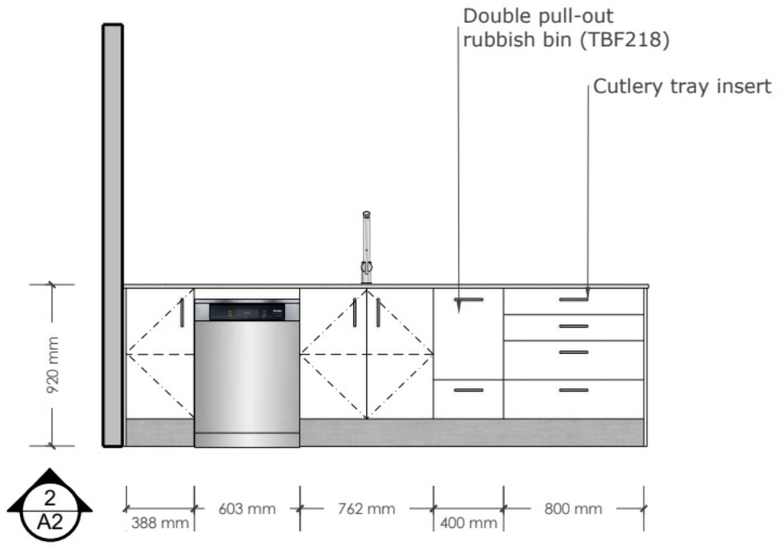
APPLIANCES SUPPLIED & FITTED BY ADVANCE BUILD:

Oven: Bosch Serie8 60cm Built-in Oven Black (HBG7341B1A) 595h 594w 548d
Hob: Bosch Serie6 Electric Cooktop 60cm Black (PKE611FA2A) 45h 592w 522d
Rangehood: Robinhood 90cm Box Canopy SS (RWE3CL9SS) 900w 500d
Fridge Space Allowance: 1765h 750w 630d space.
Dishwasher: Bosch Serie 4 Free-standing dishwasher 60 cm Stainless steel (SMS4HTI01A) 845h 600w 600d
Tap: Aquatica Saluto Gooseneck Sink mixer (SA SMAP)

NOTE:

No site measure
No template
No changes/customisations





Option for sink run to be pushed against wall or made as an Island.

Advance build
0800 327 828 Tel:09 4087 232
PO Box 59, Awanui 0451
www.advancebuild.co.nz

JOB TITLE:

DRAWING TITLE:
#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

FULL ADDRESS:

NOTES:
Verify all dimensions on site before commencing work. Refer to figured dimensions.
Refer any discrepancies to Advance manufacturing Ltd.

STAGE: **CREATED:** 16.06.2025
VERSION: C01
REVISION: BY: **DATE:**
Drawn

DESIGNER:
TECHNICIAN:
JOB **SCALE:**

SHEET: 3

Proposed New Project

91 Mangakahia Road, Kaikohe

For: Whakatere ki Koranui Trust

Advance build

A smarter move

CONTENTS

Concept Plans

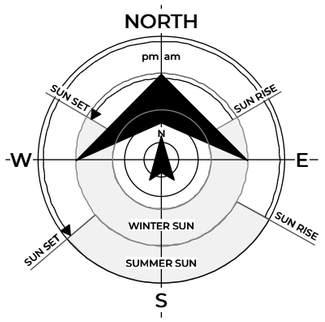
Concept 1

February 2026

FINAL WORKING DRAWINGS TAKE PRECEDENCE OVER CONCEPT PLANS. ALL LANDSCAPING, PLANTING, LIGHTING & FENCING IS SHOWN FOR IMAGING PURPOSES ONLY

REVISION:	C01
PROJECT NO.	1317
DRAWN BY:	NMB
HC:	JCS

NB: Boundary Lines are Indicative Only



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Location Plan

SCALE: NTS

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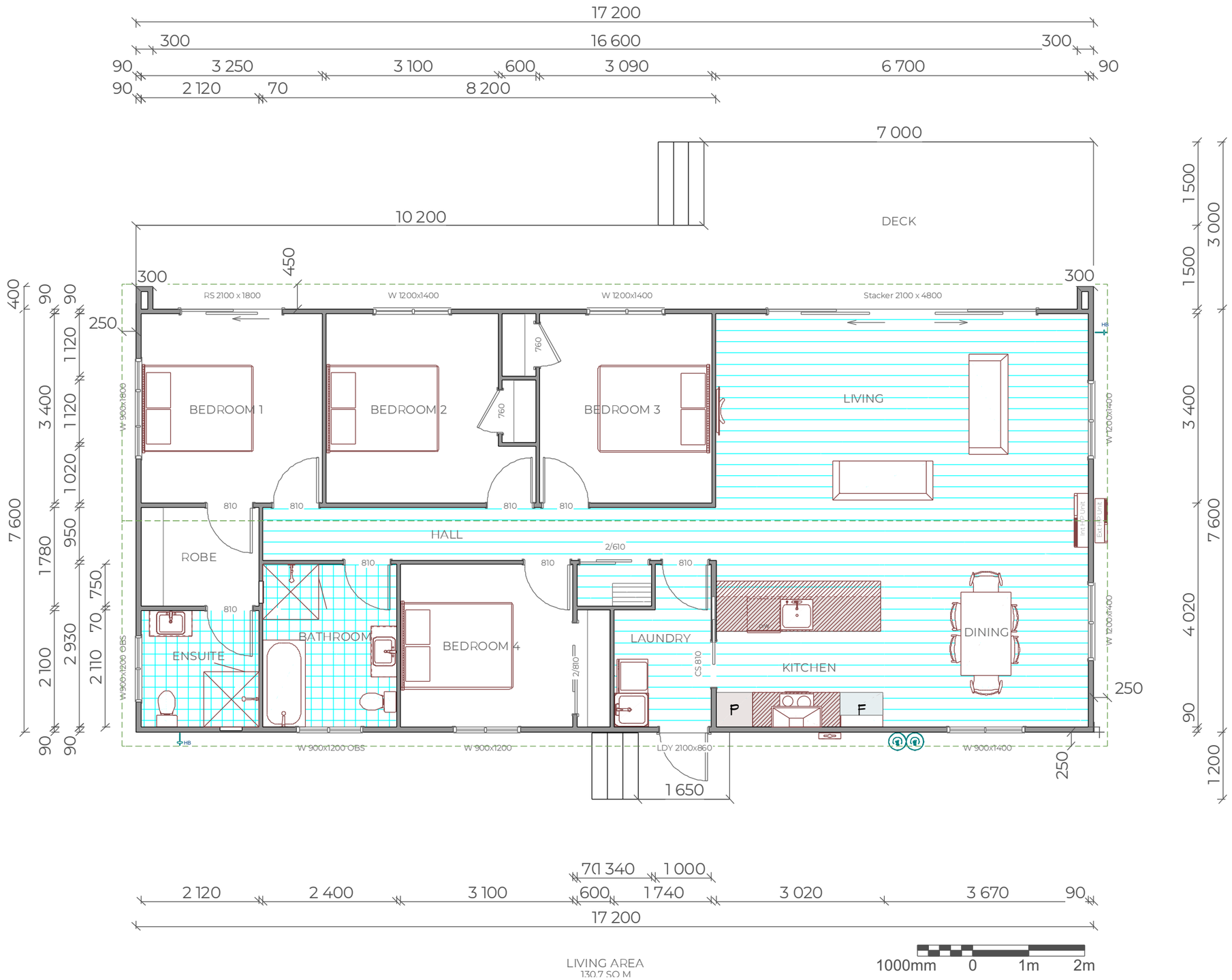


1
4 2
3

Elevations

Roof Pitch 15 deg
Stud height - 2.4m Flat Ceiling

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Floor Plan

SCALE: 1 : 75 (A3 Original)

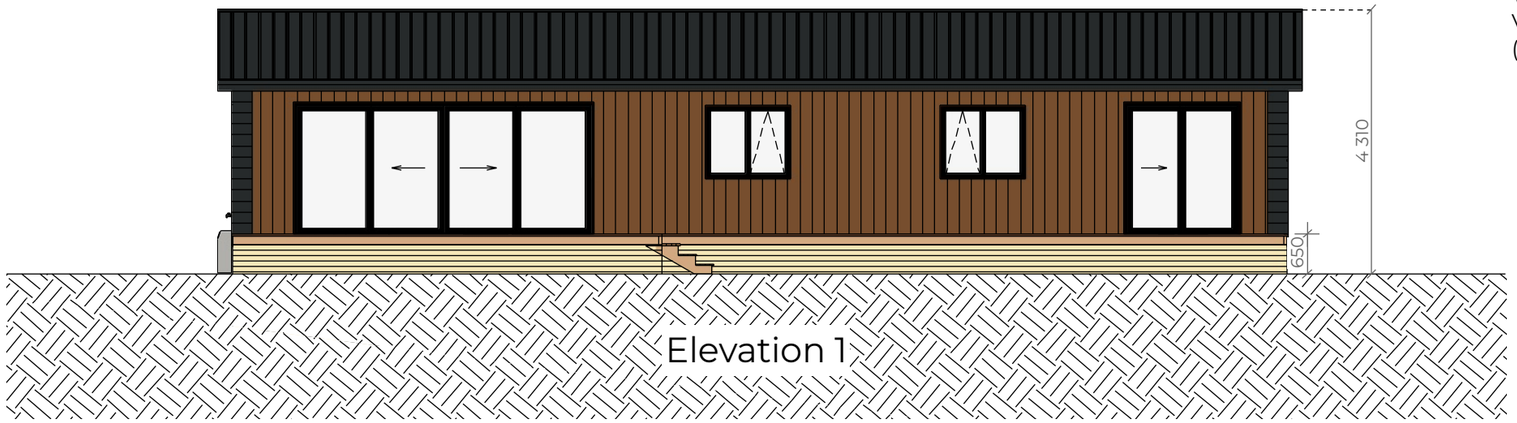
PROJECT #:	PAGE:	REVISION:
1317	02	P01

Roof Pitch 15 deg
Stud height - 2.4m Flat Throughout

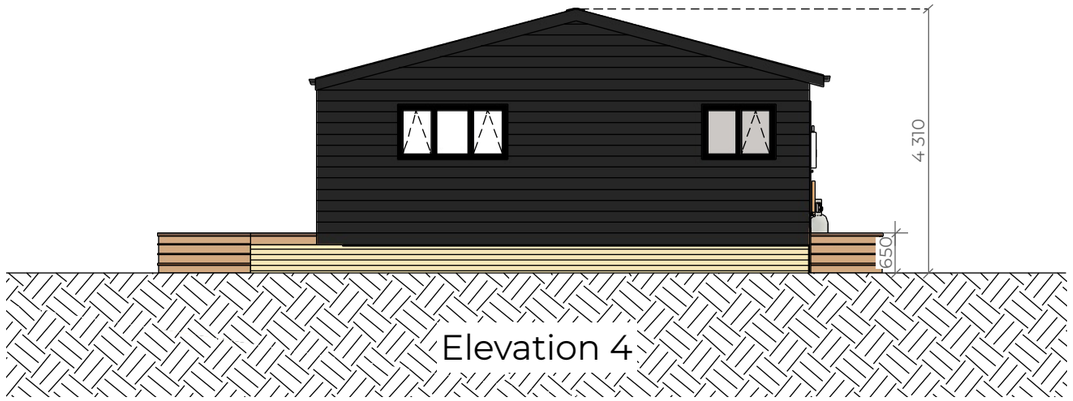
Weathertex Primelok Smooth 200mm

Armorsteel 5-Rib, Standard 0.40mm

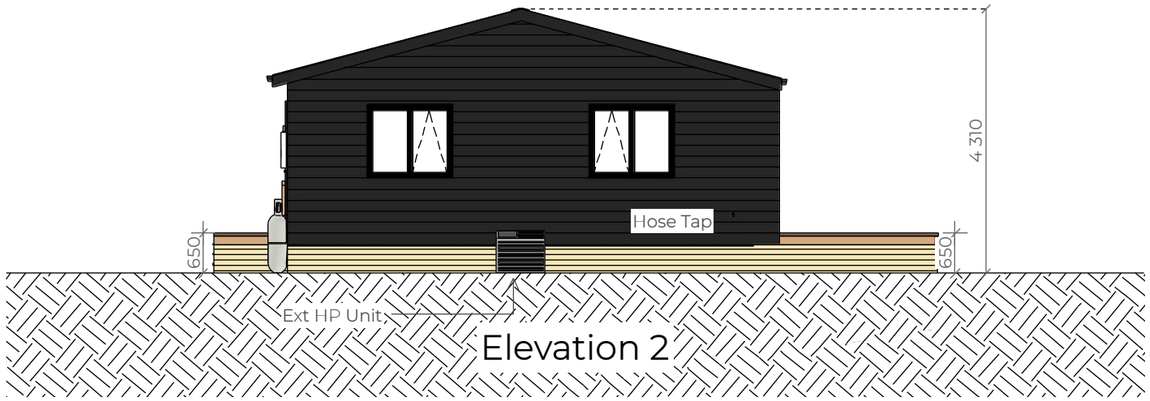
Weathergroove Natural 150mm
Vertical Groove-Stained
(Between wing walls)



Elevation 1



Elevation 4

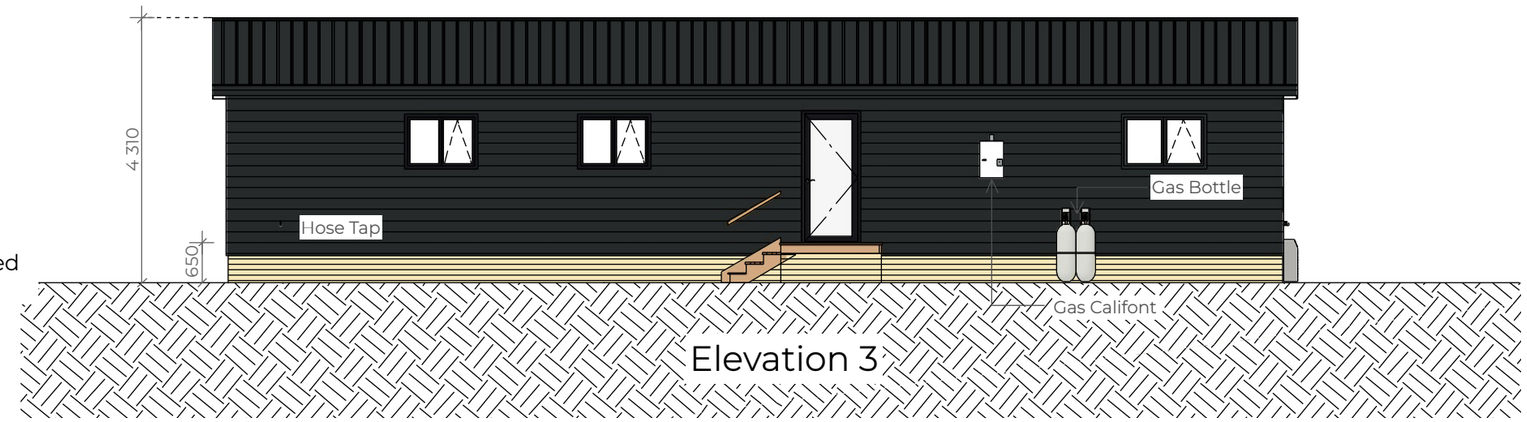


Elevation 2

Low-E Light Bridge,
Double Glazed Windows

140x35 Premium smooth H3 Pine
decking - uncoated, Nail fixed

140x20 PG H3 Pine baseboards Unpainted



Elevation 3

REVISION:	BY:	DATE:
Drawn	NMB	Jun 19 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Elevations

SCALE: 1 : 100 (A3 Original)

PROJECT #:	PAGE:	REVISION:
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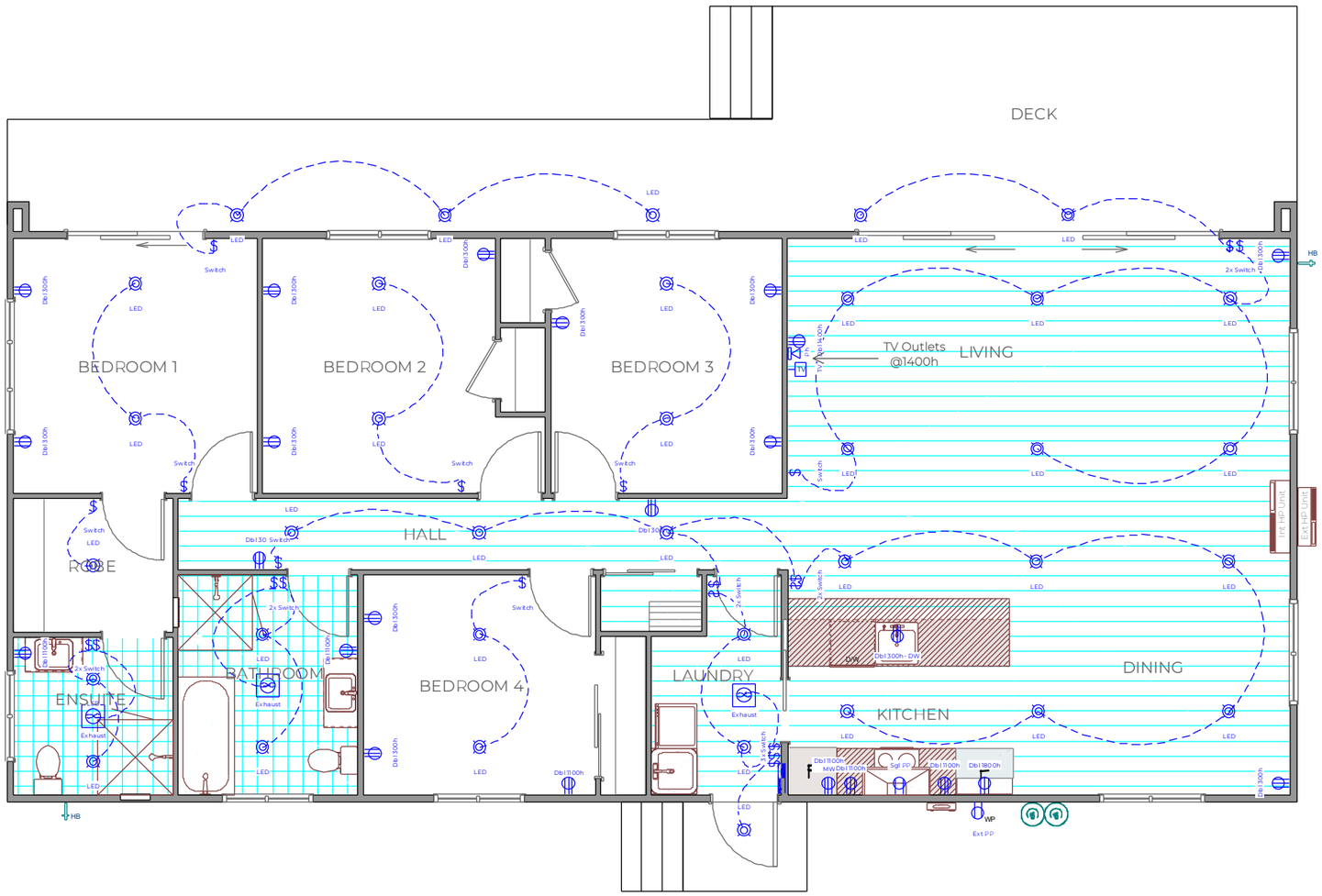


REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build

A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Electrical Plan

SCALE: 1 : 75 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	04	C01

All Windows and Doors at 2.1m Lintel Height

All Exterior Doors Rebated for Flush Entry

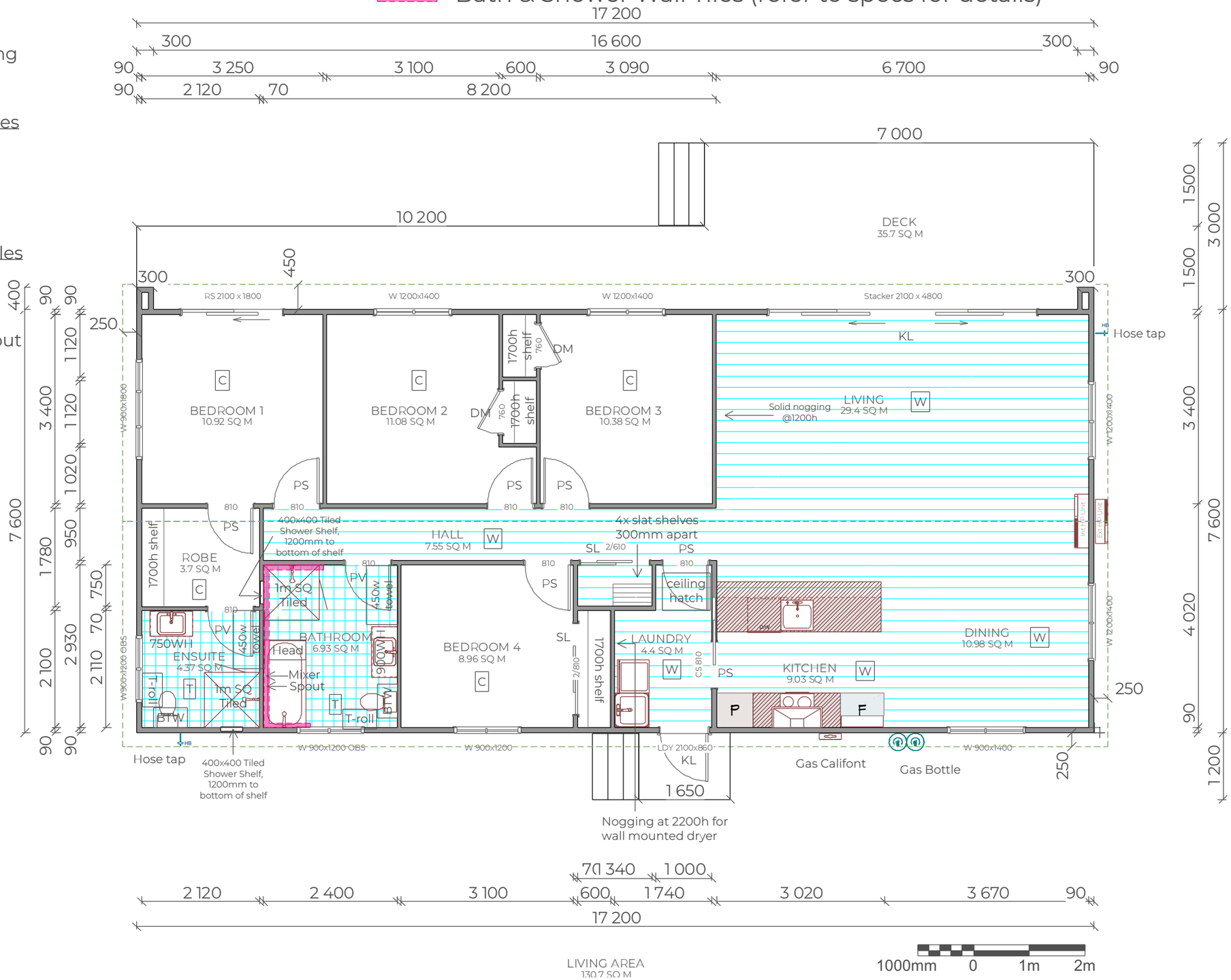
Bath & Shower Wall Tiles (refer to specs for details)

Floorcoverings
C=Carpet
T=Tiles
W=Wooden Planking

Interior Door Handles
SL=Sliding
PS=Passage
PV=Privacy
DM=Dummy

Exterior Door Handles
KL=Keyed Lock

Ceiling Height
2.4m Flat Throughout



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Fittings Plan

SCALE: 1 : 75 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	05	C01

Advance build

0800 327 828 Tel:09 4087 232
PO Box 59, Awanui 0451
www.advancebuild.co.nz

JOB TITLE:

DRAWING TITLE:

#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

FULL ADDRESS:

NOTES:

Verify all dimensions on site before commencing work. Refer to figured dimensions.

Refer any discrepancies to Advance manufacturing Ltd.

STAGE: **CREATED:** 16.06.2025

VERSION: C01

REVISION: BY: DATE:

Drawn

DESIGNER:

TECHNICIAN:

JOB # **SCALE:**

SHEET: 1

Advance build

0800 327 828 Tel:09 4087 232
PO Box 59, Awanui 0451
www.advancebuild.co.nz

JOB TITLE:

DRAWING TITLE:
#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

FULL ADDRESS:

NOTES:
Verify all dimensions on site before commencing work. Refer to figured dimensions.

Refer any discrepancies to Advance manufacturing Ltd.

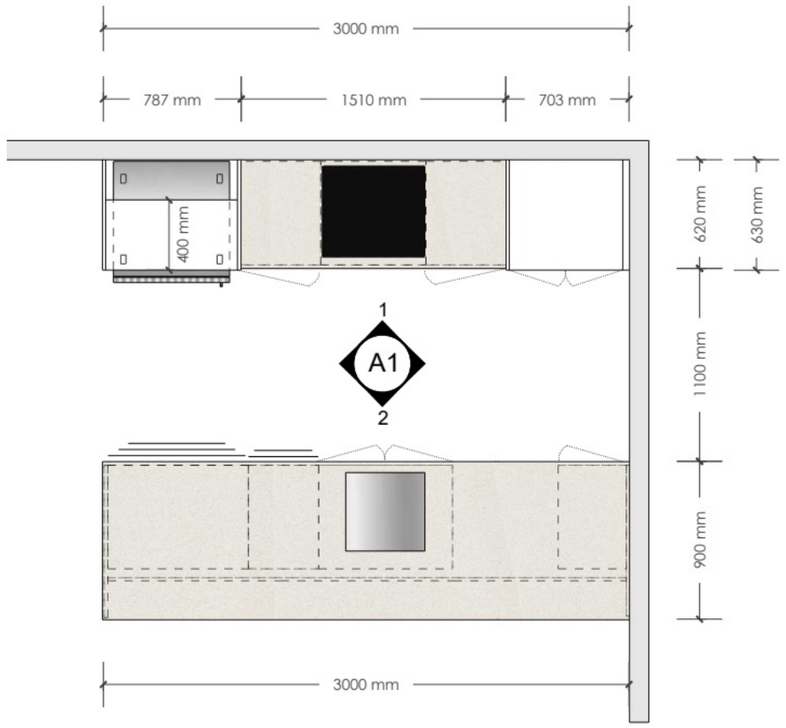
STAGE: **CREATED:** 16.06.2025
VERSION: C01
REVISION: BY: DATE:
Drawn

DESIGNER:

TECHNICIAN:

JOB **SCALE:**

SHEET: 2



KITCHEN SPECIFICATIONS:

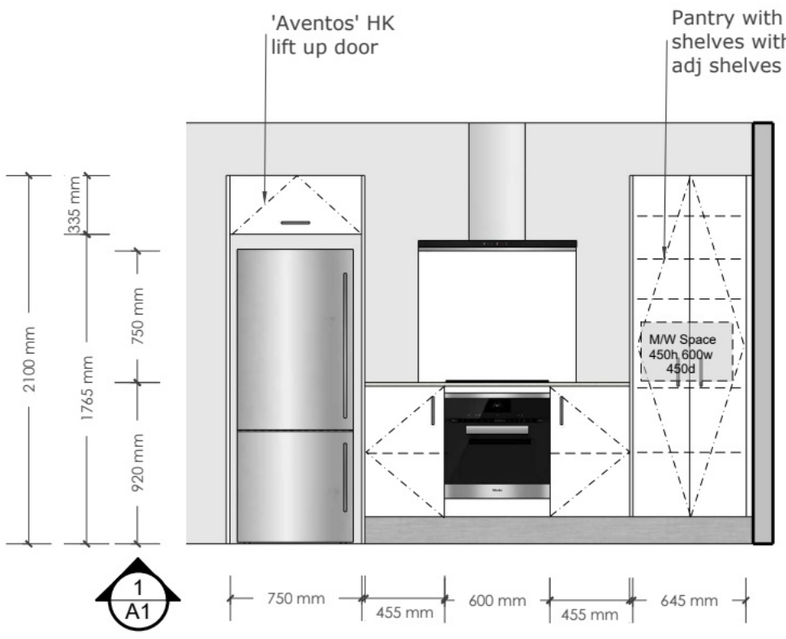
CABINET INTERIORS: 16mm Moisture-resistant MDF. Colour: White. Finish: Naturale.
DOORS, DRAWERS & FACE PANELS: 18mm Melamine with matching laser edging. 'AB Standard' range. Colour: Prime White. Finish: Embossed.
BENCHTOP: 20mm Silestone. 'AB Mid' range. Colour: Blanco Maple. Finish: Polished.
HANDLES: 'AB Mid' range. Model: Archant Anzio. Length: 160mm. Finish: Brushed Nickel.
SINK: Acero 'DV105' 450mm sink insert, undermounted.
SINK CABINET: Fitted with space saving waste, 1x adjustable shelf and 1x towel rail.
DRAWERS: White full extension soft close drawer system.
HINGES: Soft close fully adjustable hinges.
KICKBOARD: 150mm brushed stainless, moisture-resistant.
SPLASH BACK: 750h x 900w back painted toughened glass. 'AB Standard' range. Colour: Resene Alabastar.
BULKHEAD: None.
SCOTIA/GIB COVE: None.
FLOORING: TBC.

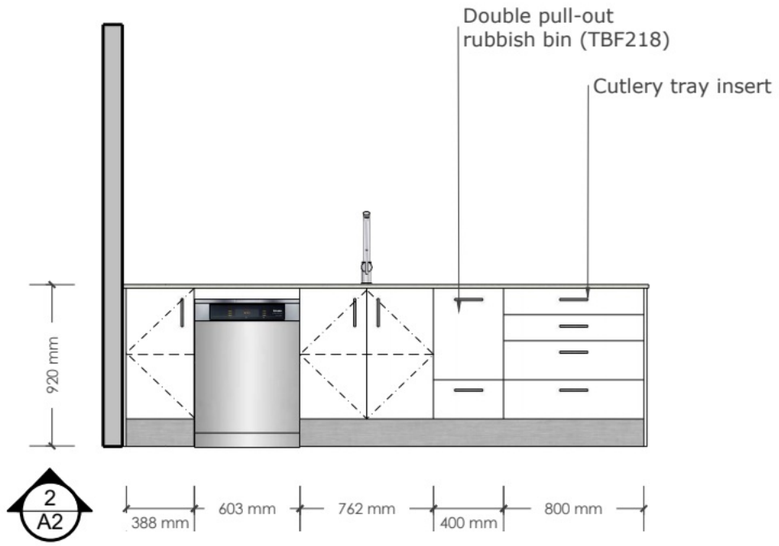
APPLIANCES SUPPLIED & FITTED BY ADVANCE BUILD:

Oven: Bosch Serie8 60cm Built-in Oven Black (HBG7341B1A) 595h 594w 548d
Hob: Bosch Serie6 Electric Cooktop 60cm Black (PKE611FA2A) 45h 592w 522d
Rangehood: Robinhood 90cm Box Canopy SS (RWE3CL9SS) 900w 500d
Fridge Space Allowance: 1765h 750w 630d space.
Dishwasher: Bosch Serie 4 Free-standing dishwasher 60 cm Stainless steel (SMS4HTI01A) 845h 600w 600d
Tap: Aquatica Saluto Gooseneck Sink mixer (SA SMAP)

NOTE:

No site measure
No template
No changes/customisations





Option for sink run to be pushed against wall or made as an Island.

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JOB TITLE:

DRAWING TITLE:
#AB Eco Right Sided Kitchen with Peninsula

LEGAL DESCRIPTION:

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STAGE: **CREATED:** 16.06.2025
VERSION: C01
REVISION: BY: **DATE:**
Drawn

DESIGNER:
TECHNICIAN:
JOB **SCALE:**

SHEET: 3

Proposed New Project

91 Mangakahia Road, Kaikohe

For: Whakatere ki Koranui Trust

CONTENTS

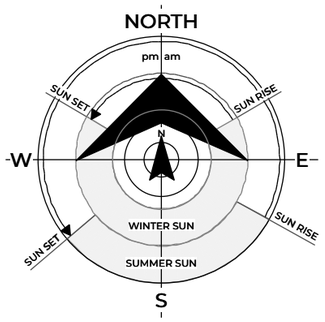
Concept Plans

Concept 1
February 2026

FINAL WORKING DRAWINGS TAKE PRECEDENCE OVER CONCEPT PLANS. ALL LANDSCAPING, PLANTING, LIGHTING & FENCING IS SHOWN FOR IMAGING PURPOSES ONLY

REVISION:	C01
PROJECT NO.	1317
DRAWN BY:	NMB
HC:	JCS

NB: Boundary Lines are Indicative Only



REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

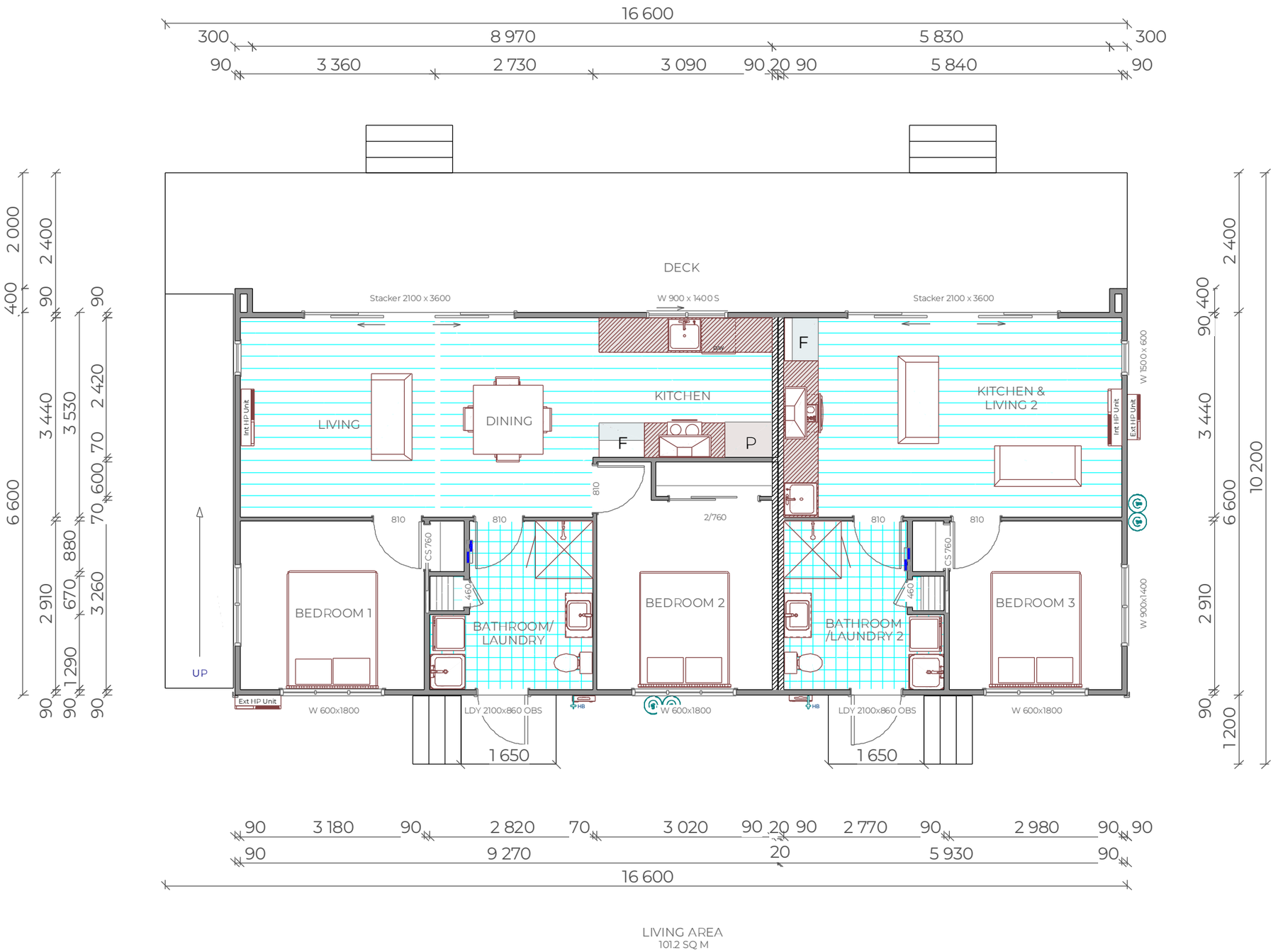
Advance build
A smarter move

Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Site Location Plan

SCALE: NTS

PROJECT #:	PAGE:	REVISION:
1317	01	C01



LIVING AREA
101.2 SQ M

Elevations

Roof Pitch 15 deg
Stud height - 2.4m Flat Ceiling

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

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Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Floor Plan

SCALE: 1 : 75 (A3 Original)

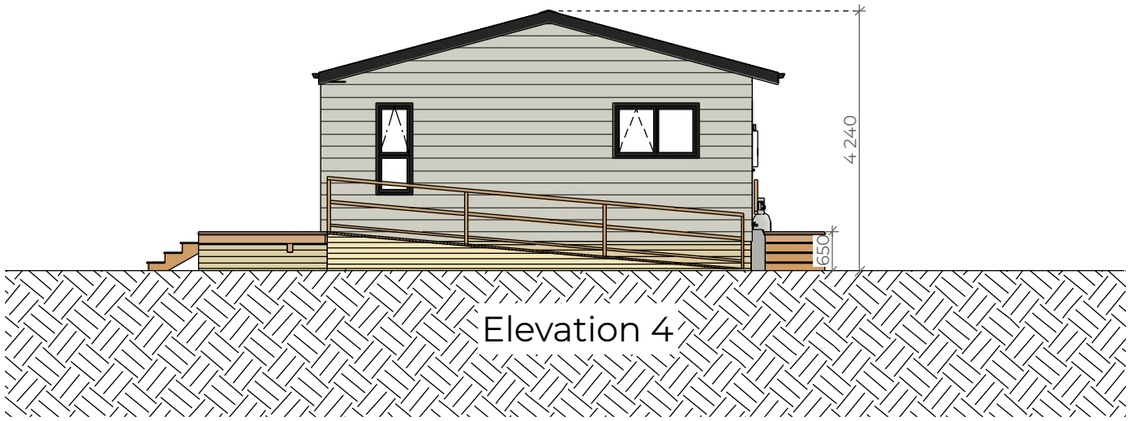
PROJECT #:	PAGE:	REVISION:
1317	02	P01

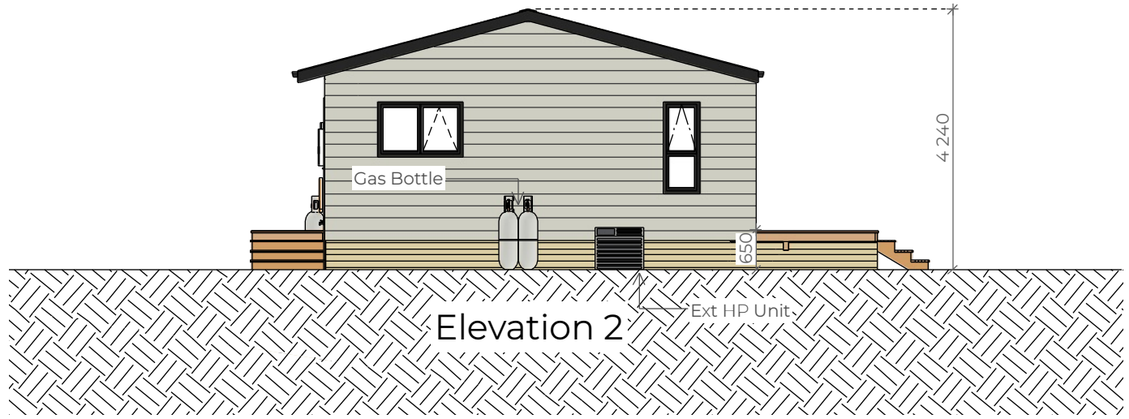
Roof Pitch 15 deg
Stud height - 2.4m Flat Throughout

Weathertex Primelok Smooth 200mm

Armorsteel 5-Rib, Standard 0.40mm

Weathergroove Natural 150mm
Vertical Groove-Stained
(Between wing walls)





REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

Low-E Light Bridge,
Double Glazed Windows

140x35 Premium smooth H3 Pine decking - uncoated, Nail fixed

140x20 PG H3 Pine baseboards Unpainted

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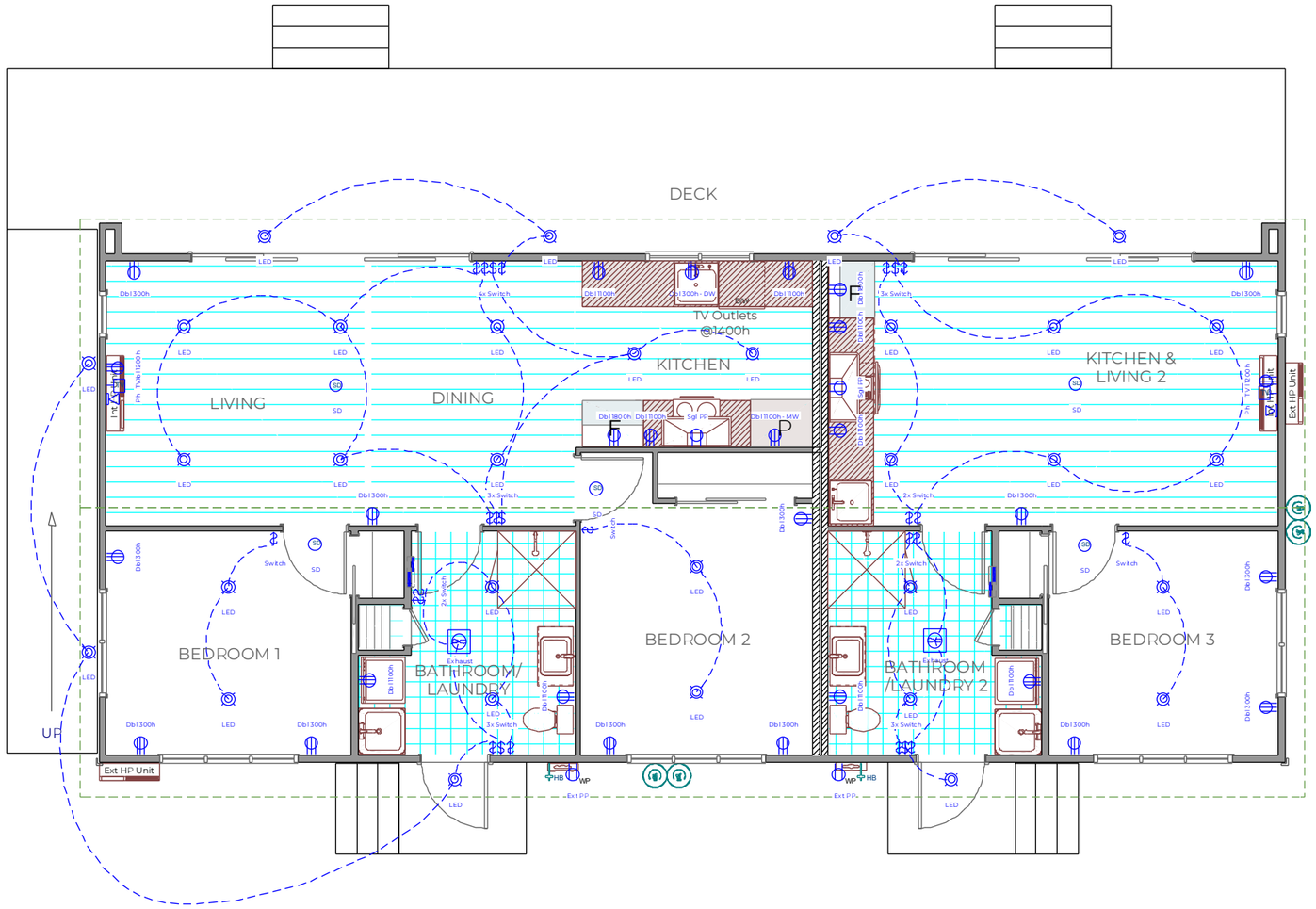
Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Elevations

SCALE: 1 : 100 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	03	C01



LIVING AREA
101.2 SQ M

1000mm 0 1m 2m

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

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Proposed New Project for:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Electrical Plan

SCALE: 1 : 75 (A3 Original)

PROJECT #:	PAGE:	REVISION:
1317	04	C01

All Windows and Doors at 2.1m Lintel Height

All Exterior Doors Rebated for Flush Entry

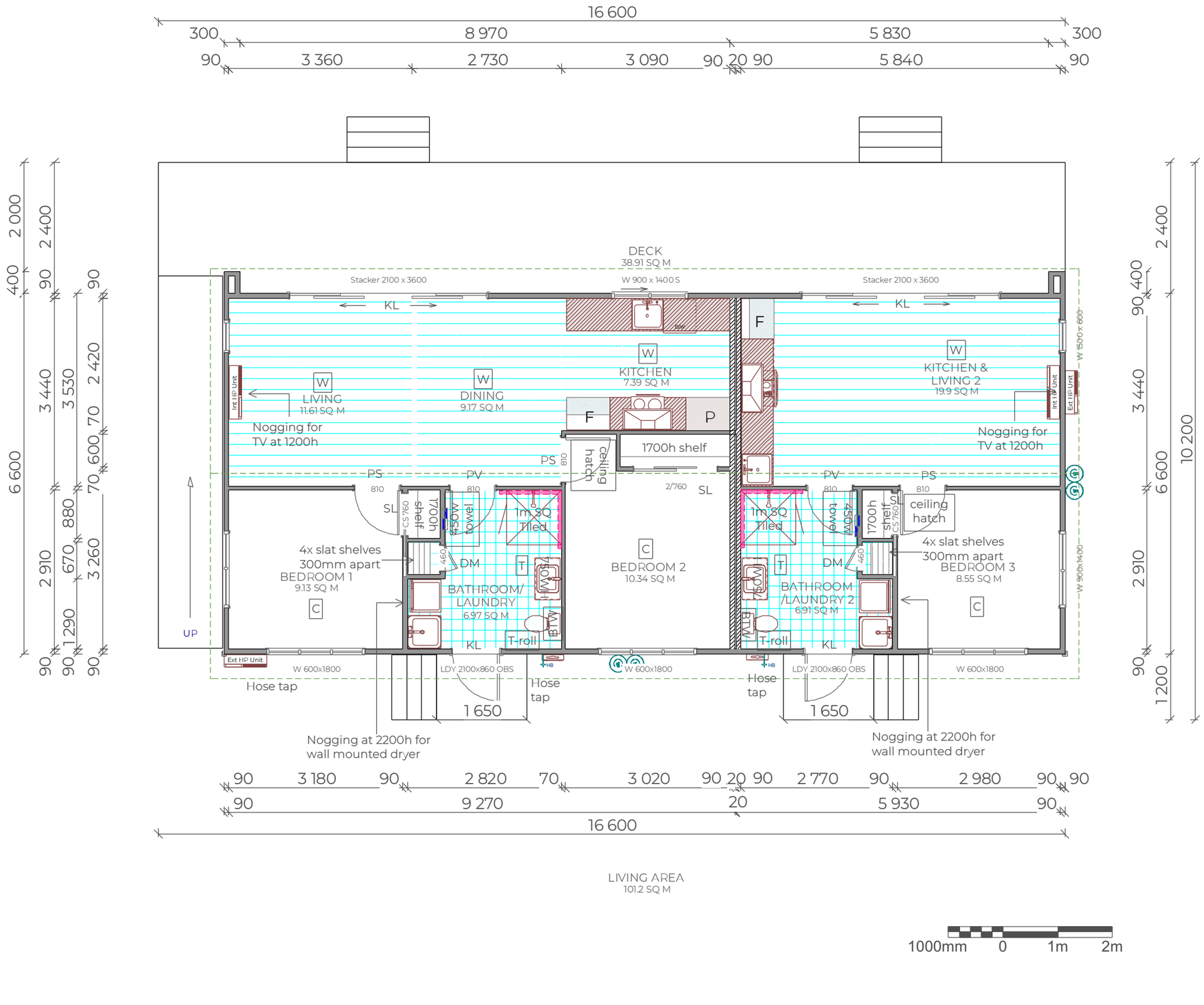
Shower Wall Tiles (refer to specs for details)

Floorcoverings
C=Carpet
T=Tiles
W=Wooden Planking

Interior Door Handles
SL=Sliding
PS=Passage
PV=Privacy
DM=Dummy

Exterior Door Handles
KL=Keyed Lock

Ceiling Height
2.4m Flat Throughout



LIVING AREA
101.2 SQ M

1000mm 0 1m 2m

REVISION:	BY:	DATE:
Drawn	NMB	Feb 03 2026

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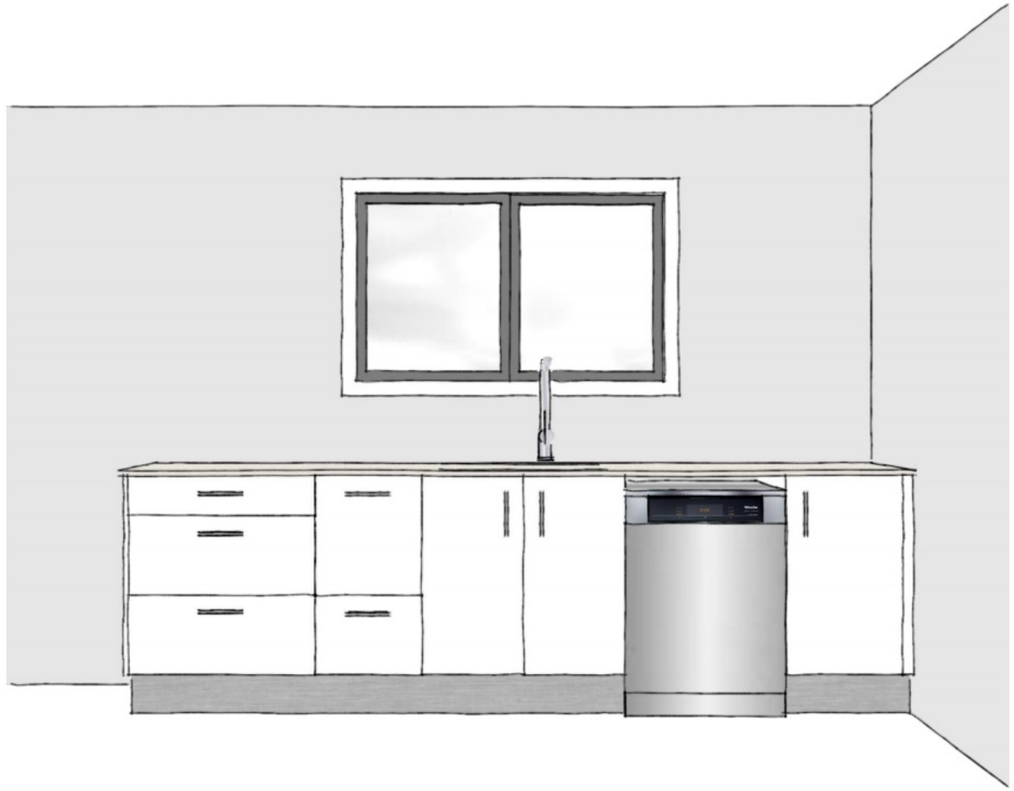
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

SHEET TITLE:
Fittings Plan

SCALE: 1 : 75 (A3 Original)

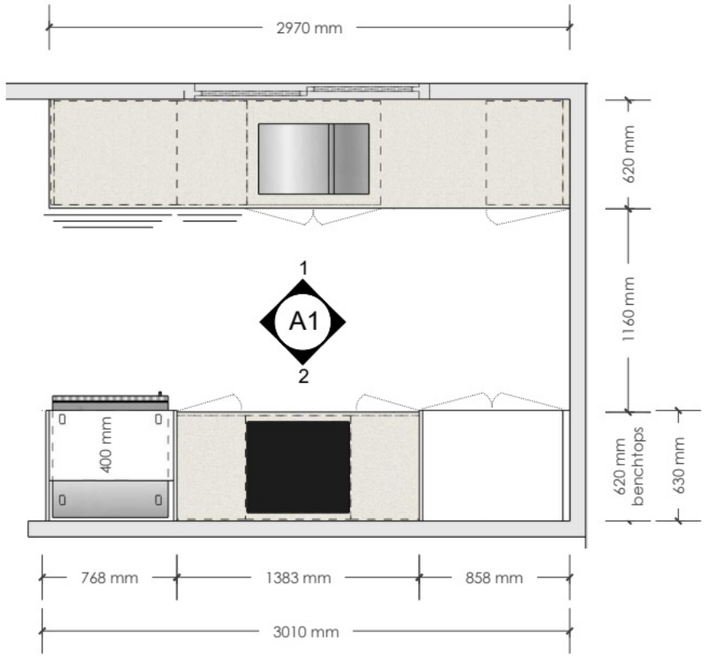
PROJECT #:	PAGE:	REVISION:
1317	05	C01

Kitchen 1



Advance build 0800 327 828 Tel:09 4087 232 PO Box 59, Awanui 0451 www.advancebuild.co.nz	**JOB TITLE:**	DRAWING TITLE: Smarter Living Series	LEGAL DESCRIPTION: FULL ADDRESS: Whakatere ki Koranui Trust 91 Mangakahia Road Kaikohe	**NOTES:** Verify all dimensions on site before commencing work. Refer to figured dimensions. Refer any discrepancies to Advance manufacturing Ltd. This document and the copy right in this document remain the property Advance manufacturing Ltd. The contents of this document may not be reproduced either in whole or in part by any other means whatsoever without the prior written consent of Advance manufacturing Ltd. 	**STAGE:** **CREATED:** 10.02.2026 **VERSION: C01** REVISION: BY: DATE: Drawn	DESIGNER: Luca Bill **SHEET: 2** **TECHNICIAN:** JOB # **SCALE:**

Kitchen 1

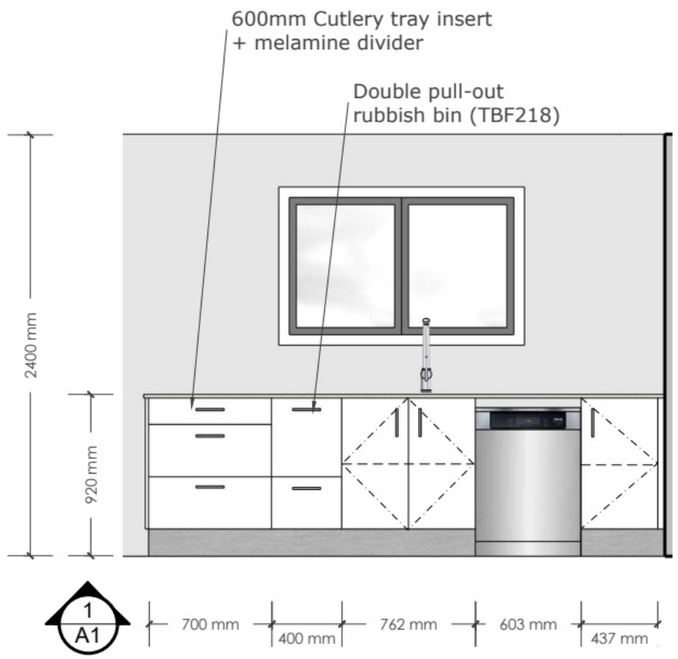


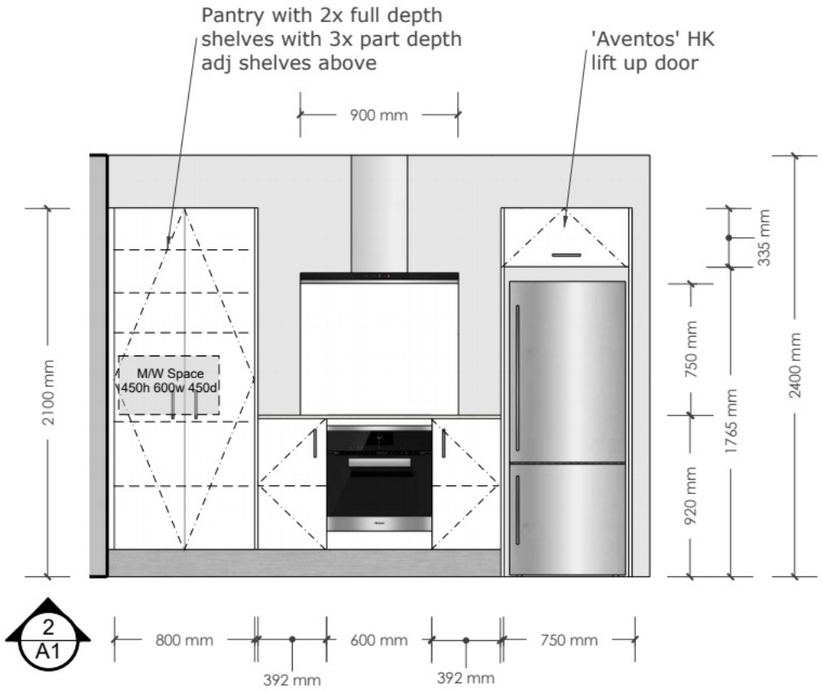
KITCHEN 1 SPECIFICATIONS:

CABINET INTERIORS: 16mm Moisture-resistant MDF. Colour: White. Finish: Naturale.
DOORS, DRAWERS & FACE PANELS: 18mm Melamine with matching laser edging (colour dependent). 'AB Standard' range. Colour: Prime White. Finish: Embossed.
BENCHTOP: 20mm Silestone. 'AB Mid' range. Colour: White Storm. Finish: Polished
HANDLES: 'AB Standard' range. Model: Archant Anzio Length: 160mm Finish: Brushed Nickel
SINK: Acero 'DV204 R' 400/200mm sink insert, undermounted.
SINK CABINET: Fitted with space saving waste, 1x adjustable shelf and 1x towel rail.
DRAWERS: White full extension soft close drawer system.
HINGES: Soft close fully adjustable hinges.
KICKBOARD: 150mm brushed stainless, moisture-resistant.
SPLASH BACK: 750h x 900w back painted toughened glass. 'AB Standard' range. Colour: Resene Alabastar.
BULKHEAD: None.
SCOTIA/GIB COVE: None.
FLOORING: Wooden Planking.

APPLIANCES SUPPLIED & FITTED BY ADVANCE BUILD:

Oven: Bosch Series 6 60cm Built-in Oven Black (HBA572EB3A) 594w 595h 548d
Hob: Bosch Series 6 Electric Cooktop 60cm Black (PKE611FA2A) 560w 490d
Rangehood: Robinhood 90cm Box Canopy SS (RWE3CL9SS) 900w 500d
Fridge Space Allowance: 1765h 750w 630d space.
Dishwasher: Bosch Series 4 Freestanding dishwasher 60cm Stainless Steel (SMS4HTI01A) 845h 600d 600w
Tap: Aquatica Saluto Gooseneck Sink Mixer (SA SMAP)





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PO Box 59, Awanui 0451
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JOB TITLE:

DRAWING TITLE:
Smarter Living Series

LEGAL DESCRIPTION:

FULL ADDRESS:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

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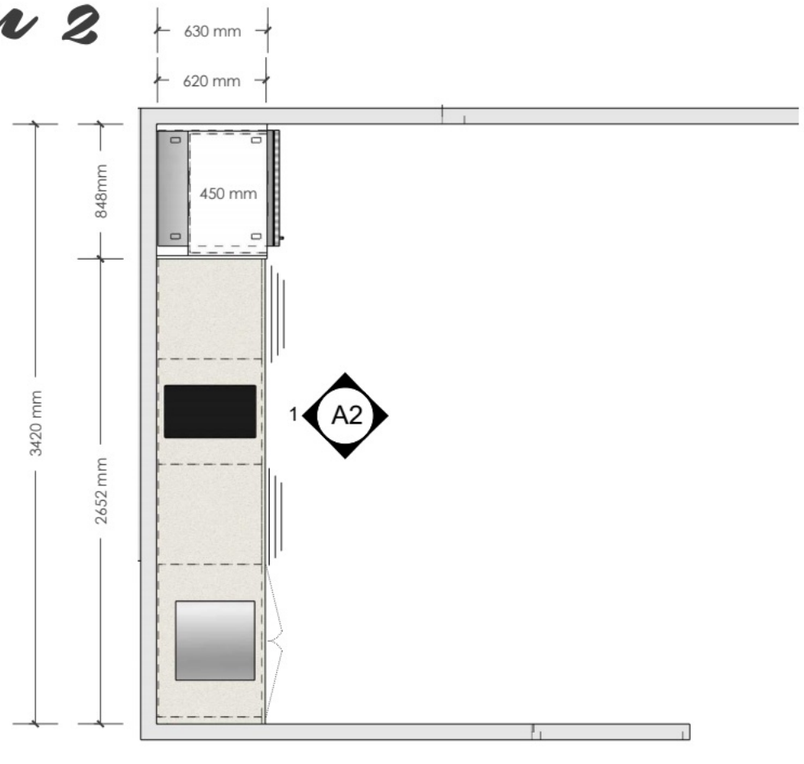
STAGE: **CREATED:** 10.02.2026
VERSION: C01
REVISION: BY: DATE:
Drawn

DESIGNER: Luca Bill **SHEET: 3**
TECHNICIAN:
JOB # **SCALE:**

Kitchen 2

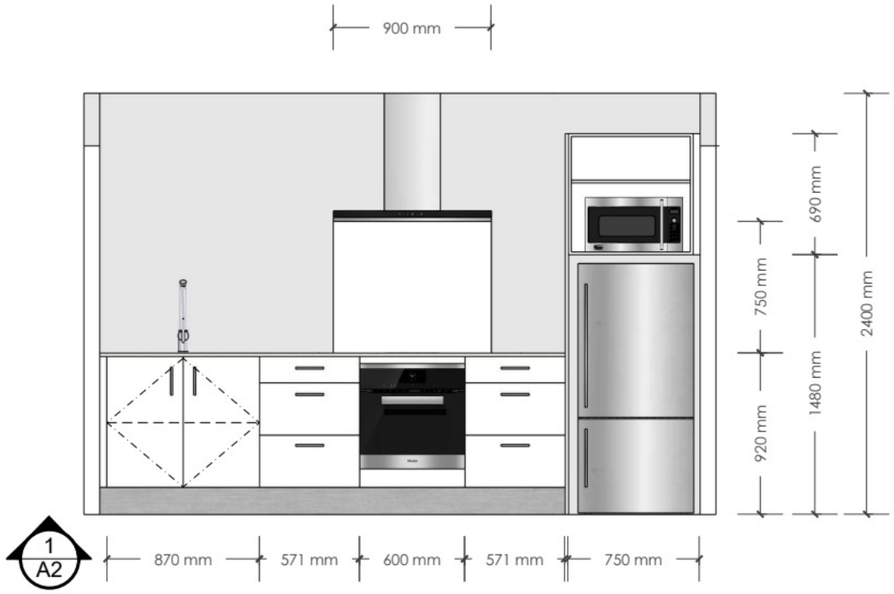


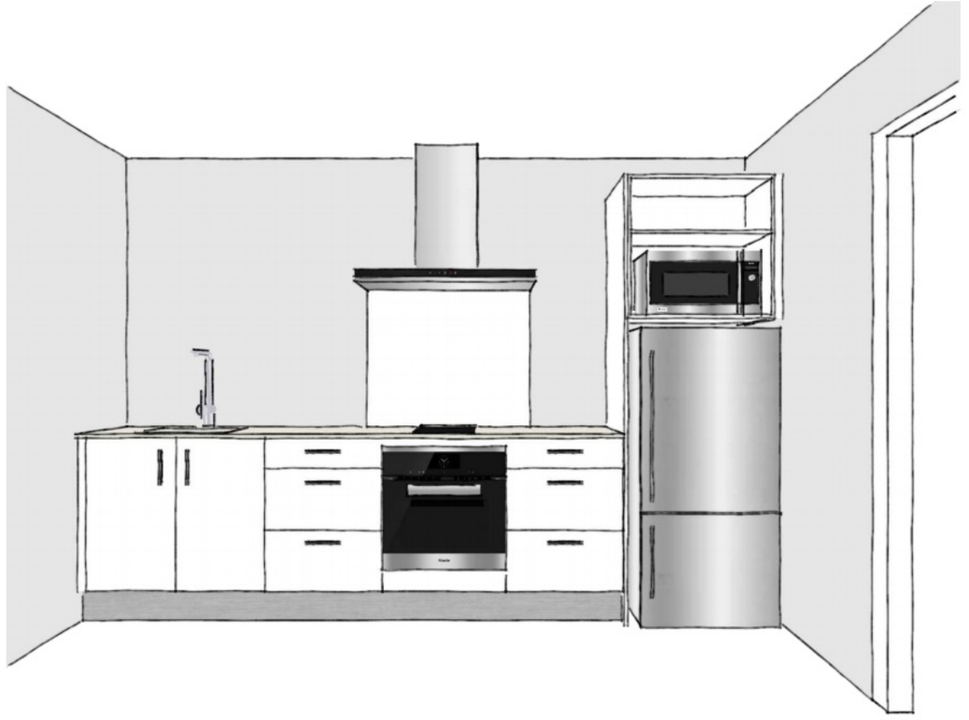
KITCHEN 2 SPECIFICATIONS:

CABINET INTERIORS: 16mm Moisture-resistant MDF. Colour: White. Finish: Naturale.
DOORS, DRAWERS & FACE PANELS: 18mm Melamine with matching laser edging (colour dependent). 'AB Standard' range. Colour: Prime White. Finish: Embossed.
BENCHTOP: 20mm Silestone. 'AB Mid' range. Colour: White Storm. Finish: Polished
HANDLES: 'AB Standard' range. Model: Archant Anzio Length: 160mm Finish: Brushed Nickel.
SINK: Acero 'DV105' 450mm sink insert, undermounted.
SINK CABINET: Fitted with space saving waste, 1x adjustable shelf and 1x towel rail.
DRAWERS: White full extension soft close drawer system.
HINGES: Soft close fully adjustable hinges.
KICKBOARD: 150mm brushed stainless, moisture-resistant.
SPLASH BACK: 750h x 900w back painted toughened glass. 'AB Standard' range. Colour: Resene Alabastar.
BULKHEAD: None.
SCOTIA/GIB COVE: None.
FLOORING: Wooden Planking.

APPLIANCES SUPPLIED & FITTED BY ADVANCE BUILD:

Oven: Bosch Series 6 60cm Built-in Oven Black (HBA572EB3A) 594w 595h 548d
Hob: Parmco 300mm Domino Hob Ceramic. (PKF375FP2E) 270w 490d
Rangehood: Robinhood 90cm Box Canopy SS (RWE3CL9SS) 900w 500d
Fridge Space Allowance: 1480h 750w 630d space.
Tap: Aquatica Saluto Gooseneck Sink Mixer (SA SMAP)





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JOB TITLE:

DRAWING TITLE:
Smarter Living Series

LEGAL DESCRIPTION:

FULL ADDRESS:
Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe

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STAGE: **CREATED:** 10.02.2026
VERSION: C01
REVISION: BY: DATE:
Drawn

DESIGNER: Luca Bill **SHEET: 4**
TECHNICIAN:
JOB # **SCALE:**

CIVIL SUITABILITY REPORT

91 Mangakahia Road

Kaikohe

(Lot 2 DP 191875)

RS Eng Ltd • 2 Seaview Road, Whangarei 0110 • **09 438 3273** • **office@RSEng.co.nz**
Consulting Engineers

CIVIL SUITABILITY REPORT

91 Mangakahia Road

Kaikohe

(Lot 2 DP 191875)

Report prepared for: Advance Build

Report reference: 20010

Date: 24 February 2026

Revision: 2

Document Control

Date	Revision	Description	Prepared by:	Reviewed by:	Authorised by:
16/02/2026	1	First Issue	S Scott Compton	R Beasley	M Jacobson
24/02/2026	2	Revision 2	S Scott Compton	R Beasley	M Jacobson

Contents

Appendices

File: 20010
24 February 2026
Revision: 2

CIVIL SUITABILITY REPORT

91 Mangakahia Road, Kaikohe

(Lot 2 DP 191875)

1.0 Introduction

RS Eng Ltd (RS Eng) has been engaged by Advance Build to investigate the suitability of their client's property (Lot 2 DP 191875) for the proposed Papakainga construction. The purpose of this report is to the assess crossing, access and pavement design and detail and design of a stormwater attenuation and management system. This report is being prepared to support a resource consent application.

The client proposes to construct eight residential units as part of a Papakainga, consisting of three 3-bedroom, two 4-bedroom and three 2 + 1 bedroom duplex buildings, to be founded on timber pile foundations.

2.0 Site Description

This 1.55ha property is accessed west off Mangakahia Road, some 73m south of the intersection with Carey Road. The property consists of near level to gently sloping ground, generally falling to the west. Ground coverage at the property consists of pasture and trees.

Figure 1: Lot 2 DP 191875

3.0 Stormwater Management

The property is located within the Indsutrial Zone. As per section 7.8.5.1.9 of the District Plan, "*The disposal of collected stormwater from the roof of all new buildings and new impervious surfaces provided that the activity is within an existing consented urban stormwater management plan or discharge consent*." Given that there is no stormwater network available to the property to discharge to, the proposals fall under Restricted Discretionary Activity. As a result, attenuation of the stormwater runoff is required. This minimises any potential adverse effects on downstream properties.

3.1 Stormwater Attenuation

To provide stormwater management and attenuation of the increased stormwater runoff from the development, a stormwater attenuation pond is proposed, discharging the drain that crosses the western boundary of the property and follows an existing drainage channel.

3.1.1 Design Methodology

The stormwater attenuation and disposal will be designed in accordance with the FNDC ES 2023. The general design methodology used is laid out below:

- Stormwater attenuation is to be designed for the 20%AEP and 1%AEP rainfall events, where post development runoff (including 20% for climate change) is attenuated to 80% of pre-development runoff.
- Disposal is designed to incorporate the attenuation to have no adverse effects on downstream properties.
- Collection of roof runoff via downpipes and accessway/paving runoff via cesspits through a sealed pipe network shall discharge to the pond.
- The design assumes the future stormwater network to the pond can accommodate the 20%AEP+CC event.
- During the 1%AEP+CC event, the design assumes runoff from roof areas exceeding 20%AEP+CC will not discharge to the pond. The accessway overland flow runoff during the 1%AEP+CC will be directed to the pond via a swale.
- A nominal dead storage ($10m^2$) is proposed for light showers and dew, which will be allowed to soak away via soakage strips at the base of the pond.

3.1.2 Design Criteria

The design is completed using the following criteria, based on the FNDC ES 2023;

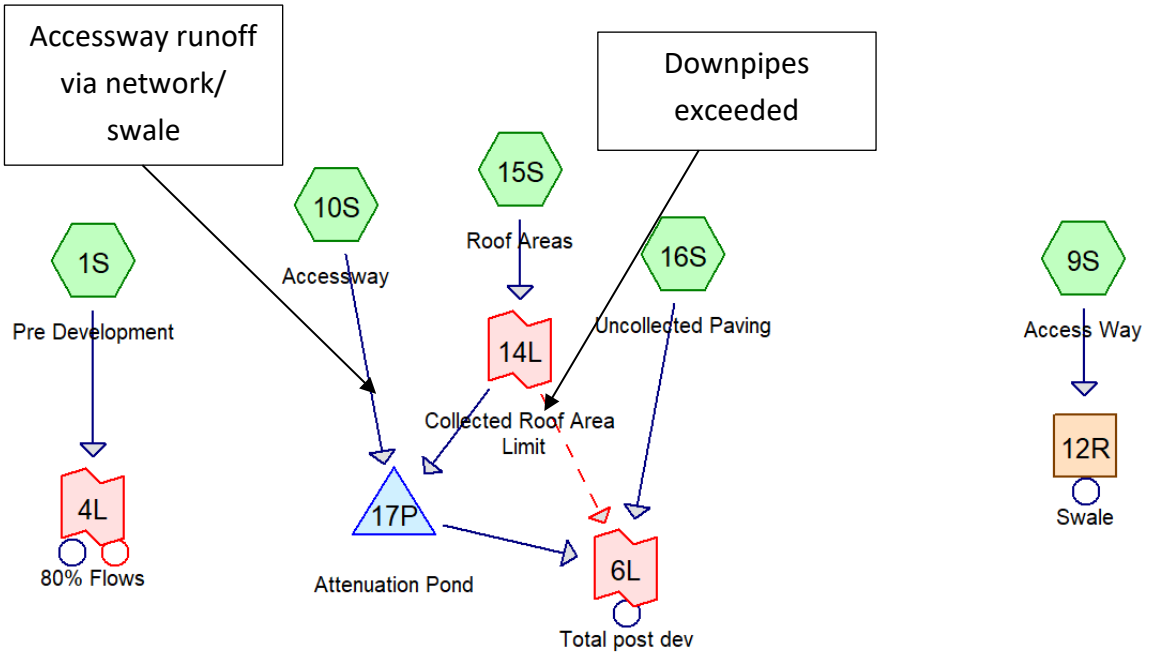
- 20%AEP=141mm.
- 1%AEP=253mm.
- +20% climate change.
- Design attenuation to limit post development runoff to 80% of pre-development.

3.1.3 Attenuation Design

Table 1 summarises the existing and proposed surface coverage.

Table 1: Catchment Summary

Scenario	Cover	Description	Curve Number	Area (m²)
Pre-development	Impervious	Existing Gravelled Access	98	828
	Pervious	Grassed Area	74	2042
Post-development	Impervious	Roofing	98	1017
	Impervious	Collected Paving and Access	98	1443
	Impervious	Uncollected Paving	98	410
			Total Proposed	2870



The pre-development and post-development runoff was modelled using HydroCAD. The United States Department of Agriculture Technical Release 55 (TR55) Type 1A method was adopted for calculating the runoff, using rainfall depths from HIRDS 4 (High Intensity Rainfall Design System, NIWA) including an additional 20% rainfall depth to account for climate change as required by FNDC ES. The subsoils have been assessed as, designated as Group C soils with good grass cover. Table 2 includes a summary of the stormwater attenuation modelling. Table 3 and the drawings in Appendix B detail the proposed attenuation device.

Table 2: Stormwater Attenuation Design Summary

	Pre-development		Post-development	
Peak flow l/s	20% AEP	1% AEP	20% AEP	1% AEP
			+20%	+20%
From surfaces	18.85	40.55	31.86	57.54
80% (design flows reqd.)	**15.08**	**32.44**		
Storage required.			54.7m^3	109.5m^3
Total attenuated flows			**15.08**	**32.29**

Table 3: Stormwater Pond Summary

Pond Summary	
Elevation	**Area**
0.0	100m^2
0.70	330m^2

	Size	**Invert Level from base of pond**
Primary Orifice	100mmWx80mmH	0.10m
Secondary Orifice	60mmWx50mmH	0.50m
Spillway	1.5mW	0.75m

Attenuation Pond Summary

- Collection of roof runoff via downpipes and accessway/paving runoff via cesspits through a sealed pipe network shall discharge to the pond.
- 410m^2 of uncollected runoff for paved private parking has been allowed for in the attenuation design.
- The accessway shall be shaped that overland flows are directed to a 0.5m wide by 0.2m deep rock lined swale, with 1V:2H sides, that discharges to the pond.
- The modelling concludes the stormwater attenuation pond requires a maximum storage volume of 109.5m³, as detailed in Table 3 above.
- The geometric formation of the pond will be made up of a 1V:4H batters, refer to attached detail in Appendix A.
- Subsoil drains consisting of Ø100mm novacoil pipes in filter socks and drainage metal shall be located in beneath the base of the pond.
- The discharge structure outlet shall be a minimum of Ø300mm.

- An emergency spillway is proposed at the western side of the pond away from the development, discharging to an overland flow path.
- Detailed design of the pond shall completed on finalised plans.

3.2 Stormwater Disposal

The piped overflow from the pond should be a minimum of Ø300mm, to the existing drain at the western boundary and shall incorporate suitable erosion control such as RipRap.

4.0 Transport

To provide access to the proposed development, the existing driveway is proposed to be upgraded and extended to accommodate the proposed development. This assessment is based on five movements per unit/household in the Papakainga per day.

The first section of proposed accessway accommodates eleven units equates to 55 traffic movements per day, akin to six standard residential units in terms of the FNDC District Plan. The accessway then splits to service five houses, this section of access is proposed to accommodate 25 traffic movements per day, akin to three standard residential units in terms of the FNDC District Plan. The last section of access services three duplexes (six households), this section is proposed to accommodate 30 traffic movements per day, akin to three standard residential units in terms of the FNDC District Plan.

3.3 Pavement

The investigations completed along the proposed accessway encountered volcanic soils made up of clayey silts. In-Situ Undrained Shear Strengths exceeded 214kPa. Based on the results, RS Eng have assessed that a sub grade CBR of 5 is available. However further investigation should be undertaken following excavations of subgrade to confirm design CBR. Refer to RS Eng Geotechnical Report, dated 29 January 2026 for locations and investigations.

3.4 Accessway

In accordance with the FNDC district Plan, Appendix 3B-1, the following carriageway widths are required for the specified length of access.

Table 4: Access Widths

Access Section	Design No. of House Equivalents	Required Carriageway Width (m)
Section 1	6	5m
Section 2	3	3m
Section 3	3	3m

3.5 Crossing

The existing crossing to Mangakahia Road shall be used for the development. Approaching from the northern side of the existing crossing, the road consists of a long straight road with a posted speed of speed of 50km/hr. Approaching from the southern side, the road consists of a long straight road with a posted speed of speed of 50km/hr, exiting a 70km/hr speed zone. Refer Table 5 below of assessed available sight distances in accordance with the current FNDC District Plan and FNDC ES 2023.

Table 5: Assessed Sight Distances

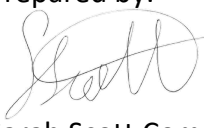
Crossing	Direction	Available Sight Distance (m)	Required Sight Distance (m)
Proposed Crossing	North Sight Distance	>200m	120m
	South Sight Distance	>200m	120m

5.0 Limitations

This report has been prepared solely for the benefit of our client. The purpose is to determine the civil suitability of the proposed dwellings, in relation to the material covered by the report. The reliance by other parties on the information, opinions or recommendations contained therein shall, without our prior review and agreement in writing, do so at their own risk.

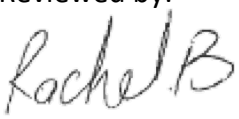
Recommendations and opinions in this report are based on data obtained as previously detailed. The nature and continuity of subsoil conditions away from the test locations are inferred and it should be appreciated that actual conditions could vary from those assumed. If during the construction process, conditions are encountered that differ from the inferred conditions on which the report has been based, RS Eng should be contacted immediately.

Prepared by:



Sarah Scott Compton
Senior Technician
NZDE(Civil)

Reviewed by:



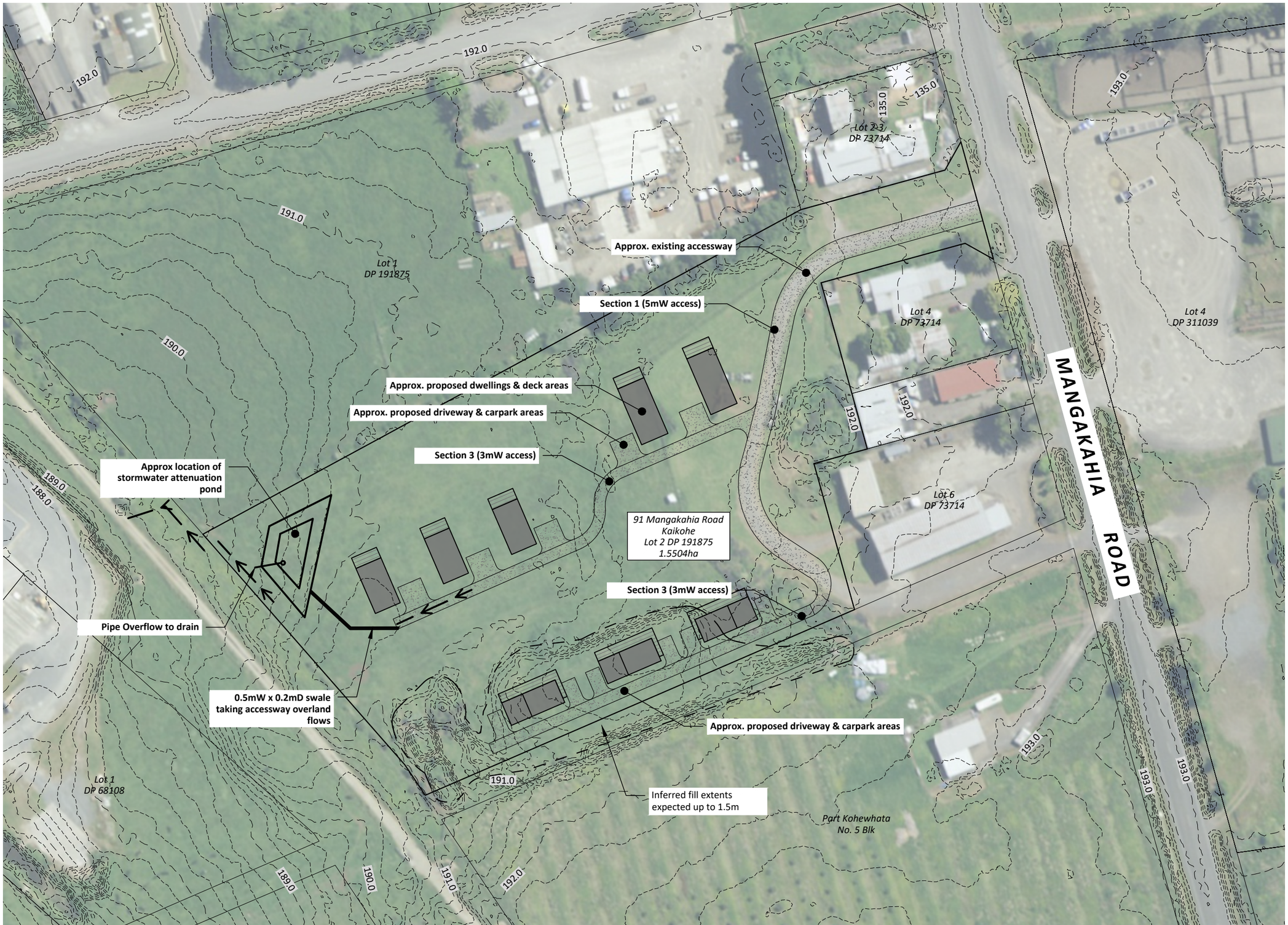
Rachel Beasley
Geologist
BSc(Geology)

Approved by:

Matthew Jacobson
Director
NZDE(Civil), BE(Hons)(Civil), CPEng, CMEngNZ
RS Eng Ltd

Appendix A

Drawings



NOTES:

- If any part of these drawings are unclear, please contact RS Eng.
- These plans are indicative only and shall not be used for construction set-out or scaled off.
- All services shall be identified on-site prior to construction.
- It is the responsibility of the lead designer/project manager to complete the design coordination and clash detection.
- This plan is copyright to RS Eng Ltd and should not be reproduced without prior permission.

LEGEND

- Existing Road
- Proposed Driveway & Carpark Area
- Proposed Dwelling
- Proposed Deck Area

Contour Interval:	0.5m
Vertical Datum:	NZVD2016
Survey Data Source:	LiDAR (2018)

0 10 20
PLAN 1:1000

FOR CONSENT

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

PROPOSED DWELLINGS
STORMWATER AND ACCESS PLAN

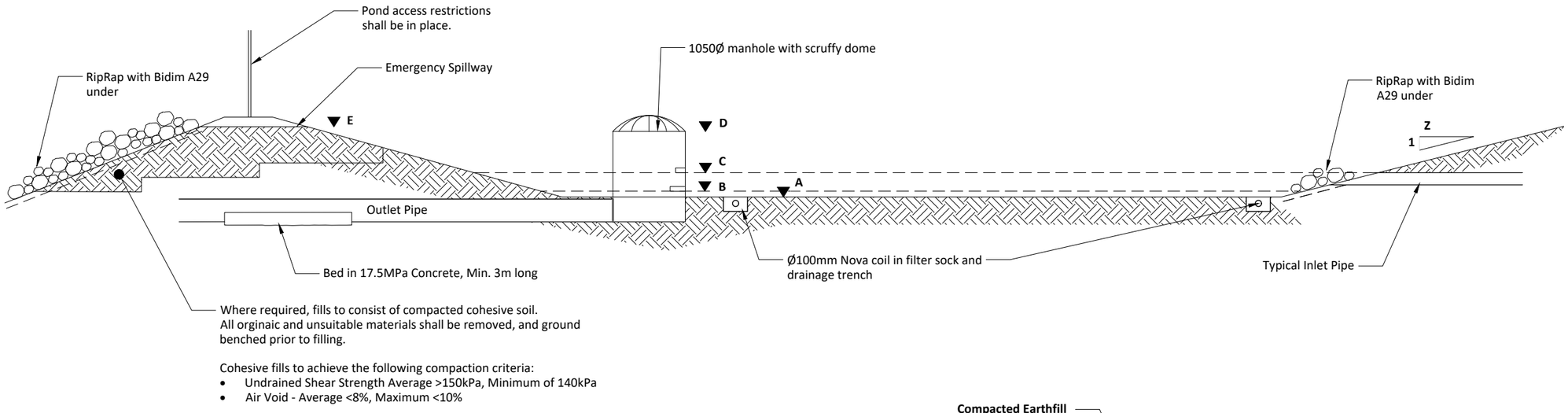
Client: ADVANCE BUILD

Location: 91 MANGAKAHIA ROAD KAIKOHE

Date	Rev	Notes
24/02/2026	B	Access
28/01/2026	A	Original Issue

Drawn by: LMC | Reviewed by: RB | Approved by: MJ

Scale	1:1000
Rev No.	A
Original	A3
Sheet No.	A01
Job No.	20010



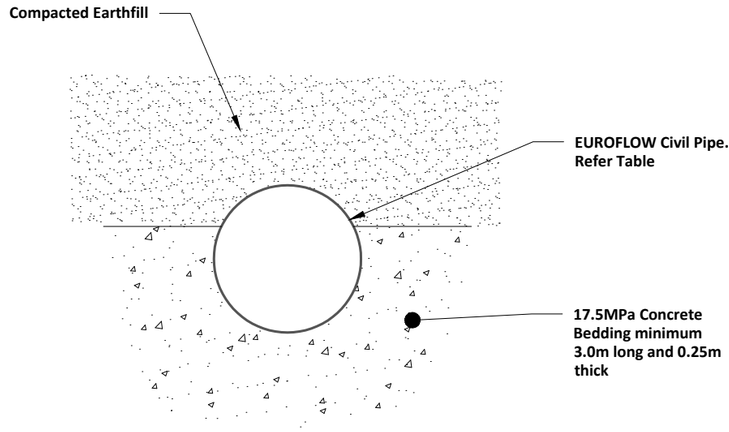
Cohesive fills to achieve the following compaction criteria:

- Undrained Shear Strength Average >150kPa, Minimum of 140kPa
- Air Void - Average <8%, Maximum <10%

STORMWATER POND - TYPICAL LAYOUT

1:100

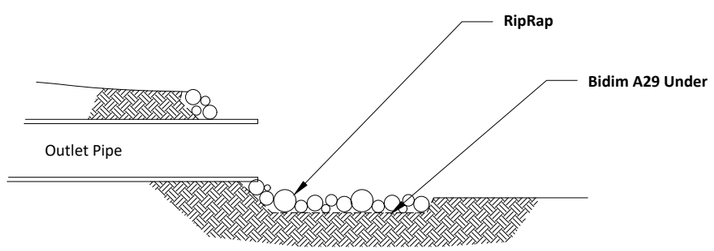
Item	Name	Pond	
		Elevation	Dimentions
A	Nominal storage	0.0m	Soakage volume 10m³
B	Outlet 1	0.10m	100mmW x 80mmH
C	Outlet 2	0.50m	60mmW x 50mmH
D	Spillway	0.70m	1050mm Manhole
E	Emergency spillway	0.75m	1500mmW
G	Outlet Pipe	-	315mmø
Z	Slope	-	Slope 1:4
-	Pond	0.00m	100m²
		0.50m	140m²
		0.70m	330m²



TYPICAL DETAIL - OUTLET PIPE BEDDING

NTS

STORMWATER POND - SPECIFIC DETAILS



NOTES:

- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- All works are to under undertaken in accordance with the FNDC Engineering Standard 2024.
- If any part of these documents are unclear, please contact RSEng Ltd.
- This plan is copyright to RSEng Ltd and should not be reproduced without prior permission.

0 0.5 1.0 1.5 2.0 1:100
SECTION

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

Title
PROPOSED REDEVELOPMENT
STORMWATER PONDS
DETAILS

Client
ADVANCE BUILD

Location
91 MANGAKAHIA ROAD
KAIKOHE

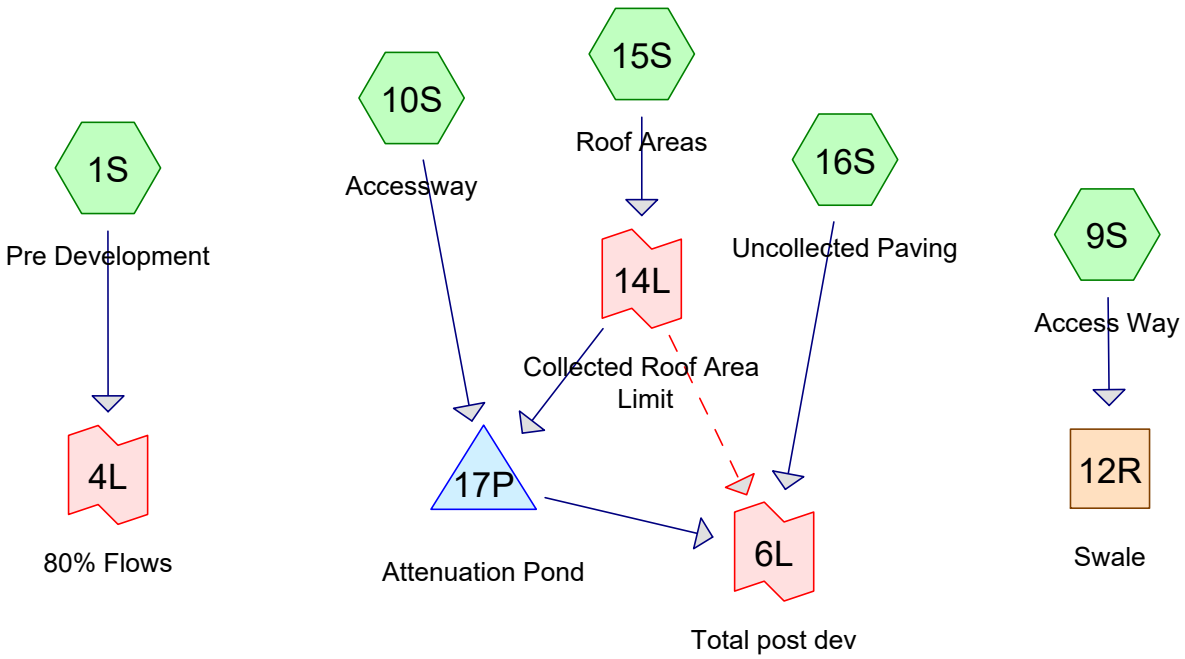
Date	Rev	Notes
24/02/2026	B	Pond access
24/01/2026	A	First Issue

Scale	Original	Rev
1:100	A3	B

Drawn	Approved	File #	Sheet
SSC	MJ	20010	2

Appendix B

Stormwater Attenuation Design



Subcat Reach Pond Link

Routing Diagram for 20010 SW Pond V2 2026-02-16
Prepared by {enter your company name here}, Printed 18/02/2026

Summary for Subcatchment 1S: Pre Development

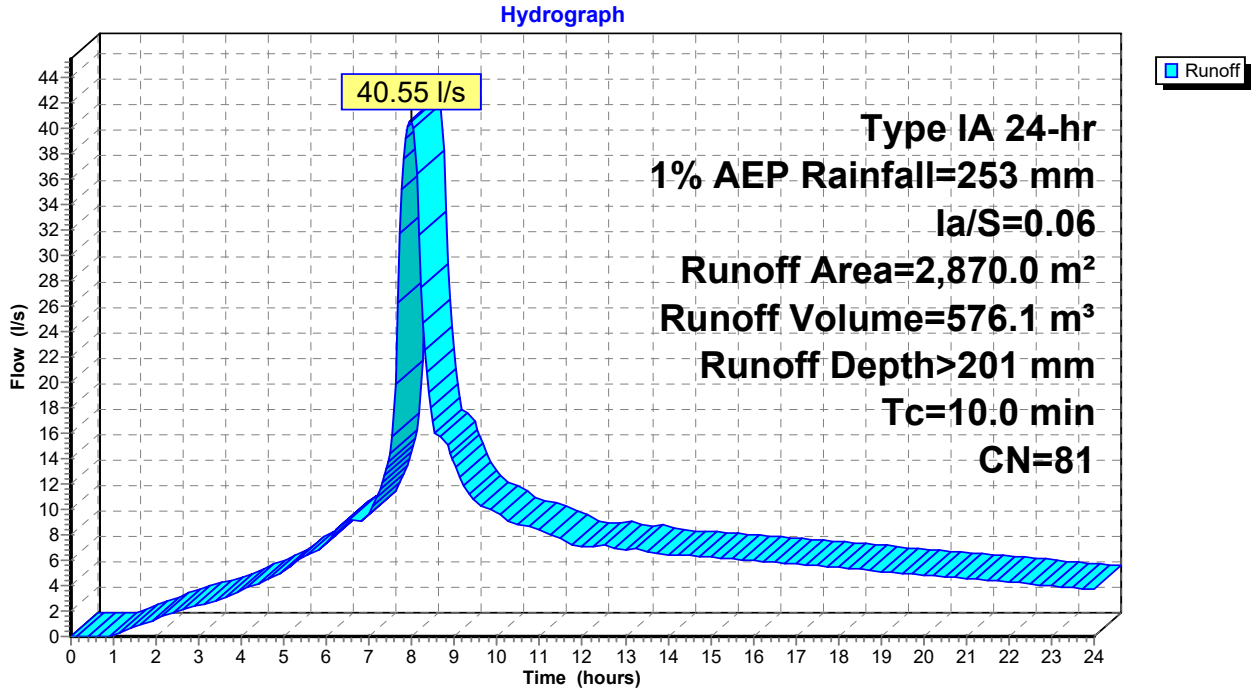
Runoff = 40.55 l/s @ 7.97 hrs, Volume= 576.1 m³, Depth> 201 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=253 mm, Ia/S=0.06

	Area (m²)	CN	Description
	2,042.0	74	>75% Grass cover, Good, HSG C
*	828.0	98	Existing access
	2,870.0	81	Weighted Average
	2,042.0		71.15% Pervious Area
	828.0		28.85% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Pre Development

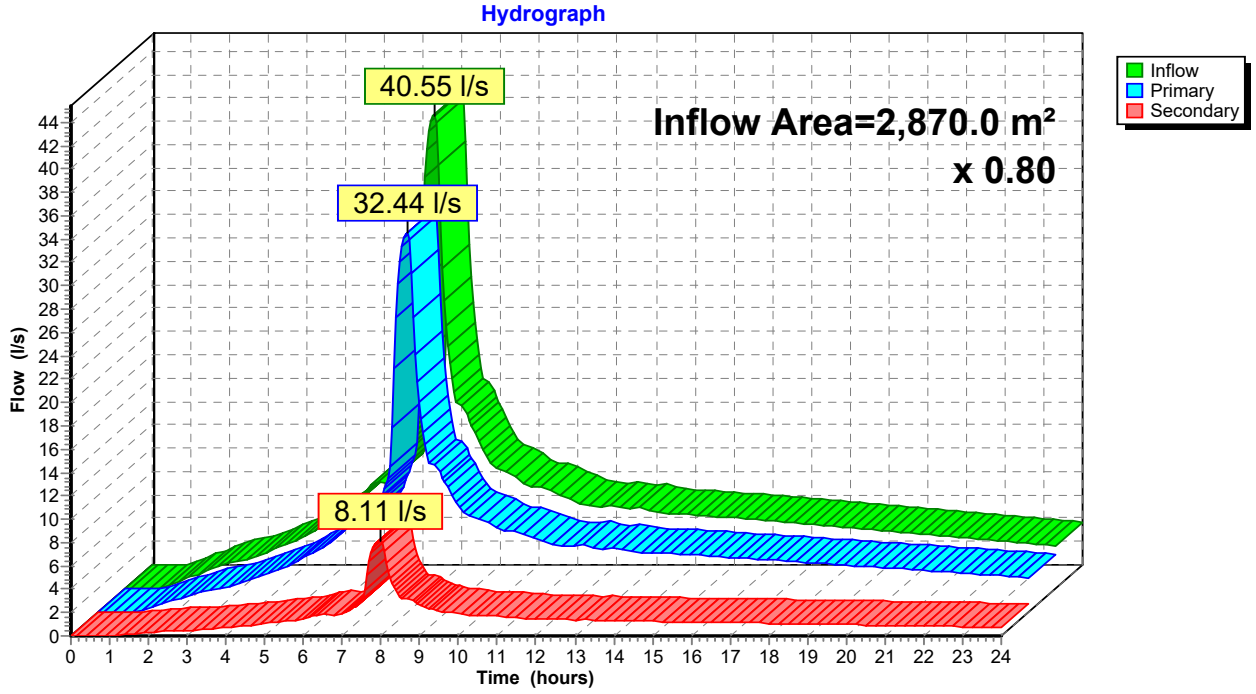


Summary for Link 4L: 80% Flows

Inflow Area = 2,870.0 m², 28.85% Impervious, Inflow Depth > 201 mm for 1% AEP event
Inflow = 40.55 l/s @ 7.97 hrs, Volume= 576.1 m³
Primary = 32.44 l/s @ 7.97 hrs, Volume= 460.9 m³, Atten= 20%, Lag= 0.0 min
Secondary = 8.11 l/s @ 7.97 hrs, Volume= 115.2 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: 80% Flows



Summary for Subcatchment 1S: Pre Development

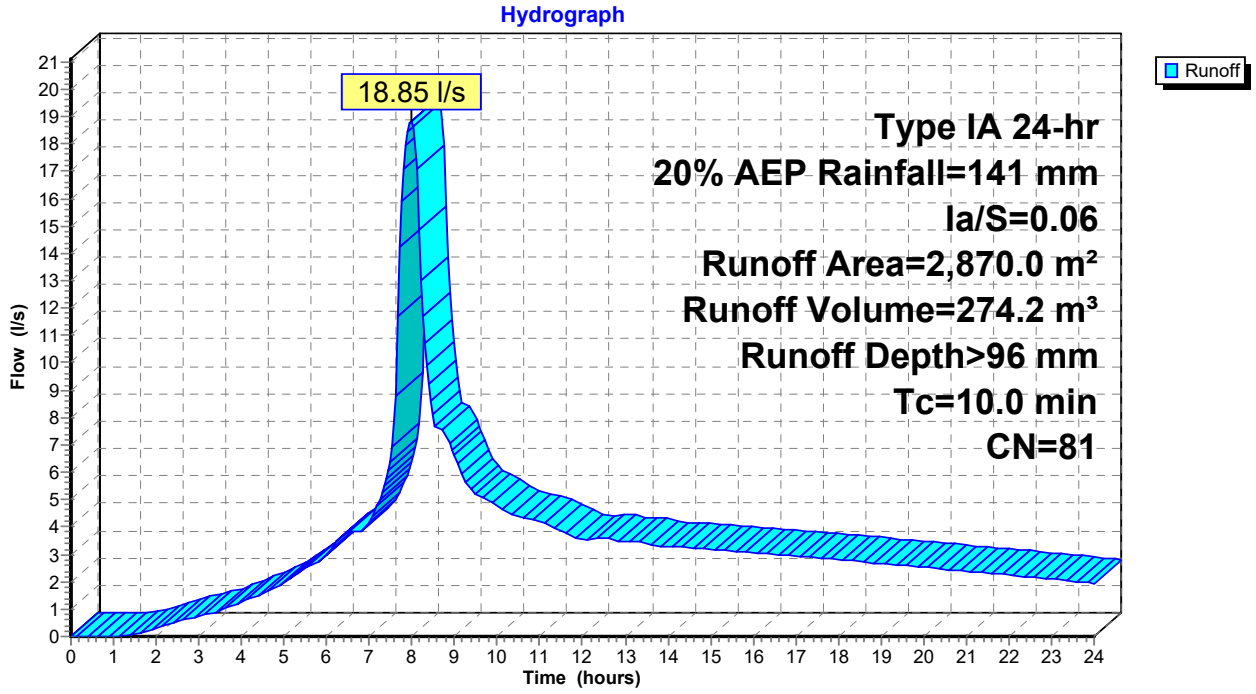
Runoff = 18.85 l/s @ 7.98 hrs, Volume= 274.2 m³, Depth> 96 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=141 mm, Ia/S=0.06

	Area (m²)	CN	Description
	2,042.0	74	>75% Grass cover, Good, HSG C
*	828.0	98	Existing access
	2,870.0	81	Weighted Average
	2,042.0		71.15% Pervious Area
	828.0		28.85% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Pre Development

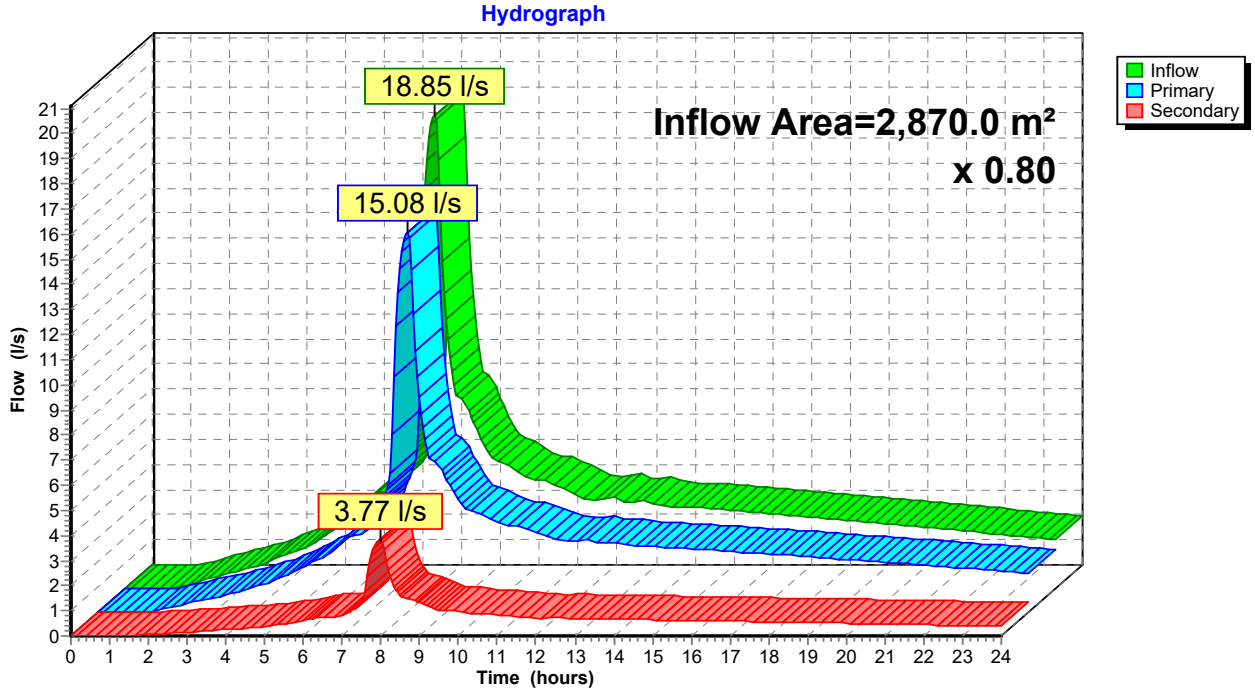


Summary for Link 4L: 80% Flows

Inflow Area = 2,870.0 m², 28.85% Impervious, Inflow Depth > 96 mm for 20% AEP event
Inflow = 18.85 l/s @ 7.98 hrs, Volume= 274.2 m³
Primary = 15.08 l/s @ 7.98 hrs, Volume= 219.4 m³, Atten= 20%, Lag= 0.0 min
Secondary = 3.77 l/s @ 7.98 hrs, Volume= 54.8 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: 80% Flows



Summary for Subcatchment 10S: Accessway

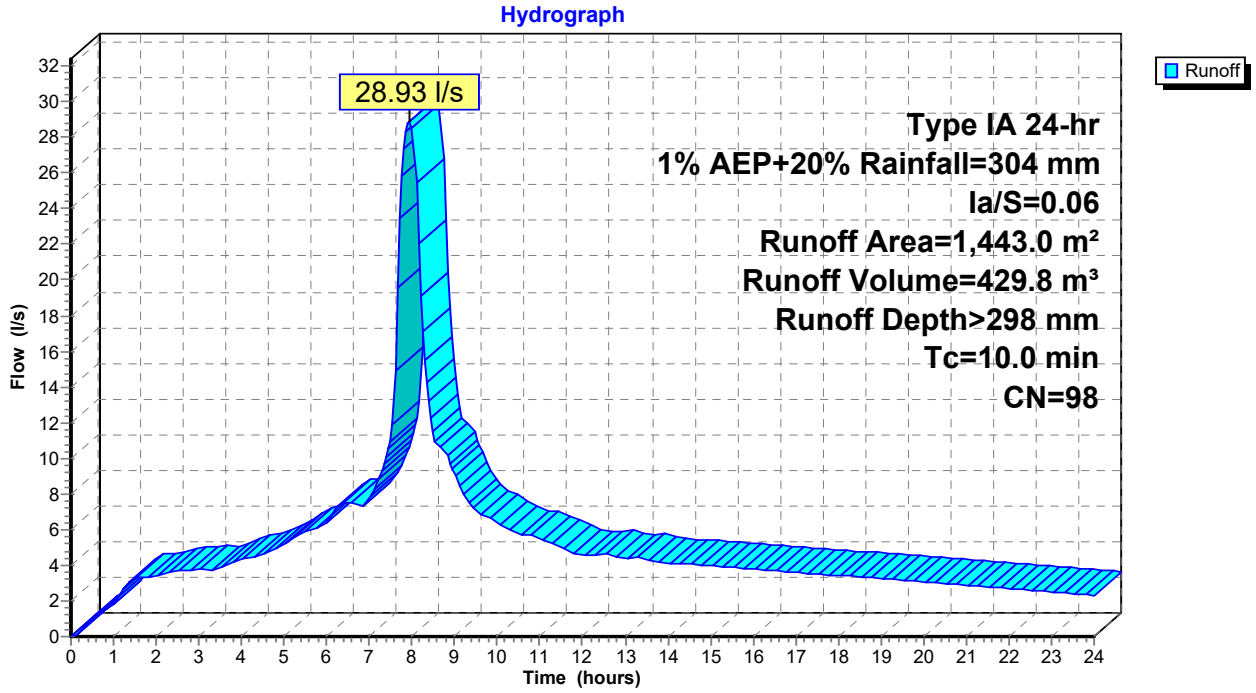
Runoff = 28.93 l/s @ 7.94 hrs, Volume= 429.8 m³, Depth> 298 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=304 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	1,443.0	98	Roads
	1,443.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 10S: Accessway



Summary for Subcatchment 15S: Roof Areas

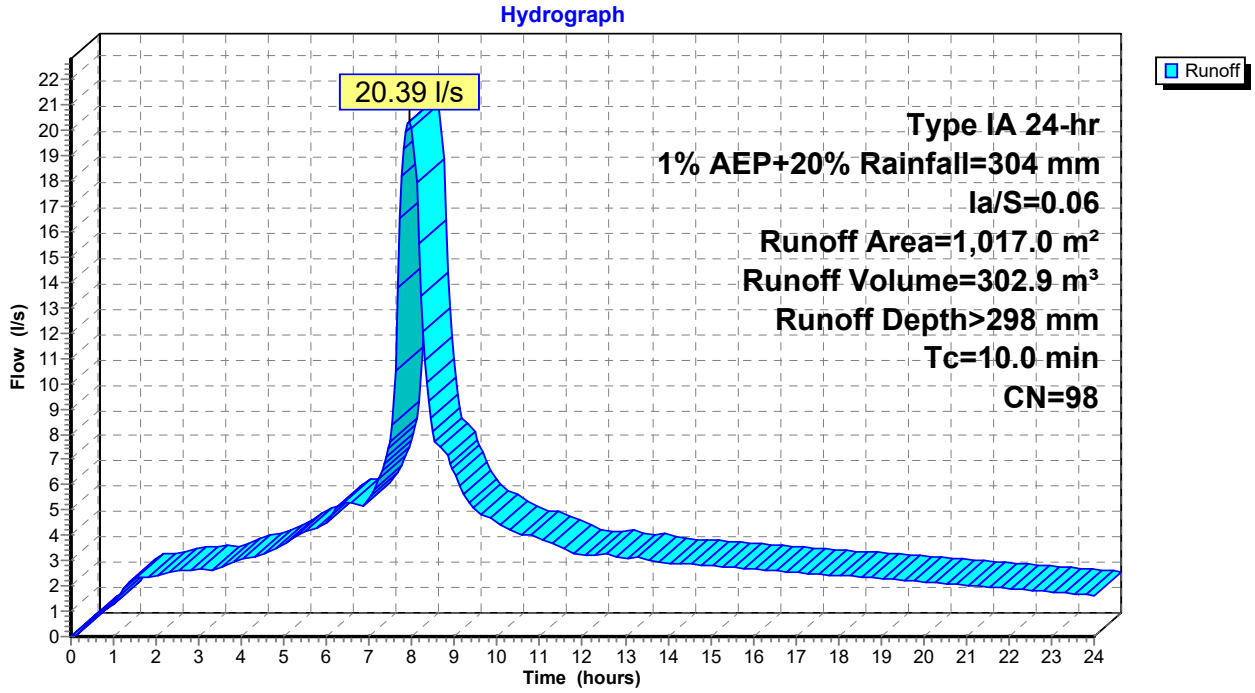
Runoff = 20.39 l/s @ 7.94 hrs, Volume= 302.9 m³, Depth> 298 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=304 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	1,017.0	98	Roofing
	1,017.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 15S: Roof Areas



Summary for Subcatchment 16S: Uncollected Paving

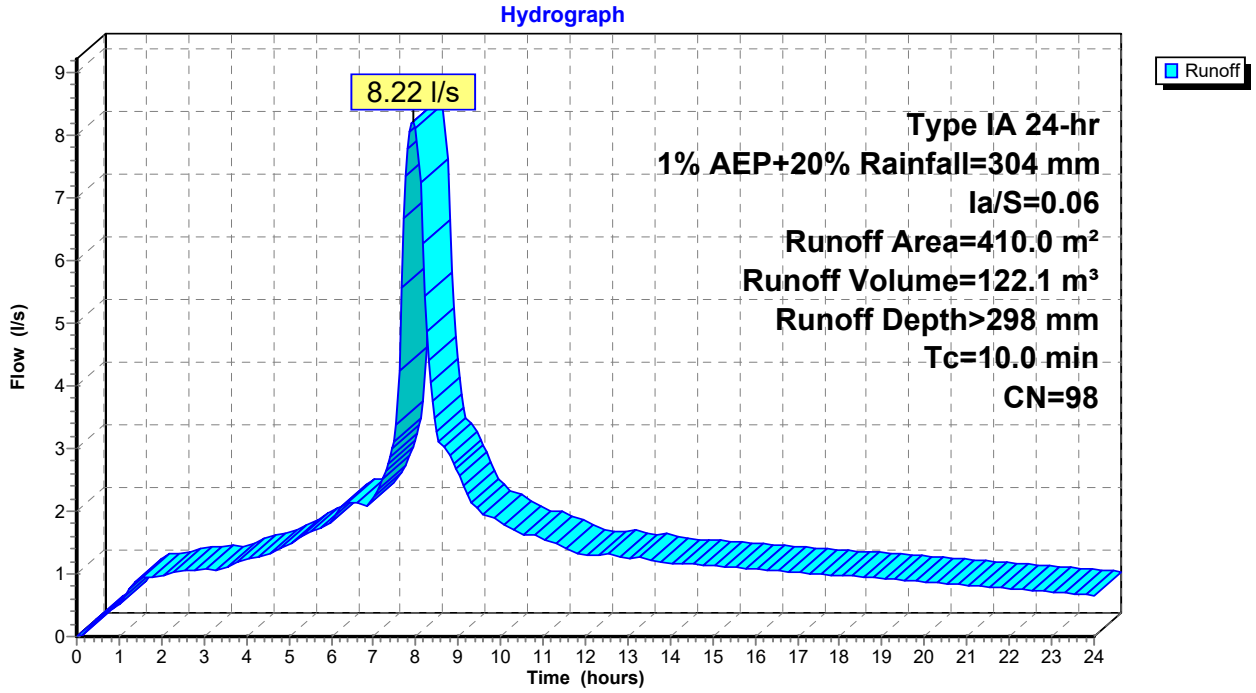
Runoff = 8.22 l/s @ 7.94 hrs, Volume= 122.1 m³, Depth> 298 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=304 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	410.0	98	Roads
	410.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 16S: Uncollected Paving



Summary for Pond 17P: Attenuation Pond

Inflow Area = 2,460.0 m², 100.00% Impervious, Inflow Depth > 292 mm for 1% AEP+20% event
Inflow = 40.23 l/s @ 7.94 hrs, Volume= 718.2 m³
Outflow = 17.70 l/s @ 8.78 hrs, Volume= 708.7 m³, Atten= 56%, Lag= 50.6 min
Primary = 17.70 l/s @ 8.78 hrs, Volume= 708.7 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 190.739 m @ 8.78 hrs Surf.Area= 306.6 m² Storage= 109.5 m³

Plug-Flow detention time= 67.1 min calculated for 708.7 m³ (99% of inflow)
Center-of-Mass det. time= 56.7 min (702.7 - 646.0)

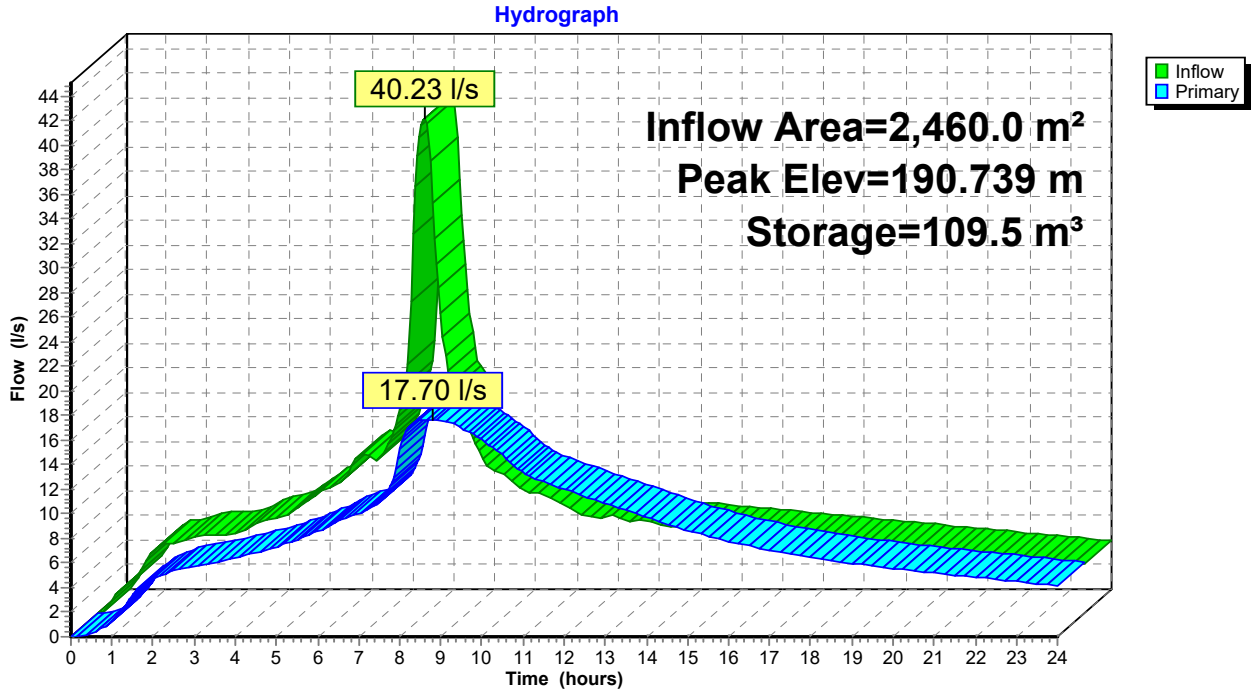
Volume	Invert	Avail.Storage	Storage Description
#1	190.200 m	129.0 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
190.200	100.0	0.0	0.0
190.800	330.0	129.0	129.0

Device	Routing	Invert	Outlet Devices
#1	Primary	190.750 m	**5.00 m long x 1.50 m breadth Broad-Crested Rectangular Weir** Head (meters) 0.061 0.122 0.183 0.244 0.305 0.366 0.427 0.488 0.549 0.610 0.762 0.914 1.067 1.219 1.372 1.524 1.676 Coef. (Metric) 1.29 1.38 1.49 1.48 1.48 1.47 1.46 1.46 1.46 1.46 1.48 1.47 1.48 1.49 1.52 1.55 1.61
#2	Primary	190.200 m	**100 mm W x 80 mm H Vert. Orifice/Grate** C= 0.600
#3	Primary	190.600 m	**60 mm W x 50 mm H Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=17.70 l/s @ 8.78 hrs HW=190.739 m (Free Discharge)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 l/s)
- **2=Orifice/Grate** (Orifice Controls 15.01 l/s @ 1.88 m/s)
- **3=Orifice/Grate** (Orifice Controls 2.68 l/s @ 0.89 m/s)

Pond 17P: Attenuation Pond

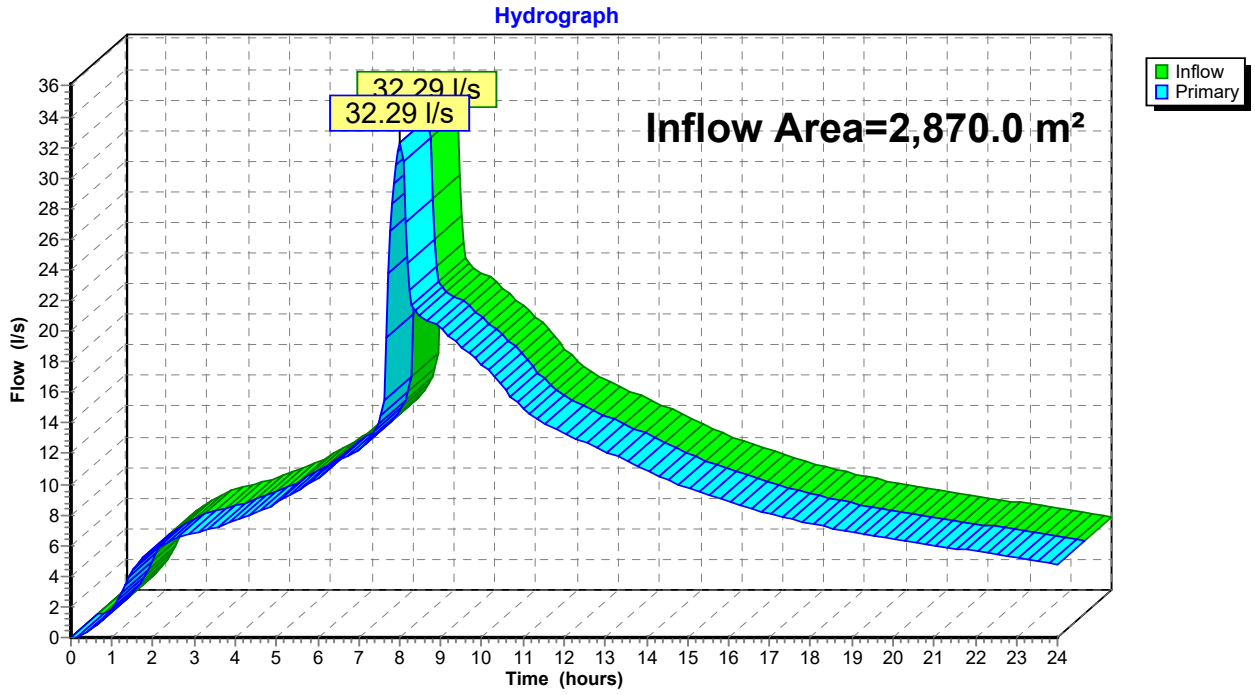


Summary for Link 6L: Total post dev

Inflow Area = 2,870.0 m²,100.00% Impervious, Inflow Depth > 295 mm for 1% AEP+20% event
Inflow = 32.29 l/s @ 8.01 hrs, Volume= 845.3 m³
Primary = 32.29 l/s @ 8.01 hrs, Volume= 845.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: Total post dev

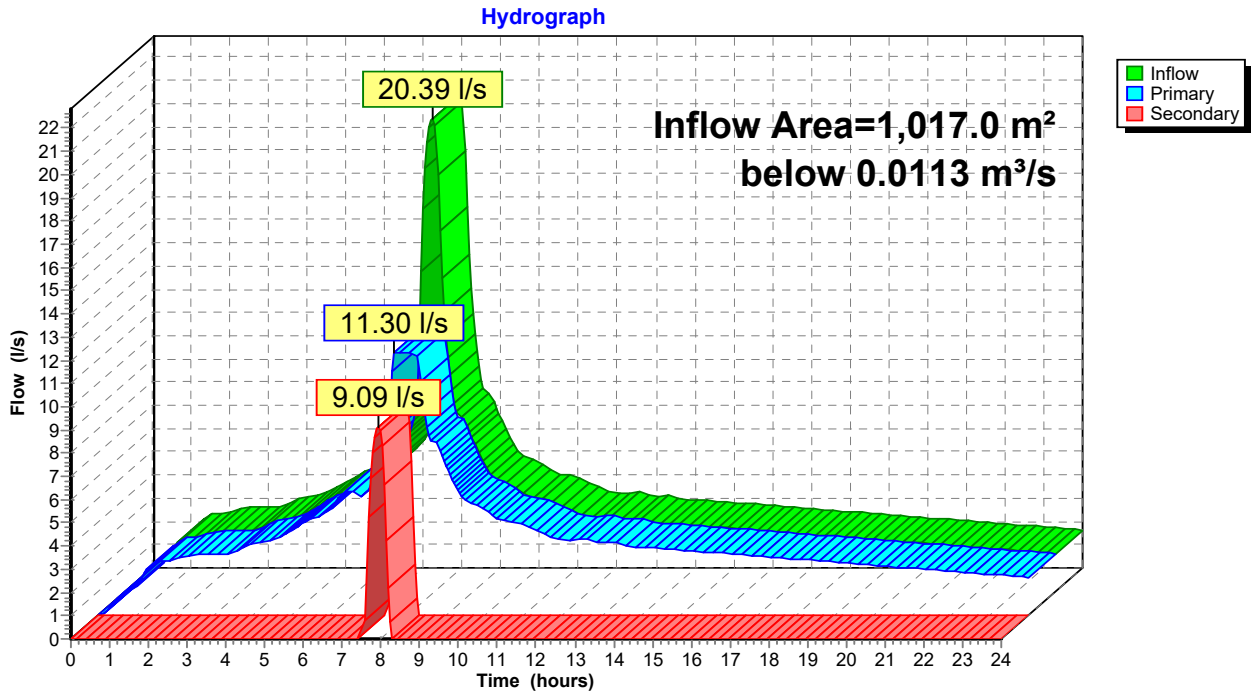


Summary for Link 14L: Collected Roof Area Limit

Inflow Area = 1,017.0 m²,100.00% Impervious, Inflow Depth > 298 mm for 1% AEP+20% event
Inflow = 20.39 l/s @ 7.94 hrs, Volume= 302.9 m³
Primary = 11.30 l/s @ 7.65 hrs, Volume= 288.4 m³, Atten= 45%, Lag= 0.0 min
Secondary = 9.09 l/s @ 7.94 hrs, Volume= 14.5 m³

Primary outflow = Inflow below 0.0113 m³/s, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 14L: Collected Roof Area Limit



Summary for Subcatchment 10S: Accessway

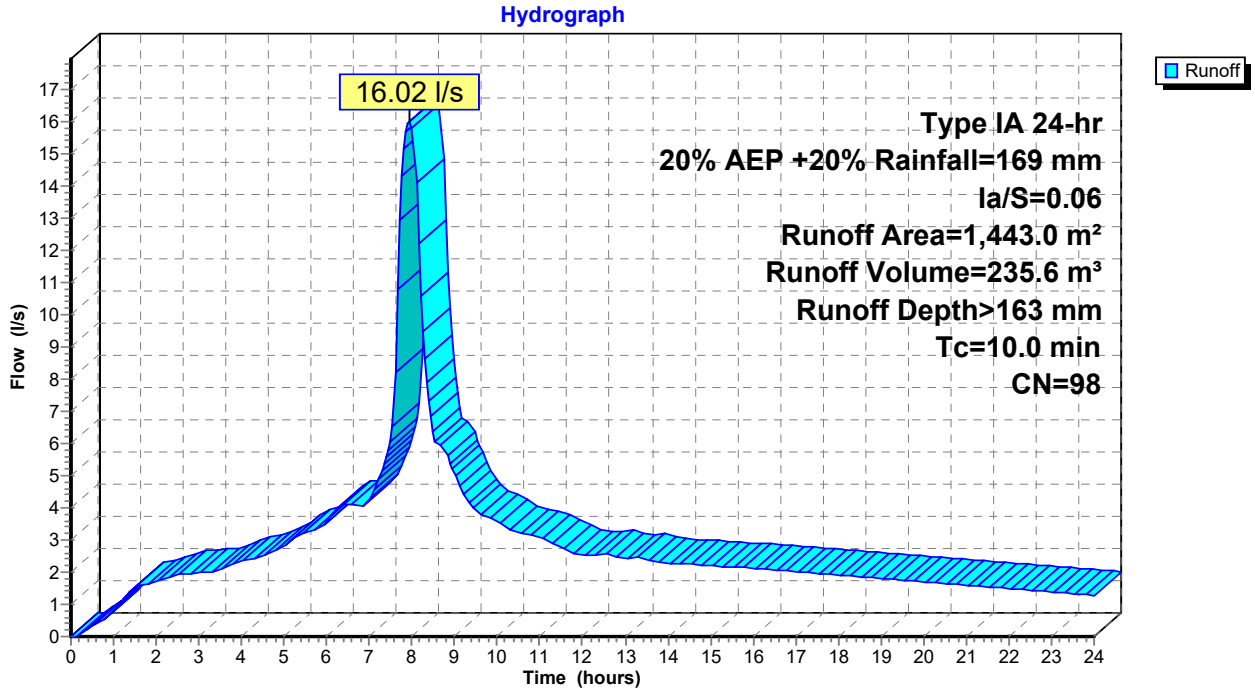
Runoff = 16.02 l/s @ 7.94 hrs, Volume= 235.6 m³, Depth> 163 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=169 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	1,443.0	98	Roads
	1,443.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 10S: Accessway



Summary for Subcatchment 15S: Roof Areas

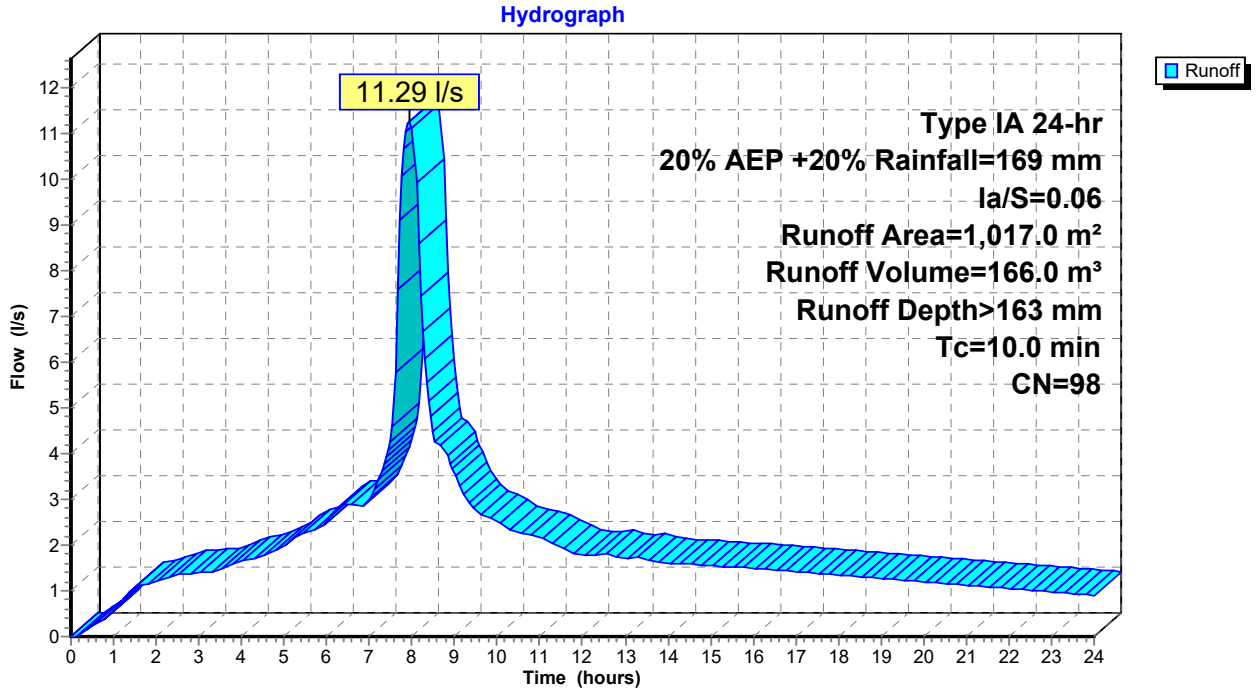
Runoff = 11.29 l/s @ 7.94 hrs, Volume= 166.0 m³, Depth> 163 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=169 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	1,017.0	98	Roofing
	1,017.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 15S: Roof Areas



Summary for Subcatchment 16S: Uncollected Paving

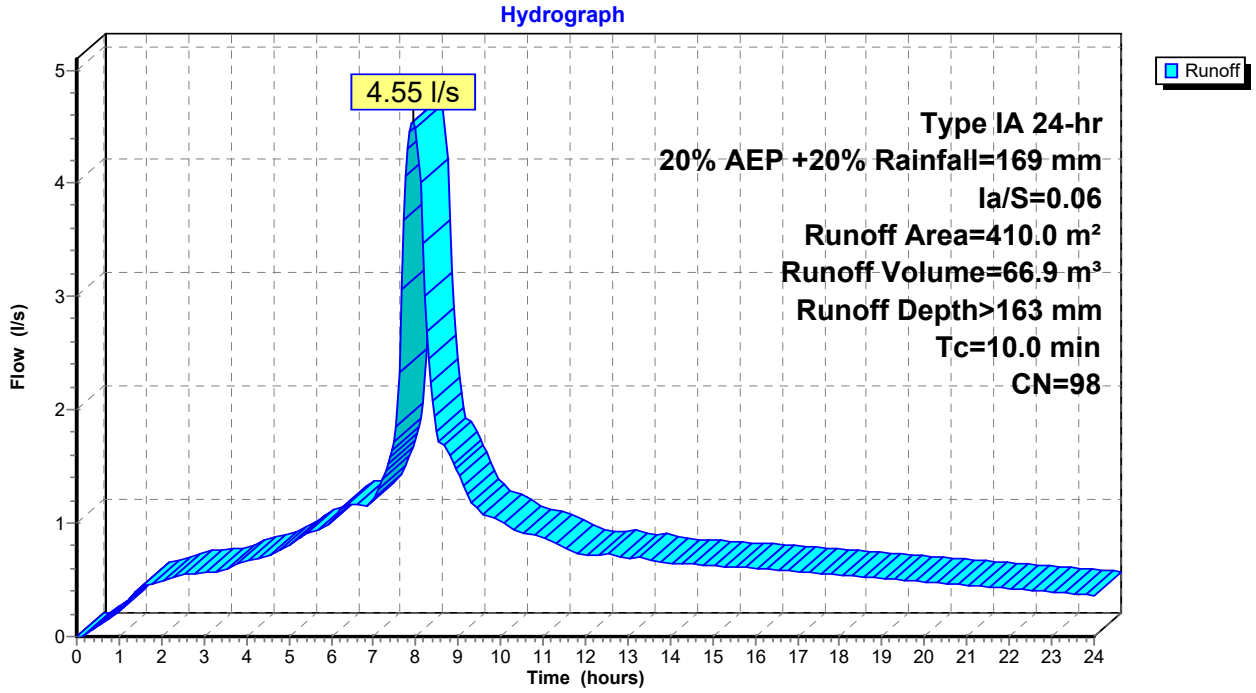
Runoff = 4.55 l/s @ 7.94 hrs, Volume= 66.9 m³, Depth> 163 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=169 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	410.0	98	Roads
	410.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 16S: Uncollected Paving



Summary for Pond 17P: Attenuation Pond

Inflow Area = 2,460.0 m², 100.00% Impervious, Inflow Depth > 163 mm for 20% AEP +20% event
Inflow = 27.31 l/s @ 7.94 hrs, Volume= 401.6 m³
Outflow = 11.51 l/s @ 8.46 hrs, Volume= 395.5 m³, Atten= 58%, Lag= 31.3 min
Primary = 11.51 l/s @ 8.46 hrs, Volume= 395.5 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 190.533 m @ 8.46 hrs Surf.Area= 227.8 m² Storage= 54.7 m³

Plug-Flow detention time= 49.6 min calculated for 395.5 m³ (98% of inflow)
Center-of-Mass det. time= 37.8 min (686.8 - 649.0)

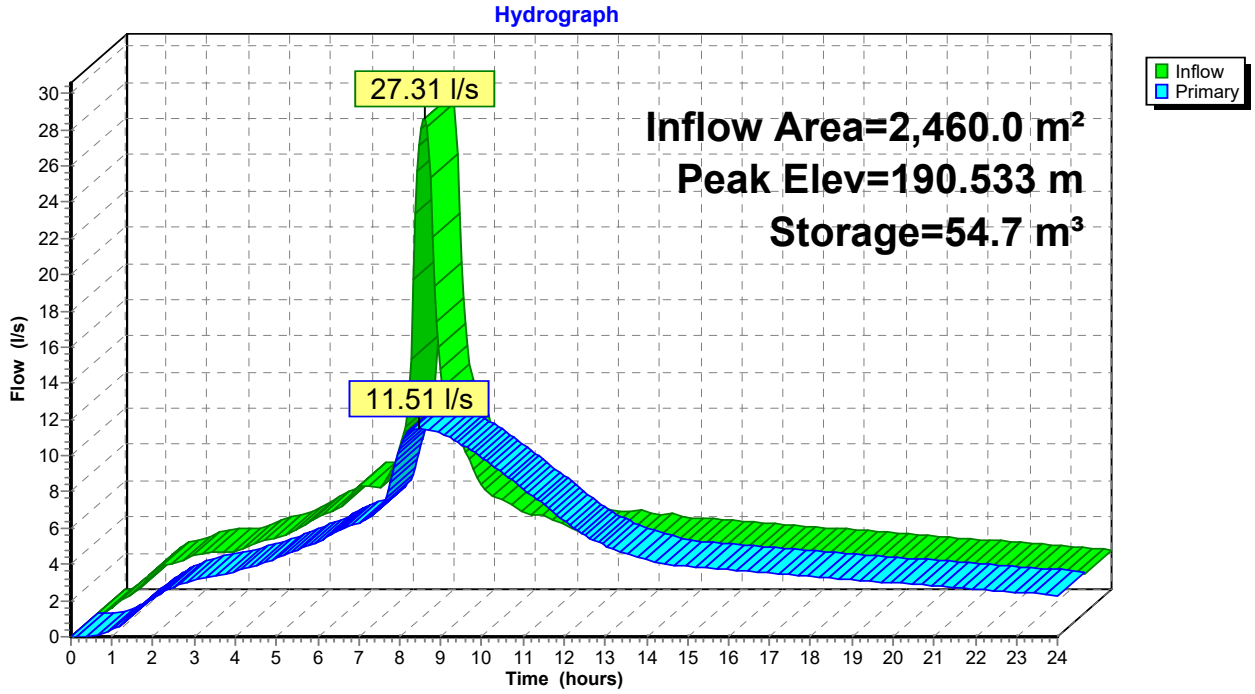
Volume	Invert	Avail.Storage	Storage Description
#1	190.200 m	129.0 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
190.200	100.0	0.0	0.0
190.800	330.0	129.0	129.0

Device	Routing	Invert	Outlet Devices
#1	Primary	190.750 m	**5.00 m long x 1.50 m breadth Broad-Crested Rectangular Weir** Head (meters) 0.061 0.122 0.183 0.244 0.305 0.366 0.427 0.488 0.549 0.610 0.762 0.914 1.067 1.219 1.372 1.524 1.676 Coef. (Metric) 1.29 1.38 1.49 1.48 1.48 1.47 1.46 1.46 1.46 1.46 1.48 1.47 1.48 1.49 1.52 1.55 1.61
#2	Primary	190.200 m	**100 mm W x 80 mm H Vert. Orifice/Grate** C= 0.600
#3	Primary	190.600 m	**60 mm W x 50 mm H Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=11.51 l/s @ 8.46 hrs HW=190.533 m (Free Discharge)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 l/s)
- **2=Orifice/Grate** (Orifice Controls 11.51 l/s @ 1.44 m/s)
- **3=Orifice/Grate** (Controls 0.00 l/s)

Pond 17P: Attenuation Pond

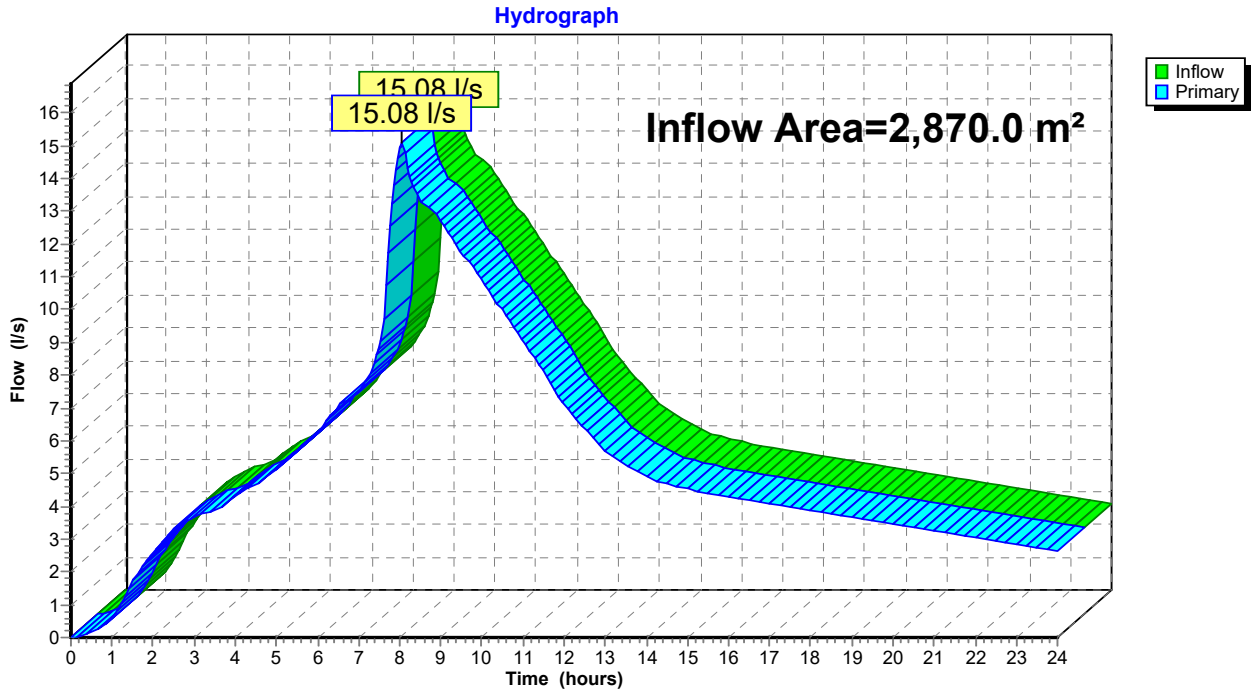


Summary for Link 6L: Total post dev

Inflow Area = 2,870.0 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP +20% event
Inflow = 15.08 l/s @ 8.05 hrs, Volume= 462.4 m³
Primary = 15.08 l/s @ 8.05 hrs, Volume= 462.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: Total post dev

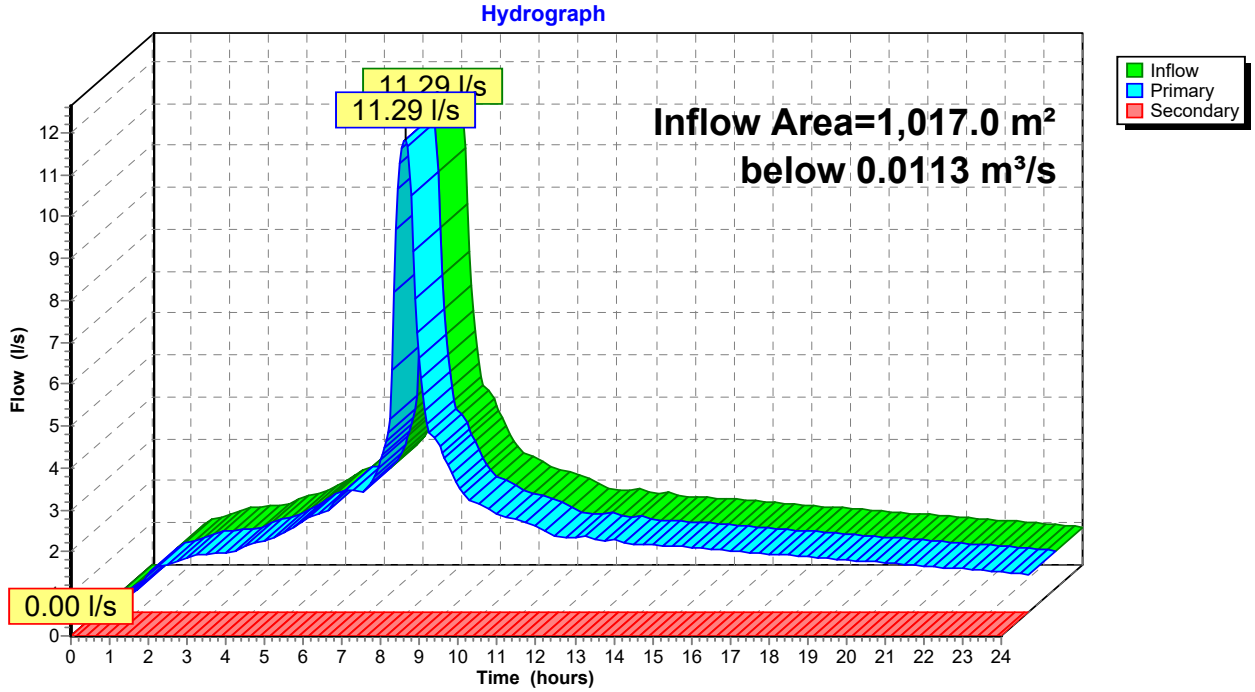


Summary for Link 14L: Collected Roof Area Limit

Inflow Area = 1,017.0 m²,100.00% Impervious, Inflow Depth > 163 mm for 20% AEP +20% event
Inflow = 11.29 l/s @ 7.94 hrs, Volume= 166.0 m³
Primary = 11.29 l/s @ 7.94 hrs, Volume= 166.0 m³, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 l/s @ 0.00 hrs, Volume= 0.0 m³

Primary outflow = Inflow below 0.0113 m³/s, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 14L: Collected Roof Area Limit



Summary for Subcatchment 9S: Access Way

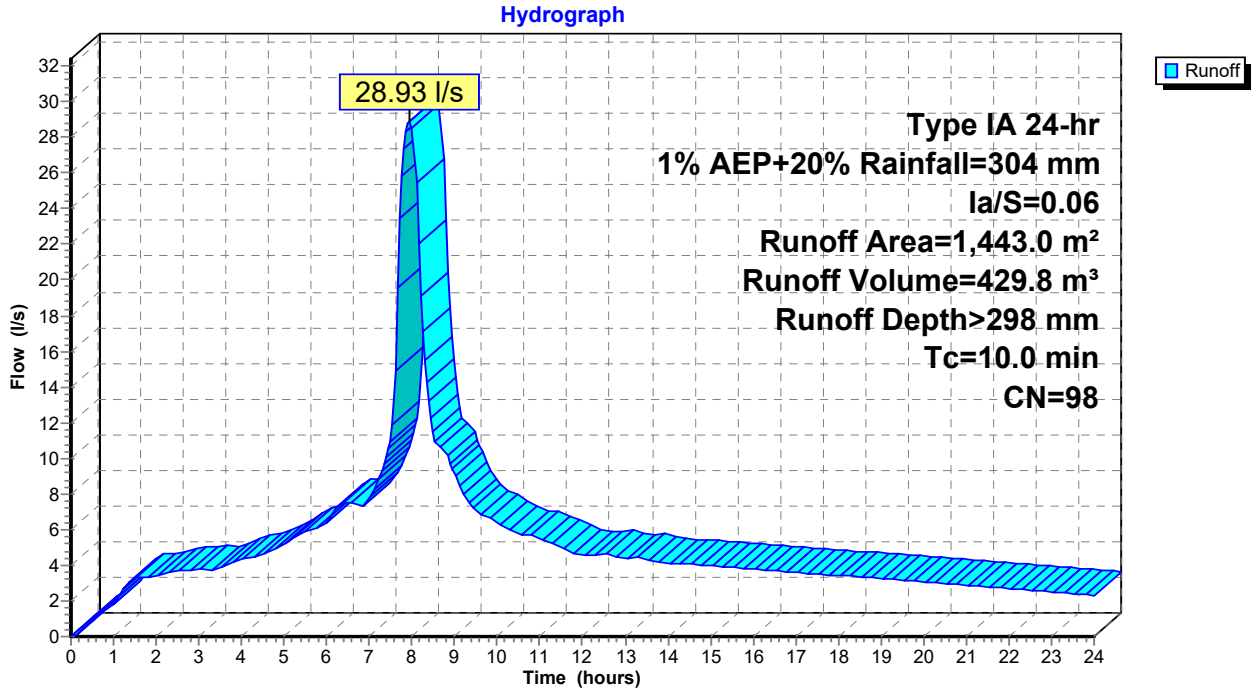
Runoff = 28.93 l/s @ 7.94 hrs, Volume= 429.8 m³, Depth> 298 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=304 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	1,443.0	98	Roads
	1,443.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 9S: Access Way



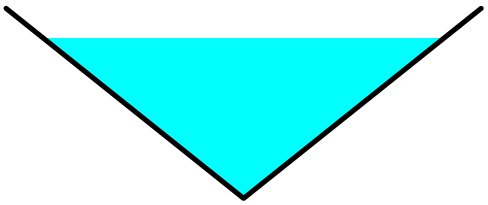
Summary for Reach 12R: Swale

Inflow Area = 1,443.0 m²,100.00% Impervious, Inflow Depth > 298 mm for 1% AEP+20% event
Inflow = 28.93 l/s @ 7.94 hrs, Volume= 429.8 m³
Outflow = 28.92 l/s @ 7.94 hrs, Volume= 429.7 m³, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.81 m/s, Min. Travel Time= 0.5 min
Avg. Velocity = 0.51 m/s, Avg. Travel Time= 0.8 min

Peak Storage= 0.9 m³ @ 7.94 hrs
Average Depth at Peak Storage= 0.17 m
Bank-Full Depth= 0.20 m Flow Area= 0.05 m², Capacity= 45.48 l/s

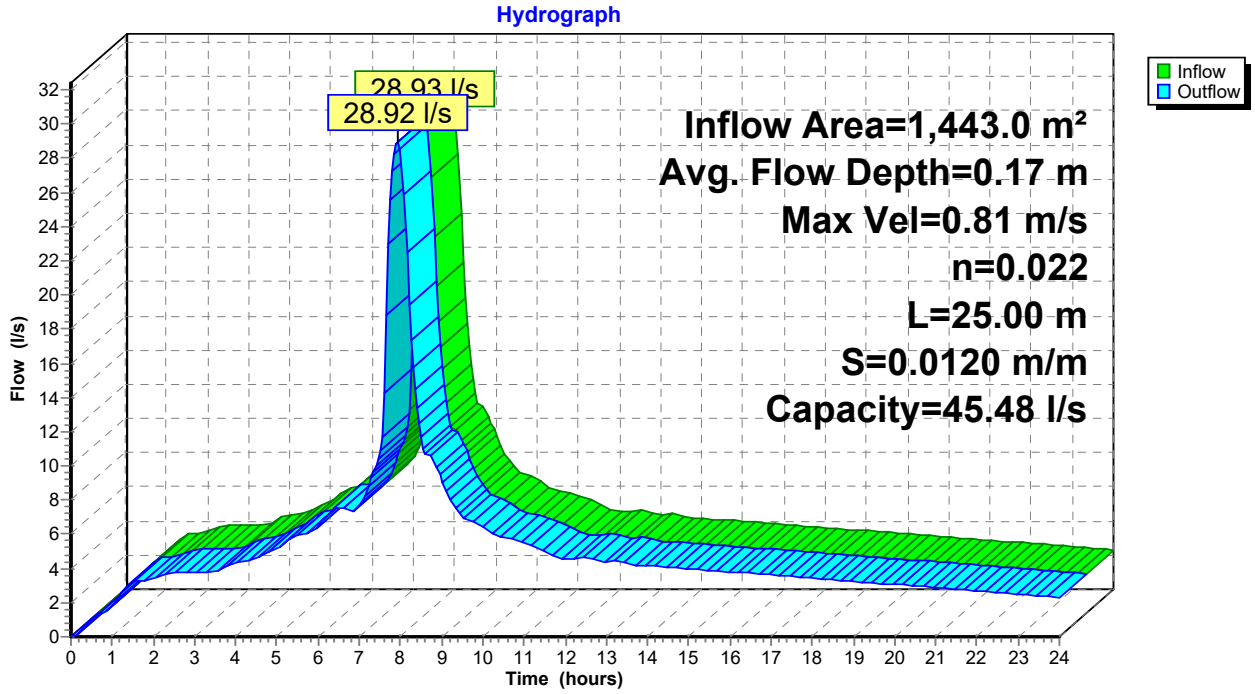
Custom cross-section, Length= 25.00 m Slope= 0.0120 m/m
Constant n= 0.022 Earth, clean & straight
Inlet Invert= 0.000 m, Outlet Invert= -0.300 m



Offset (meters)	Elevation (meters)	Chan.Depth (meters)
0.000	0.000	0.00
0.250	-0.200	0.20
0.500	0.000	0.00

Depth (meters)	End Area (sq-meters)	Perim. (meters)	Storage (cubic-meters)	Discharge (l/s)
0.00	0.00	0.00	0.0	0.00
0.20	0.05	0.64	1.3	45.48

Reach 12R: Swale



GEOTECHNICAL REPORT

91 Mangakahia Road

Kaikohe

(Lot 2 DP 191875)

RS Eng Ltd • 2 Seaview Road, Whangarei 0110 • **09 438 3273** • **office@RSEng.co.nz**
Consulting Engineers

GEOTECHNICAL REPORT

91 Mangakahia Road

Kaikohe

(Lot 2 DP 191875)

Report prepared for:	Advance Build
Report reference:	20010
Date:	29 January 2026
Revision:	1

Document Control

Date	Revision	Description	Prepared by:	Reviewed by:	Authorised by:
29/01/2026	1	Resource Consent Issue	R Beasley	S Scott Compton	M Jacobson

ace new zealand

association of consulting and engineering

Contents

Appendices

File: 20010
29 January 2026
Revision: 1

GEOTECHNICAL REPORT

91 Mangakahia Road, Kaikohe

(Lot 2 DP 191875)

1.0 Introduction

RS Eng Ltd (RS Eng) has been engaged by Advance Build to investigate the suitability of their clients property (Lot 2 DP 191875) for the proposed Papakainga. The purpose of this report is to assess the geotechnical suitability of the building sites making foundation and earthworks recommendations.

The client proposes to construct eight new dwellings, consisting of three 3-bedroom, two 4-bedroom and three 2 + 1 bedroom duplex buildings, to be founded on timber pile foundations.

2.0 Site Description

This 1.55ha property is accessed west off Mangakahia Road, some 73m south of the intersection with Carey Road. The property consists of near level to gently sloping ground, generally falling to the west. Ground coverage at the property consists of pasture and trees.

Figure 1: Lot 2 DP 191875

3.0 Desk Study

3.1 Referenced/Reviewed Documents

The following documents have been referenced in this report:

- GNS – Geology Of The Kaitaia Area – Isaac – 1996.

3.2 Site Geology

The GNS 1:250,000 scale New Zealand Geology Web Map shows that the property is located within an area underlain by Kerikeri Volcanics, which has been described as follows: *"Basalt lava, volcanic plugs and minor tuff."*

3.3 Aerial Photography

RS Eng has undertaken a review of historical aerial photography, specifically images from 1950, 1969 and 1982 and Google Earth imagery. See Figure 2 below of the 1950 image. Several notable features were observed, listed below.

- No soil creep or deep seated slope instability was observed at the property.
- Earthworks were observed in 2004 to form the existing driveway and in 2017 and 2022 over the proposed building areas to the south of the property. The remaining building areas remained undeveloped throughout the imagery.

Figure 2: 1950 Aerial Image *(Source: www.retrolens.nz) (red outline indicates approx. property boundary).*

4.0 Field Investigation

A Technician and Geologist from this office visited the property on 23 January 2026 to undertake a walkover inspection and nineteen hand augers.

The walkover inspection did not observe any signs of concern at the building sites in relation to the proposal.

The hand augers were dug to a maximum depth of 2.8m below ground level (BGL). Shear Vane readings were taken at regular intervals throughout the hand augers. Soil and rock descriptions are in general accordance with the New Zealand Geotechnical Society guideline.

5.0 Subsoil Conditions

Interpretation of the subsurface conditions is based on the investigations shown on the drawings in Appendix A. The conditions are summarised below.

- Topsoil was encountered to a maximum depth of 0.4mBGL.
- Uncontrolled fill was encountered to a maximum depth of 1.0mBGL but is expected to be up to 1.5m thick at the sites along the southern area of the property, consisting of firm to stiff clayey silty gravels and firm to very stiff gravelly silts. In-Situ Undrained Shear Strengths ranged between 61kPa to 183kPa.
- Residual soils of Kerikeri Volcanics were encountered to a maximum depth of 1.4mBGL, consisting of very stiff silts, very stiff clayey silts and very stiff sandy silts. In-Situ Undrained Shear Strengths ranged between 165kPa to greater than 214kPa.
- Completely weathered basalt was encountered to a maximum investigated depth of 2.8mBGL, consisting of very stiff sands, very stiff silts, very stiff clayey silts and very stiff sandy silts. In-Situ Undrained Shear Strengths ranged between 165kPa to greater than 214kPa.
- Groundwater inflow was encountered at 2.5mBGL and groundwater was encountered at 2.6mBGL.

6.0 Geotechnical Assessment

6.1 Slope Stability

The property consists of near level ground (<2°), generally falling to the west. The proposed building areas were found to be underlain with Kerikeri Volcanics, consisting of very stiff silts, clays and sands. Towards the south of the property, an uncontrolled fill platform was encountered estimated to be up to 1.5m thick, consisting of firm to very stiff silts and gravels. The fill platform creates a short steep batter (1-1.5mH and <26°), which the dwellings are considered setback from. Foundations are proposed to extend to original ground, beyond this depth of fill.

Based on the gentle slopes at the building areas, underlying geology, and provided the recommendations made in this report are complied with, the risk of slope instability is considered to be low.

6.2 Liquefaction

The proposal is positioned on land underlain by Kerikeri Volcanics, consisting of soils that are cohesive in nature and therefore unlikely to liquefy when subjected to seismic shaking. RS Eng considers the risk of liquefaction to be low.

6.3 Expansive Soils

The clayey soils encountered on-site are likely to be subject to volumetric change with seasonal changes in moisture content (wet winters / dry summers); this is known as expansive or reactive soils. Apart from seasonal changes in moisture content other factors that can influence soil moisture content at the include:

- Influence of garden watering and site drainage.
- The presence of large trees close to buildings. Large trees can cause variation in the soil moisture content for a distance of up to 1.5 times their mature height.
- Initial soil moisture conditions during construction, especially during summer and more so during a drought. Building platforms that have dried out after initial excavation should be thoroughly wet prior to any floor slabs being poured.
- Plumbing leaks.

Based on a visual tactile assessment made during the subsoil investigation, RS Eng considers the soils as being Class H1 (Highly Expansive) as per AS 2870.

7.0 Engineering Recommendations

7.1 Site Subsoil Class

In accordance with NZS 1170.5:2004, Section 3.1.3 the site has been assessed for its Site Subsoil Class. Based on the observations listed above RS Eng considers the site soils lie within Site Class C *"Shallow Soil Site."*

7.2 Earthworks

To form access to and create building platforms for the proposed buildings, earthworks are proposed. To suitably develop the building areas, RS Eng recommend as follows.

- Cuts and fills shall be limited to a maximum of 1.5m and 1.0m respectively, without further geotechnical assessment.
- Cut and fill batters should be sloped at angles less than 1V to 3H.

- Uncontrolled fills shall be removed from beneath paved or concreted areas.
- Site works shall generally be completed in accordance with NZS 4431.
- The building site and driveway should be shaped to assist in stormwater run-off and avoid ponding of surface water.

7.3 Shallow Foundations

It is proposed to construct the buildings on standard NZS 3604 type pile foundations. To suitably found the proposed construction, RS Eng make the following recommendations.

- Timber pile type foundations designed to NZS 3604 shall extend to a minimum of 0.9m below cleared ground level, or 0.5m into original ground, whichever depth is greater.

Notwithstanding the recommendations of this report, for the specific design of shallow foundations, RS Eng has assessed the following.

- 300kPa Ultimate Bearing Capacity (Geotechnical Ultimate).
- 150kPa Dependable Bearing Capacity (Ultimate Limit State).
- 100kPa Allowable Bearing Capacity (Serviceability Limit State).

7.4 Pavement Design

The investigations completed across the proposed accessway encountered very stiff silts. Shear vane results across the accessway exceeded 214kPa. Based on the results above, RS Eng have assessed that a subgrade CBR of 5 is available. Refer to Appendix A and B for locations and investigations. However, further investigation should be undertaken following excavations of the subgrade to confirm design CBR. Based on CBR of 5, a minimum pavement depth of 300mm is recommended.

8.0 Construction Monitoring and Producer Statements

RS Eng recommends a suitably experienced Chartered Professional Engineer monitor the construction of the following works to confirm if the geotechnical conditions are consistent with that outlined in this report.

- Foundation excavations.

Any works not inspected will be excluded from future producer statements (PS4) to be issued by RS Eng. In any event, where doubt exists regarding inspections, this office should be contacted for advice and provided with reasonable notice of inspections.

9.0 Conclusions

It is the conclusion of RS Eng Ltd that the building areas are suitable for the proposal provided the recommendations and limitations stated within this report are adhered to.

RS Eng Ltd also concludes that subject to the recommendations of this report, in terms of Section 72 of the Building Act 2004;

(a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in slippage or subsidence on the land on which the building work is to be carried out or any other property; and

(b) the land is neither subject to nor likely to be subject to slippage or subsidence.

10.0 Limitations

This report has been prepared solely for the benefit of our client. The purpose is to determine the engineering suitability of the proposed buildings, in relation to the material covered by the report. The reliance by other parties on the information, opinions or recommendations contained therein shall, without our prior review and agreement in writing, do so at their own risk.

Recommendations and opinions in this report are based on data obtained as previously detailed. The nature and continuity of subsoil conditions away from the test locations are inferred and it should be appreciated that actual conditions could vary from those assumed. If during the construction process, conditions are encountered that differ from the inferred conditions on which the report has been based, RS Eng should be contacted immediately.

Construction site safety is the responsibility of the builder/contractor. The recommendations included herein should not be construed as direction of the contractor's methods, construction sequencing or procedures. RS Eng can provide recommendations if specifically engaged to, upon request.

This report does not address matters relating to the National Environmental Standard for Contaminated Sites, and if applicable separate advice should be sought on this matter from a suitably qualified person.

Prepared by:

Rachel Beasley
Geologist
BSc(Geology)

Reviewed by:

Sarah Scott Compton
Senior Technician
NZDE(Civil)

Approved by:

Matthew Jacobson
Director
NZDE(Civil), BE(Hons)(Civil), CPEng, CMEngNZ

RS Eng Ltd

Appendix A

Drawings

NOTES:

- If any part of these drawings are unclear, please contact RS Eng.
- These plans are indicative only and shall not be used for construction set-out or scaled off.
- All services shall be identified on-site prior to construction.
- It is the responsibility of the lead designer/project manager to complete the design coordination and clash detection.
- This plan is copyright to RS Eng Ltd and should not be reproduced without prior permission.

LEGEND

- Hand Auger Location
- Existing Road
- Proposed Driveway & Carpark Area
- Proposed Dwelling
- Proposed Deck Area

Contour Interval:	0.5m
Vertical Datum:	NZVD2016
Survey Data Source:	LiDAR (2018)

0 10 20
PLAN 1:1000

FOR CONSENT

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

PROPOSED DWELLINGS
SITE PLAN
SITE INVESTIGATIONS

Client: ADVANCE BUILD

Location: 91 MANGAKAHIA ROAD
KAIKOHE

Date	Rev	Notes
28/01/2026	A	Original Issue

Drawn by: LMC | Reviewed by: RB | Approved by: MJ

Scale	1:1000
Rev No.	A
Original	A3
Sheet No.	A01
Job No.	20010

Appendix B

Subsurface Investigations

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA01

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673246mE, 6080285mN
ELEVATION: 190.94m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS			Groundwater Not Encountered
Kerikeri Volcanics	SILT, with some clay, with minor gravel; brownish. Very stiff; moist; low plasticity; gravel, angular, basalt.		0.2				
	Completely weathered; BASALT. - -.		0.4			214+	
	SAND, with some silt and gravel. Very stiff; dry.		0.6			-	
	Unable to penetrate - rock. End Of Hole: 0.60m		0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

Scala penetrometer scale: 2 4 6 8 10 12 14 16 18
Vane shear strength scale: 50 100 150 200 Values

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA02

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673243mE, 6080291mN
ELEVATION: 190.75m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: Values	WATER
TS	TOPSOIL.		0.0	TS	2 4 6 8 10 12 14 16 18	50 100 150 200	Groundwater Not Encountered
Kerikeri Volcanics	SILT, with some clay, with minor gravel; brownish. Very stiff; moist; low plasticity.		0.2				
	Unable to penetrate - rock. End Of Hole: 0.40m		0.4				
			0.6				
			0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA03

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673266mE, 6080288mN
ELEVATION: 190.13m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS	2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT; dark brown. Very stiff; moist; low plasticity.		0.4			182 49	
	Completely weathered; BASALT. - -. SILT, with some clay; dark brown and grey. Very stiff; moist; non-plastic.		0.6				
	Unable to penetrate - rock. End Of Hole: 0.80m		0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA04

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673260mE, 6080293mN
ELEVATION: 190.98m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL, with minor gravel; dark brown/grey. Gravel, fine.		0.0 – 0.4	TS	2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT, with minor gravel; dark brown some red streaks. Very stiff; moist; low plasticity; gravel, fine.		0.4 – 0.6			165	
	Completely weathered; BASALT. - -. SILT, with some clay; dark brown/grey. Very stiff; dry; non-plastic.		0.6 – 0.8			40	
	Unable to penetrate - rock. End Of Hole: 0.70m		0.8 – 2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA05

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673286mE, 6080301mN
ELEVATION: 191.07m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)
TS	TOPSOIL.		0.0
Kerikeri Volcanics	Clayey SILT; dark brown. Very stiff; moist; low plasticity.		0.2
	With trace gravel. Gravel, angular, orange/grey.		0.8
	Completely weathered; BASALT. - -. Clayey SILT; grey/orange/brown. Very stiff; moist; low plasticity.		1.0
	With some sand; brown/dark purple some orange. Sand, fine.		1.6
	Unable to penetrate - rock. End Of Hole: 2.00m		2.0

LEGEND

SCALA PENETROMETER (Blows / 0mm): 2 4 6 8 10 12 14 16 18

VANE SHEAR STRENGTH (kPa), Vane: GEO3763: 50 100 150 200

Values
183
43
199
92
214+
-
UTP
-

WATER: Groundwater Not Encountered

PHOTO(S)

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA06

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673300mE, 6080252mN
ELEVATION: 192.38m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
FILL	Clayey silty GRAVEL; grey/brown/orange some dark blue. Very stiff; moist; low plasticity; gravel, fine to coarse, subangular.		0.0 – 0.6		2 4 6 8 10 12 14 16 18	50 100 150 200 Values: UTP -	Groundwater Not Encountered
	Unable to penetrate - gravels. End Of Hole: 0.60m		0.6 – 2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA07

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673292mE, 6080250mN
ELEVATION: 191.88m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm) 2 4 6 8 10 12 14 16 18	VANE SHEAR STRENGTH (kPa) Vane: 50 100 150 200 Values	WATER
FILL	Clayey silty GRAVEL; dark brown/orange some bluish grey. Firm; moist; low plasticity; gravel, medium to coarse, subangular.		0.2				dwater Not Encou
	Unable to penetrate - gravels. End Of Hole: 0.30m		0.4				
			0.6				
			0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA08

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673343mE, 6080276mN
ELEVATION: 191.54m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	Values	WATER
TS	TOPSOIL, with minor gravel.		0.0	TS				
Kerikeri Volcanics	Clayey SILT, with some gravel; dark brown/grey. Very stiff; moist; low plasticity; gravel, fine, subangular.		0.4				168 43	
	Completely weathered; BASALT. - -. SILT, with some clay; dark brown/grey. Very stiff; moist; low plasticity.		0.8					
	With minor gravel; orange/white. Gravel, medium.		1.0				214+ -	
	Unable to penetrate - gravels. End Of Hole: 1.20m		1.2					

Scala penetrometer scale: 2 4 6 8 10 12 14 16 18
Vane shear strength scale: 50 100 150 200
Depth scale: 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8

Groundwater Not Encountered

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA09

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673350mE, 6080275mN
ELEVATION: 191.57m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS	2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT; dark brown some red and orange. Very stiff; moist; low plasticity.		0.2			214+	
	Completely weathered; BASALT. - -. SILT, with some clay and gravel; dark brown/grey. Very stiff; moist; low plasticity; gravel, medium.		0.4			-	
	Unable to penetrate - rock. End Of Hole: 0.70m		0.6				
			0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
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2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA10

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673333mE, 6080343mN
ELEVATION: 191.32m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL, with minor gravel. Very stiff; moist; gravel, fine to medium.		0.0	TS			
Kerikeri Volcanics	Clayey SILT, with minor gravel; dark brown some orange/red. Very stiff; moist; non-plastic; gravel, fine.		0.4			199 44	
	Completely weathered; BASALT. - -. Clayey SILT, with minor sand; dark brown/black some orange/red. Very stiff; moist; low plasticity; sand, medium to coarse.		1.0			214+ -	
	Sandy SILT, with minor clay; dark brown/black and red/orange. Very stiff; moist; low plasticity.		1.4			202 34	
	Clayey SILT, with some sand; purplish grey. Very stiff; moist; low plasticity; sand, fine to medium.		1.8			165 47	
	Sandy SILT, with some clay; purplish grey some white/orange. Very stiff; moist; sand, fine to coarse.		2.4			214+ -	23/01/2026
	Saturated.		2.6				
	Unable to penetrate - rock. End Of Hole: 2.80m		2.8				

SCALA PENETROMETER: 2 4 6 8 10 12 14 16 18
VANE SHEAR STRENGTH (kPa): 50 100 150 200 Values

PHOTO(S)

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- [x] Hand Auger
- [ ] Test Pit

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Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA11

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673354mE, 6080354mN
ELEVATION: 191.41m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0		2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT, with trace gravel; dark brown some orange. Very stiff; moist; low plasticity; gravel, fine.		0.2			214+ -	
			0.4				
			0.6				
	SILT, with some clay, with minor sand; dark brown some orange. Very stiff; moist; low plasticity; sand, fine to coarse.		0.8			214+ -	
			1.0				
			1.2				
	Completely weathered; BASALT. - -. Clayey SILT, with some gravel; dark brown some black, yellow/orange. Very stiff; dry; low plasticity; gravel, fine to medium.		1.4			214+ -	
			1.6				
			1.8				
	Unable to penetrate - rock. End Of Hole: 2.00m		2.0			214+ -	
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

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office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA12

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673407mE, 6080377mN
ELEVATION: 192.2m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS	2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT; brownish. Very stiff; moist; high plasticity.		0.2			214+ -	
	Completely weathered; BASALT. - -. Clayey SILT, with some sand; brown some orange streaks. Very stiff; moist; low plasticity.		0.4 0.6 0.8 1.0			214+ -	
	Unable to penetrate - rock. End Of Hole: 1.20m		1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

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office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA13

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673344mE, 6080306mN
ELEVATION: 191.38m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
FILL	Gravelly SILT; dark brown/grey. Very stiff; moist; low plasticity.		0.0				
Kerikeri Volcanics	Clayey SILT; dark brown. Very stiff; moist; low plasticity.		0.2, 0.4, 0.6			214+	Groundwater Not Encountered
Kerikeri Volcanics	Sandy SILT, with some gravel; dark brown/purplish and orange. Very stiff; moist; low plasticity.		0.8, 1.0			214+	
	End Of Hole: 1.10m		1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8				

Scala penetrometer scale: 2 4 6 8 10 12 14 16 18
Vane shear strength scale: 50 100 150 200 Values

PHOTO(S)

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- [x] Hand Auger
- [ ] Test Pit

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2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA14

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673278mE, 6080297mN
ELEVATION: 191.11m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS			
Kerikeri Volcanics	Clayey SILT, with trace sand; brown . Very stiff; moist; low plasticity.		0.2			214+	Groundwater Not Encountered
	With some gravel; grey/brown. Gravel, fine, highly weathered, basalt.		0.4			-	
	Completely weathered; BASALT. - -. SILT, with some clay, with minor gravel; grey/brown. Very stiff; moist; non-plastic.		0.6			214+	
	Unable to penetrate - rock. End Of Hole: 1.20m		0.8			-	
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

Scala Penetrometer scale: 2 4 6 8 10 12 14 16 18
Vane Shear Strength scale: 50 100 150 200 Values

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
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2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA15

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673270mE, 6080315mN
ELEVATION: 191.13m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS			Groundwater Not Encountered
Kerikeri Volcanics	Clayey SILT. Very stiff; moist; low plasticity.		0.2				
	With trace gravel.		0.4			214+	
	Unable to penetrate - rock. End Of Hole: 0.60m		0.6			-	
			0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

Scala Penetrometer (Blows / 0mm): 2 4 6 8 10 12 14 16 18

Vane Shear Strength (kPa): 50 100 150 200 | Values

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
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2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA16

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673314mE, 6080256mN
ELEVATION: 192.52m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: RB

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0	TS			
FILL	Gravelly SILT, with some clay; brownish. Firm to stiff; moist; non-plastic; gravel, angular and rounded.		0.2 – 0.8			61 31	Groundwater Not Encountered
Kerikeri Volcanics	SILT, with some clay, with minor gravel; purple/brown. Very stiff; moist; low plasticity.		0.8 – 1.2			214+ -	
	Unable to penetrate - rock. End Of Hole: 1.20m		1.2				

Scala Penetrometer (Blows / 0mm): 2, 4, 6, 8, 10, 12, 14, 16, 18
Vane Shear Strength (kPa): 50, 100, 150, 200
Values

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA17

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673315mE, 6080269mN
ELEVATION: 191.32m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	WATER
TS	TOPSOIL.		0.0		2 4 6 8 10 12 14 16 18	50 100 150 200 Values	Groundwater Not Encountered
FILL	Gravelly SILT; brownish. Very stiff to stiff; moist; non-plastic.		0.2 0.4 0.6 0.8			UTP -	
FILL	With trace topsoil.		1.0			183 76	
Kerikeri Volcanics	Clayey SILT; brownish. Very stiff; moist; low plasticity.		1.2				
Kerikeri Volcanics	With some gravel.		1.4			UTP -	
	Unable to penetrate - rock. End Of Hole: 1.50m		1.6 1.8 2.0 2.2 2.4 2.6 2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA18

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673337mE, 6080270mN
ELEVATION: 191.97m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: Values	WATER
TS	TOPSOIL.		0	TS	2 4 6 8 10 12 14 16 18	50 100 150 200	dwater Not Encou
FILL	Gravelly SILT; brownish. Very stiff; moist; non-plastic.		0.2				
	Unable to penetrate - rock. End Of Hole: 0.30m		0.4				
			0.6				
			0.8				
			1.0				
			1.2				
			1.4				
			1.6				
			1.8				
			2.0				
			2.2				
			2.4				
			2.6				
			2.8				

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

HAND AUGER LOG

HOLE NO.: HA19

CLIENT: Advance Build
PROJECT: Geotechnical Investigations

JOB NO.: 20010

SITE LOCATION: 91 Mangakahia Road, Kaikohe
CO-ORDINATES: 1673323mE, 6080324mN
ELEVATION: 191.3m

START DATE: 23/01/2026
END DATE: 23/01/2026
LOGGED BY: SSC

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3763	Values	WATER
TS	TOPSOIL.		0.0	TS				
Kerikeri Volcanics	Clayey SILT; brownish. Very stiff; moist; low plasticity.		0.2					
			0.4			214+	-	
			0.6					
			0.8					
	Completely weathered; BASALT. - -. Clayey SILT, with minor gravel; brown and orange. Very stiff; moist; low plasticity.		1.0			214+	-	
			1.2					
			1.4					
	SILT, with some clay, with minor sand; dark brown/purple and orange speckles. Very stiff; moist; low plasticity; sand, fine to medium.		1.6			214+	-	
			1.8					
			2.0			UTP	-	
	Unable to penetrate- rock. End Of Hole: 2.00m		2.2					
			2.4					
			2.6					
			2.8					Groundwater Not Encountered

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

STATEMENT OF DESIGN - PS1

Issued by: Matt Riddell
To: Whakatere ki Koranui Trust
Copy to be supplied to: Far North District Council
In Respect of: Econotreat Domestic Onsite Wastewater and Sewage System Design
At: 91 Mangakahia Road, Kaikohe
Legal Description: Lot 2 DP 191875

Waterflow NZ Ltd has been engaged by Whakatere ki Koranui Trust to provide the technical design services and details in respect of the requirements of G13/VM4 and B2 Durability of the Building Code 2004, for an Onsite Wastewater and Sewage System for their building at the above location.

The Design has been carried out in accordance with AS/NZS 1547/2012 and Clause B2, G13 and G14 of the Building Regulations 2004.

The proposed building work covered by this producer statement is described on the drawings titled: Whakatere ki Koranui Trust Onsite Wastewater Design Report, and numbered 1-42 together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions: correct installation of the system and drainage fields
(ii) All proprietary products meeting their performance specification requirements;

As an independent design professional covered by a current policy for Professional Indemnity Insurance, no less than $200,000*, I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

Signed by: Matt Riddell - PS Author '2384' Auckland Council, NZQA Onsite Wastewater Training/Opus, Approved Designer

Date: 16/02/2026

Signature: 

Waterflow NZ Ltd
4/525 Great South Road
Penrose, Auckland 1061

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

WaterFlow
Bringing Clarity to Wastewater

2026

Waterflow NZ Ltd
Certified Designer

Whakatere ki Koranui Trust
91 Mangakahia Road
Kaikohe
Lot 2 DP 191875

Reference Number: WF24812

Issued 16/02/2026

ONSITE WASTEWATER DESIGN REPORT

Limitations / Disclaimer

This document has been prepared by Waterflow NZ Ltd specifically for the commissioning client and for the project described. It should not be used, copied, or relied upon by any other party without written confirmation from Waterflow NZ Ltd that the report is appropriate for their intended purpose.

The design and recommendations presented are based on the site information, test results, and reference material made available at the time the assessment was undertaken. Any assumptions or data provided by others are considered correct unless clearly stated otherwise. Waterflow NZ Ltd cannot accept responsibility for the consequences of relying on information that is later found to be incomplete or inaccurate.

Site conditions, development plans, or client requirements may change over time. If this occurs, the conclusions and design in this report may no longer be suitable. It is the client's responsibility to seek a review of this report if new information emerges or if the project scope is amended.

This report focuses on wastewater treatment and disposal design. It does not include a geotechnical stability assessment. Waterflow NZ Ltd are not Geotechnical Engineers and make no representations regarding slope stability, ground settlement, or subsurface hazards. Where ground stability or geotechnical risk is a concern, a separate assessment by a suitably qualified professional is required.

The successful performance of any wastewater system depends on correct installation. Installers must follow all manufacturer instructions and Waterflow NZ Ltd design details. Any proposed departures from the design must be approved by the property owner, Waterflow NZ Ltd, and the relevant Council before the work proceeds.

Compliance with regional and district rules, consent conditions, and relevant legislation remains the responsibility of the property owner. Routine servicing, monitoring, and desludging of the system are essential to maintain performance and minimise environmental effects. Failure to undertake required maintenance may result in system malfunction or regulatory non-compliance, for which Waterflow NZ Ltd cannot be held liable.

WaterFlow
Bringing Clarity to Wastewater

TABLE OF CONTENTS

Attachments

- **PS1**
- **Land Application System Schematics**
- **Pump Specification**
- **Electrical Diagram**
- **Assessment of Environmental Effects**
- **System & Installation Specifications**
- **Home Owners Care Guide**

Disclaimer

The design presented herein is based on the information available at the time of preparation and reflects the conditions known at that time.

If additional information comes to light or if there are significant changes in site conditions or circumstances, the design may no longer be valid. In such cases, the design must be reassessed and potentially revised by the designer to ensure its continued suitability.

The designer(s) disclaim any responsibility for the design's applicability or effectiveness under new or altered conditions and recommend a review before implementation if any such changes occur.

PART A: CONTACT AND PROPERTY DETAILS

A 1. Consultant / Evaluator

Name:	Xandir Fatialofa
Company/Agency:	Waterflow New Zealand Ltd
Address:	4/525 Great South Road, Penrose, Auckland 1061
Phone:	09 431 0042
Fax:	
Email Address:	xandir@waterflow.co.nz

A 2: Applicant Details

Applicant Name:	Whakatere ki Koranui Trust
Company Name:	
Property Owner:	Whakatere ki Koranui Trust
Owner Address:	91 Mangakahia Road, Kaikohe
Phone:	021 351 467
Mobile:	
Email Address:	angela@advancebuild.co.nz

A 3: Site Information

Sited Visited by:	Ken Hoyle		**Date:**	Thursday, 12 February 2026			
Physical Address:	91 Mangakahia Road, Kaikohe						
Territorial Authority:	Far North District Council						
Regional Council:	Northland Regional Council						
Regional Rule	C.6.1.5						
Legal Status of Activity:	**Permitted:**		**Controlled:**		**Discretionary:**	**x**	
Total Property Area (m^2):	15504m^2						
Map Grid Reference:							
Legal Description of Land (as on Certificate of Title):							
Lot No:	2						
DP No:	191875						
CT No:	NA121A/976						

A 4: Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on the site?

Yes:		**No:**	**x**

If yes, give reference No's and description:

A 5: Dwelling(s) for which on-site wastewater service is to be provided

Status of dwelling(s) to be serviced:		**New**	**x**	**Existing**		**Multiple**	
How many dwellings on the property?		11					
Capacity of dwellings:	**Dwelling Type 1**	2 x 4 bedroom dwelling					
(or number of bedrooms)	**Dwelling Type 2**	3 x 3 bedroom dwelling					
	Dwelling Type 3	3 x duplex dwelling (1 bedroom + 2 bedroom)					
	Other:						
Notes:							

PART B: SITE ASSESSMENT - SURFACE EVALUATION

B 1: Site Characteristics

Performance of adjacent systems:	**(Unknown)**			
Estimated annual rainfall (mm):	1250 - 1500 **(as per NIWA statistics)**			
Seasonal variation (mm):	300-400mm			
Vegetation cover:	Grass			
Slope shape:	Linear Planar			
Slope angle:	<5 °			
Surface water drainage characteristics:	Broad overland to west			
Flooding potential?	**Yes:**		**No:**	**x**
If Yes, specify relevant flood levels relative to disposal area:				
Site characteristics:	91 Mangakahia Road is a rural property of about 1.5 hectares. This development involves the creation of 11 papakainga dwellings wihtin 8 new buildings inlcuding 2 x 4 bedroom, 3 x 3 bedroom and 3 x (2 bed + 1 bed) duplex dwellings. The domestic wastewater from the new dwellings will drain to four new onsite wastewater management systems detailed in this report. The land where the disposal of secondary treated wastewater is proposed is relatively flat and the area is currently covered with grass and scrub. There are no overland flow paths, surface waters or flood plains in the area proposed for onsite wastewater management.			

B 2: Slope Stability

Has a slope stability assessment been carried out on the site?

Yes:		**No:**	**x**

If no, why not?

Low slope:	**x**	**No signs of instability:**	**x**	**Other:**

If yes, give brief details of report:

Details:	
Author:	
Company/Agency:	
Date of report:	

B 3: Site Geology

B 4: Slope Direction

What aspect does the proposed disposal system face?

North		West	x
North-West		South-West	
North-East		South-East	
East		South	

B 5: Site Clearances if applicable (also on site plan)

	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries:	>1.5	>1.5
Surface Water:	>15	>15
Ground Water:	>1.2	>1.2
Stands of Trees / Shrubs:	n/a	n/a
Wells/Water Bores:	>20	>20
Embankments / Retaining Walls:	>3	>3
Buildings:	>3	>3
Other:		

B 6: Please identify any site constraints applicable for this property, and indicate how the design process is to deal with these.

Constraints	Explain how constraints are being dealt with
1 Site constraints:	n/a

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PART C: SITE ASSESSMENT - SOIL INVESTIGATION

C 1: Soil Profile Determination Method

Test pit:		Depth (mm):		No. of Test pits:	
Bore hole:	x	Depth (mm):	1200	No. of Bore holes	2
Other:					

C 2: Fill Material

Was fill material intercepted during the subsoil investigation?

Yes:		No:	x

If yes, please specify the effect of the fill on wastewater disposal:

C 3: Permeability Testing

Has constant head Permeability Testing (Ksat) been carried out?

Yes:		No:	x

If yes, please indicate the details (test procedure, number of tests):

Test report attached?

Yes:		No:	x

C 4: SURFACE WATER CUT OFF DRAINS

Are surface water interception/diversion drains required?

Yes:		No:	x

C 5: DEPTH OF SEASONAL WATER TABLE:

Winter (m):	>1.2
Summer (m):	>1.2

Was this:

Measured:	✓ no sign of ground water or mottling in bore holes
Estimated:	

C 6: SHORT CIRCUITS

Are there any potential short circuit paths?

Yes:		No:	x

If yes, how have these been addressed?

C 7: SOIL CATEGORY

Is topsoil present?

Yes:	x	**No:**	

If yes, what is the topsoil depth & soil description?

A relatively uniform profile comprising shallow topsoil overlying a consistent brown sandy silt loam subsoil with moderate structure and limited coarse fragments.

Indicate the disposal field soil category (as per AS/NZS 1547:2012 Table E1)

Category	Description	Drainage	(x)
1	Gravel, coarse sand	Rapid draining	
2	Loamy sand, sandy loam	Free draining	
3	Medium-fine sandy loam, loam & silt loam	Good draining	
4	Sandy clay-loam, clay loam & silty clay-loam	Moderate draining	x
5	Sandy clay, light clay, silty clay	Moderate to slow draining	
6	Medium to Heavy Clays	Slow draining	

Reason for placing in stated category:

Result of bore hole/test pit sample	x
Profile from excavation	
Geotech report	
Other:	

C 8: SOIL STRUCTURE

Based on results of the in-situ soil profile investigation above (C7) please indicate the disposal (land application) field soil structure:

Massive	
Single grained	
Weak	
Moderate	x
Strong	

C 9: As necessary, provide qualifying notes on the relationship of Soil Category (C7) to Soil Structure (C8) and the effect this relationship will have on design loading rate selection:

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PART D: DISCHARGE DETAILS

D 1: Water supply source for the property:

Rain water (roof collection)	
Bore/well	
Public supply	x

D 2: Are water reduction fixtures being used?

Yes:		No:	x	(according to our knowledge at time of design report)

If 'yes' Please state:

Standard Fixtures include dual flush 11/5.5 or 6/3 litre toilet cisterns, and includes standard automatic washing machine, but a low water use dishwasher, no garbage grinder.

D 3: Daily volume of wastewater to be discharged:

No. of bedrooms/people:	1:	2 x 4 bedroom dwelling
	2:	3 x 3 bedroom dwelling
	3:	3 x duplex (1 bd + 2 bd) dwelling
Design occupance (people): (as per AC TP-58, Table 6.1)	1:	12 People
	2:	15 People
	3:	18 People
		Black / Grey water
Per capita wastewater production (litres/person/day): (as per AS/NZS 1547:2012 Table H3, Note 2)	1:	165 L/day
	2:	165 L/day
	3:	165 L/day
Total daily wastewater production (litres per day):		7425 L/day
Notes:		

D 4: Is daily wastewater discharge volume more than 2000 litres?

Yes:	x	No:	

D 5: Gross lot area to discharge ratio:

Gross lot area:	15504 m²
Total daily wastewater production (litres/day):	7425 L
Lot area to discharge ratio:	2.09

D 6: Net Lot Area

Area of lot available for installation of the disposal (land application) field and reserve area:

Net lot area (m²):	14504 m²	
Reserve area (m²):	30%	148.5m²

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PART E: LAND DISPOSAL METHOD

E 1: Indicate the proposed loading method:

	Black / Grey Water
Gravity Dose:	
Dosing Siphon:	
Pump:	Davey 42A/B

E 2: If a pump is being used please provide following information:

Total Design Head (m):	23.5
Pump Chamber Volume (litres):	1600
Emergency Storage Volume (litres):	3250

Is a high water level alarm being installed in pump chambers?

Yes:	**x**	**No:**	

E 3: Identify the type(s) of Land Disposal method proposed for this site:

	Black / Grey Water
P.C.D.I. Dripper Irrigation:	
L.P.E.D. System:	
Evapo-Transpiration Beds:	
Other:	Soakage Beds
	(as per Schematics attached)

E 4: Identify the Loading Rate proposed for option selected in E3:

as per AS/NZS 1547:2012 Table L1 & M1	**Black / Grey Water**
Loading Rate (litres/m²/day):	15
Disposal Area Basal (m²):	495
Areal (m²):	N/A

E 6: Details and dimensions of the disposal (land application) field:

Length (m):	20.6	**No. Soakage Beds**	8	**Hole Size:**	16.0
Width (m):	3.0	**Spacing (m):**	1.5	**Hole Spacing:**	500.0

Notes:	**Conventional soakage beds laid on level contour. To be protected from stock and vehicle movements, as per schematic drawing attached. See schematic drawing attached.**

PART F: PROPOSED WASTEWATER TREATMENT SYSTEM

One Econotreat ET52C-WM and three Econotreat ET60C Systems, fed through 8 Soakage Beds is suitable for this site. Each ET60C System has enough capacity to accommodate 3000ltr per day, so will be well within its capacity. The land application system is designed to discharge a maximum volume of 7425ltrs per day and if this is exceeded it could cause failure resulting in environmental and public harm.

PART G: OPERATION AND MAINTENANCE OF SYSTEM

The operation of this complete system will be explained verbally to the owner by the Installer or Agent on Completion of Installation; also provided with Waterflow's Home Owner's Manual.

Waterflow NZ Ltd encourages the Home Owner to monitor and care for your Econotreat system yourself, with our backing and support, and by doing so you will learn how your system works and operates and how to keep it in top working order.

It is also recommended that a Maintenance Program contract is in place at all times to ensure this system is maintained at top performance at all times.

All on site wastewater systems require regular maintenance; in this case once annually is suffice and may be specified within the consent process by the Building Department of Far North District Council. This Maintenance will be recorded on hard copy and supplied to both the Owner and Far North District Council Compliance Officer if requested.

NOTE TO OWNER: All written records pertaining to the wastewater system should be retained in a safe place. When a change of ownership occurs, a full and complete history is able to be passed to the new owners.

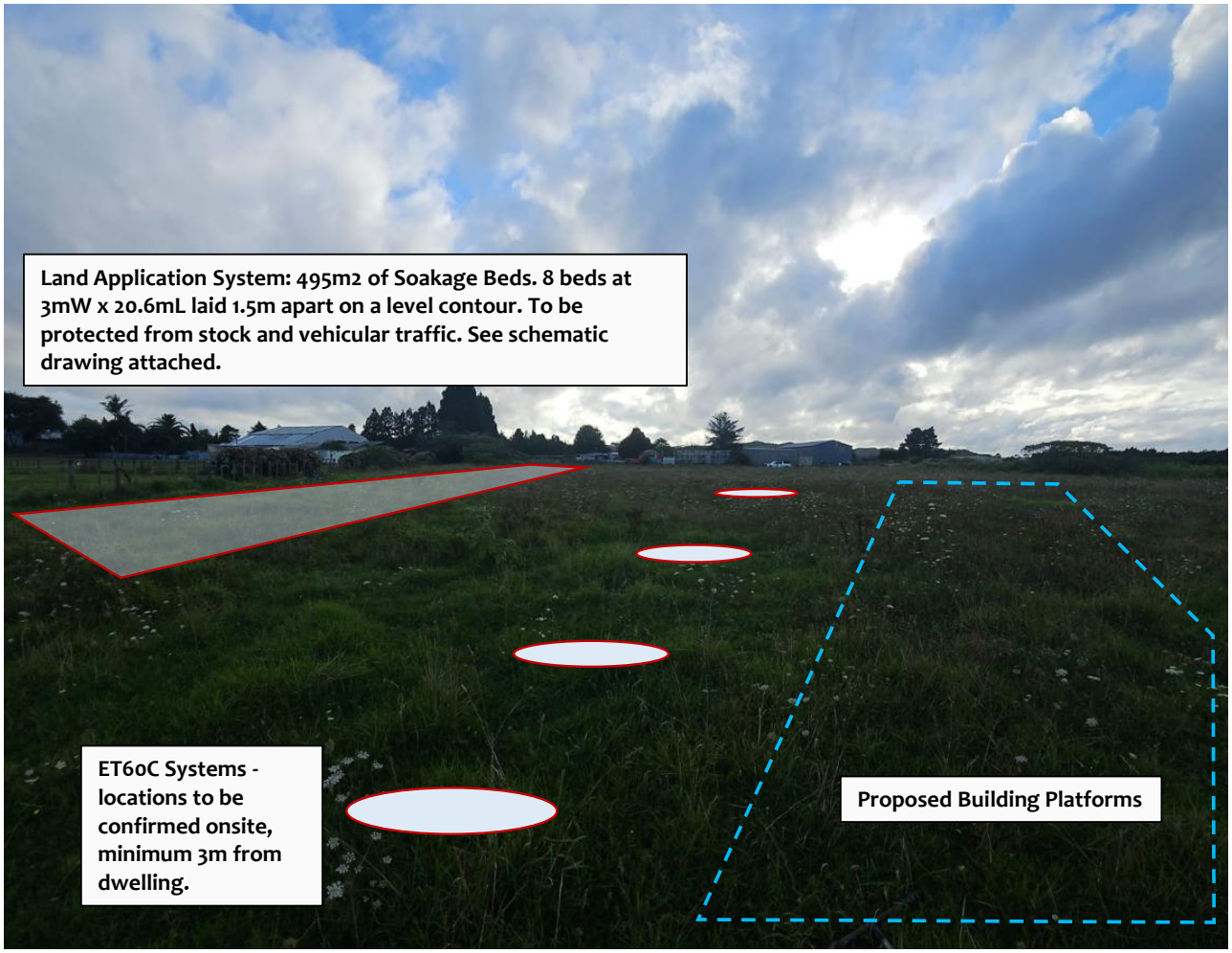
Animals are to be physically excluded from the installed effluent field to avoid damage, and to reduce the risk of soil compaction in the vicinity of the bed.

Planting within this area is encouraged to assist with evapotranspiration by plants.

PART H: SOIL LOG PROFILE

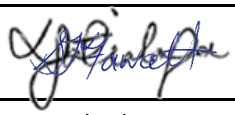
A relatively uniform profile comprising shallow topsoil overlying a consistent brown sandy silt loam subsoil with moderate structure and limited coarse fragments. Soil Category 4, (as per AS/NZS 1547:2012 Table E1)

PART I: SITE IMAGES



DECLARATION

I, hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Prepared By:	
Name:	**Xandir Fatialofa - Design Technician**
Signature:	
Date:	16/02/2026

Designed By:	
Name:	**Matt Riddell - PS Author '2384' Auckland Council, NZQA Onsite Wastewater Training/Opus, Approved Designer**
Signature:	
Date:	16/02/2026

NOTE: The Waterflow Systems are to be installed by a registered drainlayer to the designs supplied by Waterflow NZ Ltd. All work to comply with Regional Council Water and Soil Plans.

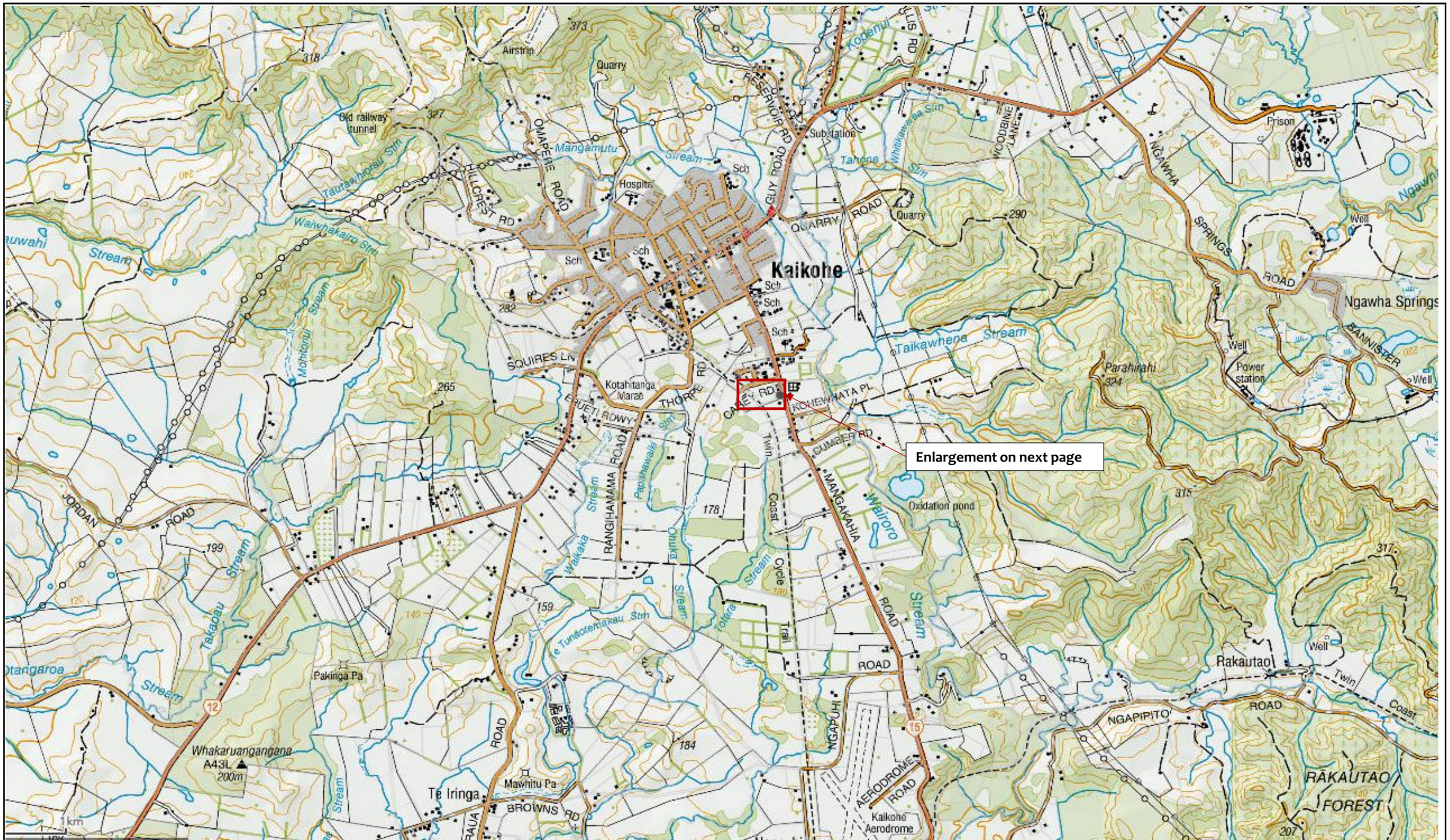
Comments/Summary:

The disposal field will need to be protected from traffic and animal grazing. Planting this area is recommended to increase Evapotranspiration.

Suitable plants for the disposal field can be found on our website www.naturalflow.co.nz

Waterflow Treatment systems to be installed by accredited installer unless other arrangements have been made by Waterflow NZ Ltd

For more information do not hesitate to contact the team at Waterflow NZ Ltd on 0800 628 356



N	WaterFlow Bringing Clarity to Wastewater	**SITE LOCATION PLAN:** Whakatere ki Koranui Trust 91 Mangakahia Road Kaikohe Lot 2DP 191875 1.5504HA	**SCALE:** 1 : 34517 @ A3

DESIGN FLOW = 7425 LITRES PER DAY

CATEGORY 4 SOILS:
DLR = 15mm/DAY
MINIMUM DISPOSAL AREA = 495m2
MINIMUM RESERVE DISPOSAL AREA = 149m2 (30%)

MINIMUM 1.5m FROM PROPERTY BOUNDARIES
MINIMUM 3.0m FROM HABITABLE BUILDINGS
MINIMUM 5m FROM OPEN DRAINS
MINIMUM 15m FROM OTHER SURFACE WATER

PROPOSED LAND DISPOSAL AREA:

495m2 DISPOSAL AREA CONSISTING OF
8 SOAKAGE BEDS EACH 3m WIDE x 18.3 - 22m LONG

FINAL LOCATIONS OF TREATMENT PLANT AND LAND DISPOSAL AREAS MAY BE ALTERED BY INSTALLING DRAINLAYER TO SUIT SITE/INSTALLATION CONDITIONS AND PROPERTY OWNER PREFERENCES. CHANGES TO BE RECORDED ON THE 'AS-BUILT' PLAN.

TEST BOREHOLE

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR.
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

ECONO-TREAT ET-60C
SERVICES HOUSES 1 & 2
LOCATION TBC, >3.0m FROM BUILDINGS

LAND APPLICATION SYSTEM:
132m2 SOAKAGE BEDS. 2 BEDS AT 3mW x 22mL
LAID 1.5m APART ON A LEVEL CONTOUR
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
165m2 SOAKAGE BEDS. 3 BEDS AT 3mW x 18.3mL
LAID 1.5m APART ON A LEVEL CONTOUR
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

LAND APPLICATION SYSTEM:
66m2 SOAKAGE BED. 1 BED AT 3mW x 22mL
LAID ON A LEVEL CONTOUR
TO BE PROTECTED FROM STOCK & VEHICLES
SEE SCHEMATIC DRAWING ATTACHED.

H 1
4 BDRM

H 2
4 BDRM

H 3
3 BDRM

H 4
3 BDRM

H 5
3 BDRM

H 6
1 BD

H 7
2 BD

H 8
1 BD

H 9
2 BD

H 10
1 BD

H 11
2 BD

>15m TO SURFACE WATER

RESERVE DISPOSAL AREAS (~30%)

ECONO-TREAT ET-60C
SERVICES HOUSES 3, 4 & 5
LOCATION TBC, >3.0m FROM BUILDINGS

TEST BOREHOLE

STORMWATER MANAGEMENT DRY POND

ECONO-TREAT ET-60C
SERVICES HOUSES 6, 7, 8 & 9
LOCATION TBC, >3.0m FROM BUILDINGS

ECONO-TREAT ET-52C-WM
SERVICES HOUSES H10 & H11
LOCATION TBC, >3.0m FROM BUILDINGS

Mangakahia Rd

0m 50m 100m

WaterFlow
Bringing Clarity to Wastewater

PO Box 24
Maungaturoto
www.waterflow.co.nz

CLIENT
ADVANCE BUILD
(WHAKATERE KI
KORANUI TRUST)

PROJECT
91 MANGAKAHIA RD
KAIKOHE
ON-SITE WASTEWATER
TREATMENT AND DISPOSAL

TITLE
PROPOSED ONSITE
WASTEWATER LAYOUT

DATE	16/02/26	
DRAWN	MR	
DESIGN	MR	
CHECKED	KH	

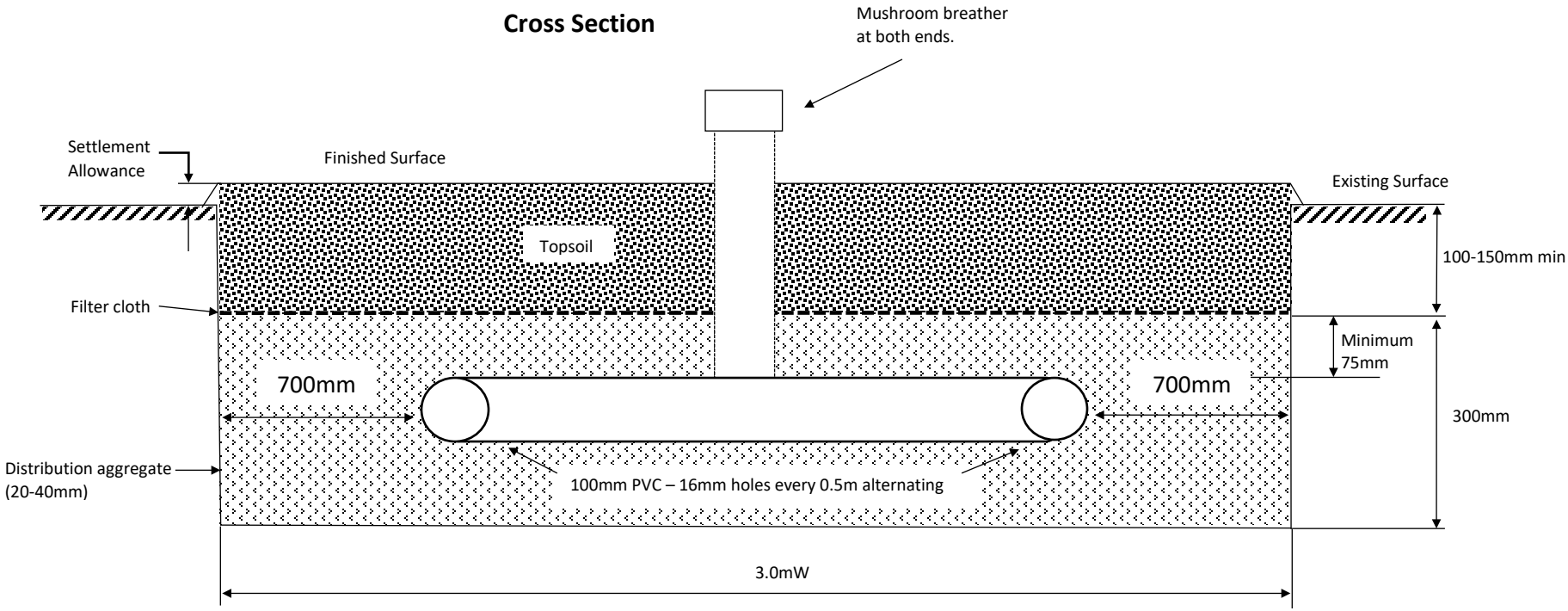
JOB No.	SCALE.
WF24812	1:750@A3

DWG No.	REV.
WF24812-01	A

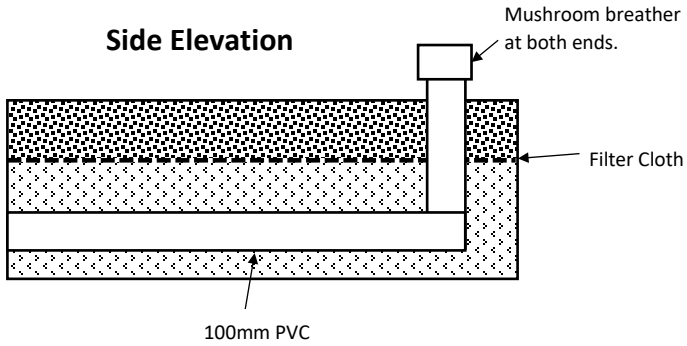
CONVENTIONAL PVC SOAKAGE BED

WaterFlow
Bringing Clarity to Wastewater

Cross Section



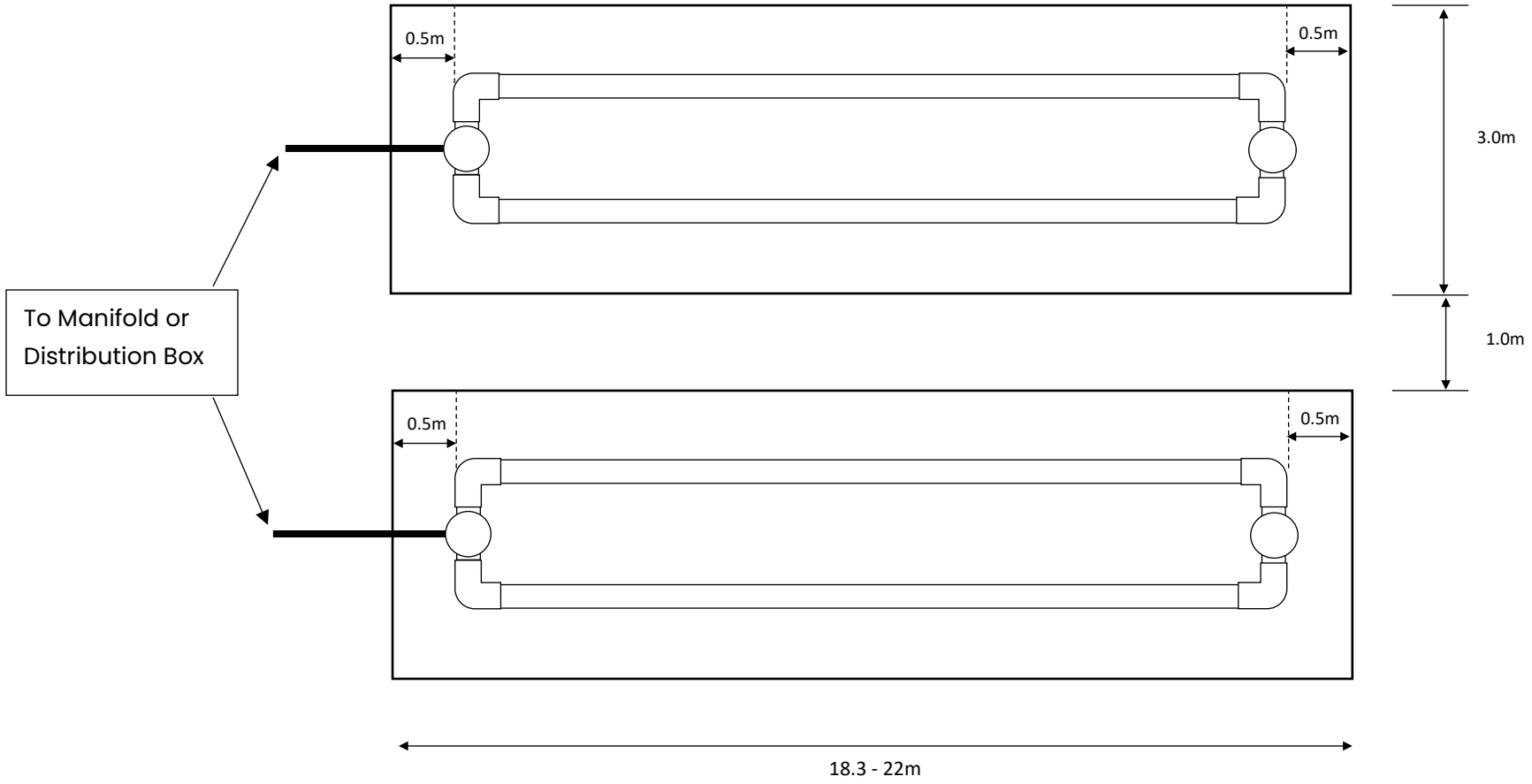
Side Elevation



CONVENTIONAL PVC SOAKAGE BED

WaterFlow
Bringing Clarity to Wastewater

Top Elevation



DAVEY

APPLICATIONS

> Non-potable rainwater applications
> Lawn and garden irrigation
> Sump emptying to higher heads
> Treated effluent disposal
> Water transfer from wells

D42A/B D53A/B

Submersible Drainage Pumps

Model Numbers: D42A/B, D53A/B

Submersible sump pump with two and three impeller designs for higher pressure, up to 45m head.

WHY CHOOSE DAVEY SUBMERSIBLE DRAINAGE PUMPS?

Double mechanical seal, one in oil bath on motor and extra mechanical seal on pump
- Superior reliability
- Long service life

Corrosion resistant 304 stainless steel shaft, motor shell and fasteners
- Long service life

Cast 316 stainless steel motor caps and super tough engineered thermo plastic pump casing
- Outstanding corrosion resistance
- Long life

Centrifugal multistage 2 and 3 impeller designs
- Higher pressures and increased efficiency

Closed vane impellers with long engagement “D” drives
- Positive operation
- Long service life

Patented independently floating neck rings
- Outstanding pump performance
- Long pump life

Corrosion resistant hard wearing polycarbonate impellers
- Long service life

Corrosion resistant stainless steel fine mesh suction strainer with large surface area
- Prevents blockages of the pump by solids

In-built automatic thermal overload
- Protects the motor in the event of blockage or voltage supply problems

HO7RNF oil resistant leads, 10 metres long with 3 pin power plug
- Easy to connect to power supply
- Longer life in dirty water

proudly australian since 1934

Sump Pumps

OPERATING LIMITS

Type	D42A/B	D53A/B
Capacities to	120 lpm	130 lpm
Maximum total head	32m	45m
Maximum submergence	12m	
Maximum pumped water temperature	40°C	
Maximum soft solids	1.9mm O.D.	
Outlet size (BSP)	1" F	

SUITABLE FLUIDS

Clean water of neutral pH containing up to 1% small solids. Some wear should be expected while pumping hard solids in suspension.

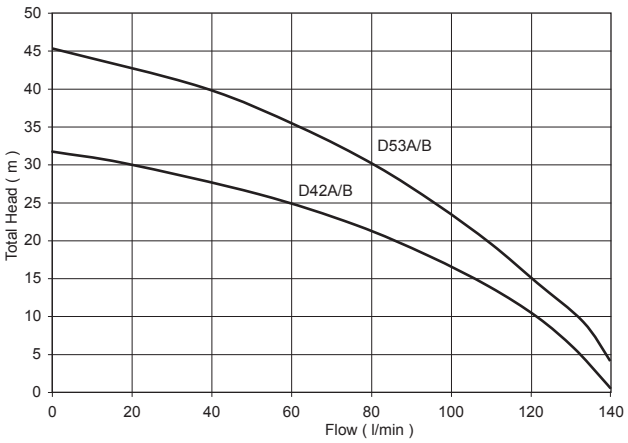
MATERIALS OF CONSTRUCTION

PART	MATERIAL
Impeller	Glass filled polycarbonate
Lock nut	304 stainless steel
Pump casing	Glass filled polycarbonate
Diffuser and blanking ring	Glass filled noryl
Mechanical seal – pump	Carbon / ceramic
Mechanical seal – motor	Silicon carbide / ceramic oil in bath
Shaft seal elastomer	Nitrile rubber
Pump shaft	304 stainless steel
O-rings	Nitrile rubber
Motor shell	304 stainless steel
Bottom bearing housing	Cast 316 stainless steel
Upper motor cover	Cast 316 stainless steel
Handle	304 stainless steel
Fasteners	304 stainless steel
Float and power supply leads	HO7RN-F oil resistant

ELECTRICAL DATA

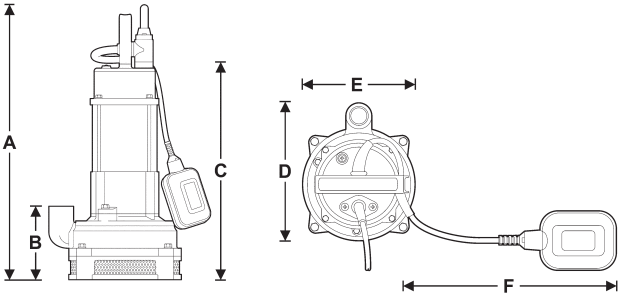
Type	D42A/B	D53A/B
Supply voltage	220-240V	
Supply frequency	50Hz single phase	
Speed	2 pole, 2850rpm	
Full load current (Run)	4.3A	5.7A
Locked rotor current (Start)	14A	
Input power (P_1)	1.00kW	1.31kW
Output power (P_2)	0.60kW	0.84kW
IP rating	X8	
Insulation class	Class F	
Starting	P.S.C.	
Lead	10m long	

HYDRAULIC PERFORMANCE



DIMENSIONS (MM)

Type	A	B	C	D	E	F	Outlet B.S.P.	Net Weight (kg)
D42A/B	475	130	370	235	195	330	1"F	10.8
D53A/B	535	170	430	235	195	330	1"F	16.5



INSTALLATION AND PRIMING

Use a rope to position and retrieve the pump. Do not lower or retrieve the pump using the power lead as this may damage the cable entry seals, causing water leaks and unsafe operation.

Do not use this product for recirculating or filtering swimming pools, spas, etc. While these pumps are built to high safety standards, they are not approved for installations where people will be in the water while they are operating.

Do not pump abrasive materials. Sand and grit in the water being pumped will accelerate wear, causing shortened pump life.

Keep your pump clean, particularly in situations where lint, hair or fibrous materials may get bound around the pump shaft. Regular inspection and cleaning will extend pump life.

Make room for the float switch to operate. Automatic models have a float switch to turn them on when the water level rises and turn them off again when it has been pumped down to the safe operating level of the pump. If the float switch is not free to rise and fall, correct pump operation may not be possible.

Do not run your pump dry. Non-automatic models must be switched off manually or by way of an external float/level switch when the water level is reduced to the top of the pump housing.

DWP0327-3/0818

Assessment of Environmental Effects

Whakatere ki Koranui Trust of 91 Mangakahia Road, Kaikohe
Lot 2 DP 191875

1.1 Description of Proposal

The owners of the property propose the construction of 11 new papakainga dwellings within 8 new buildings. The new buildings will require onsite wastewater management.

1.2 Site Description

91 Mangakahia Road is a rural property of about 1.5 hectares. This development involves the creation of 11 papakainga dwellings wihtin 8 new buildings inlcuding 2 x 4 bedroom, 3 x 3 bedroom and 3 x (2 bed + 1 bed) duplex dwellings. The domestic wastewater from the new dwellings will drain to four new onsite wastewater management systems detailed in this report. The land where the disposal of secondary treated wastewater is proposed is relatively flat and the area is currently covered with grass and scrub. There are no overland flow paths, surface waters or flood plains in the area proposed for onsite wastewater management.

1.3 Wastewater Volume

In calculating the wastewater flows we have allowed for a maximum occupancy of 45 persons in the 11 new dwellings, based on 2 x 4 bedroom dwelling, 3 x 3 bedroom dwelling and 3 x duplex dwellings (1 bed + 2 bed). Occupancies are calculated as per Auckland Council TP-58, Table 6.1). Total wastewater production is based on an allowance of 165 litres per person per day (as per AS/NZS 1547:2012 Table H3, Note 2), which is based on a municiple water supply and standard water reduction fixtures being throughout the new dwellings.

1.4 Wastewater Volume

The four ET60C system that is proposed will treat the wastewater to an advanced secondary standard prior to dispersal using a LPED dispersal system into a purpose-designed conventional soakage bed system, where the removal of nutrient will continue, both in the receiving soils and by plant uptake.

The system will be capable of producing reductions in Biochemical Oxygen Demand, Total Suspended Solids, Nitrogen, and Coliforms to a standard that meets the requirements (see details below). The system will cater for the wastewater requirements of the private dwellings (domestic wastewater) and will not service any commercial or trade waste sources. Risk Minor to Nil.

1.5 Proposed Treatment System

The objective of the treatment system is to reduce and remove much of the contaminants from the wastewater prior to discharge into the receiving soil. This will improve the long-term performance of the disposal field as well as reducing the risk to the receiving environment. Each of the four wastewater systems will consist of:

- 4 x Septic Tank Modules (6000L)
- 1 x ET52C & 3 x ET60C Econotreat wastewater treatment plants
- Land Application System (495m2)

The system is constructed using concrete tanks. The system produces treated effluent with BOD <20mg/L, Suspended solids <20mg/L.

1.6 Land Application System

The proposed land application system uses a LPED dispersal system into conventional soakage beds, to disperse the treated wastewater into the receiving soils and we recommend densely planting to enhance evapo-transpiration. This land application system will be installed in conjunction with existing and proposed landscaping as detailed on the site plan.

1.7 Surface & Ground Water

It is proposed to treat the water to a high standard prior to discharge and the proposed irrigation system will introduce the water into the topsoil horizon using Soakage Beds. A low application rate of treated effluent into the topsoil will significantly reduce the likelihood of, any breakout or runoff or any risk of surface water contamination. With the ground water levels being >1.2m this conservative DLR also means the risk of ground water contamination is virtually nil. A majority of the undeveloped areas of this site are suitable for a Soakage Beds when the necessary setbacks are observed. Risk Minor to Nil.

1.8 Air Quality

The proposed ET60C system will produce no noticeable odour when functioning correctly. Any odour will be contained within the tanks. The land application system will load the soil at a rate that should not cause ponding, spraying or aerosol of the effluent that could potentially cause odours. Risk Minor to Nil.

1.9 Visual Impact

The tanks are installed wholly below ground level with only the lids being visible. The lids will protrude approximately 100mm to prevent egress of storm water into the system. The disposal field will be located in a purpose designed mulched and intensively planted disposal area. Warning signs may be installed to indicate the presence of the disposal area, although probably not necessary in a domestic situation, also the area may be fenced to restrict access.

1.10 Environmental Risks

Risks are associated with this proposal are minor. The treatment system will be automated, and the Home Owner will be given a 'Home Owners Care Guide' which explains the necessary visual checks to ensure no issues arise with the system, specifically – solids build-up - high water level – discharge failure – filter blockage.

Peak flow into the system are not expected to be significant and the system includes a large emergency storage volume.

1.11 Maintenance Requirements

The maintenance requirement of this system is minimal, with the system fully automated. The system requires little input from the operator apart from the regular visual checks of the treatment system and land application system. All other maintenance interventions must be carried out by service persons familiar with the operation of the system and approved by the manufacturer. Maintenance may include checking of the dissolved oxygen levels, cleaning of effluent outlet filter, removal of excess sludge volume, checking of control panel function, etc.…

The owners will be verbally informed at the commissioning of this system of all maintenance requirements and strongly advised to have a service contract in place prior to final sign off of the system installation.

WaterFlow
Bringing Clarity to Wastewater

ECONOTREAT™

ET60C Treatment System

System Specificatons & Installation Instructions

ET-60C-SpecInstall-250516

ET60C

System Specificatons & Installation Instructions

Compliance Requirements

All Waterflow Septic Tanks and Treatment Modules meet the requirements of the New Zealand Building Code G13-VM4, Clause B1 - Structure, and Clause B2 Durability As stated in the AS/NZS 1546.1:2008 Standard, 1.5.2.1, all septic tanks constructed to this Standard meet the requirements of the New Zealand Building Code for Clause B1 - Structure and Clause B2 Durability.

The design and specifications of the septic tank are fully compliant with the AS/NZS1546.1:2008 Standard, including but not limited to:

Structural Integrity: The tank is designed using 50 MPa fibre-reinforced concrete with appropriate foot anchors and reinforcement, ensuring it meets the structural requirements specified in the standard.
Material Specifications: All materials used, including the reinforcing details and concrete mix, comply with the necessary standards for durability and suitability in septic tank applications.
Capacity and Dimensions: The tank's dimensions and baffle placements align with the standard's guidelines, ensuring proper functionality and waste management.
Access and Maintenance Provisions: The design includes provisions for easy access, necessary for regular inspection, cleaning, and maintenance in accordance with the standard.

Please feel free to ask for a copy of this complete document, if required.

ET60C

System Specificatons & Installation Instructions

Treatment Process

Primary Chamber / Tank
Influent enters the chamber via the source whereby scum and solids capable of settling are separated from the raw influent. Primary treated effluent flows through a transfer port to the aeration tank. This primary tank will also act as a storage chamber for sludge returned from the Clarification Chamber.
After primary settling, the sewage passes through a Reln outlet filter.

Aeration Chamber
Water enters from the Primary Chamber. Air is introduced into this chamber via an air blower to create an environment for aerobic bacteria and other helpful organisms to consume the organic matter present. The aeration tank is designed in a manner to help prevent short circuiting of the wastewater to ensure extended aeration. Media is present in the tank to support the growth of bacteria.

Clarification Chamber
The Clarification chamber is essentially a quiescent zone where suspended particles/solids are settled out of the water. These particles are returned to the Primary chambers via a sludge return which aids in further biological reduction, denitrification and providing a constant food supply rich in microbes supporting the system through periods of limited flows.

System Performance

BOD (g/m^3)	<10
TSS (g/m^3)	<10
Total Nitrogen TN (g/m^3)	<15
Ammonia Nitrogen NH4-N (g/m^3)	<15
Total Phosphorous (g/m^3)	<15

ET60C

System Specificatons & Installation Instructions

Effluent Quality

The EconoTreat ET60C Series wastewater treatment system generates advanced secondary treated effluent of the following quality provided that there are no inhibitory or toxic substances within the wastewater that will impair the biological performance of the system:

- 5-day Biochemical Oxygen Demand (BOD5) 15 mg/L
- Suspended solids 15 mg/L

Note: Please read Guidelines on how to care for your EconoTreat wastewater system which are to be adhered to at all times.

The treated wastewater will usually be disposed of via a land application system, designed accordingto AS/NZS 1547:2012which describes various land application systems for primary treated effluent. Disposal systems must also comply with the relevant Regional Authority rules, and these should be consulted.

Loading Rates

• Total Daily Flow Rate	3000 L per day
• Organic loading as BOD5	700g per day
• Suspended solids loading	700g per day

Important: the actual maximum loading of an installed EconoTreat VBB-C-3000 System is limited to the capacity of the land application system it discharges to. For example if the land application system is designed with a capacity of 800L per day, then the VBB-C-3000 System must not be loaded at more then 800L per day.

Dual Chamber Septic Tank

6000L Nominal Capacity
2200mm Diameter
1960mm High
~4,100kg

Aeration Tank

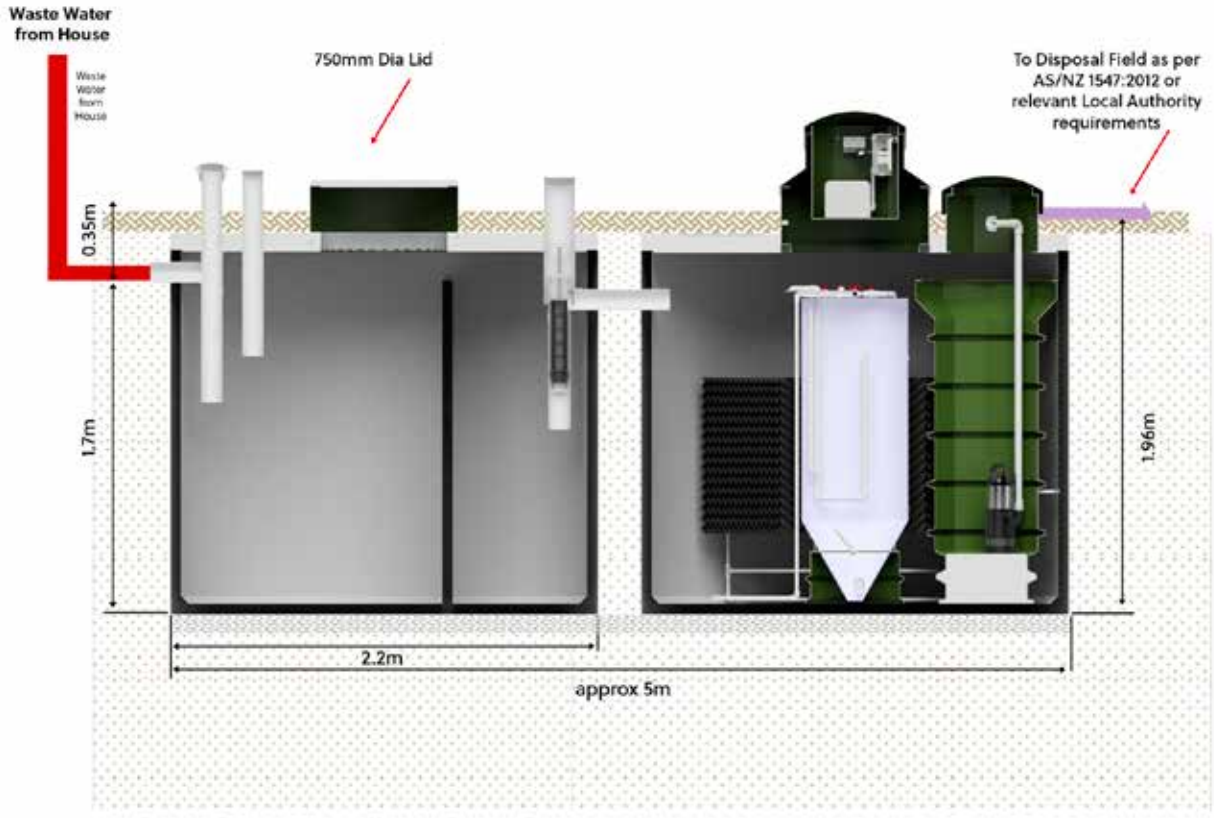
6000L Nominal Capacity
2200mm Diameter
1960mm High
~3,640kg

Pump Chamber

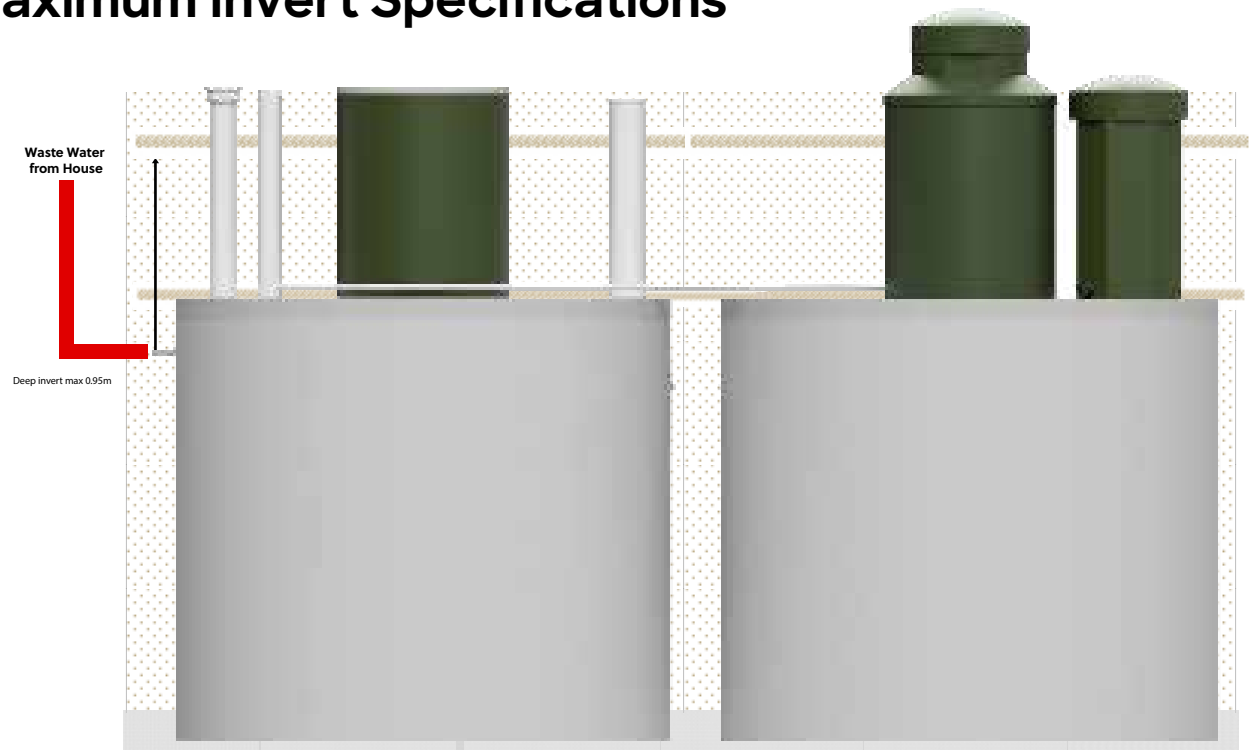
500L Pump Chamber
3000L Emergency Storage

ET60C

Schematic Drawings

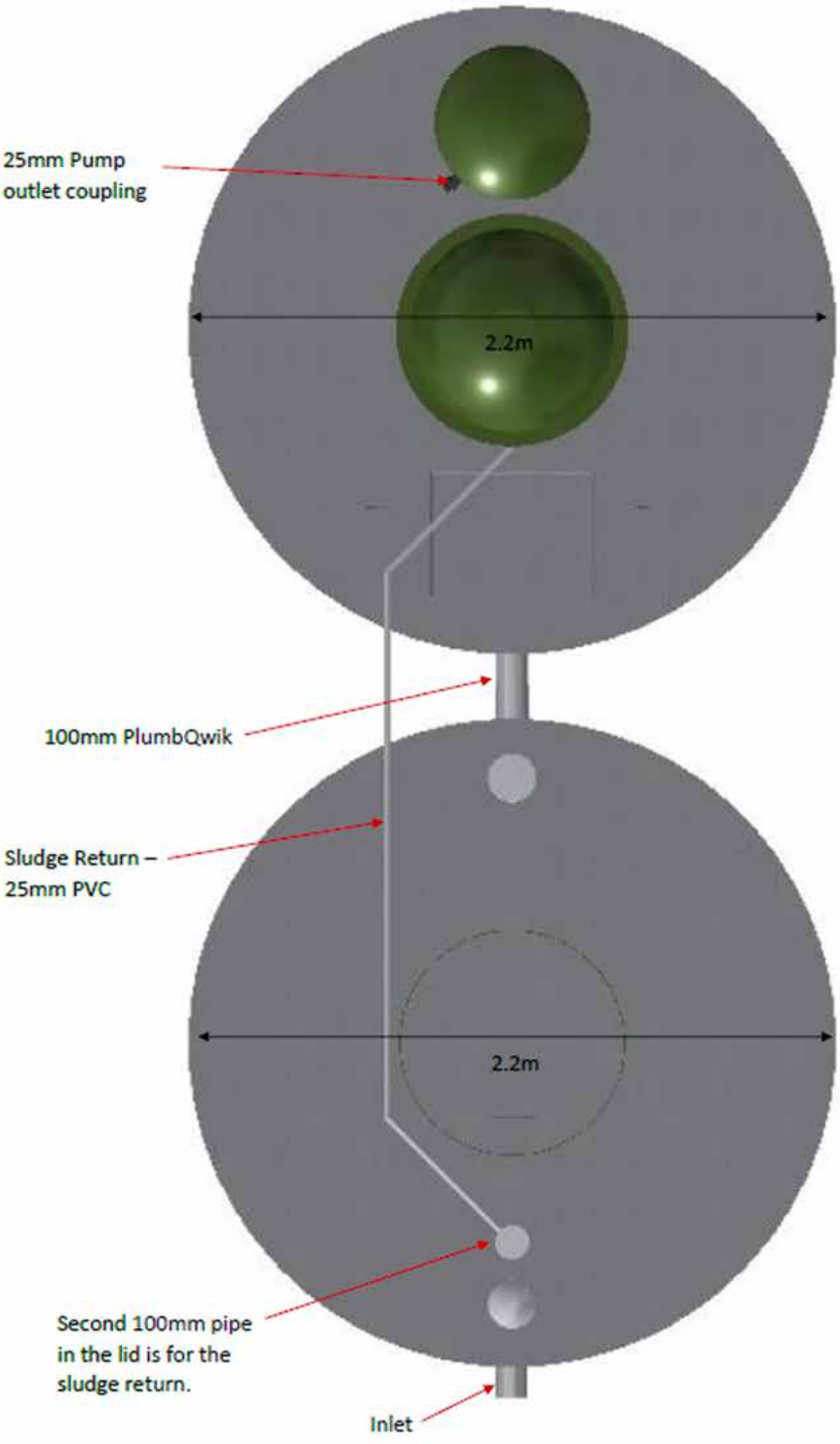


Maximum Invert Specifications



ET60C

Schematic Drawings



ET60C

Instructions for Installation

The EconoTreat system is to be installed or signed off by a registered Drain layer to the design specified by Waterflow NZ Ltd. The following installation instructions and procedures followed correctly will ensure System performance is not compromised in any way.

1. Excavate two 3m x 2m level platforms at an appropriate depth to ensure adequate fall for inlet pipe from the source. This has to be installed on virgin ground. The two platforms are ideally on the same level and next to each other, either side-by-side or end-on-end.

2. Lay 100mm of bedding metal on platform and place the Septic and Aeration tanks next to each other. As close as practically possible to minimize the connection distance between the tanks.

3. Connect the two tanks with 100mm PVC. If the tanks are side-by-side the connection will need supporting. This is done by, extending the connection back onto virgin ground or hard-filling and compacting and also tying it back to the wire on the lids with a length of rope supplied. The rope can be found in the top of the treatment tank.

Instructions for Installation

4. Next connect the sludge return. This is a 25mm PVC pipe that come out of the central riser on the treatment tank. This must be plumbed back to the second 100mm PVC at the start of the septic tank. It is important that this pipe is falling slightly or at minimum flat.

5. Trench from Dose Chamber outlet to disposal field and lay the 25mm alkathene feed line.

6. Take a minimum of 3 photos at this point to showing connections and back fill, to ensure correct installation for sign off.

7. Back fill around tanks. Using spoil from the excavation is fine if it is suitable otherwise consider a hard fill. Please be aware that soils will settle over time though.

Caution: System must be protected from excessive super imposed loads both lateral and top loads. E.g. loads from vehicular traffic. There needs to be at least 2m of clearance maintained around system.

ET60C

System Specificatons & Installation Instructions

Installation Location and Certification

These tanks are not designed for vehicle loads and shall be located no closer than 2m to a driveway, road frontage or a building. If for any reason the tank is located where vehicle traffic may drive over the tank or approach closer than 2m, or where it may be trampled on by farm stock then the tank should be protected by a concrete slab designed to support these loads. Surface water must also be diverted from flowing into the installation.

Installation must be certified to AS/NZS 1547:2012, the certificate to be issued and held by the regulatory authority.

High Water Table Installations

All tanks have been engineered and designed for maximum strength, in accordance with the NZC 3604. Clauses B1 and B2 for structure and durability, to withstand any hydraulic pressures, both lateral and uplift, created by high water table conditions.

In high water table installations, it is important to fill the tanks with water. This removes the hydraulic uplift and simplifies the installation. In extremely high-water tables, cement can be added to fine metal to create a mass around the dead men anchors secured to the tanks (alternately concrete could be used). Waterflow must be made aware of this early on in vies of supplying a tank that is fit for purpose.

Plumbing Pipes and Fittings

All internal plumbing is done with PVC pipes with appropriate connections according to AS/NZS 1260 and AS/NZS 4130.

Alarm System

The ET60C System is equipped with an AS/NZS 1546.3 compliant audible and visual alarm with a mutable alarm signal and alarm light. The alarm panel must be mounted in a location that is readily visible within the dwelling.

Alarm is triggered by a high-level float switch in the pump well.

ET60C

System Specificatons & Installation Instructions

Plumbing Pipes and Fittings

All internal plumbing is done with PVC pipes with appropriate connections according to AS/NZS 1260 and AS/NZS 4130.

Backfill and Bedding

Backfill the excavation from the base of the tank with a GAP/PAP 20 metal, dry mixed with cement to form a solid mass, to a minimum of 400mm above the anchor plates. Then continue with metal, clean unsaturated soils or spoil from the excavation, (if suitable i.e. up to Class 4 as per AS/NZS 1547:2012) in approximately 200mm layers. Compact each layer evenly with a mechanical compactor to minimise subsidence and back fill to the level of the invert pipe.

Electrical

Where a pump is required to dose the Land Application System, all electrical connections must be installed according to AS/NZS 3000. The electrical connections are housed in an enclosure on the top of the tank. Please see separate Electrical Guide for more details.

Warranty

WATERFLOW NZ LTD warrants that all Treatment Systems manufactured by WaterFlow NZ Ltd will be free from defects in materials and workmanship for the following periods from the date of installation, under the following conditions:

1. Plastic-Moulded tanks: 15 years

2. Concrete Tanks: 15 years

3. Filter Media: 5 years

4. Dosing float: 2 years

5. Electrical Components and Pump: 2 years

WATERFLOW NZ LTD will, at its discretion, repair or replace any defective components with the same or equivalent part at no charge to the consumer, in accordance with the following terms and conditions laid out in the WaterFlow NZ's Warranty Certificate. Full text warranty available on request.

1st June 2025
Dean Hoyle
Managing Director

WaterFlow

Bringing Clarity to Wastewater

Our team of wastewater experts are here to help.
Let's see if Econotreat could be right for your backyard.

Smarter wastewater and sewage systems, for a cleaner New Zealand.

0800 628 356
www.waterflow.co.nz
sales@waterflow.co.nz
ET-60C-SpecInstall-250516

ECONOTREAT™

WaterFlow
Bringing Clarity to Wastewater

ECONOTREAT™

Advanced Secondary Treatment Aerated Wastewater System

Owner's Manual

EconoTreat Wastewater Systems

Owner's Manual

Contents

EconoTreat Wastewater Systems

Owner's Manual

To the Owner

Thank you for choosing an EconoTreat System to treat and care for your on-site sewage and wastewater.

Your EconoTreat System is fully automatic in operation and requires little owner intervention to ensure years of service. It is useful that the owner/operator of the system understand some of the broad concepts of the system operation. This manual has been written to provide this simple explanation and to serve as a future reference so that you can ensure that the system is operating effectively at all times.

We encourage you to monitor and care for your EconoTreat system with our backing and support. By doing so you will learn how your system works and operates and how to keep it in top working order. WaterFlow promises consistent results year after year.

Kind regards,
The Waterflow Team

WaterFlow NZ Ltd Warranty

WATERFLOW NZ LTD warrants that the Waterflow NZ System will be free from defects in materials and workmanship for the following periods from the date of installation, under the following conditions:

1. Plastic-Moulded tanks: 15 years
2. Concrete Tanks: 15 years
3. Filter media: 5 years
4. Dosing float: 2 years
5. Electrical components and Pump: 2 years

WATERFLOW NZ LTD will, at its discretion, repair or replace any defective components with the same or equivalent part at no charge to the consumer, in accordance with the full terms.

Note: Full warranty document available at your request.

EconoTreat Wastewater Systems

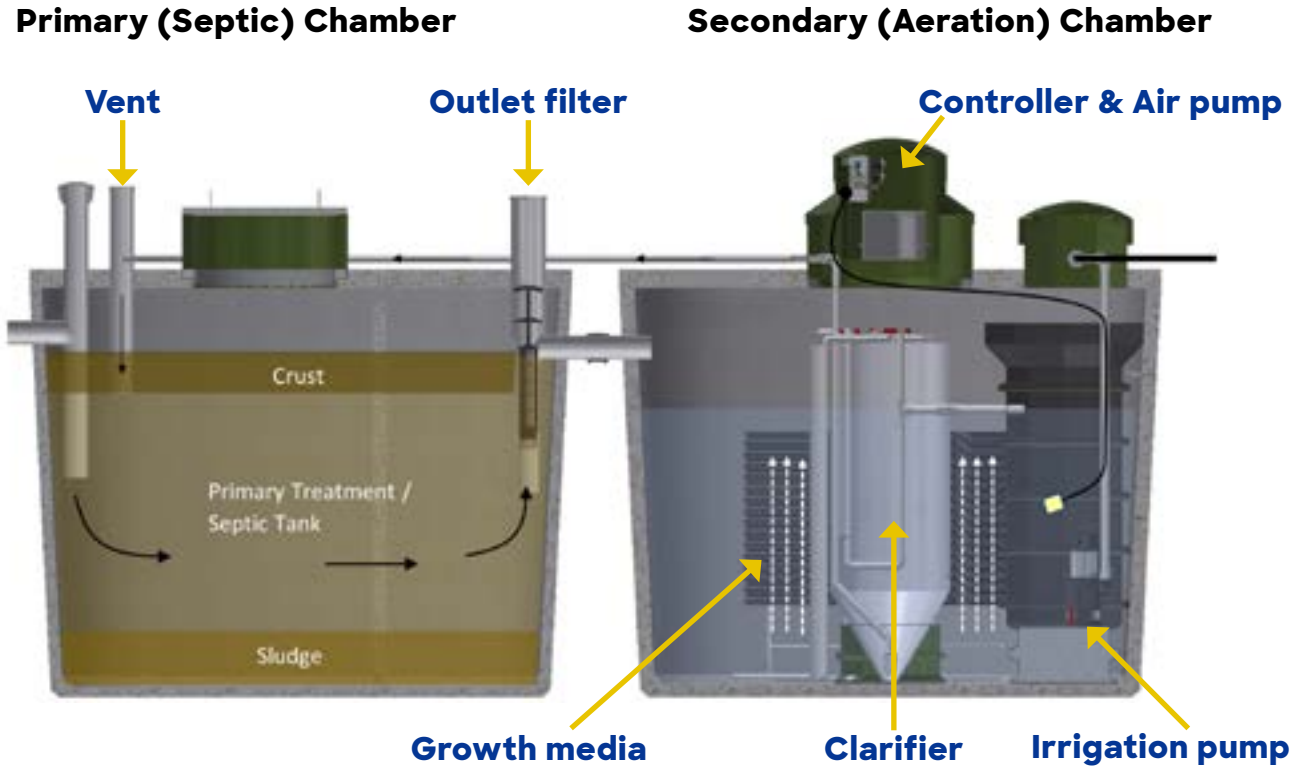
Owner's Manual

Components of Your Wastewater Septic System

Primary Chamber / Tank
Influent enters the chamber via the source whereby scum and solids capable of settling are separated from the raw influent. Primary treated effluent flows through a transfer port to the aeration tank. This primary tank will also act as a storage chamber for sludge returned from the Clarification Chamber.

Aeration Chamber
Water enters from the Primary Chamber. Air is introduced into this chamber via an air blower to create an environment for aerobic bacteria and other helpful organisms to consume the organic matter present. The aeration tank is designed in a manner to help prevent short circuiting of the wastewater to ensure extended aeration. Media is present in the tank to support the growth of bacteria.

Clarification Chamber
The Clarification chamber is essentially a quiescent zone where suspended particles/solids are settled out of the water. These particles are returned to the Primary chambers via a sludge return which aids in further biological reduction, denitrification and providing a constant food supply rich in microbes supporting the system through periods of limited flows.



Service Agent Role

Your EconoTreat System requires annual service and maintenance inspections unless otherwise specified by local regulations. This will need to be done by our trained technicians. We will phone to arrange a suitable time to attend to your servicing needs. Servicing done by technicians who are not approved by WaterFlow will void your Warranty.

A record sheet (in duplicate) will be completed by our technician at the time of service. One copy is for you the customer and available upon payment, the other copy will be retained for our records.

Please call our office for the cost of servicing after the initial 12-month period.

Servicing includes:

1. A general inspection of tank area, irrigation and drainage.
2. Inspection of electrical equipment including timer, Low powered Blower, irrigation pump, warning lights and connections.
3. Inspection of Pump-out Chamber and septic tank, checking air lines, adjusting air supply (if necessary), operating de-sludging unit, resetting air control, operating submersible switch, checking bio-mass growth, checking sludge level.
4. Inspection of irrigation including lines, jets and outlets. Between 4 - 9 years the tank will need to be de-sludged (pumped out) as with any septic tank. We will notify you of this requirement, as the service technicians will be monitoring sludge depth annually.

EconoTreat Wastewater Systems

Owner's Manual

Owner Care Role

Did you know...
...that as a homeowner you're responsible to make sure your wastewater system gets the required maintenance needed to protect the investment in your home? This guide will help you care for your wastewater system. It will help you understand how your system works and what steps you can take as a homeowner to ensure your system will work efficiently.

The owner is greatly encouraged to maintain a monthly visual check of the operation of their system and to make sure their land application systems are maintained in good condition.

1. Industry recommendation is to have a maintenance contract in place at all times
2. Visual check of treatment system
3. Visual check of land application system
4. Notify your approved service provider of any issues

Intermittent Use
There are no precautions to take. Your EconoTreat can be left to function automatically for 6 to 12 months. However, if you are likely to be away from home for more than six months you may like to contact our office, so we can make a routine check.

Efficient Water Use - it really does make a difference
Average indoor water use in the typical single-family home is approximately 180ltrs per person per day. The more water a household conserves, the less water enters the septic system. Efficient water use can improve the operation of the wastewater system and reduce any risk of disposal field overload.

Washing machines
By selecting the proper load size, you'll reduce wastewater. Washing small loads of laundry on the large-load cycle wastes precious water and energy. If you can't select load size, run only full loads of laundry. N.B. A new Energy Star washing machine uses 35 percent less energy and 50 percent less water than a standard model.

EconoTreat Wastewater Systems

Owner's Manual

Inspection Checklist

When checking the system operation, take particular note of;

1. Remove and clean outlet filter every 3-4 months.
2. Field performance, particularly looking for any undue odours or effluent breakout (flush field lines 2-3 monthly).
3. All electrical parts (if applicable). Ensure all pump alarms are working.
4. Clean disc filter 2–3 monthly (if applicable)

EconoTreat Wastewater Systems

Owner's Manual

Care for your Land Application System (LAS / Disposal Field)
Your disposal field is an important part of your wastewater system. Here are a few things you should do to maintain it:

- Flush driplines regularly – every 3 months recommended
- Mow your disposal field and maintain plantings regularly to ensure access to flushpoints etc.
- Plant only recommended wetland plants over and near your wastewater system. Roots from nearby trees or shrubs might clog and damage the disposal field
- Protect both the treatment system and the disposal field from vehicle traffic, including livestock to avoid damage to the pipes, tank, or other septic system components.
- Do not build any structures over it or seal it with concrete, asphalt etc
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the disposal field. Flooding the disposal field with excessive water slows down or stops treatment processes and can cause plumbing fixtures to back up
- Trees with very aggressive roots, such as willows, should be kept well away from the disposal field
- A soggy disposal field won't absorb and neutralise liquid waste. Plan landscaping, roof gutters and foundation drains so that excess water is diverted away from the disposal field

Effects of Household Cleaning Chemicals

Use of many cleaning chemicals in facilities served by on-site disposal systems, can result in high concentrations of the constituents in those cleaning agents being discharged into the receiving soils. These chemicals and constituents can have a massive impact on the quality and condition of the receiving soils over time.

Many of the chemicals can disrupt soil structure and decrease hydraulic conductivity while others can act as bactericides, destroying the essential micro-organisms required to achieve the high level of biodegradation in the treatment and disposal systems.

The following matters need to be considered when using cleaning agents in a domestic situation:

- Laundry powders are often extremely high in sodium which will destroy the salt balance in the soils. Check the labels for low sodium and phosphorous contents.
- Wastewater flow from dishwashing machines can have an impact on wastewater treatment systems, in terms of the strong cleaning chemicals used, so check labels for low sodium products
- Highly corrosive cleaners (such as toilet and drain cleaners) that have precautionary labels warning users to minimise direct contact, are an indication that they can adversely affect the wastewater treatment system. Up to 1 cup of bactericides such as bleach can be sufficient to impact on all the micro-organisms/bugs in a septic system.

Substitutes For Household Cleaning Chemicals

Use of the following readily biodegradable substitutes for common potentially harmful household cleaning chemicals will reduce the stress on any wastewater system, significantly enhance the performance of the whole system and increase the life of the land application system, while reducing the potential effects of the receiving soils.

General Cleaners
Use soft soap cleaners and bio-degradable cleaners and those low in chlorine levels. Contact us for a new biological cleaner that will help you system.

Ammonia-Based Cleaners
Instead sprinkle baking soda on a damp sponge.

Disinfectants
In preference use Borax (sold in most Bin Inn stores): ½ cup in 4-litres of water.

Drain De-Cloggers
Avoid using de-clogging chemicals. Instead use a plunger or metal snake, or remove and clean trap. Contact us for very effective, worm friendly, drain cleaning products.

Scouring Cleaners and Powders
Instead sprinkle baking soda on a damp sponge or add 4-Tbs baking soda to 1-Litre warm water. It's cheaper and won't scratch.

Toilet Cleaners
Sprinkle on baking soda, then scrub with toilet brush.

Laundry Detergent
Choose one with a zero phosphate content and low in alkaline salts (in particular, a low sodium level) and no chlorine.

Do's and don'ts

DO

- If your system requires power supply make sure this remains on continuously
- Wipe and bin your fats and frying oils rather than rinsing them down the drain
- Check faucets and toilets for leaks; make repairs if necessary
- Use low flush toilets where possible
- Use a 'displacer' to reduce the amount of water needed to flush older toilets
- Use aerators on faucets and flow reducer nozzles on showers to help lower water consumption
- Reduce water levels for small loads of laundry
- Wait until the dishwasher is full to run it
- Perform regular monthly visual checks of your system and field
- Keep records of all maintenance undertaken on the wastewater systems

DO NOT

- Switch off power unless servicing
- Use cleaners high in chlorine, phosphorous or ammonia in toilets or kitchen sink
- Pour any toxic/strong chemicals (paint, oil, grease, paint thinners or pesticides) down any drains
- Pour strong or large volumes of acid down any drains. These include: vinegar, brine, lemon juice.
- Flush down your toilet – Dental floss, feminine hygiene products, diapers, wipes, cotton swabs, cigarette butts, cat litter, dog poo, and other kitchen and bathroom items. Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can also stress or destroy the biological treatment taking place in the system or might contaminate surface or ground waters.
- Discard any drugs down the sink or toilet
- Alter or add any part of your system without Waterflow NZ LTD's approval

Troubleshooting

To ensure the most effective operation of your EconoTreat System you should familiarise yourself with the contents of this manual. The system has a high-water level and air failure alarm that can be muted as per AS/NZS 1546.3:2008. The mute function will automatically reset to audible in 24hrs. The EconoTreat has been designed to include additional safety margins and minor mishaps and normal household usage will not usually affect the operation of the system.

However, if the alarm sounds or strong odours persist, please call your service

Problem	Potential Cause(s)	Remedial Action(s)
Alarm sounds (will indicate air or water alarm)	Irrigation pump not working Air supply not working No power at the tank Blocked Septic filter	Check power source and wriggle pipe from pump to ensure float is not stuck Check water levels Listen for the air compressor Clean septic outlet filter Check your fuse board Open the taps on your drip field to assist water exiting faster High level float switch in the pump well may be triggered – the alarm will reset after the water level in the sump subsides If your system has a disc filter, remove and clean it If everything all looks to be ok, it may be a faulty alarm sensor (mute alarm and contact your service provider.
Water around tank	System overflowing Blocked outlet filter Storm/Surface water	Check there is power on at the system Remove and clean outlet filter Divert Storm/Surface water away from the system
Excessive foaming	Too much laundry detergent Too many washes	Use recommended quantities Spread wash loads over different days

EconoTreat Wastewater Systems

Owner's Manual

Problem	Potential Cause(s)	Remedial Action(s)
Persistent odours	Too much water usage Excessive chemicals in use Gully traps dried out or non-existent (if the bathroom does not get used often, the water can evaporate out of a gully trap allowing odour to escape into the house).	Add biologic starter pack Install water saving devices Stop fats, oils, and grease going down the drain Reduce water usage or install water saving devices Avoid using nasty chemicals (Eco store, Earthwise, Ecobeings and Dishpod are great options) Run water down drain to ensure gully trap is blocking odour System will recover
Irrigation system not working	Irrigation pump not working Irrigation lines kinked or blocked Saturated areas at the end of the irrigation field	Check power source and wriggle pipe from pump to ensure float is not stuck Locate all flush valves, check if water is exiting Flush irrigation line and remove kinks or blockages Turn flush valves off to avoid further saturation Check if any large machinery has driven over / near it
Water ponding on irrigation field	Storm/Surface water Irrigation line blocked Excessive water use	Install water saving devices Repair irrigation pipe Redirect any surface water away from the irrigation field
Household drains gurgling	Blocked drain to the tank Check your main switchboard that the power to the system is on Check water levels, if flooded then a technician may be needed to investigate further	Check and make sure you can see the inlet into the tank. If you can you have a drainage issue. Send pictures of the inside of the tank to **service@waterflow.co.nz** to arrange an inspection Please limit water usage until we can come to site Stop and fats, oils, or grease going down the drain

ECONOTREAT™

Need a hand? We're here to help.

0800 628 356

www.waterflow.co.nz

sales@waterflow.co.nz

WaterFlow

Advance build

Project Starter Pack

Authorisation for Council

As the legal owner/s or representative/s of property at: 91 Mangakahia Rd, Kaikohe.

I give authority for the builder (Advance Manufacturing Ltd) or nominated delegates to apply for a PIM Report, Resource Consent, Building Consents on my behalf and to undertake site visits on my property.

It is not a requirement for all landowners to give authorisation, one or more key stakeholders is sufficient.

Date: ..... Project Consultant: Joseph Simpkin

Owner/ Representative Name: Andrew James Toia Signature: .....

Owner/ Representative Name: Britannia Norma Mutu Signature: .....

Owner/ Representative Name: Kevin Lambert Signature: .....

Owner/ Representative Name: ..... Signature: .....

Owner/ Representative Name: ..... Signature: .....

Owner/ Representative Name: ..... Signature: .....

Home Starter Pack

Authorisation for Council

As the legal owner of property at: 91 Mangakahia Rd, Kaikohe

I give authority and permission for the builder (Advance Manufacturing Ltd) or nominated designer to apply for a PIM Report, Resource Consent and Building Consents on my behalf.

Date: 25/02/26 Home Consultant: Advance Build Ltd

Client/s Name/s: Whakatere Investments Ltd

Client/s Signature: I Cassidy