



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 Form 9)

Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges – both available on the Council’s web page.

1. Pre-Lodgement Meeting

Have you met with a Council Resource Consent representative to discuss this application prior to lodgement? Yes / No

2. Type of Consent being applied for (more than one circle can be ticked):

- Land Use  Fast Track Land Use\*  Subdivision  Discharge
 Extension of time (s.125)  Change of conditions (s.127)  Change of Consent Notice (s.221(3))
 Consent under National Environmental Standard (e.g. Assessing and Managing Contaminants in Soil)
 Other (please specify)

\*The fast track for simple land use consents is restricted to consents with a controlled activity status and requires you provide an electronic address for service.

3. Would you like to opt out of the Fast Track Process? Yes / No

4. Applicant Details:

Name/s: Kiri Sloane-Hobson and Craig Hobson

Electronic Address for Service (E-mail):

Phone Numbers: Work: Home:

Postal Address: (or alternative method of service under section 352 of the Act)

Post Code: 0481

5. Address for Correspondence: Name and address for service and correspondence (if using an Agent write their details here).

Name/s: Nina Pivac (Tohu Consulting Limited)

Electronic Address for Service (E-mail): nina@tohuconsulting.nz

Phone Numbers: Work: 0210614725 Home:

Postal Address: 39A Commerce Street Kaitaia 0410 (or alternative method of service under section 352 of the Act)

Post Code:

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

**6. 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: Kiri-Ann Sloane-Hobson and Craig Russell Hobson

Property Address/  
Location: 36 Houhora Heads Road, Pukenui

**7. Application Site Details:**

Location and/or Property Street Address of the proposed activity:

Site Address/  
Location: 36 Houhora Heads Road, Pukenui

Legal Description: Lot 2 DP 530683 Val Number: \_\_\_\_\_

Certificate of Title: 864005  
Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site Visit Requirements:

Is there a locked gate or security system restricting access by Council staff? Yes / ~~No~~

Is there a dog on the property? Yes / ~~No~~

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

Please contact applicant to arrange site visit

**8. Description of the Proposal:**

Please enter a brief description of the proposal here. Attach a detailed description of the proposed activity and drawings (to a recognized scale, e.g. 1:100) to illustrate your proposal. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

To construct a new dwelling and shed/barn breaching rules relating to visual amenity and stormwater management. A discharge permit is also required under Rule C.6.1.5 of the Proposed Northland Regional Plan.

If this is an application for an Extension of Time (s.125); Change of Consent Conditions (s.127) or 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) or extension being sought, with reasons for requesting them.

**9. Would you like to request Public Notification**

**Yes/No**



**10. Other Consent required/being applied for under different legislation (more than one circle can be ticked):**

- Building Consent (BC ref # if known)                       Regional Council Consent (ref # if known)
- National Environmental Standard consent                       Other (please specify)

**11. 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 (further information in regard to this NES is available on the Council's planning web pages):

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? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle).  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

**12. 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.*

**Please attach your AEE to this application.**

**13. 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 all names in full)  \_\_\_\_\_

Email:  \_\_\_\_\_


Postal Address:  \_\_\_\_\_


\_\_\_\_\_ Post Code: 0481

Phone Numbers: Work:  Home: \_\_\_\_\_ Fax: \_\_\_\_\_

**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 20<sup>th</sup> 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 print)

Signature:  (signature of bill payer – **mandatory**) Date: 9/8/2023

## 14. 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](http://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.

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

Name: \_\_\_\_\_ (please print)

Signature: \_\_\_\_\_ (signature)

Date: 24/08/2023

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

### Checklist (please tick if information is provided)

- Payment (cheques payable to Far North District Council)
- A current Certificate of Title (Search Copy not more than 6 months old)
- 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.*

**Only one copy of an application is required, but please note for copying and scanning purposes, documentation should be:**

**UNBOUND**

**SINGLE SIDED**

**NO LARGER THAN A3 in SIZE**



## **LANDUSE RESOURCE CONSENT APPLICATION**

36 HOUHORA HEADS ROAD, PUKENUI  
LOT 2 DP 530683

### **ASSESSMENT OF ENVIRONMENTAL EFFECTS**

PREPARED FOR:

**KIRI-ANN SLOANE-HOBSON AND CRAIG HOBSON**

Rev A

2 November 2023





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Appendix A – Site, Floor and Elevation Plans (Salt Design)

Appendix B – Certificate of Title and Interests

Appendix C – Engineers Report



## 1.0 THE APPLICANT AND PROPERTY DETAILS

<b>To:</b>	Far North District Council
<b>Site address:</b>	36 Houhora Heads Road, Pukenui
<b>Applicant's name:</b>	Kiri-Ann Sloane-Hobson and Craig Hobson
<b>Address for service:</b>	Tohu Consulting Limited Attn: Nina Pivac 39a Commerce Street Kaitaia 0410
<b>Legal description:</b>	Lot 2 DP 530683
<b>Site area:</b>	1.2270ha
<b>Site owner/s:</b>	Kiri-Ann Sloane-Hobson and Craig Russell Hobson
<b>Operative District Plan:</b>	Far North District Plan
<b>Operative zoning:</b>	Coastal Living Zone
<b>Overlays/resource areas:</b>	Nil
<b>Brief description of proposal:</b>	<p>To construct a new dwelling and shed/barn breaching the following rules:</p> <ul style="list-style-type: none"> <li>• 10.7.5.1.6 Stormwater Management</li> <li>• 10.7.5.1.1 Visual Amenity</li> </ul> <p>The proposed effluent disposal fields will be located within the 5% AEP as mapped by NRC. The proposal therefore requires a discharge permit under the Proposed Northland Regional Plan (PRP) pursuant to Rule <i>C.6.1.5 Other domestic wastewater discharges</i>.</p>
<b>Summary of reasons for consent:</b>	Overall, resource consent is required as a <b>Discretionary Activity</b> under the Far North District Plan.

### **AUTHOR**



**Nina Pivac**

Director | BAppSC | PGDipPlan | Assoc. NZPI

**Date: 2 November 2023**

## 2.0 PROPOSAL

The applicants, Kiri-Ann Sloane-Hobson and Craig Hobson, propose to construct a new dwelling and a detached shed/barn, and associated impermeable surfaces, in the Coastal Living Zone. Resource consent is required under the following rules:

### Operative Far North District Plan (ODP):

- 10.7.5.1.6 Stormwater Management
- 10.7.5.1.1 Visual Amenity

### Proposed Northland Regional Plan (PDP):

The proposed effluent disposal fields will be located within the 5% AEP as mapped by NRC. The proposal therefore requires a discharge permit under the Proposed Northland Regional Plan (PRP) pursuant to Rule C.6.1.5 Other domestic wastewater discharges.

Overall, the application is assessed overall as a **Discretionary Activity** under the District Plan.

The following Assessment of Environmental Effects (AEE) has been prepared in accordance with the requirements of Section 88 of and Schedule 4 of the Resource Management Act 1991 (the Act) and is intended to provide the information necessary for a full understanding of the activity for which consent is sought and any actual or potential effects the proposal may have on the environment.

## 3.0 SITE CONTEXT

### Site Characteristics

The subject site is located at 36 Houhora Heads Road, Pukenui and is legally described as Lot 2 DP 530683 (CT 864005). The site has a land area of 1.2270ha. A copy of the relevant Certificate of Title is attached as **Appendix B**.

The site is subject to Consent Notice 11423778.4 (also attached as **Appendix B**) with conditions relating to wastewater, effluent disposal, stormwater management and water collection. There are two consent notices attached, however they both have the same conditions. The proposal has been designed with all relevant consent notice conditions.

The site is currently vacant and in pasture, with some scattered exotic trees throughout. Additional landscaping will be undertaken as per the landscape plan attached as **Appendix A**.

As shown in **Figure 1** below, the subject site is located within the Coastal Living Zone and is partially subject to flood susceptibility, as per NRC Hazard Maps. The proposed development has been carefully designed around this site constraint in a manner which will not exacerbate the natural hazard.



*Figure 1: Aerial image of subject site showing flood zone. Note that NRC Maps do not reflect the new title created by RC2170075 (NRC Hazard Maps)*

### Surrounding Environment

As shown in **Figure 2** below, the subject site is located in an area largely characterised by rural-residential development. Adjoining sites are similarly zoned Coastal Living.



*Figure 2: Aerial image showing subject site (Far North Maps)*

### Access

The site is accessed via an existing ROW off Houhora Heads Road. A raised internal driveway will be constructed providing access to the dwelling and barn.

### Zoning and Resources

The subject site is zoned Coastal Living. There are no other resource features or overlays relevant to the site.

In terms of heritage and archaeology, there are no registered heritage sites or sites of cultural significance located in the vicinity of the subject site.

## 4.0 FAR NORTH DISTRICT PLAN ASSESSMENT

### OPERATIVE DISTRICT PLAN

*Table 1 – Coastal Living Zone – land-use performance standards*

Coastal Living Zone Rule	Permitted Standards	Compliance
10.7.5.1.1 Visual Amenity	(a) any new building(s) with max GFA of 50m <sup>2</sup> ; or  (b) any alteration/addition to an existing building which does not exceed 30% of the gross floor area of the building which is being altered or added to, provided that any alteration/addition does not exceed the height of the existing building and that any alteration/addition is to a building that existed at 28 April 2000; or  (c) replacement of any building so long as the replacement does not exceed the building envelope occupied by the previous building; or  (d) renovation or maintenance of any building.	The proposed dwelling has a GFA of 336m <sup>2</sup> and is unable to comply with clause (a).  <b>Restricted Discretionary Activity</b>
10.7.5.1.2 Residential Intensity	1 unit per 4ha of land.	The residential use of the site fits within this threshold.



Coastal Living Zone Rule	Permitted Standards	Compliance
		<b>Permitted</b>
10.7.5.1.3 Scale of Activities	1 Person per 2000m <sup>2</sup> of land.	The proposed building will be less than 9m in height.  <b>Permitted</b>
10.7.5.1.5 Building Height	The maximum height of any building shall be 8m	The proposed building height is less than 8m.  <b>Permitted</b>
10.7.5.1.5 Sunlight	2m + 45-degree recession plane	The dwelling will not encroach the recession plane.  <b>Permitted</b>
10.7.5.1.6 Stormwater Management	The maximum proportion or amount of the gross site area which may be covered by buildings and other impermeable surfaces shall be 10% or 600m <sup>2</sup> whichever is the lesser.	Total impermeable surfaces equate to 1277m <sup>2</sup> exceeding their permitted threshold of 600m <sup>2</sup> . The proposal is able to meet the Restricted Discretionary threshold of 1500m <sup>2</sup> .  <b>Restricted Discretionary Activity</b>
10.7.5.1.7 Setback from boundaries	Buildings shall be set back a minimum 10m from any site boundary, except that on any site with an area less than 5,000m <sup>2</sup> this set back shall be 3m from any site boundary.	The buildings are at least 13m from nearest boundary.  <b>Permitted</b>
10.7.5.1.9 Transportation	Two onsite parking spaces  Max TIF = 20	As per the site plan, adequate parking will be provided on site.  <b>Permitted</b>

Overall, the proposal requires resource consent as a **Restricted Discretionary Activity** under the Far North District Plan.

### **PROPOSED DISTRICT PLAN**

The Proposed Far North District Plan (PDP) was notified on Wednesday 27 July 2022. Rules in a Proposed Plan have legal effect once the council makes a decision on submissions relating to that rule and publicly notified this decision, unless the rule has immediate legal effect in accordance with section 86(3) of the Resource Management Act 1991 (the Act).

As of Monday 7 August 2023, the PDP summary of submissions has been released and the ‘further submission’ period closes on Monday 4 September 2023. Council are yet to make a decision on submissions made and publicly notify this decision. Therefore, only rules in the PDP with immediate legal effect are relevant. These rules are identified with a ‘hammer’ in the plan. Rules that do not have immediate legal effect do not trigger the need for a resource consent under the PDP.

The only relevant PDP rules are those relating to earthworks. However, the proposal is able to comply with all relevant permitted thresholds under these rules.

### **PROPOSED NORTHLAND REGIONAL PLAN (PRP)**

The proposed effluent disposal fields will be located within the 5% AEP as mapped by NRC. The proposal therefore requires a discharge permit under the Proposed Northland Regional Plan (PRP) pursuant to Rule C.6.1.5 Other domestic wastewater discharges.

Overall, the proposal requires resource consent as a **Discretionary Activity**.

## **5.0 NATIONAL ENVIRONMENTAL STANDARDS CONTAMINATED SOILS (NESCS)**

All applications that involve subdivision, or an activity that changes the use of a piece of land, or earthworks are subject to the provisions of the NES Contaminated Soils. The regulation sets out the requirements for considering the potential for soil contamination, based on the HAIL (Hazardous Activities and Industries List) and the risk that this may pose to human health as a result of the proposed land use.

Based on a search of Council records, historic aerial images, and the documentation provided in support of this application, there is no evidence to suggest that a HAIL activity is, has been, or is more than likely to not have been undertaken on any part of the site. Therefore, the NES Contaminated Soils is not applicable in this instance.

## **6.0 NATIONAL ENVIRONMENTAL STANDARDS FOR FRESHWATER (NES FRESHWATER)**

A review of aerial images, including NRC’s wetland maps, reveal no evidence to suggest that there are any wet areas that may be subject to the NES Freshwater provisions. Therefore, no further assessment is required under the NES Freshwater.

## **7.0 NATIONAL POLICY STATEMENT FOR HIGHLY PRODUCTIVE LAND (NPSHPL)**

The subject site contains soils classified 4w3 which are not deemed as ‘highly productive’ under the NPSHPL. Therefore, no further consideration needs to be given under the NPSHPL.

## 8.0 NATIONAL POLICY STATEMENT FOR INDIGENOUS BIODIVERSITY (NPS-IB)

The subject site does not contain any significant areas of indigenous vegetation or habitats of indigenous fauna which would require protection under the NPS-IB. Therefore, no further consideration needs to be given under the NPS-IB.

## 9.0 NOTIFICATION

### Public Notification

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

#### **Step 1: Mandatory public notification is required in certain circumstances**

Under Section 95A(3) an application must be publicly notified if:

- a) *the applicant has requested that the application be publicly notified;*
- b) *public notification is required under Section 95C.*

The applicant is not requesting public notification under clause (a). Clause (b) provisions relate to where an applicant does not provide further information formally requested under Section 92, which is not applicable in this case.

Public notification is not required and therefore Step 2 must be considered.

#### **Step 2: If not required by Step 1, public notification precluded in certain circumstances**

Under Section 95A (4) an application must not be publicly notified if:

- a) *the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification;*
- b) *the application is for a resource consent for 1 or more of the following, but no other, activities:*
  - i. *a controlled activity;*
  - ii. *a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity;*

None of the above criteria apply, therefore public notification is not precluded in this instance. Step 3 must be considered.

#### **Step 3: If not precluded by step 2, public notification required in certain circumstances**

Under Section Under Section 95A(7), public notification is required if:

- a) *the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification;*
- b) *the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.*

Clause (a) does not apply in this situation.

An assessment of environmental effects in accordance with s95D has been undertaken in Section 8.0 below which concludes that any adverse effect arising as a result of the proposed development will be less than minor. Public notification is therefore not required in this instance.

#### **Step 4: Public notification in special circumstances**

Section 95A(9) sets out that the council is required to determine whether special circumstances exist that warrant it being publicly notified.

*Special circumstances are those that are:*

- *exceptional or unusual, but something less than extraordinary; or*
- *outside of the common run of applications of this nature; or*
- *circumstances which make notification desirable, notwithstanding the conclusion that the adverse effects will be no more than minor.*

Based on the assessment of environmental effects below, it is considered that there is nothing out of the ordinary that could give rise to special circumstances.

#### **Public Notification Conclusion**

Based on the above, it is considered that this application can be processed without public notification.

#### **Limited Notification**

Under Section 95B, if an application is not publicly notified, the Council must decide if there are any 'affected persons' and undertake limited notification to those persons. Under Section 95E(1) a person is considered 'affected' if the adverse effects of the activity on that person are 'minor or more than minor'. If the application is not publicly notified, the consent authority must follow the following steps to determine whether to give limited notification of an application.

#### **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.

The above does not apply to this land.

#### **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 limited notification; or the application is for a controlled activity (other than the subdivision of land) or a prescribed activity under section 360H(1)(a)(ii).

None of the above apply in this instance.

#### **Step 3: if not precluded by step 2, certain other affected persons must be notified**



In the case of a boundary activity, Council shall determine in accordance with section 95E whether an owner of an allotment with an infringed boundary is an affected person.

In the case of any other activity, Council shall determine whether a person is an affected person in accordance with section 95E.

If yes to any of the above, Council shall notify each affected person identified under subsections (7) and (8) of the application.

The assessment of environmental effects in Section 7.0 below concludes that there are no other adversely affected parties.

#### **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.

As previously discussed, special circumstances are not considered to apply to this proposal.

#### **Limited Notification Conclusion**

Having undertaken the s95B limited notification tests, it is considered that this application can be processed without limited notification.

## **9.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS**

As a Discretionary Activity, Council has discretion to grant or decline the application pursuant to any matter described in s104 of the Act. All relevant matters have been addressed below.

### **10.7.5.3.1 Visual Amenity in the Coastal Living Zone**

<b>Assessment Criteria</b>	<b>Comment</b>
(i) the location of the building;	The proposed development is concentrated relatively central to the subject site but closer to the western boundary, with a minimum setback distance of 13.4m from the nearest boundaries. The location of the building has been carefully selected so as to avoid visual domination, but also to avoid developing within that area mapped as being flood susceptible. The location of the proposed development also enables ample open space for the enjoyment of residents as well as the adequate operation and maintenance of all associated services (e.g. wastewater and stormwater disposal).
(ii) the size, bulk, and height of the building or utility services in relation to ridgelines and natural features;	There are no ridgelines or significant natural features that will be affected by the proposed dwelling.

(iii) the colour and reflectivity of the building;	<p>The external colour scheme consists of natural materials and recessive colours, including 'Flax Pod (Matt)' with low reflectivity values (ranging from 4% to 32%)</p> <p>The proposed colour scheme is considered to be consistent with existing dwellings in the immediate surrounding environment, and will not be visually dominant.</p>
(iv) the extent to which planting can mitigate visual effects;	The site contains some existing mature vegetation. Additional landscaping will be undertaken as per the planting schedule attached as <b>Appendix A</b> . It is considered that the proposed planting is extensive and will assist in providing effective screening from all vantage points.
(v) any earthworks and/or vegetation clearance associated with the building;	Minimal earthworks are required to create the house platform and internal driveway. Any excess fill will be spread over the area in front of the house, falling towards the pond area. No vegetation clearance is required.
(vi) the location and design of associated vehicle access, manoeuvring and parking areas;	As shown on the site plan, there is ample space for onsite parking and manoeuvring.
(vii) the extent to which the building will be visually obtrusive;	As per the assessment of clause (i) and (iii) above, the proposed building will not be visually obtrusive owing to the modest colour scheme and the careful positioning of the building. The dwelling is also single-level with a floor area that is consistent with most dwellings in the immediate surrounding environment.
(viii) the cumulative visual effects of all the buildings on the site;	The site is currently vacant and the proposed dwelling will enable the construction of a single residential dwelling and shed/barn which is considered appropriate on this site.
(ix) the degree to which the landscape will retain the qualities that give it its naturalness, visual and amenity values;	As per clause (iv) above, the site is largely in pasture with some mature vegetation scattered throughout. This vegetation will remain unaffected, and any gaps will be infilled with additional landscaping as per the attached planting schedule. This will provide effective screening of the proposed development and enhance the qualities of the site that give its naturalness, visual and amenity values.
(x) the extent to which private open space can be provided for future uses ;	As shown on the subject site, ample open space will be maintained for the enjoyment of residents and for future uses.
(xi) the extent to which the siting, setback and design of building(s) avoid visual	Refer to clauses (i) to (iv) above.

dominance on landscapes, adjacent sites and the surrounding environment;	
(xii) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.	Refer to clauses (i) to (iv) above.

### Stormwater Management

The relevant assessment criteria for stormwater management has been addressed in Section 10 of the Stormwater Management Report prepared by PK Engineering (**Appendix C**). Overall, the report concludes that any adverse effect in relation to stormwater management will be less than minor subject to the implementation of those recommendations outlined in the report. These include attenuating all stormwater flows stormwater flows from the proposed house, barn and boat port back to predevelopment levels for a 1% AEP event. Planting a minimum, one meter-wide strip along the eastern edge of the proposed driveway is also recommended to mitigate stormwater flows from the driveway.

To meet the required attenuation, the report recommends attenuation of stormwater flows from the building roofs, by utilising the three 25,000ltr rainwater storage tanks as indicated on the Site Plan Sheet SG2. The three tanks are to be linked in series, with the last tank in the series to have a 10-year event orifice of 32mm diameter installed at 550mm below the overflow invert and a 100-year event orifice of diameter 39mm installed at 300mm below the overflow invert level.

It is anticipated that these recommendations will form a condition of consent.

### Effluent Disposal

The TP58 Report prepared by Effluent Drainlayers (**Appendix C**) includes an assessment of environmental effects. In summary, the report concludes that any adverse effect in relation to wastewater disposal will be less than minor for the following reasons:

- The primary treated effluent has been carefully designed to be disposed of into the soil by trenches. There is sufficient slope on the section to ensure there will be no surface water retention for any length of time which could affect or compromise the effluent disposal system chosen.
- The site contains adequate land area for reserve areas, which will be wholly contained within the site boundaries.
- While mapped as flood prone, the subject site and immediate surrounding environment is well-drained owing to the sandy soils present on site.
- The site does not contain any significant areas of indigenous vegetation or habitats of indigenous fauna.
- The effluent disposal system has been placed so that maximum separation is achieved from any assessed high-risk area.
- Groundwater in winter is at a depth greater than 1.2m which is significantly deeper than the proposed effluent disposal system.
- The location of the effluent disposal system has been selected so that the horizontal movement of contaminants would not cause a hazard or have any effect on the immediate environment.

- The soil at the effluent site is classified as being a mix of Ruakaka and Houhors Sands which is considered to be very well-drained as per FNDC and NRC soil maps.

Ultimately, the system installed for effluent disposal has been designed to maximise the potential for basal ground area, wall and transpiration disposal. The separation distance of wastewater distribution from potential groundwater aquifers, which were not found during investigations, minimises the opportunity for any aquifer contamination.

## Conclusion

Based on the above, it is considered that any adverse effects as a result of the proposal will be less than minor.

## 10.0 SECTION 104 ASSESSMENT

### Assessment of Effects

Section 104(1)(a) requires consideration of any actual and potential effects on the environment of allowing the activity. This has been carried out in the assessment above. The conclusion reached overall is that the adverse effects of granting consent to the proposal are less than minor. Some positive effects will arise from the development such as the efficient use of unused land in the Coastal Living Zone, and providing for the social wellbeing of the residents. Therefore, the effects are considered acceptable in the receiving environment.

### National and Regional Planning Documents

These have been addressed earlier in the report.

### Operative and Proposed District Plans

#### OPERATIVE DISTRICT PLAN

Section 104(1)(b)(vi) requires consideration of the relevant objectives and policies contained in any Operative or proposed District Plan. Therefore, an assessment of the Operative Far North District Plan provisions is required.

Coastal Living Zone Objectives	
Objectives	Comment
10.7.3.1 To provide for the well-being of people by enabling low density residential development to locate in coastal areas where any adverse effects on the environment of such development are able to be avoided, remedied or mitigated.	The proposed dwelling will be located on a vacant site created by subdivision 2236-RMASUB which is anticipated for residential use. The application will enable the construction of a single residential dwelling. The site is not located within the coastal environment or near the CMA. As per the assessment of effects, the dwelling has been



	designed so as to not result in any adverse effects on the environment.
10.7.3.2 To preserve the overall natural character of the coastal environment by providing for an appropriate level of subdivision and development in this zone.	The application will enable the construction of a single dwelling on a vacant site. No earthworks or vegetation clearance are required. All existing vegetation will be maintained.

Coastal Living Zone Policies	
Policies	Comment
10.7.4.1 That the adverse effects of subdivision, use, and development on the coastal environment are avoided, remedied or mitigated.	As per the assessment of effects, the coastal environment will not be affected by the proposal.
10.7.4.2 That standards be set to ensure that subdivision, use or development provides adequate infrastructure and services and maintains and enhances amenity values and the quality of the environment.	As per the attached TP58 and Stormwater Reports, stormwater and wastewater will be managed appropriately.  Amenity values and the quality of the environment will not be adversely affected.
10.7.4.3 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the zone in regards to s6 matters, and shall avoid adverse effects as far as practicable by using techniques including: (a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns; (b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area; (c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas; (d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2, and in particular Section 2.5, and Council's	The application will enable the construction of a single dwelling on a vacant site anticipated for residential development. Minimal earthworks are required, no vegetation clearance is required. The site does not contain any significant areas of indigenous vegetation or habitats of indigenous fauna, nor does the site contain any archaeological or heritage sites.

Coastal Living Zone Policies	
Policies	Comment
<p>“Tangata Whenua Values and Perspectives (2004)”);</p> <p>(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;</p> <p>(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.</p>	

### PROPOSED DISTRICT PLAN (PDP)

**Table 2 – PDP Objectives and Policies - Rural Lifestyle**

PDP Objective/Policy	Comment
<p>RLZ-O1 -The Rural Lifestyle Zone is used predominantly for low density residential activities and small scale farming activities that are compatible with the rural character and amenity of the zone.</p>	<p>The site is currently vacant and the proposed development will result in a single residential dwelling on a 1.23ha section. Ample open space will be maintained for the enjoyment of residents. The proposed development is therefore considered to be entirely compatible with the rural character and amenity of the zone.</p>
<p>RLZ-O2 - The predominant character and amenity of the Rural Lifestyle Zone is characterised by:</p> <ul style="list-style-type: none"> <li>a. low density residential activities;</li> <li>b. small scale farming activities with limited buildings and structures;</li> <li>c. smaller lot sizes than anticipated in the Rural Production Zone;</li> <li>d. a general absence of urban infrastructure;</li> <li>e. rural roads with low traffic volumes;</li> <li>f. areas of vegetation, natural features and open space.</li> </ul>	<p>As above.</p>
<p>RLZ-O3 - The role, function and predominant character and amenity of the Rural Lifestyle Zone is not compromised by incompatible activities.</p>	<p>As per the assessment of effects above, the proposed development is considered to be compatible with the surrounding environment.</p>

PDP Objective/Policy	Comment
<p>RLZ-O4 - Land use and subdivision in the Rural Lifestyle Zone does not compromise the effective and efficient operation of primary production activities in the adjacent Rural Production Zones.</p>	<p>The proposed development will result in the construction of a single residential unit on the site, leaving ample open space surrounding the house and barn. All built development will be located away from any boundary adjoining the Rural Production Zone. Adjacent primary production activities will therefore be unaffected.</p>
<p>RLZ-P1 - Enable activities that will not compromise the role, function and predominant character and amenity of the Rural Lifestyle Zone, while ensuring their design, scale and intensity is appropriate to manage adverse effects in the zone, including:</p> <ul style="list-style-type: none"> <li>a. low density residential activities;</li> <li>b. small scale farming activities;</li> <li>c. home business activities;</li> <li>d. visitor accommodation; and</li> <li>e. small scale education facilities.</li> </ul>	<p>As above.</p>
<p>RLZ-P2 - Avoid activities that are incompatible with the role, function and predominant character and amenity of the Rural Lifestyle Zone because they are:</p> <ul style="list-style-type: none"> <li>a. contrary to the density anticipated for the Rural Lifestyle zone;</li> <li>b. predominately of an urban form or character;</li> <li>c. primary production activities, such as intensive indoor primary production, that generate adverse amenity effects that are incompatible with rural lifestyle living; or</li> <li>d. commercial, rural industry or industrial activities that are more appropriately located in a Settlement Zone or an urban zone.</li> </ul>	<p>As above.</p>
<p>RLZ-P3 - Avoid where possible, or otherwise mitigate, reverse sensitivity effects from</p>	<p>As above.</p>

PDP Objective/Policy	Comment
sensitive and other non-productive activities on primary production activities in the adjacent Rural Production Zone.	
<p>RLZ-P4 - Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:</p> <ul style="list-style-type: none"> <li>a. consistency with the scale and character of the rural lifestyle environment;</li> <li>b. location, scale and design of buildings or structures;</li> <li>c. at zone interfaces: <ul style="list-style-type: none"> <li>i. any setbacks, fencing, screening or landscaping required to address potential conflicts;</li> <li>ii. the extent to which adverse effects on adjoining or surrounding sites are mitigated and internalised within the site as far as practicable;</li> </ul> </li> <li>d. the capacity of the site to cater for on-site infrastructure associated with the proposed activity;</li> <li>e. the adequacy of roading infrastructure to service the proposed activity;</li> <li>f. managing natural hazards;</li> <li>g. any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity; and</li> <li>h. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.</li> </ul>	<p>All of these matters have been addressed in the assessment of environmental effects above.</p>

## **Other Matters**

There are no other matters considered relevant to the proposal.

## **11.0 PART 2 ASSESSMENT**

As per current case law, an assessment of matters under Part 2 is only required where there is invalidity, incomplete coverage or uncertainty in the planning provisions. The Operative District Plans contain provisions that are relevant to the proposal, and there is no evidence to suggest the relevant provisions are invalid, incomplete or present uncertainty in making any decision. No assessment of the Part 2 provisions is therefore required.

## **12.0 OVERALL CONCLUSION**

The application lodged for Kiri-Ann Sloane-Hobson and Craig Hobson provides for the construction of a new dwelling and shed/barn on a property located on Houhora Heads Road, Pukenui. Breaching rules relating to Visual Amenity. The application has been assessed as a restricted discretionary activity.

Having considered the matters associated with adverse effects and affected persons, it is considered that the extent of the development including any adverse effects is either contemplated by the District Plan. The adverse effects associated with the land use infringements area assessed as less than minor and therefore acceptable in the receiving environment.

Based on the assessment of effects above, it is concluded that any potential adverse effects on the existing environment would be no more than minor and can be managed in terms of appropriate conditions of consent.

It is therefore concluded that the proposal satisfies all matters the consent authority is required to assess, and that the application for resource consent can be granted on a non-notified basis.

## **AUTHOR**



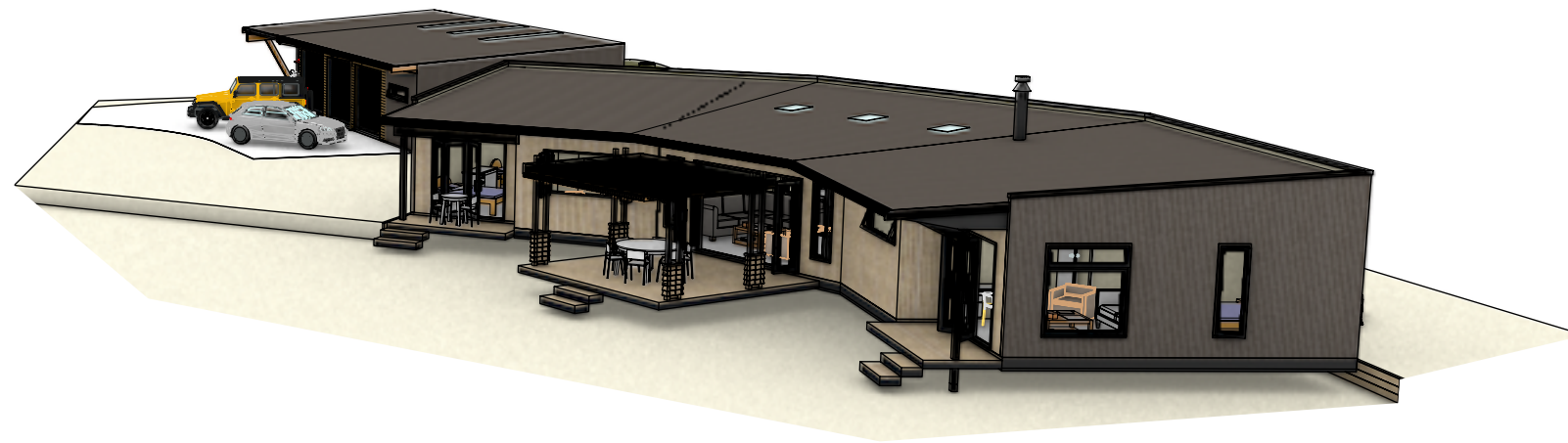
**Nina Pivac**

Director | BAppSC | PGDipPlan | Assoc. NZPI

**Date: 2 November 2023**

## **Appendix A – Site, Floor and Elevation Plans (Salt Design)**

CRAIG & KIRI SLOANE - HOBSON  
36 - HOUHORA HEADS RD PUKENUI RD4  
FARMHOUSE & BARN



LEGEND FOR RESOURCE CONSENT

SHT 01.0	LOCATION PLAN	SHT 09.0	EAST & WEST ELEVATIONS
SHT 02.0	SITE PLAN	SHT 10.0	FLOOR PLAN DIMENSIONS
SHT 03.0	SITE & WASTE WATER & STORMWATER PLAN	SHT 11.0	FLOOR PLAN ISOMETRIC
SHT 04.0	WASTE WATER TREATMENT TANK	SHT 12.0	FLOOR PLAN DIMENSIONS AREA
SHT 05.0	FLOOD WATER HAZARD ZONE	SHT 13.0	SHT B 01.0 BARN -BOATPORT FOUNDATION PLAN
SHT 06.0	LANDSCAPE PLAN	SHT 14.0	SHT B 02.0 BARN -BOATPORT FLOOR PLAN
SHT 07.0	HOUSE & BARN PERSPECTIVE	SHT 15.0	SHT B 03.0 THRU SECT TRUSS & ENDS
SHT 08.0	NORTH & SOUTH ELEVATIONS	SHT 16.0	SHT B 04.0 ELEVATIONS & PERSPECTIVE







NOTE - DISTANCE TO KAITAIA = 39 KM (35 MINS)

Lot 8 DP 204703

Lot 6 DP 530683

Lot 1 DP 530683

Lot 5 DP 503751

Lot 4 DP 530683

Lot 2 DP 530683

Lot 3 DP 530683

Pt Lot 1 DP 103717

DISTANCE TO FAR NORTH ROAD = 425 METRES

METER BOARD  
APROX 165 METERS TO ROAD

OPEN DRAIN

OPEN DRAIN

OPEN DRAIN

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	NOT TO SCALE	LOCATION & POWER PLAN
			Job Number 220301	Drawing No. SHT 01.0	

**SALT DESIGN**  
1 Kokopu Street Ahipara

MICHAEL SLOANE CELL 022 4716957 E.MAIL: michael@sloane.com





A = RIGHT OF WAY AREA 825 M2

RIGHT OF WAY LOT 6 OFF HOUHORA HEADS RD  
ACCESS TO - LOT 6 (1.05536) - LOT 2 (1.2270) & LOT 3 (1.2270)

DRIVEWAY = 825 M2  
GRAVEL EXISTING ROAD = 3747.76 M2



PARCEL ID: 4734495  
APPELLATION: LOT 1 DP 136252  
CLIMATE ZONE: 1  
EARTHQUAKE ZONE: ZONE 1  
EXPOSURE ZONE: ZONE D  
RAINFALL RANGE: 90 - 100  
WIND REGION: A  
WIND ZONE: VERY HIGH

PERMEABLE SURFACE TOTAL AREA = 1.277 HECTARES  
IMPERMEABLE SURFACES ALLOWED 600 M2 OR 10% \* = 1277 M2  
ROOF AREAS HOUSE = 207 M2  
ROOF AREA BARN & BOAT PORT = 146 M2  
DRIVEWAY FRONT GRAVEL ROAD = 372 M2  
CARPARK & TURNING = 118 M2  
DRIVEWAY BACK GRAVEL ROAD = 162 M2  
TOTAL IMPERMEABLE SURFACE = 1005 M2  
IMPERMEABLE SURFACE AREA EQUALS = 7.87 %  
\* 600 M2 OR 10% WHICH EVER IS LESSER

ADDRESS - 36 HOUHORA HEADS RD  
PUKENUI RD 4  
POST CODE 0484

ZONE - COASTAL LIVING

VALUATION NO - 00011-8302  
IDENTIFIER NO 864005

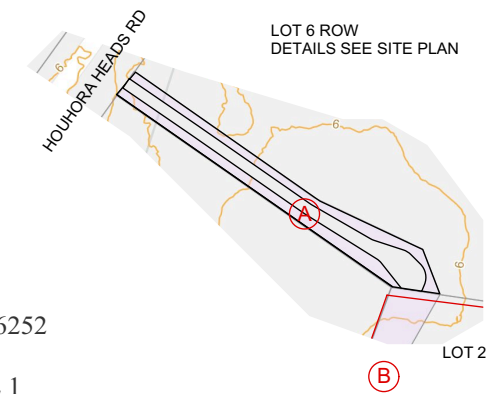
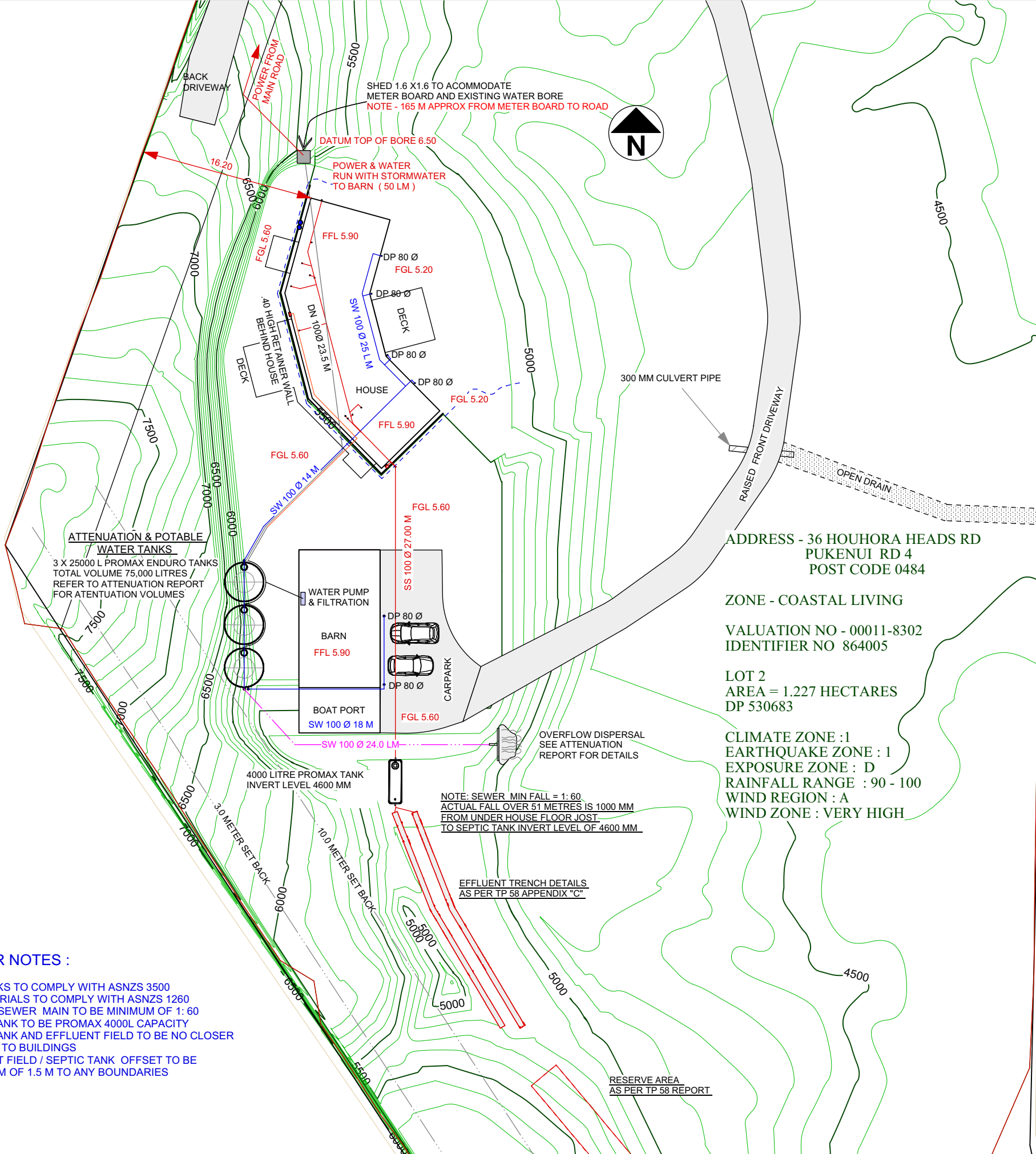
LOT 2  
AREA = 1.227 HECTARES  
DP 530683

CLIMATE ZONE : 1  
EARTHQUAKE ZONE : 1  
EXPOSURE ZONE : D  
RAINFALL RANGE : 90 - 100  
WIND REGION : A  
WIND ZONE : VERY HIGH

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK \* REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:700	SITE PLAN
			Job Number 220301	Drawing No. SHT 02.0	





PARCEL ID: 4734495  
 APPELLATION: LOT 1 DP 136252  
 CLIMATE ZONE: 1  
 EARTHQUAKE ZONE: ZONE 1  
 EXPOSURE ZONE: ZONE D  
 RAINFALL RANGE: 90 - 100  
 WIND REGION: A  
 WIND ZONE: VERY HIGH

PERMEABLE SURFACE TOTAL AREA = 1.277 HECTARES  
 IMPERMEABLE SURFACES ALLOWED 600 M2 OR 10% \* = 1277 M2  
 ROOF AREAS HOUSE = 207 M2  
 ROOF AREA BARN & BOAT PORT = 146 M2  
 DRIVEWAY FRONT GRAVEL ROAD = 372 M2  
 CARPARK & TURNING = 118 M2  
 DRIVEWAY BACK GRAVEL ROAD = 162 M2  
 TOTAL IMPERMEABLE SURFACE = 1005 M2  
 IMPERMEABLE SURFACE AREA EQUALS = 7.87 %  
 \* 600 M2 OR 10% WHICH EVER IS LESSER

**EARTHWORKS VOLUMES**  
 HOUSE PLATFORM  
 CUT = 113.31 M3  
 FILL = 41.09 M3  
 TOTAL CUT & FILL = 154.40 M3

ANY EXCESS FILL TO SPREAD OVER AREA INFRONT OF HOUSE FALLING TOWARDS THE POND AREA  
 BATTER ALL GRASS BANKS TO A MAX SLOPE OF 35 Ø DEGREES

ADDRESS - 36 HOUHORA HEADS RD  
 PUKENUI RD 4  
 POST CODE 0484  
 ZONE - COASTAL LIVING  
 VALUATION NO - 00011-8302  
 IDENTIFIER NO 864005  
 LOT 2  
 AREA = 1.227 HECTARES  
 DP 530683  
 CLIMATE ZONE : 1  
 EARTHQUAKE ZONE : 1  
 EXPOSURE ZONE : D  
 RAINFALL RANGE : 90 - 100  
 WIND REGION : A  
 WIND ZONE : VERY HIGH

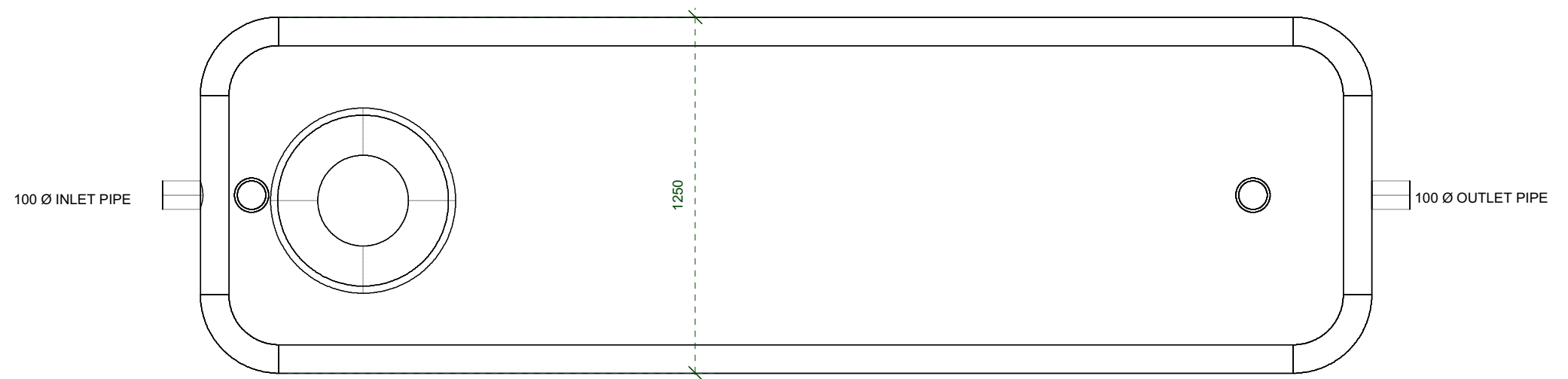
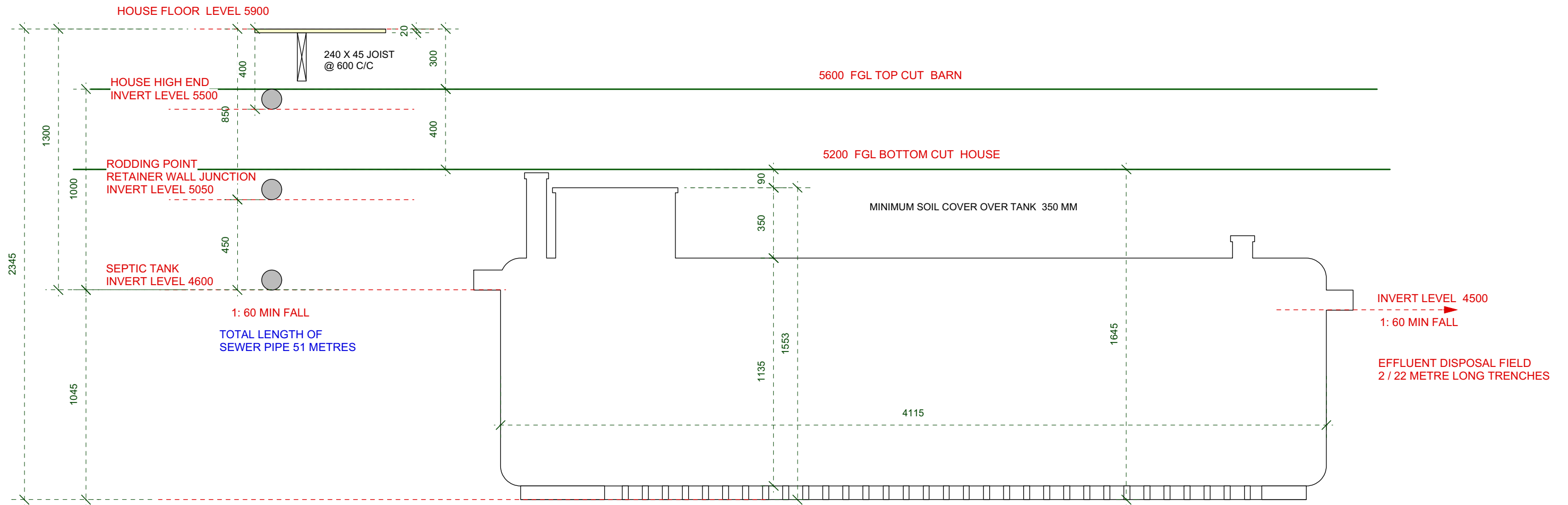
**SEWER NOTES :**  
 ALL WORKS TO COMPLY WITH AS/NZS 3500  
 ALL MATERIALS TO COMPLY WITH AS/NZS 1260  
 FALLS IN SEWER MAIN TO BE MINIMUM OF 1:60  
 SEPTIC TANK TO BE PROMAX 4000L CAPACITY  
 SEPTIC TANK AND EFFLUENT FIELD TO BE NO CLOSER THAN 3 M TO BUILDINGS  
 EFFLUENT FIELD / SEPTIC TANK OFFSET TO BE A MINIMUM OF 1.5 M TO ANY BOUNDARIES

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:200	
			Job Number 220301	Drawing No. SHT 03.0	SITE PLAN SEWER STORMWATER ATTENUATION & SERVICES



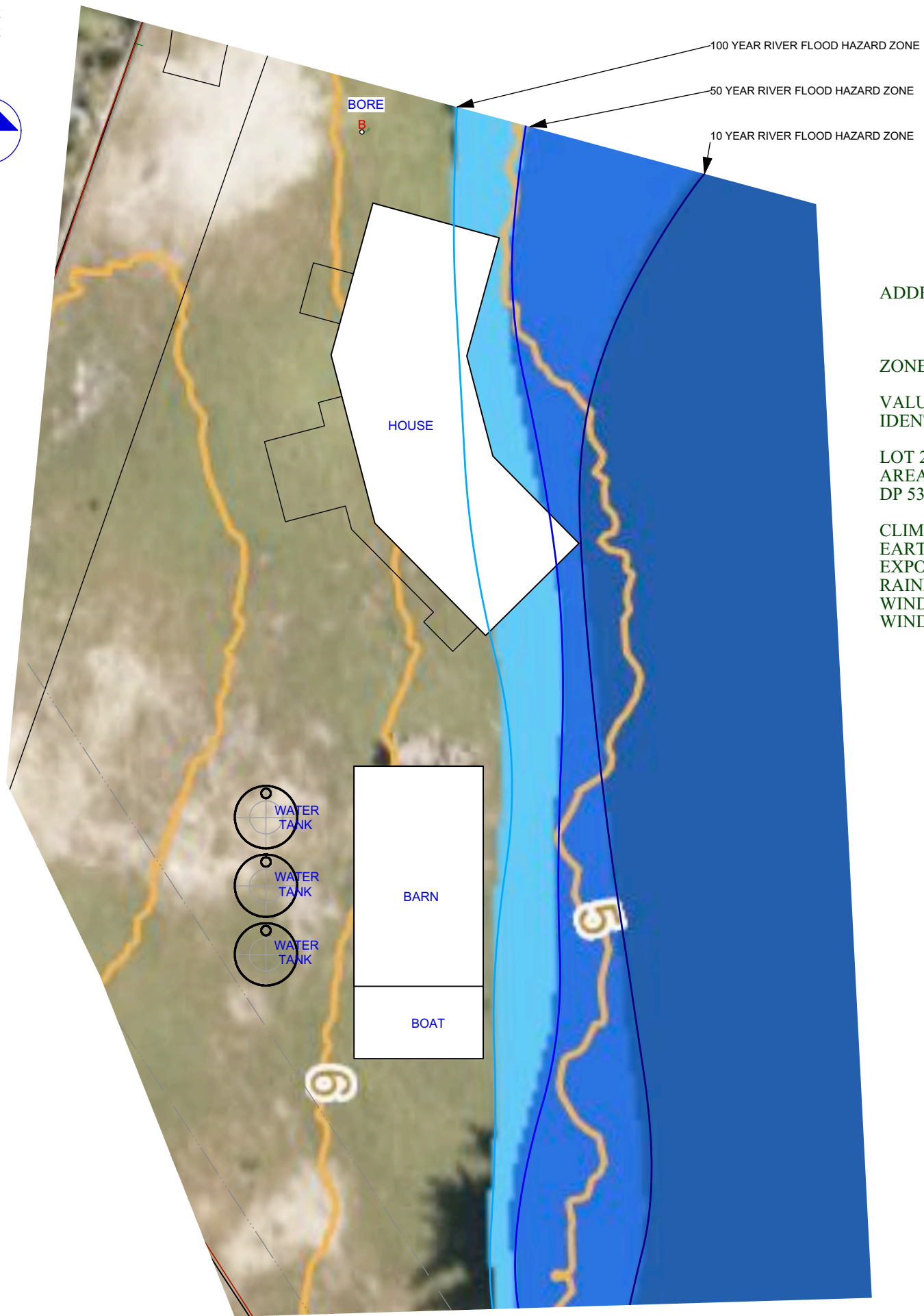
MICHAEL SLOANE CELL 022 4716957 E-MAIL: michael@sloane.com



IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK ~ REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:20	PROMAX 4,000 LITRE SEPTIC TANK
			Job Number 220301	Drawing No. SHT 04.0	





ADDRESS -36 HOUHORA HEADS RD  
PUKENUI RD 4  
POST CODE 0484

ZONE - COASTAL LIVING

VALUATION NO - 00011-8302  
IDENTIFIER NO 864005

LOT 2  
AREA = 1.227 HECTARES  
DP 530683

CLIMATE ZONE :1  
EARTHQUAKE ZONE : 1  
EXPOSURE ZONE : D  
RAINFALL RANGE : 90 - 100  
WIND REGION : A  
WIND ZONE : VERY HIGH

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK ~ REFER ALL DISCREPANCIES TO SALT DESIGN

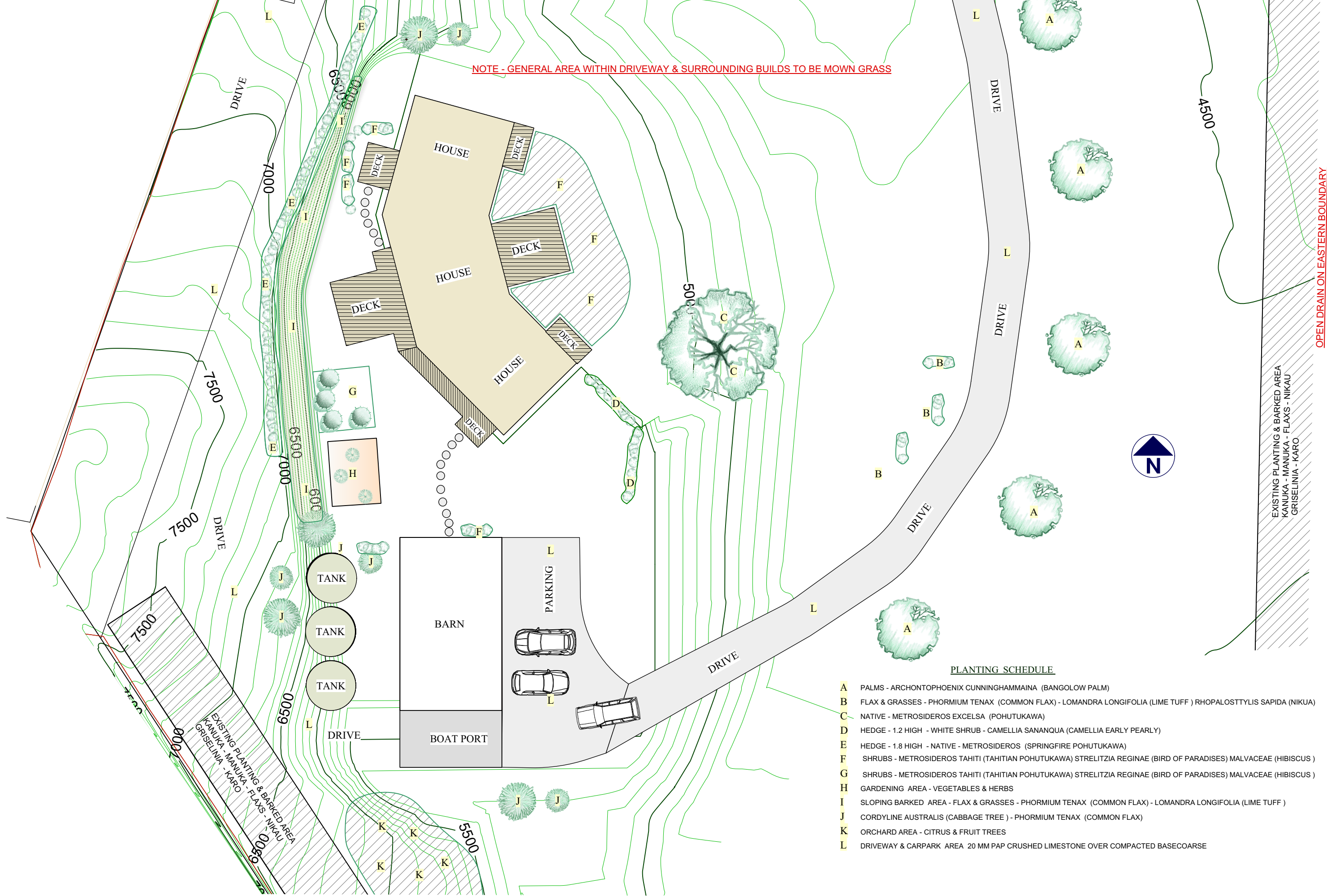
Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:300 & 1:750	SITE PLAN FLOOD PLANE HAZARD ZONE
			Job Number 220301	Drawing No. SHT 05.0	



MICHAEL SLOANE CELL 022 4716957 E-MAIL: michael@saltdesign.co.nz



NOTE - GENERAL AREA WITHIN DRIVEWAY & SURROUNDING BUILDS TO BE MOWN GRASS



OPEN DRAIN ON EASTERN BOUNDARY

EXISTING PLANTING & BARKED AREA  
KANUKA - MANUKA - FLAXS - NIKAU  
GRISELINIA - KARO

**PLANTING SCHEDULE**

- A PALMS - ARCHONTOPHOENIX CUNNINGHAMMAINA (BANGLOW PALM)
- B FLAX & GRASSES - PHORMIUM TENAX (COMMON FLAX) - LOMANDRA LONGIFOLIA (LIME TUFF) RHOPALOSTTYLIS SAPIDA (NIKUA)
- C NATIVE - METROSIDEROS EXCELSA (POHUTUKAWA)
- D HEDGE - 1.2 HIGH - WHITE SHRUB - CAMELLIA SANANQUA (CAMELLIA EARLY PEARLY)
- E HEDGE - 1.8 HIGH - NATIVE - METROSIDEROS (SPRINGFIRE POHUTUKAWA)
- F SHRUBS - METROSIDEROS TAHITI (TAHITIAN POHUTUKAWA) STRELITZIA REGINAE (BIRD OF PARADISES) MALVACEAE (HIBISCUS)
- G SHRUBS - METROSIDEROS TAHITI (TAHITIAN POHUTUKAWA) STRELITZIA REGINAE (BIRD OF PARADISES) MALVACEAE (HIBISCUS)
- H GARDENING AREA - VEGETABLES & HERBS
- I SLOPING BARKED AREA - FLAX & GRASSES - PHORMIUM TENAX (COMMON FLAX) - LOMANDRA LONGIFOLIA (LIME TUFF)
- J CORDYLINAE AUSTRALIS (CABBAGE TREE) - PHORMIUM TENAX (COMMON FLAX)
- K ORCHARD AREA - CITRUS & FRUIT TREES
- L DRIVEWAY & CARPARK AREA 20 MM PAP CRUSHED LIMESTONE OVER COMPACTED BASECOARSE

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1 - 250	LANDSCAPE PLAN
			Job Number 220301	Drawing No. SHT 06.0	

**SALT DESIGN**  
1 Kokopu Street Ahipara





**VISUAL AMENITIES**

**COLOURS & MATERIALS**

ROOFING HOUSE & BARN - TRUE OAK - CORRUGATED - DEEP PROFILE  
 COLOUR STEEL MAX - "FLAX POD" ( MATT ) LRV 7 % TSR 25%

WALLS HOUSE & BARN- CORRUGATED IRON - STANDARD PROFILE - VERTICALLY PAN FIXED  
 COLOUR STEEL MAX - "FLAX POD" ( MATT ) LRV 7 % TSR 25%

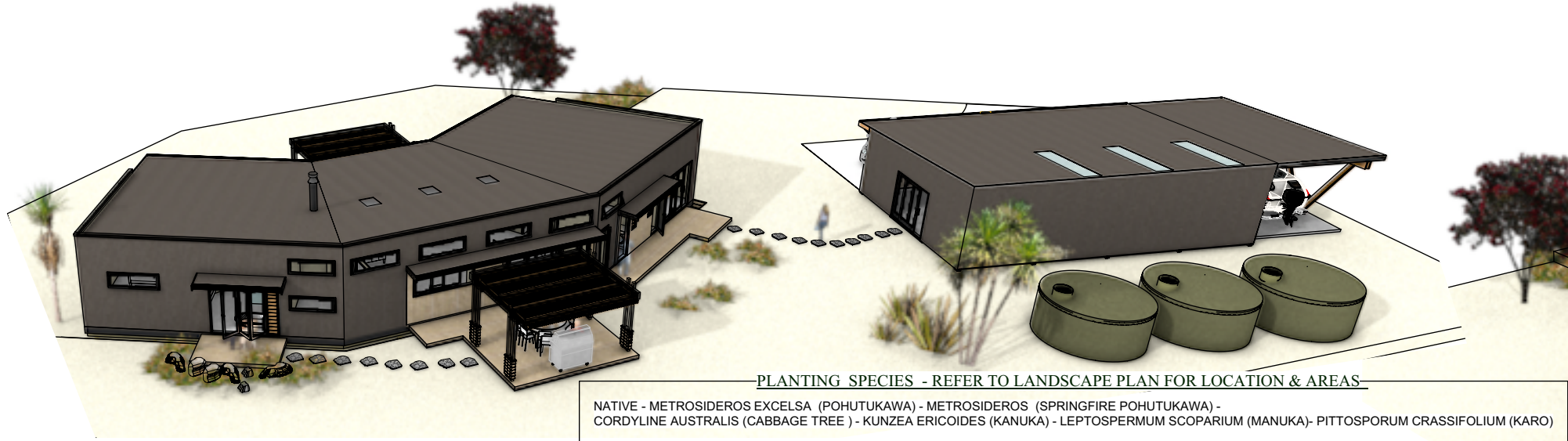
BARN ROLLA DOORS - "FLAX POD" ( MATT ) LRV 7 % TSR 25%

TIMBER VERTICAL BOARD WALLS - BANDSAWN TEXTURE OILSTAINED CODA WOOD OIL "AURUM"  
 ALL OTHER EXPOSED BANDSAWN TIMBER ON HOUSE & BARN - CODA WOOD OIL "AURUM "

HOUSE & BARN ALUMINUM DOORS & WINDOWS "BLACK MATT " LRV 4 %

SOFFIT - MATT FINISH - RESENE "AWOL" LRV 32%

DOUBLE GLAZING - NON REFLECTIVE "GREY" TINT - LOW "E"



**PLANTING SPECIES - REFER TO LANDSCAPE PLAN FOR LOCATION & AREAS**

NATIVE - METROSIDEROS EXCELSA (POHUTUKAWA) - METROSIDEROS (SPRINGFIRE POHUTUKAWA) -  
 CORDYLINE AUSTRALIS (CABBAGE TREE ) - KUNZEA ERICOIDES (KANUKA) - LEPTOSPERMUM SCOPARIUM (MANUKA)- PITTOSPORUM CRASSIFOLIUM (KARO)

PALMS - ARCHONTOPHOENIX CUNNINGHAMMAINA (BANGOLOW PALM) - RHOPALOSTYLLIS SAPIDA (NIKUA)

SHRUBS - STRELITZIA REGINAE (BIRD OF PARADISES) - CAMELLIA SANANQUA (CAMELLIA EARLY PEARLY)- METROSIDEROS TAHITI (TAHITIAN POHUTUKAWA)  
 MALVACEAE (HIBISCUS )

FLAX & GRASSES - PHORMIUM TENAX (COMMON FLAX) - LOMANDRA LONGIFOLIA (LIME TUFF )

DRIVEWAY & CARPARK AREA 20 MM PAP CRUSHED LIMESTONE OVER BASECOARSE



IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK \* REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	NOT TO SCALE	PERSPECTIVE HOUSE & BARN
			Job Number 220301	Drawing No. SHT 07.0	





4 DEGREE ROOFING  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE "TRUE OAK" 0.40MM BMT

WALL CLADDING FIXED VERTICALLY  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED

GLASS SCREENS & ALL GLAZING  
TO MANUFACTURERS STANDARD  
TOUGHENED A GRADE SAFETY GLASS TO NZBC F2  
HAZARDOUS BUILDING MATERIALS  
& NZS 4223 PERFORMANCE STANDARDS

NORTH EAST ELEVATION

SUBFLOOR BEARS & BOUNDARY JOIST H3.1 KD SG8  
FLOOR JOISTS H3.1 KD SG8

VELUX FCM FIXED SKYLIGHTS  
DOUBLE GLAZED 1430 - 488 X 895

BLACK MATT POWDER COATED  
DOUBLE GLAZED LOW E GREY TINT  
ALUMINIUM JOINERY

MARLEY "BLACK" TYPHOON SPOUTING PROFILE  
& MATCHING 80 MM DOWNPIPES

4.5 HARDIE-SOFFITS MOSS GREEN

"JSC" VERTICALLY WEATHER BOARD CAVITY FIXED  
TUSCAN HL -BAND SAWN FINISH  
PROFILE TMT J56 180 X 18.5 MM  
EFFECTIVE COVER 155 MM  
50 M2 WITH WASTE TO COVER = 322.58 LM  
60 MM LENGTH NAILS = 806 NAILS  
FACTORY STAINED WITH JSC WOOD OIL  
CODA STAIN - COLOUR "AURUM"  
ALUMINIUM HEAD FLASHING REQUIRED

DECK JOISTS & BEARERS H3.2 SG8  
DECKING PREMIUM GRADE GRIPTREAD  
WEATHERED 100X25 (90X21) H3.2 RADIATA PINE

WALL CLADDING FIXED VERTICALLY  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED



NORTH EAST ELEVATION

4 DEGREE ROOFING  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE "TRUE OAK" 0.40MM BMT

WALL CLADDING FIXED VERTICALLY  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED

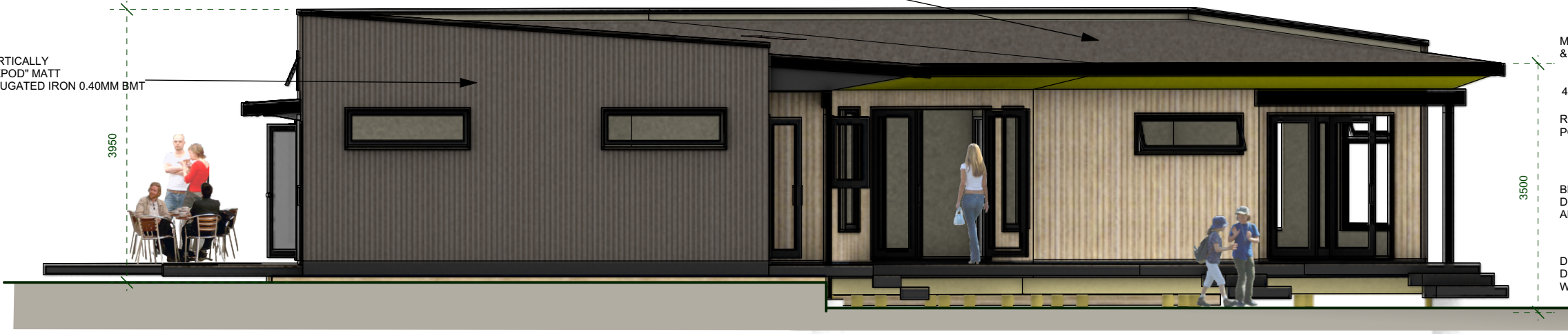
MARLEY "BLACK" TYPHOON SPOUTING PROFILE  
& MATCHING 80 MM DOWNPIPES

4.5 HARDIE-SOFFITS MOSS GREEN

ROOF SUPPORT 240X112 H3.2 GLUE LAM BEAM  
POST 112 X112 H3.2 GLUE LAM POS

BLACK MATT POWDER COATED  
DOUBLE GLAZED LOW E GREY TINT  
ALUMINIUM JOINERY

DECK JOISTS & BEARERS H3.2 SG8  
DECKING PREMIUM GRADE GRIPTREAD  
WEATHERED 100X25 (90X21) H3.2 RADIATA PINE



SOUTH ELEVATION

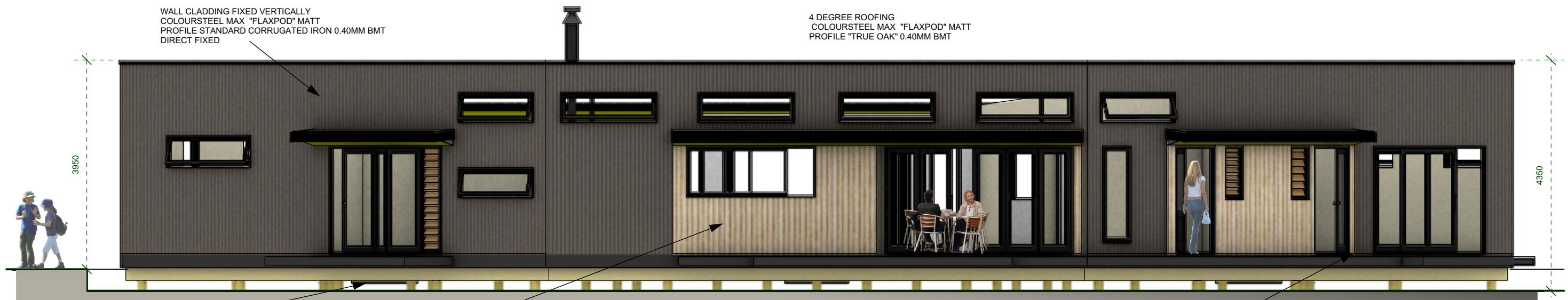
IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:75	ELEVATIONS NORTH & SOUTH
			Job Number 220301	Drawing No. SHT 08.0	

**SALT DESIGN**  
1 Kokopu Street Ahipara

MICHAEL SLOANE CELL 022 4716977 E-MAIL: michael@saltdesign.co.nz





WALL CLADDING FIXED VERTICALLY  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED

4 DEGREE ROOFING  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE "TRUE OAK" 0.40MM BMT

**WEST ELEVATION**

SUBFLOOR BEARS & BOUNDARY JOIST H3.2 KD SG8  
FLOOR JOISTS H3.1 KD SG8

DECK JOISTS & BEARERS H3.2 SG8  
DECKING PREMIUM GRADE GRIP TREAD 100X25 (90X21) H3.2 RADIATA PINE

"JSC" VERTICALLY WEATHER BOARD CAVITY FIXED  
TUSCAN HL -BAND SAWN FINISH  
PROFILE TMT J56 180 X 18.5 MM EFFECTIVE COVER 155 MM  
50 M2 WITH WASTE TO COVER = 322.58 LM - 60 MM LENGTH NAILS = 806 NAILS  
FACTORY STAINED WITH JSC WOOD OIL - CODA STAIN - COLOUR "AURUM"  
ALUMINIUM HEAD FLASHING REQUIRED

4 DEGREE ROOFING  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE "TRUE OAK" 0.40MM BMT

VELUX OPENING SOLAR POWERED SKYLIGHTS  
DOUBLE GLAZED 780 X 1400 VSS M06

MARLEY "BLACK" TYPHOON SPOUTING PROFILE  
& MATCHING 80 MM DOWNPIPES  
4.5 HARDIE-SOFFITS  
MOSS GREEN



**EAST ELEVATION**

4 DEGREE ROOFING  
COLOURSTEEL MAX "FLAXPOD" MATT  
PROFILE "TRUE OAK" 0.40MM BMT

GLASS SCREENS & ALL GLAZING  
TO MANUFACTURERS STANDARD  
TOUGHENED A GRADE SAFETY GLASS TO NZBC F2  
HAZARDOUS BUILDING MATERIALS  
& NZS 4223 PERFORMANCE STANDARDS

WALL CLADDING FIXED VERTICALLY  
COLOURSTEEL MAX "FLAXPOD" MATT  
STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED

MARLEY "BLACK" TYPHOON SPOUTING PROFILE  
& MATCHING 80 MM DOWNPIPES

4.5 HARDIE-SOFFITS MOSS GREEN

ROOF SUPORT 240X112 H3.2 GLUE LAM BEAM  
POST 112 X112 H3.2 GLUE LAM POS

BLACK MATT POWDER COATED  
DOUBLE GLAZED ALUMINIUM JOINERY

DECK JOISTS & BEARERS H3.2 SG8  
DECKING PREMIUM GRADE GRIP TREAD  
WEATHERED 100X25 (90X21) H3.2 RADIATA PINE



**SOUTH WEST ELEVATION**

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK ~ REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:75	ELEVATIONS FRONT (EAST) BACK (WEST)
			Job Number 220301	Drawing No. SHT 09.0	

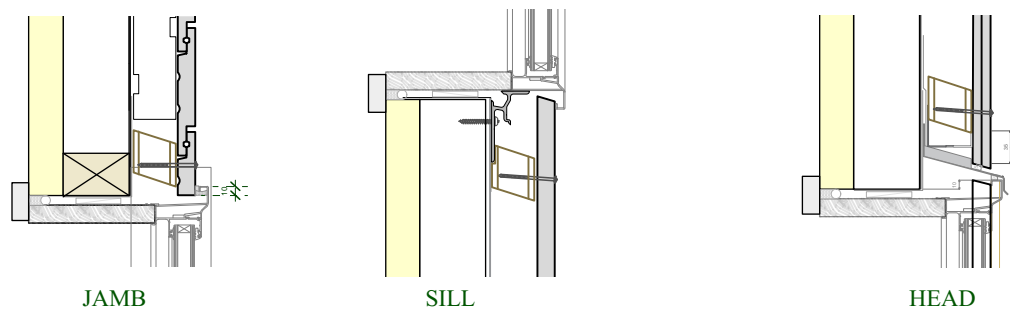
**SALT DESIGN**  
1 Kokopu Street Ahipara

MICHAEL SLOANE CELL 022 4716977 E.MAIL: michael@sloane.com



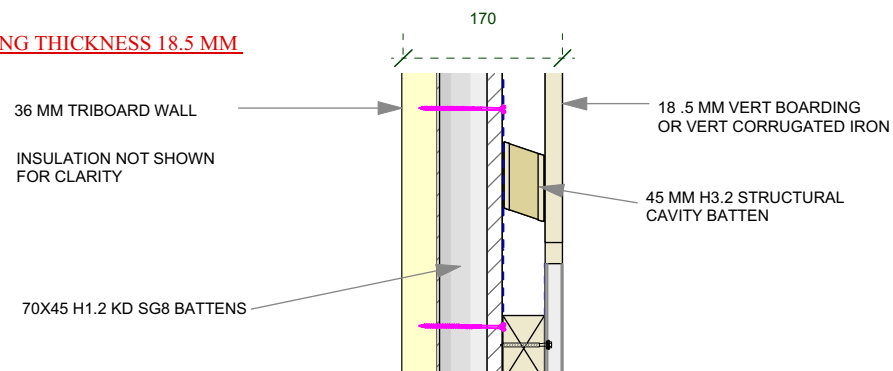


TYPICAL CORRUGATED OR VERTICAL TIMBER CLADDING WINDOW DETAILS



VERT BOARD CLADDING THRU WALL

NOTE BOTH CLADDING THICKNESS 18.5 MM



ALUMINUM JOINERY DETAILS

BLACK MATT POWDER COATED FINISH  
DOUBLE GLAZED - LOW E GLAZED - GREY TINTED GLASS  
INCLUDE SILL SUPPORTS  
SUPPLY MATCHING HEAD FLASHINGS TO ALL TIMBER CLAD WALLS - VB  
NO ALUMINUM HEAD FLASHING TO IRON CLAD WALLS (COLORSTEEL BY OTHERS) - C1

WALL CLADDINGS

COLORSTEEL MAX "FLAXPOD" MATT - FIXED VERTICALLY  
PROFILE STANDARD CORRUGATED IRON 0.40MM BMT  
DIRECT FIXED  
HEAD FLASHING TO BE PURPOSE MADE IN "FLAXPOD" COLORSTEEL

"JSC" VERTICALLY WEATHER BOARD CAVITY FIXED TUSCAN HL  
BAND SAWN FINISH  
PROFILE TMT J56 180 X 18.5 MM EFFECTIVE COVER 155 MM  
50 M2 WITH WASTE TO COVER = 322.58 LM - 60 MM LENGTH NAILS = 806 NAILS

FACTORY STAINED WITH JSC WOOD OIL "CODA AURUM"  
ALUMINIUM HEAD FLASHING REQUIRED

LEGEND

- VB = VERTICAL BOARD CLADDING
- C1 = CORRUGATED IRON CLADDING
- AJ = ALUMINUM JAMB LINERS IN SHOWER  
(TILES INTO ALUMINUM JAMB LINERS)
- WL = WOODEN CEDAR LOUVERS
- OBSCURE GLASS SHALL BE WHITE OPAL OPAQUE SAFETY GLASS

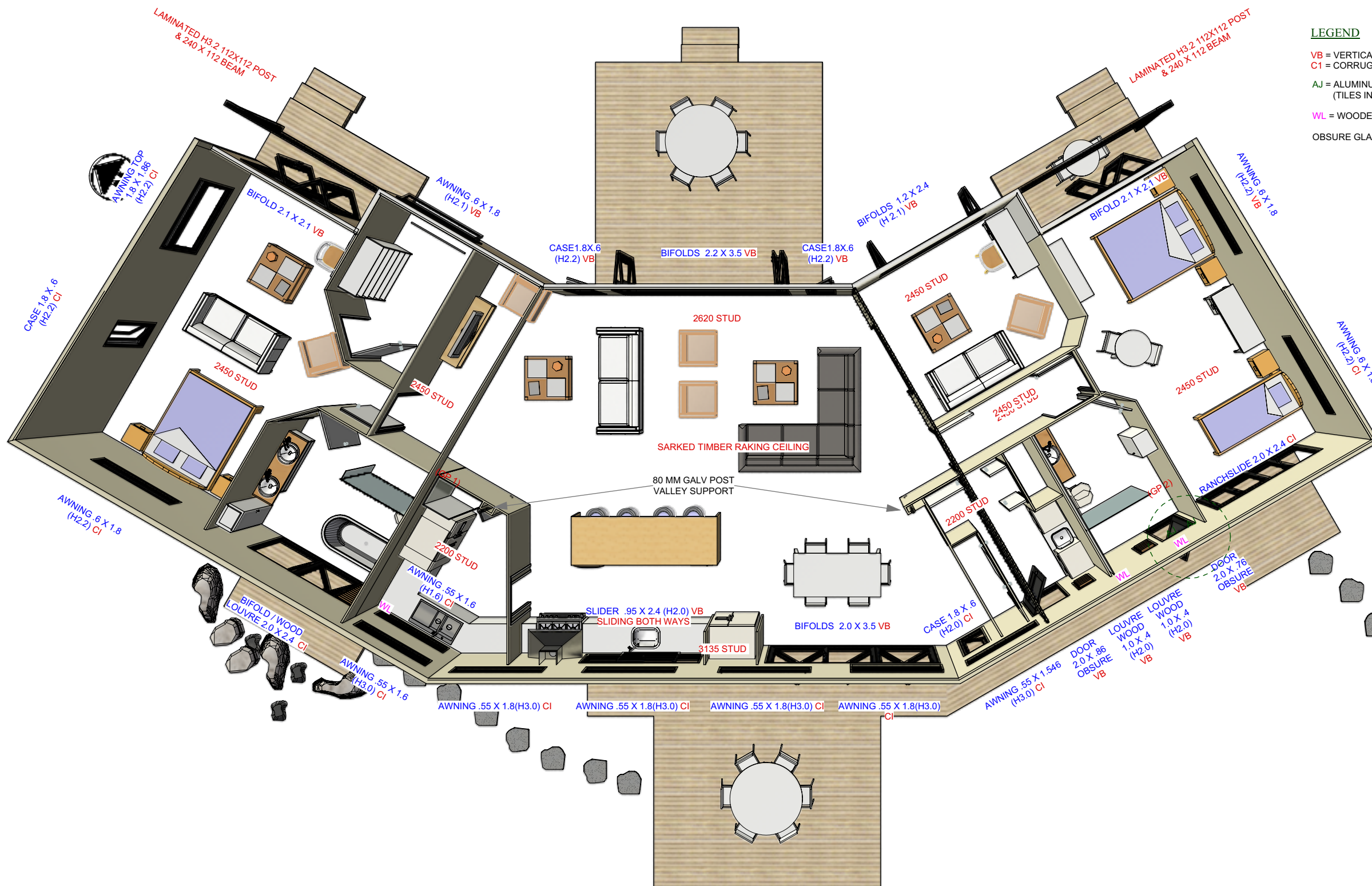
GLASS SHOWER WALLS

MASTER BEDROOM (GP 1)  
1- 2100 X 1650 X 10 MM  
& 2100 X 200 X 10 MM RETURN

BATHROOM (GP 2)  
2100 X 1500 X 10 MM PANEL WITH  
STAINLESS STABILIZING ROD  
TIED BACK TO EXTERIOR WALL  
AT FREE STANDING END

GENERAL NOTES  
TILES LINE TAKEN TO 2.2 HIGH ON WALLS  
AND TILES SLOPING FLOORS

GLASS SCREENS & ALL GLAZING  
TO MANUFACTURERS STANDARD  
TOUGHENED A GRADE SAFETY GLASS  
TO NZBC F2 HAZARDOUS BUILDING MATERIALS  
& NZS 4223 PERFORMANCE STANDARDS



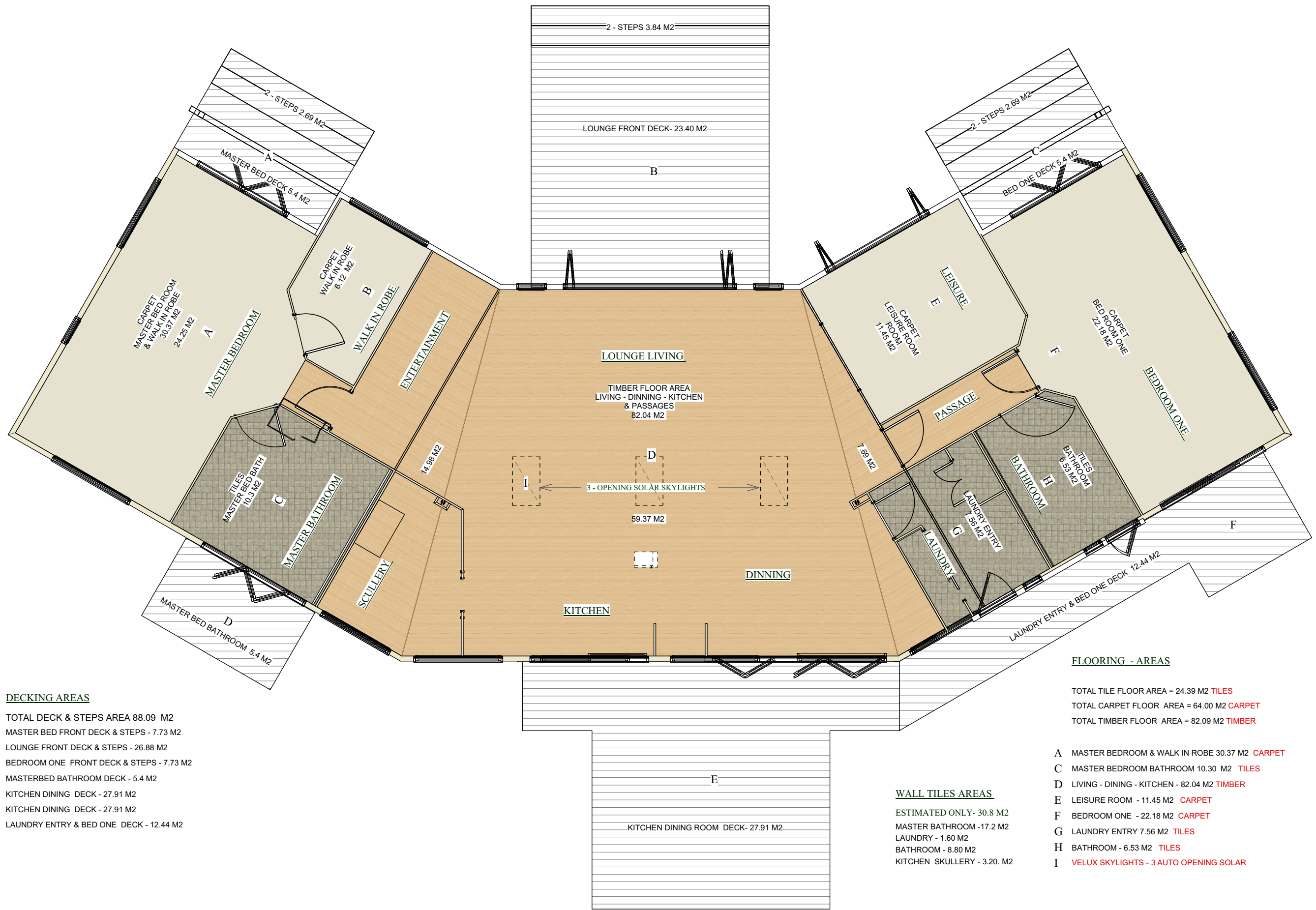
IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	NOT TO SCALE	ISOMETRIC FLOOR PLAN 178.47M2
			Job Number 220301	Drawing No. SHT 11.0	

**SALT DESIGN**  
1 Kokopu Street Ahipara







**DECKING AREAS**

TOTAL DECK & STEPS AREA 88.09 M2

- A MASTER BED FRONT DECK & STEPS - 7.73 M2
- B LOUNGE FRONT DECK & STEPS - 26.88 M2
- C BEDROOM ONE FRONT DECK & STEPS - 7.73 M2
- D MASTERBED BATHROOM DECK - 5.4 M2
- E KITCHEN DINING DECK - 27.91 M2
- F KITCHEN DINING DECK - 27.91 M2
- G LAUNDRY ENTRY & BED ONE DECK - 12.44 M2

**FLOORING - AREAS**

TOTAL TILE FLOOR AREA = 24.39 M2 **TILES**  
 TOTAL CARPET FLOOR AREA = 64.00 M2 **CARPET**  
 TOTAL TIMBER FLOOR AREA = 82.09 M2 **TIMBER**

**WALL TILES AREAS**

ESTIMATED ONLY - 30.8 M2  
 MASTER BATHROOM -17.2 M2  
 LAUNDRY - 1.60 M2  
 BATHROOM - 8.80 M2  
 KITCHEN SKULLERY - 3.20. M2

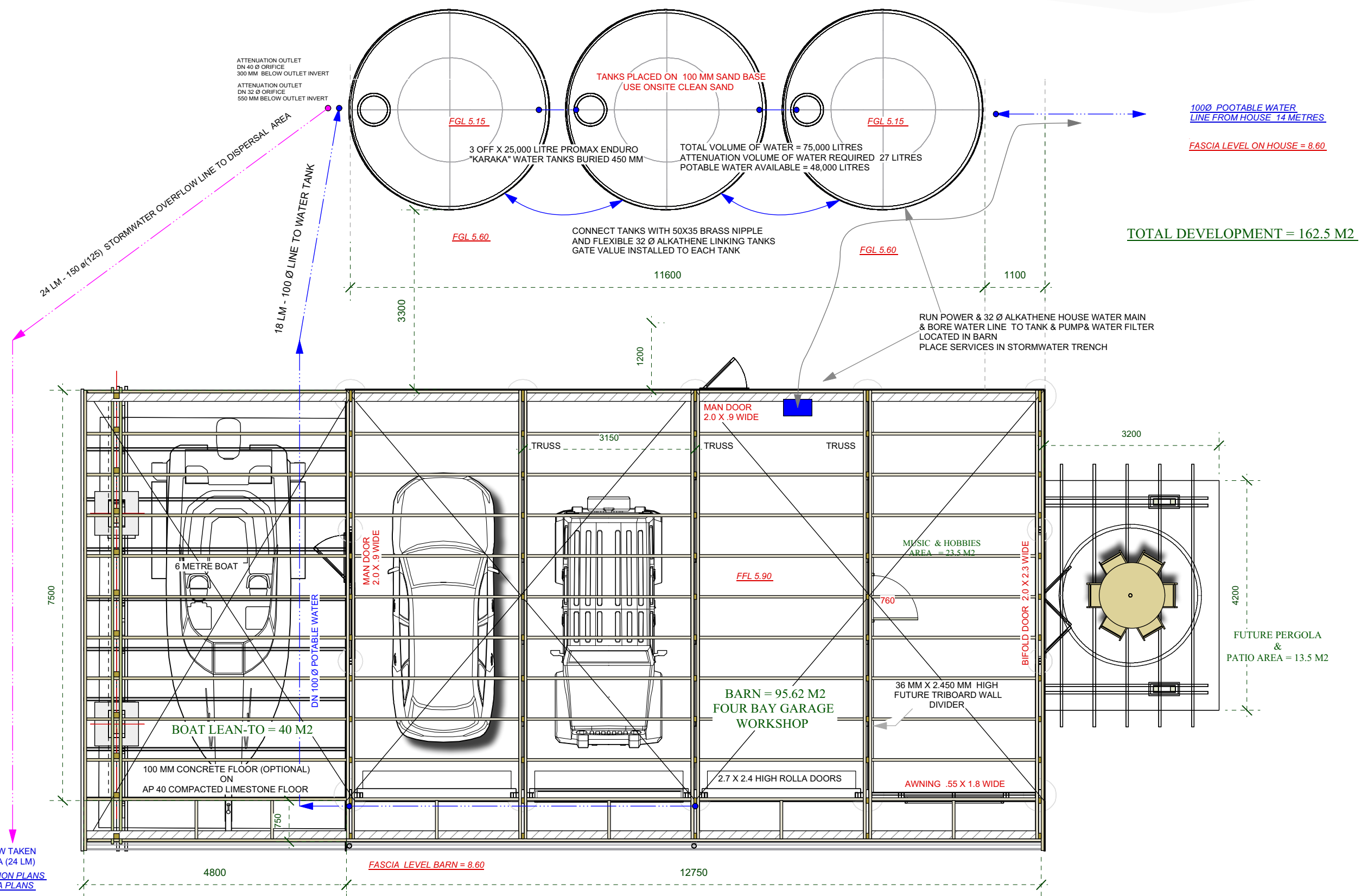
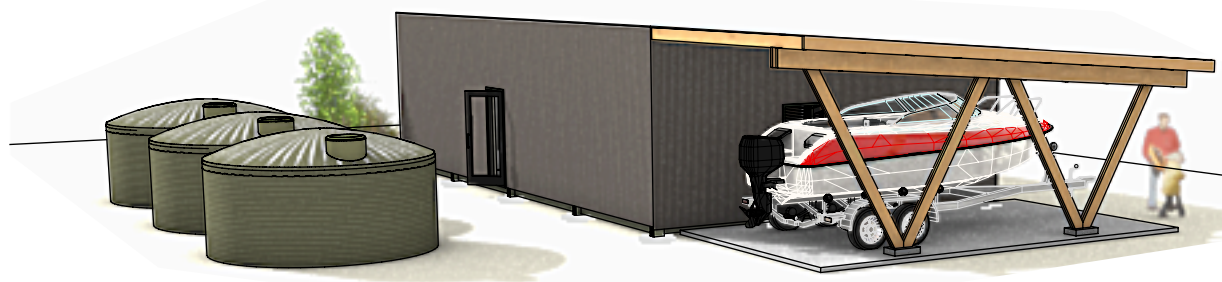
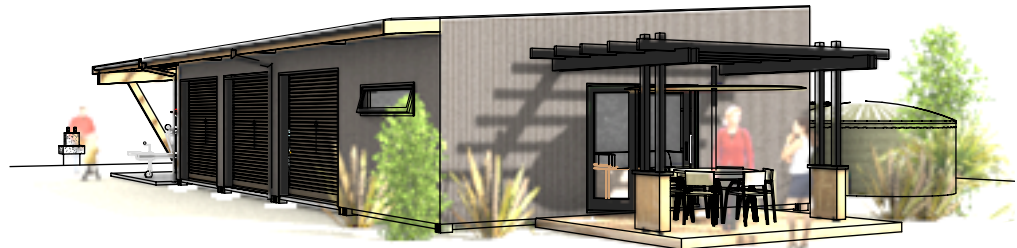
- A MASTER BEDROOM & WALK IN ROBE 30.37 M2 **CARPET**
- C MASTER BEDROOM BATHROOM 10.30 M2 **TILES**
- D LIVING - DINING - KITCHEN - 82.04 M2 **TIMBER**
- E LEISURE ROOM - 11.45 M2 **CARPET**
- F BEDROOM ONE - 22.18 M2 **CARPET**
- G LAUNDRY ENTRY 7.56 M2 **TILES**
- H BATHROOM - 6.53 M2 **TILES**
- I **VELUX SKYLIGHTS - 3 AUTO OPENING SOLAR**

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK ~ REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM HOUSE	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1- 75	FLOOR COVER & DECK PLAN & AREAS
			Job Number 220301	Drawing No. SHT 12.0	







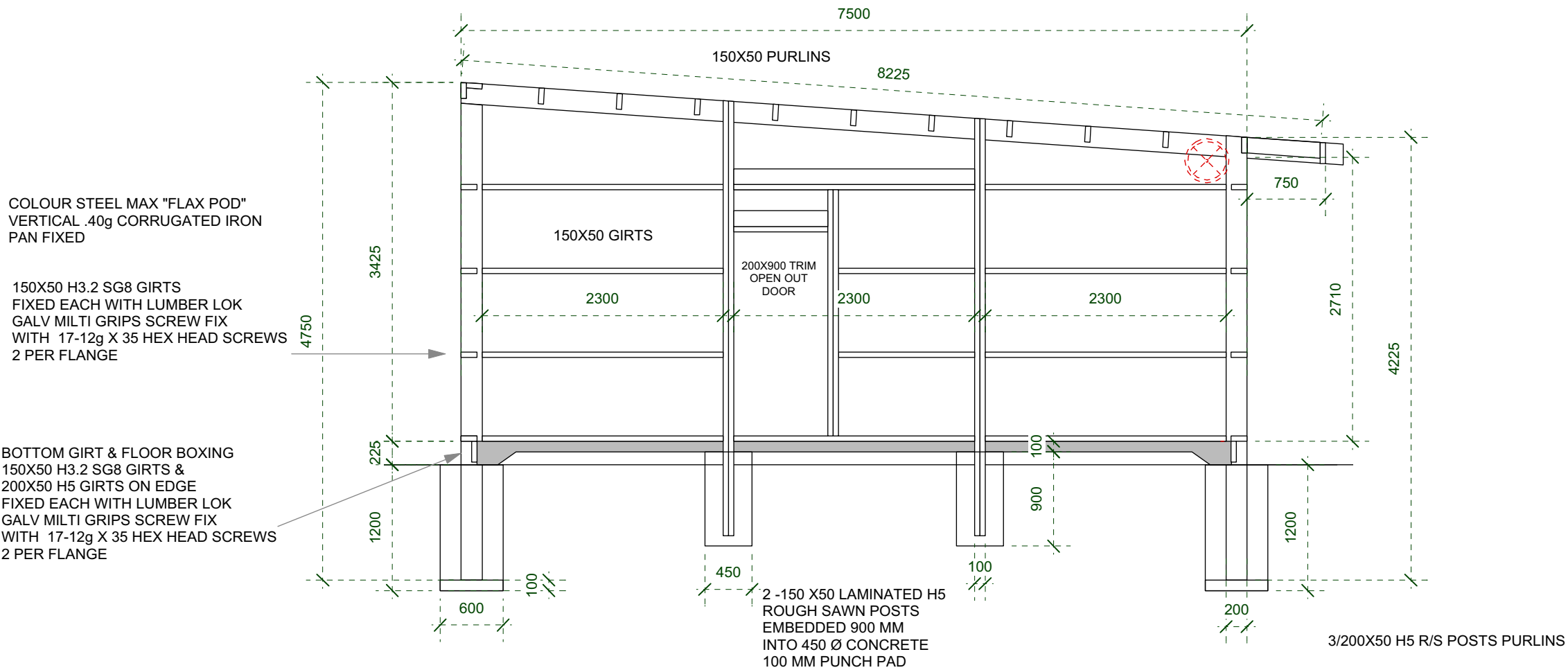
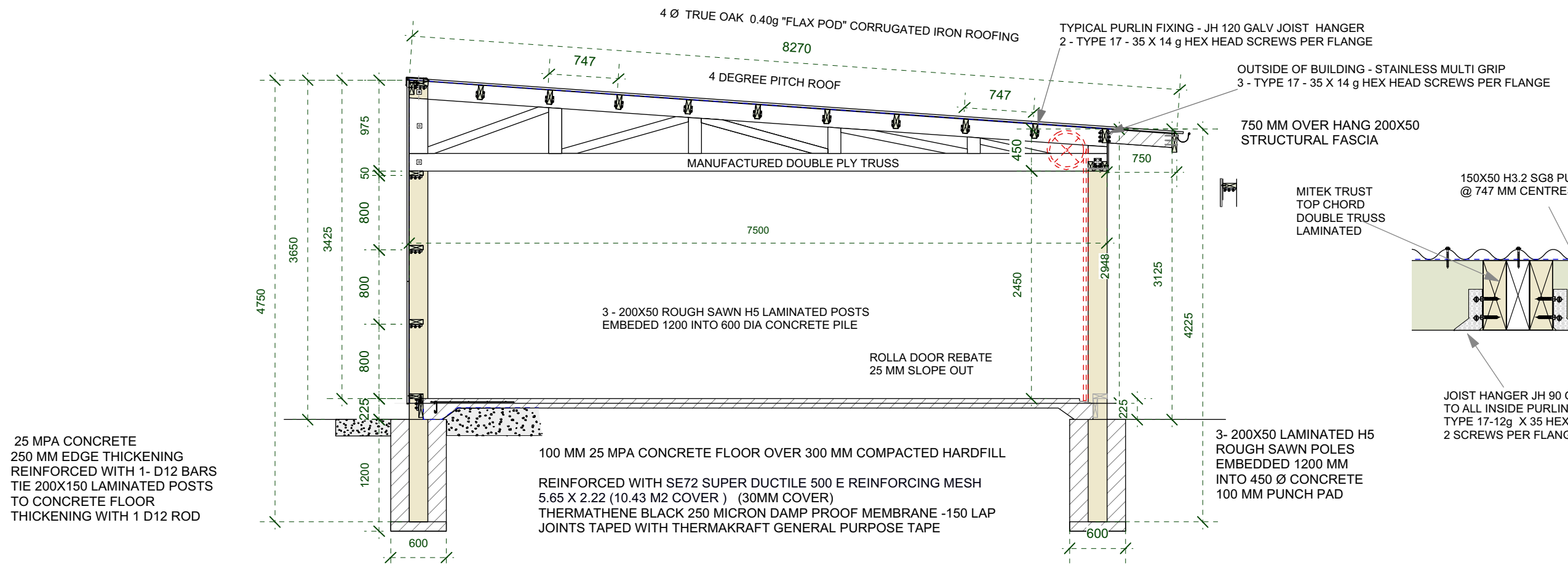
IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM BARN	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:75	BARN - BOAT PORT FLOOR PLAN
			Job Number 220301	Drawing No. SHT B 02.0	



MICHAEL SLOANE CELL 022 471 6957 EMAIL: michael@sloane.com





IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM BARN	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:50	BARN THRU SECTIONS THRU TRUSS THRU END WALL BOAT PORT
			Job Number 220301	Drawing No. SHT B 03.0	

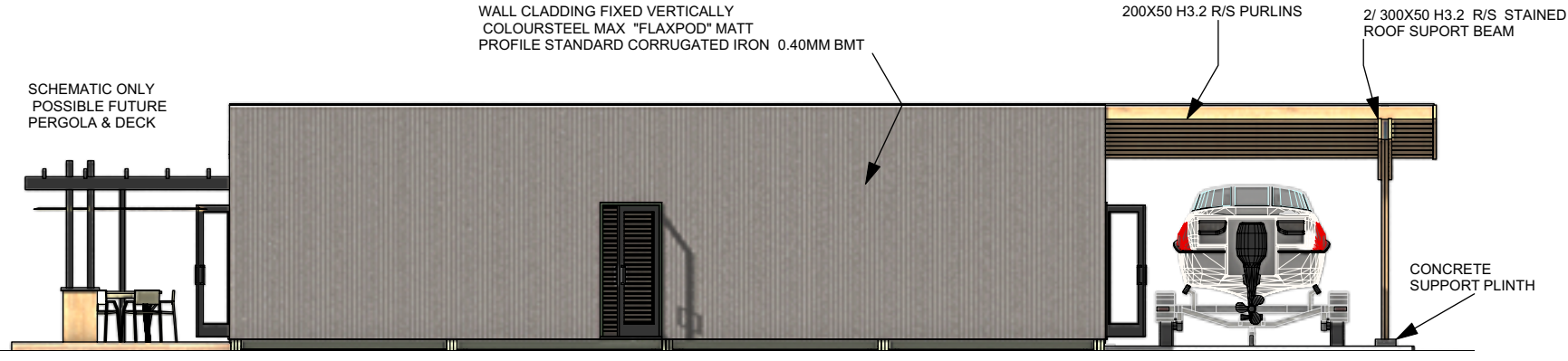


MICHAEL SLOANE CELL 022 4716977 EMAIL: michael@saltdesign.co.nz





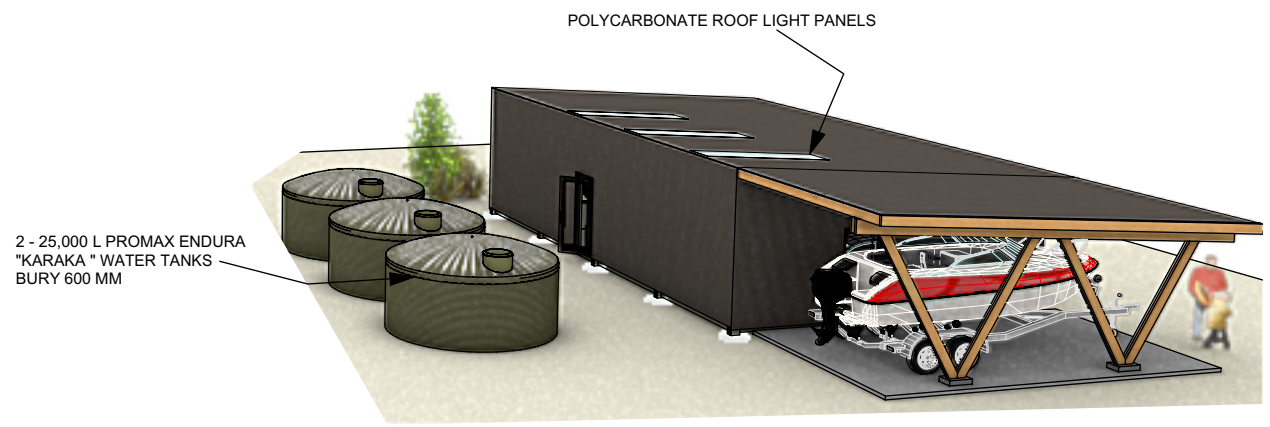
MAN DOOR 2.0 X .9  
 BLACK MATT POWDER COATED  
 SINGLE GLAZED OPAL OPAQUE (WHITE)  
 ALUMINUM JOINERY  
**SOUTH ELEVATION**



MAN DOOR 2.0 X .9  
 BLACK MATT POWDER COATED  
 SINGLE GLAZED OPAL OPAQUE (WHITE)  
 ALUMINUM JOINERY  
**WEST ELEVATION**



**NORTH EAST PERSPECTIVE**



**SOUTH WEST PERSPECTIVE**



BIFOLD 2.0 X 2.3  
 BLACK MATT POWDER COATED  
 DOUBLE GLAZED LOW E GREY TINT  
 ALUMINUM JOINERY  
**NORTH ELEVATION**



3 - 2.7 WIDE X 2400 HIGH "EBONY" AUTO OPENINGS ROLLA DOORS  
 AWNING WINDOW .5 X 1.8  
**EAST ELEVATION**

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title
THE FARM BARN	KIRI SLOANE & CRAIG HOBSON	LOT 2 36 HOUHORA HEADS RD PUKENUI	JULY 2023	1:100	ELEVATIONS & PERSPECTIVES
			Job Number 220301	Drawing No. SHT B 04.0	

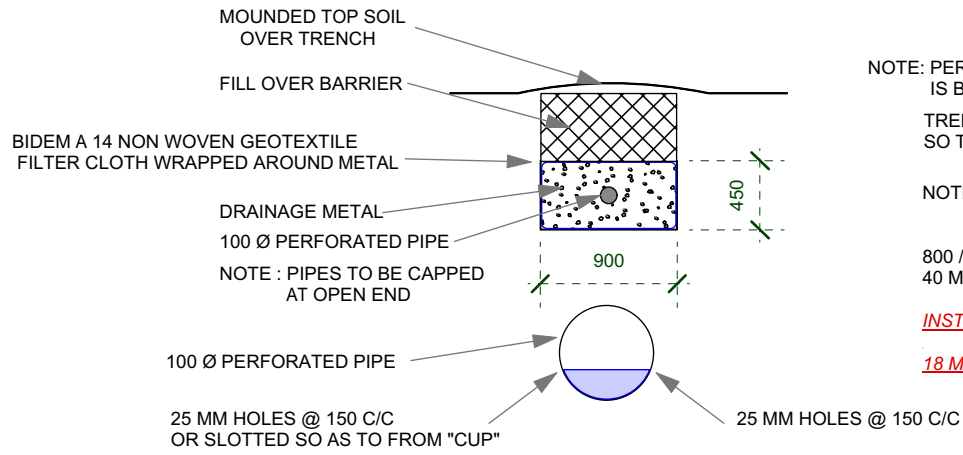


MICHAEL SLOANE CELL 022 471 6957 EMAIL: michael@saltdesign.co.nz

**EFFLUENT TRENCH DETAILS**

REFER TO SITE & SEWERAGE PLAN FOR LOCATION

AS PER TP 58 APPENDIX F



NOTE: PERCOLATION TESTS SHOW THAT ABSORPTION IS BEST INTO TOP SOIL REGION  
TRENCHES SHOULD BE LAID LEVEL SO THAT EVEN LOADS OCCUR

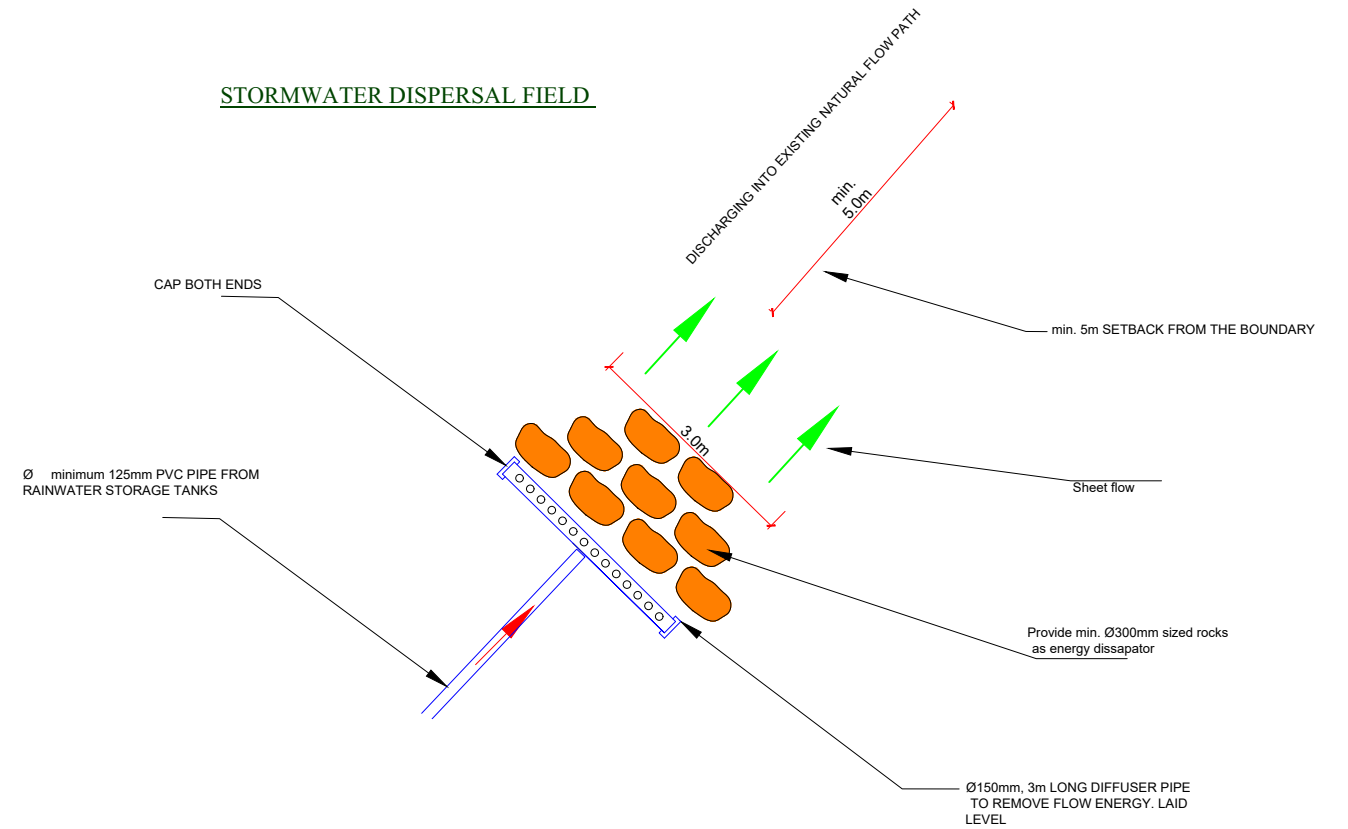
NOTE : ALLOW 3 BEDROOM 5 PERSON @ 160 L/P/D = 800 L

800 /KSAT 20 = 40 M2  
40 M2 /0.9 = 44 LM

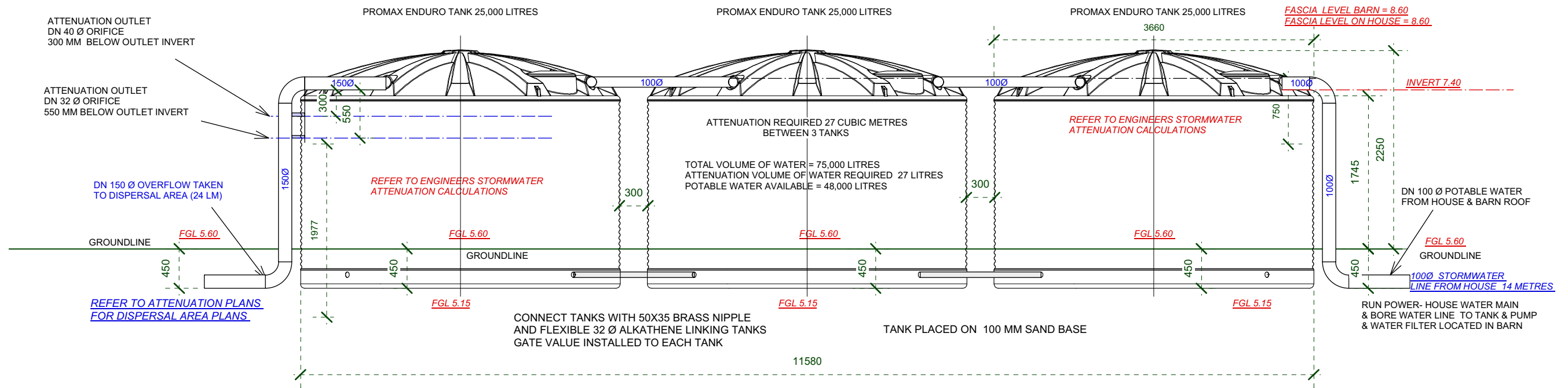
**INSTALL 2 X 22 LONG TRENCHS = 900 W X 450 D**

**18 M3 OF DRAINAGE METAL REQUIRED**

**STORMWATER DISPERSAL FIELD**



**ATTENUATION THRU SECTION - 3 - 25,000 LITRES PROMAX ENDURO WATER TANKS**



IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title	Client Name	Site Address	Date	Scale	Title <b>ATTENUATION THRU WATER TANKS STORMWATER DISPOSAL &amp; WASTE WATER DISPOSAL AREA</b>
<b>THE FARM HOUSE</b>	<b>KIRI SLOANE &amp; CRAIG HOBSON</b>	<b>LOT 2 36 HOUHORA HEADS RD PUKENUI</b>	<b>JULY 2023</b>	<b>1:50 &amp; 1:100</b>	
			Job Number <b>220301</b>	Drawing No. <b>SHT 05.0</b>	





## **Appendix B – Certificate of Title and Interests**



**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** **864005**  
**Land Registration District** **North Auckland**  
**Date Issued** 20 June 2019

**Prior References**

756898

---

**Estate** Fee Simple  
**Area** 1.2270 hectares more or less  
**Legal Description** Lot 2 Deposited Plan 530683

**Registered Owners**

Kiri-Ann Sloane-Hobson and Craig Russell Hobson

---

**Interests**

Subject to Section 59 Land Act 1948

Land Covenant in Transfer 492093.1 - 6.4.1979 at 9:00 am

Appurtenant hereto is a drainage right specified in Easement Certificate B362665.5 - 20.8.1979 at 9.00 am

10657321.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.12.2016 at 2:46 pm

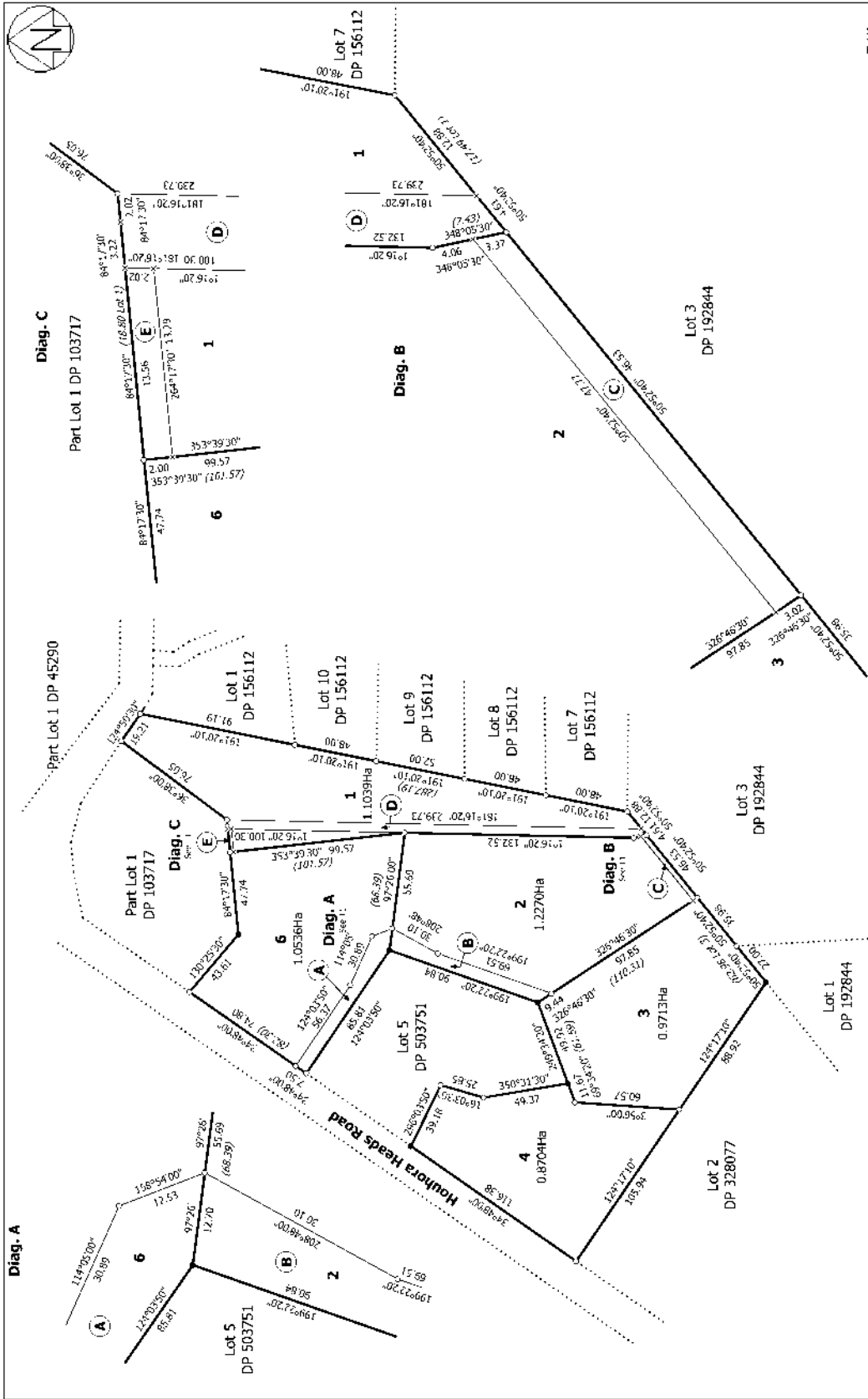
11423778.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 20.6.2019 at 12:19 pm

Subject to a right to drain water over part marked C and a right of way, a right to convey water, electricity, telecommunications and computer media over part marked B on DP 530683 created by Easement Instrument 11423778.5 - 20.6.2019 at 12:19 pm

Appurtenant hereto is a right to drain water, a right of way and a right to convey water, electricity, telecommunications and computer media created by Easement Instrument 11423778.5 - 20.6.2019 at 12:19 pm

Some of the easements created by Easement Instrument 11423778.5 are subject to Section 243 (a) Resource Management Act 1991 (see DP 530683)

11624701.2 Mortgage to Westpac New Zealand Limited - 18.12.2019 at 1:14 pm



REF 7239 T 1:1

<p>Land District North Auckland Digitally Generated Plan <small>(Scaleable to 1:10,000)</small></p>	<p>Lots 1-4 &amp; 6 being a subdivision of Lot 7 DP 503751</p>	<p>Surveyor: Aaron Robert Donaldson Firm: Donaldsons</p>	<p>Title Plan DP 530683 Deposited on: 20/06/2019</p>
---	--	--	--



# View Instrument Details

**Instrument No** 11423778.4  
**Status** Registered  
**Date & Time Lodged** 20 June 2019 12:19  
**Lodged By** Hall, John Stewart Te Harinui  
**Instrument Type** Consent Notice under s221(4)(a) Resource Management Act 1991



---

Affected Records of Title	Land District
864004	North Auckland
864005	North Auckland
864006	North Auckland
864007	North Auckland
864008	North Auckland

---

**Annexure Schedule:** Contains 2 Pages.

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## Signature

Signed by John Stewart Te Harinui Hall as Territorial Authority Representative on 14/06/2019 05:02 PM

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









Postal: Box 757, Manurewa Ave  
Tairāwhiti 0440, New Zealand  
Internet: 0300 976 097  
Phone: (09) 491 5700  
Fax: (09) 491 2137  
Email: [info@fndc.govt.nz](mailto:info@fndc.govt.nz)  
Website: [www.fndc.govt.nz](http://www.fndc.govt.nz)

*Te Kōwhiriāra o Tai Tākeraru ki Te Rōki*

## THE RESOURCE MANAGEMENT ACT 1991

### SECTION 221: CONSENT NOTICE

#### REGARDING RC2170075

Being the Subdivision of PT LOT 1 DP 83511 BLK XV HOUHORA EAST SD  
North Auckland Registry

PURSUANT to Section 221 and for the purpose of Section 224 (c) (ii) of the Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that conditions described in the schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and these are to be registered on the titles of the allotments specified below.

### SCHEDULE

#### LOTS 1, 2, 3, 4 and 6 DP 530683

- (i) In conjunction with the construction of any building which includes a wastewater treatment & effluent disposal system the applicant shall submit for Council approval a TP58 Report prepared by a Chartered Professional Engineer or an approved TP58 Report Writer. The report shall be prepared generally in accordance with the Engineers Report on Suitability of Site for Subdivision prepared by Haigh Workman and dated 30/05/2007. It shall identify a suitable method of wastewater treatment for the proposed development along with an identified effluent disposal area plus a 100% reserve disposal area. The report shall confirm that all of the treatment & disposal system can be fully contained within the lot boundary and comply with the Regional Water & Soil Plan Permitted Activity Standards.
- (ii) Electricity supply is not a condition of this consent and power has not been reticulated to the boundary of the lot. The lot owner is responsible for the provision of a power supply to operate the on-site aerobic wastewater treatment plant and any other device which requires electrical power to operate.
- (iii) In conjunction with the construction of a dwelling or building the lot owner shall submit for the approval of Council design and details of stormwater flow attenuation from the site to dispose of all storm water origination from roofs, paved surfaces and tank overflow in accordance with the recommendation contained in the Engineers Report prepared by Haigh Workman Civil and Structural Engineers and dated 30/05/2007, by piping to, and discharged into shallow vegetated swale drains and into existing drains located within the lot.



Postal Box 752, Kerikeri Ave  
Kerikeri 3110, New Zealand  
Telephone 0909 930 019  
Fax (09) 401 5260  
E-mail: [enquiries@fncc.govt.nz](mailto:enquiries@fncc.govt.nz)  
Website: [www.fncc.govt.nz](http://www.fncc.govt.nz)

*Te Kaunihera o Tei Tokerau Ki Te Raki*

- (iv) In conjunction with the construction of any dwelling, and in addition to a potable water supply, a water collection system with sufficient supply for fire fighting purposes is to be provided by way of tank or other approved means and to be positioned so that it is safely accessible for this purpose. These provisions will be in accordance with the New Zealand Fire Fighting Water Supply Code of Practice SNZ PAS 4509.

**LOT 1 DP 530683**

- (v) All buildings will require foundations specifically designed by a Chartered Professional Engineer in accordance with design parameters specified by a suitably qualified Geotechnical engineer. The foundation design details shall be submitted in conjunction with the Building Consent application.

SIGNED:



Mr Patrick John Killalea - Authorised Officer

By the FAR NORTH DISTRICT COUNCIL

Under delegated authority:

PRINCIPAL PLANNER - RESOURCE MANAGEMENT

DATED at KERIKERI this

15<sup>th</sup> day of February 2019



## **Appendix C – Engineers Report**



# **GEOTECHNICAL REPORT**

FOR

PROPOSED NEW DWELLING AND BARN

AT

36 HOUHORA HEADS ROAD

PUKENUI

LOT 2 DP 530683

FOR

KIRI SLOANE AND CRAIG HOBSON

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## **1. INTRODUCTION**

This report was requested by Kiri Sloane and has been prepared to assess the key geotechnical aspects of 36 Houhora Heads Road for future development.

This report addresses the land stability, access, foundation requirements, and ground retention requirements and has been prepared for the sole use of the client. It shall not be used, reproduced, or copied in any manner or form without the permission of PK Engineering Limited.

## **2. GENERAL SITE DESCRIPTION**

The total area of the Lot is approximately 12,270m<sup>2</sup>. The area for the proposed development is gently sloping, ~ 4-5° to the east, and lies within the Far North District Council Coastal Living Zone. The lot is currently in pasture grass.

The proposed dwelling and barn are to be sited on the gently sloping ground in the central to southern portion of the lot as indicated on the Site Plan, Sheet SG2, Appendix A.

The location of all features discussed in this report are from information supplied by Salt Design of 1 Kokopu street, Ahipara.

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

## **3. NATURAL HAZARDS**

### Tsunami

The area for the proposed development lies within *The Northland Regional Council Natural Hazards Map*. “**(Orange Inundation Zone** this zone matches the 3–5m threat level warning and is to be evacuated in the event of either the 1–3m, or 3–5m threat level warning being issued (area inundated by a tsunami with a 500 year return period). The Orange Zone encompasses the Shore Evacuation Zone” The remainder of the Lot lies within the yellow inundation Zone.

## Potential River Flood Hazard Zone

The area for the proposed development lies partially within the 1% AEP river flood hazard zone refer Sheet SG2, Appendix A.

### **4. GEOLOGY**

Soil type – *Hurewai & Te Hapua fine sandy loam. NZMS 290, Sheet N0203, North Cape -Houhora soil and map*

Rock Type – *“Weakly cemented and partly consolidated sand in fixed parabolic dunes . Clay rich sandy soils. Minor sand, mud and peat or lignite in interdune lake and swamp deposits.” GNS Q Map Kaitaia.*

### **5. SITE INVESTIGATIONS**

#### **5.1 VISUAL INSPECTION**

A thorough walkover of the site was undertaken and geotechnical features relating to site stability were noted.

#### **5.2 SUBSURFACE INVESTIGATIONS**

Six subsurface exploratory auger holes were drilled at the locations shown on the Site Plan SG1 attached as AH1 to AH6. In situ undrained shear strength readings were taken at 300mm intervals in each hole. These holes were drilled with a 90mm excavator mounted auger to 1.8m depth below existing ground level. Scala penetrometer tests were then undertaken from the base of each auger hole (PT1 - PT6) and terminated on inferred semi weathered rock.

Auger holes AH1-AH3 and AH6 intercepted predominantly strong ground with shear strength in excess of 100kPa. Auger holes AH5 and AH6 intercepted weak layers with shear strength below 100 kPa at 0.3m to 1.2m and 1.5m depth below existing ground level respectively.

The ground water table was intercepted in auger holes AH3, AH4 and AH5 at 1.3,1.1, and 1.5m depth below existing ground level respectively.

Scala penetrometer tests PT2- PT5 intercepted inferred semi weathered rock or boulders at 2.2, 3.7, 2.45 and 2.9m depth below existing ground level respectively. PT1 and PT6 were terminated in strong ground at 3.8 and 3.85m depth below existing ground level. Weak layers were intercepted in Scala test PT3 from 1.8- 2.4m depth below existing ground level.

Cross sections A – A, B – B, C – C and D - D shown in Appendix A Sheet SG3 and SG4 give an illustration of the inferred sub soil profile. The logs of the auger holes and Scala Penetrometer tests are given in Appendix A.



## **6. SITE STABILITY**

### **6.1 GENERAL**

The ground in the area for the proposed dwelling and barn can be classified predominantly as “good ground” as per NZS 3604-2011. However, due to the presence of weaker ground (identified during our site investigations) close to the eastern corner of the proposed house and the eastern end of the proposed barn this development will require a specific engineered design conducted by a Chartered Professional Engineer. Refer Site Plan SG2 for location of weaker ground in relation to the proposed house and garage.

### **6.2 BUILDING FOUNDATIONS**

A pole platform type of foundation would be suitable for the proposed house with all poles in the area identified as close to weak ground drilled or driven to a minimum of 2.0m below existing ground level.

The concrete slab for the barn to be pile supported at the eastern end with piles drilled or driven to a minimum depth of 3.0m below existing ground level.

Alternatively, a rib raft type of foundation may be utilised for the proposed barn. The raft to be designed by a suitably experienced Chartered Professional Engineer.

The following parameters should be utilized for the design of footings and piled foundations:

#### **IN STIFF CLAY:**

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 300kPa
Allowable Bearing Capacity (F.O.S = 3)	= 100kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 150kPa

#### **IN WEAK CLAY:**

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 150kPa
Allowable Bearing Capacity (F.O.S = 3)	= 50kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 75kPa

#### **IN WEAK SANDS**

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 120kPa
Allowable Bearing Capacity (F.O.S = 3)	= 40kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 60kPa

IN SEMI-WEATHERED ROCK:

Bulk Density	= 25 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 6MPa
Allowable Bearing Capacity (F.O.S = 3)	= 2MPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 3MPa

Fill may be placed around the building site to create the building platform provided that no foundations are supported onto this fill. This fill material should be rolled with a sheepsfoot roller.

All fill material under buildings should be well compacted GAP 40 hardfill, verified by an engineer. This hardfill should extend a minimum of 1m past the building edge.

6.3 TOPSOIL AND UNSUITABLE SOILS

All topsoil, organics, vegetation, unapproved fill, and any soft layers/ lenses within the subsoils are to be stripped from the building envelope. All unsuitable materials where not recycled on site are to be carted to waste.

**7. LIQUEFACTION**

The lower portion of the site has a moderate to high risk of liquefaction due to the presence of weak unconsolidated sand layers present in a state of moderate to high moisture content. Most likely cyclic dynamic loading will result in an increase of soil pore pressure which can lead to liquefaction in areas of low density.

**8. EROSION**

Care must be taken to ensure maximum ground cover and limit exposure to any cut surfaces during construction. There is no evidence of voids or cliff features. Underlying settlement and geological subsidence are unlikely.

**9. RIVER FLOOD HAZARD**

The area for development lies within the 1% AEP river flood hazard zone as indicated by the Northland Regional Council River Flood Hazard Zones. Refer Table 1 below for modelled flood levels from Northland Regional Council.

*Table 1 Modelled River flood levels supplied by Northland Regional Council*

<b>10 – year event</b>	<b>50 – year event</b>	<b>100 – year +CC event</b>
M11_010yr_Max_d (1) 0.269000	M11_050yr_Max_d (1) 0.392000	M11_100yr_CC_Max_d (1) 0.530000
M11_010yr_Max_h (1) 5.040000	M11_050yr_Max_h (1) 5.163000	M11_100yr_CC_Max_h (1) 5.301000

Table 1 indicates that the height of the 100year flood event (including allowance for climate change) is RL 5.301m with a depth of 0.53m. The finished floor level for the proposed house and barn is to be RL 5.9m, 0.6m above the modelled 100 year flood event and therefore permitted.

## **10. WASTEWATER AND STORMWATER BY Effluential Drainlayers attached**

## **11. ACCESS**

Access to this property is by a shared right of way from Houhora Heads Road

## **12. RECOMMENDATIONS**

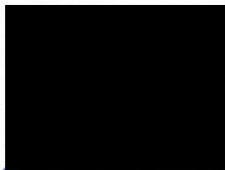
I recommend that:

- This site is considered suitable for the development as shown in the included plan.
- Foundation design should be conducted by a suitably experienced Chartered Professional Engineer.
- Any ground retaining required over 1.0m retained height or subject to surcharge loading to be designed by a suitably experienced Chartered Professional Engineer
- Finished floor level of the proposed house and barn to be a minimum of RL 5.9m.
- All earthworks are to be inspected and approved by an engineer. All hardfill over 600mm depth is to be inspected, tested, and approved by an engineer.

## **13. CONCLUSION**

This site is suitable for the proposed developments provided that the recommendations in this report are followed correctly.

All Earthworks will need to be inspected and approved by a Chartered Professional Engineer.



Pradeep Kumar.  
B.E hons, NZCE, MIPENZ,  
IntPE, CP Eng.  
(Structural, Geotechnical)  
Chartered Professional Engineer.

## APPENDIX A

- AUGER HOLE LOGS
- SCALA PENETROMETER LOGS
- LOCATION PLAN 'SG1'
- SITE PLAN 'SG2'
- CROSS-SECTION A – A, B – B 'SG3'
- CROSS-SECTION C – C, D – D 'SG4'
- WASTEWATER AND STORMWATER REPORT

**BOREHOLE LOG NO - AH1**

**Project:** 36 Hauhora Heads Road  
**Client:** Kiri Sloane  
**Job No:** 22-066



<b>Graphic Symbol</b>	@@@	#####	%%%	000	####	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	
				50mm TOPSOIL brown moist			
300	000000			SAND, light brown very fine. UTP @300 & 1200	UTP		
600	000000						
900	000000						
1200	000000				UTP		
1500	000000						
1800	000000						
2100					EOH @1.8m		
2400							
2700							
3000							
3300							
3600							
3900							
4200							
4500							
4800							
5100							
5400							

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

**BOREHOLE LOG NO - AH2**

**Project:** 36 Hauhora Heads Road  
**Client:** Kiri Sloane  
**Job No:** 22-066



Graphic Symbol	@@@	#####	%%%	000	####	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)		
				TOPSOIL, black- brown				
300	000000	Ground Water Level not Intercepted	Hurewai & Te Hapua fine sandy loam	peaty SAND, veryfine, moist	64 - 150			
600	000000				224			
900	000000				UTP			
1200	000000			UTP				
1500	000000			64 - 176				
1800	000000			UTP				
2100								
2400								
2700								
3000								
3300								
3600								
3900								
4200								
4500								
4800								
5100								
5400								

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	



**BOREHOLE LOG NO - AH3**

**Project: 36 Hauhora Heads Road**  
**Client: Kiri Sloane**  
**Job No: 22-066**



<b>Graphic Symbol</b>	@@@	#####	%%%	ØØØ	####	■	ÐÐÐÐ	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)
				TOPSOIL, brown, soft 50mm		
300	%%%	Ground Water Intercepted at 1.3m	Hurewai & Te Hapua fine sandy loam	SAND black, very fine Wet from 1.1m	22	106
600	%%%				19	102
900	%%%				0	224
1200	%%%				48	160
1500	%%%					224
1800	%%%					224
2100						
2400						
2700						
3000						
3300						
3600						
3900						
4200						
4500						
4800						
5100						
5400						

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

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**BOREHOLE LOG NO - AH4**

**Project: 36 Hauhora Heads Road**  
**Client: Kiri Sloane**  
**Job No: 22-066**



<b>Graphic Symbol</b>	@@@	#####	%%%	ØØØ	####	■	ÐÐÐÐ	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)			
				50mm TOPSOIL, dark brown, peaty, silty.					
300	%%%	Ground Water Level Intercepted @ 1.1m	Hurewai & Te Hapua fine sandy loam	SILT, black, wet from 1.1m					
600	%%%								
900	%%%								
1200	%%%								
1500	%%%								
1800	%%%								
2100									
2400									
2700									
3000									
3300									
3600									
3900									
4200									
4500									
4800									
5100									
5400									

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	



# **SITE SUITABILITY REPORT**

FOR  
PROPOSED NEW DWELLING AND BARN  
AT  
44B HOUHORA HEADS ROAD  
PUKENUI  
LOT 2 DP 530683  
FOR  
KIRI SLOANE AND CRAIG HOBSON

Job No: 22-066  
Date: August 2022  
Revised September 2023

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri, New Zealand Telephone: 09  
407 3255 Email: [teampk@pkengin.co.nz](mailto:teampk@pkengin.co.nz)

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## **1. INTRODUCTION**

This report was requested by Kiri Sloane and has been prepared to assess the key geotechnical aspects of 44B Houhora Heads Road for future development.

This report addresses the land stability, access, foundation requirements, ground retention requirements and stormwater management and has been prepared for the sole use of the client. It shall not be used, reproduced, or copied in any manner or form without the permission of PK Engineering Limited.

## **2. GENERAL SITE DESCRIPTION**

The total area of the Lot is approximately 12,270m<sup>2</sup>. The area for the proposed development is gently sloping, ~ 4-5° to the east, and lies within the Far North District Council Coastal Living Zone. The lot is currently in pasture grass.

The proposed dwelling and barn are to be sited on the gently sloping ground in the central to southern portion of the lot as indicated on the Location Plan, Sheet SG1, Appendix A.

The location of all features discussed in this report are from information supplied by Salt Design of 1 Kokopu street, Ahipara and tape measurements on site.

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

## **3. NATURAL HAZARDS**

### Tsunami

The area for the proposed development lies within *The Northland Regional Council Natural Hazards Map*. “**Orange Inundation Zone** this zone matches the 3–5m threat level warning and is to be evacuated in the event of either the 1–3m, or 3–5m threat level warning being issued (area inundated by a tsunami with a 500 year return period). The Orange Zone encompasses the Shore Evacuation Zone” The remainder of the Lot lies within the yellow inundation Zone.

## Potential River Flood Hazard Zone

The area for the proposed development lies partially within the 1% AEP river flood hazard zone refer Sheet SG6, Appendix A.

### **4. GEOLOGY**

Soil type – *Hurewai & Te Hapua fine sandy loam. NZMS 290, Sheet N0203, North Cape -Houhora soil and map*

Rock Type – *“Weakly cemented and partly consolidated sand in fixed parabolic dunes. Clay rich sandy soils. Minor sand, mud and peat or lignite in interdune lake and swamp deposits.” GNS Q Map Kaitaia.*

### **5. SITE INVESTIGATIONS**

#### **5.1 VISUAL INSPECTION**

A thorough walkover of the site was undertaken and geotechnical features relating to site stability were noted.

#### **5.2 INITIAL SUBSURFACE INVESTIGATIONS 3<sup>rd</sup> AUGUST 2022 PRIOR TO EXCAVATION**

Six subsurface exploratory auger holes were drilled at the locations shown on the Site Plan SG2 attached as AH1 to AH6. In situ undrained shear strength readings were taken at 300mm intervals in each hole. These holes were drilled with a 90mm excavator mounted auger to 1.8m depth below existing ground level. Scala penetrometer tests were then undertaken from the base of each auger hole (PT1 - PT6) and terminated on inferred semi weathered rock.

Auger holes AH1, AH2 and AH6 intercepted predominantly strong ground with shear strength in excess of 100kPa. Auger holes AH3, AH4 and AH5 intercepted weak layers with shear strength below 100 kPa at 0.3m to 1.2m and 1.5m depth below existing ground level respectively.

The ground water table was intercepted in auger holes AH3, AH4 and AH5 at 1.3, 1.1, and 1.5m depth below existing ground level respectively.

Scala penetrometer tests PT2- PT5 intercepted inferred semi weathered rock or boulders at 2.2, 3.7, 2.45 and 2.9m depth below existing ground level respectively. PT1 and PT6 were terminated in strong ground at 3.8 and 3.85m depth below existing ground level. Weak layers were intercepted in Scala test PT3 from 1.8- 2.4m depth below existing ground level.

Cross sections A – A, B – B, C – C and D - D shown in Appendix A Sheet SG3 and SG4 give an illustration of the inferred sub soil profile. The logs of the auger holes and Scala Penetrometer tests are given in Appendix A.

### 5.3 SUBSEQUENT SUBSURFACE INVESTIGATIONS JULY 26<sup>th</sup>, 2023, AFTER EXCAVATION

Subsequent investigations were undertaken at the request of Salt Design to establish ground conditions at the revised house location after excavation of the house site had been accomplished.

Eleven scala penetrometer tests PT1 – PT11 were conducted at the locations shown on the Site Plan, Sheet SG2, Appendix A. Penetrometer tests PT1 – PT4 and PT8, PT9 and PT11 conducted on the eastern edge of the proposed building intercepted weak ground from surface to various depths below the cut ground level. Penetrometer tests PT5, PT6, PT7 and PT10 intercepted predominantly strong ground and were terminated at shallow depth (0.4-0.5m below the excavated ground level) on inferred rock or hardpan.

Ground water was intercepted in penetrometer test PT9 at 1.15m below excavated ground level.

All scala penetrometer tests were terminated on inferred rock or hardpan at varying depths. The cross-section E – E shown in Appendix A, Sheet SG4 give an indication of the inferred subsoil profile along the eastern edge of the proposed dwelling. The scala penetrometer logs can be found in Appendix A.

## **6. SITE STABILITY**

### 6.1 GENERAL

The ground in the area for the proposed dwelling and barn, to the west of the red shaded area indicated on Site Plan SG2, can be classified predominantly as “good ground” as per NZS 3604-2011. However, due to the presence of weaker ground (identified during both initial and subsequent site investigations) along eastern side of the proposed house and the eastern and southern end of the proposed barn this development will require a specific engineered design conducted by a Chartered Professional Engineer. Refer Site Plan SG2 for location of weaker ground, shaded red, in relation to the proposed house and garage.

### 6.2 BUILDING FOUNDATIONS

A pole platform type of foundation would be suitable for the proposed house with all poles in the area identified as weak ground drilled or driven to a minimum of 2.0m below excavated ground level or embedded a minimum of 500mm into rock. Refer Scala Sheet Appendix A for depth to inferred rock, numbers 9 and above indicating rock intercept.

The foundations for the barn structural supports to be pile supported at the eastern side and southern end with piles drilled or driven to a minimum depth of 2.5m below excavated ground level or to 500mm into rock. All other barn support foundations as

per structural design. A reinforced concrete slab for the barn may be poured at a later date.

Alternatively, a rib raft type of foundation may be utilised for the proposed barn. The raft to be designed by a suitably experienced Chartered Professional Engineer.

The following parameters should be utilized for the design of footings and piled foundations:

IN STIFF CLAY:

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 300kPa
Allowable Bearing Capacity (F.O.S = 3)	= 100kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 150kPa

IN WEAK CLAY:

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 150kPa
Allowable Bearing Capacity (F.O.S = 3)	= 50kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 75kPa

IN WEAK SANDS

Bulk Density	= 18 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 120kPa
Allowable Bearing Capacity (F.O.S = 3)	= 40kPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 60kPa

IN SEMI-WEATHERED ROCK:

Bulk Density	= 25 kN/m <sup>3</sup>
Ultimate Bearing Capacity	= 6MPa
Allowable Bearing Capacity (F.O.S = 3)	= 2MPa
Dependable Bearing Capacity ( $\phi = 0.5$ )	= 3MPa

Fill may be placed around the building site to create the building platform provided that no foundations are supported onto this fill. This fill material should be rolled with a sheepsfoot roller.

All fill material under buildings should be well compacted GAP 40 hardfill, verified by an engineer. This hardfill should extend a minimum of 1m past the building edge.

6.3 TOPSOIL AND UNSUITABLE SOILS

All topsoil, organics, vegetation, and any unapproved fill, are to be stripped from the building envelope. All unsuitable materials where not recycled on site are to be carted to waste.

## **7. LIQUEFACTION**

The lower portion of the site has a moderate to high risk of liquefaction due to the presence of weak unconsolidated sand layers present in a state of moderate to high moisture content. Most likely cyclic dynamic loading will result in an increase of soil pore pressure which can lead to liquefaction in areas of low density.

## **8. EROSION**

Care must be taken to ensure maximum ground cover and limit exposure to any cut surfaces during construction. There is no evidence of voids or cliff features. Underlying settlement and geological subsidence are unlikely.

## **9. RIVER FLOOD HAZARD**

The area for development lies within the 1% AEP river flood hazard zone as indicated by the Northland Regional Council River Flood Hazard Zones. Refer Table 1 below for modelled flood levels from Northland Regional Council.

*Table 1 Modelled River flood levels supplied by Northland Regional Council*

<b>10 – year event</b>	<b>50 – year event</b>	<b>100 – year +CC event</b>
M11_010yr_Max_d (1) 0.269000	M11_050yr_Max_d (1) 0.392000	M11_100yr_CC_Max_d (1) 0.530000
M11_010yr_Max_h (1) 5.040000	M11_050yr_Max_h (1) 5.163000	M11_100yr_CC_Max_h (1) 5.301000

Table 1 indicates that the height of the 100year flood event (including allowance for climate change) is RL 5.301m with a depth of 0.53m. The finished floor level for the proposed house and barn is to be RL 5.9m, 0.6m above the modelled 100-year flood event and therefore permitted.

## **10. STORMWATER**

The careful management of stormwater runoff is vital to minimise downstream effects from the proposed development. During construction, silt fences should be erected around the downhill perimeter of the site and filter cloth to line cesspits onsite to minimise runoff. No water is to be discharged on open cut slopes around the building envelope during construction.

This site is zoned as Coastal Living under the Far North District Plan. To constitute a permitted activity the maximum proportion of impermeable surfaces is 10% of the total site area or 600m<sup>2</sup> whichever is the lesser.

The proposed development, house roof area is 207m<sup>2</sup>, barn and boat port roof area 146m<sup>2</sup>, gravelled driveway 534m<sup>2</sup>, car park and turning 118m<sup>2</sup>, giving a total of 1005m<sup>2</sup> of impermeable surfaces. The total permitted impermeable surface is 600m<sup>2</sup>



therefore stormwater flows from 405m<sup>2</sup> of impermeable surface is required to be attenuated.

To meet the required attenuation, we recommend attenuating all stormwater flows from the proposed house, barn and boat port back to predevelopment levels for a 1% AEP event. We also recommend planting a minimum, one meter-wide strip along the eastern edge of the proposed driveway to mitigate stormwater flows from the driveway.

To accomplish attenuation of stormwater flows from the building roofs we recommend utilising the three 25,000ltr rainwater storage tanks indicated on the Site Plan Sheet SG2, Appendix A. The three tanks to be linked in series. The last tank in the series to have a 10-year event orifice of 32mm diameter installed at 550mm below the overflow invert and a 100-year event orifice of diameter 39mm installed at 300mm below the overflow invert level. Refer Table 2, below, and tank schematic, from Salt Design, found in Appendix A.

**Table 2 Attenuation System Parameters**

	Orifice diameter	Orifice invert location	
ARI 10	32 mm	550 mm below overflow invert	
ARI 100	39 mm	300 mm below overflow invert	
Tank size	3x25k Total	75,000	litres @ 1.8 m Ø
ARI 10		13,720.0	litres
ARI 100		28,410.0	litres
Reuse		46,590.0	litres

## **11. ACCESS**

Access to this property is by a shared right of way from Houhora Heads Road that leads to the proposed new driveway.

## **12. RECOMMENDATIONS**

I recommend that:

- This site is considered suitable for the development as shown in the included plan.
- Foundation design should be conducted by a suitably experienced Chartered Professional Engineer.
- Any ground retaining required over 1.0m retained height or subject to surcharge loading to be designed by a suitably experienced Chartered Professional Engineer
- Finished floor level of the proposed house and barn to be a minimum of RL 5.9m.
- Stormwater management to follow section 10 of this report
- All earthworks are to be inspected and approved by an engineer. All hardfill over 600mm depth is to be inspected, tested, and approved by an engineer.

## **13. CONCLUSION**

This site is suitable for the proposed developments provided that the recommendations in this report are followed diligently.

All Earthworks will need to be inspected and approved by a Chartered Professional Engineer.




Pradeep Kumar.  
B.E hons, NZCE, MIPENZ,  
IntPE, CP Eng.  
(Structural, Geotechnical)  
Chartered Professional Engineer.

## APPENDIX A

- AUGER HOLE LOGS
- SCALA PENETROMETER LOGS
- LOCATION PLAN 'SG1'
- SITE PLAN 'SG2'
- CROSS-SECTION E - E 'SG3'
- CROSS-SECTION A – A & B –B 'SG4'
- CROSS-SECTION C – C & D –D 'SG5'
- RIVER FLOOD HAZARD MAP 'SG6'
- STORMWATER DISPERSAL SYSTEM 'SG7'
- ATTENUATION TANKS SCHEMATIC
- ATTENUATION CALCS

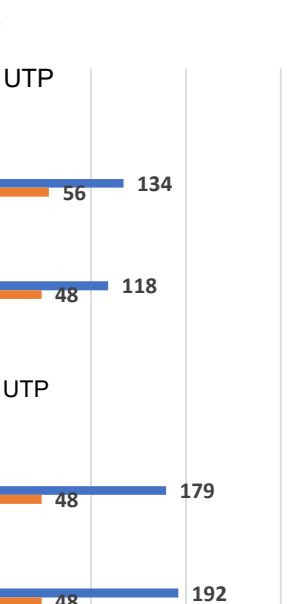
**BOREHOLE LOG NO - AH1**

**Project: 44B Houhora Heads Road**  
**Client: Kiri Sloane & Craig Hobson**  
**Job No: 22-066**



**PK ENGINEERING**  
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<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	■
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	■
								Scale Penetrometer	●


Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)															
				50mm TOPSOIL brown moist																	
300	000000	Ground Water Level not Intercepted	Hurewai & Te Hapua fine sandy loam	SAND, light brown very fine. UTP @300 & 1200	 <table border="1"> <caption>Shear Strength and Penetrometer Data</caption> <thead> <tr> <th>Depth (mm)</th> <th>Undrained Shear Strength (kPa)</th> <th>Scale Penetrometer (blows/300mm)</th> </tr> </thead> <tbody> <tr> <td>600</td> <td>56</td> <td>134</td> </tr> <tr> <td>900</td> <td>48</td> <td>118</td> </tr> <tr> <td>1500</td> <td>48</td> <td>179</td> </tr> <tr> <td>1800</td> <td>48</td> <td>192</td> </tr> </tbody> </table>	Depth (mm)	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	600	56	134	900	48	118	1500	48	179	1800	48	192	
Depth (mm)	Undrained Shear Strength (kPa)					Scale Penetrometer (blows/300mm)															
600	56					134															
900	48					118															
1500	48					179															
1800	48					192															
600	000000																				
900	000000																				
1200	000000																				
1500	000000																				
1800	000000																				
2100								EOH @1.8m													
2400																					
2700																					
3000																					
3300																					
3600																					
3900																					
4200																					
4500																					
4800																					
5100																					
5400																					

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand  
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**BOREHOLE LOG NO - AH2**

**Project: 44B Houhora Heads Road**  
**Client: Kiri Sloane & Craig Hobson**  
**Job No: 22-066**



**PK ENGINEERING**  
 CHARTERED PROFESSIONAL ENGINEERS

<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	■
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	■
								Scale Penetrometer	●

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	
				TOPSOIL, black- brown			
300	000000			peaty SAND, veryfine, moist	64 - 150		
600	000000				224		
900	000000				UTP		
1200	000000				UTP		
1500	000000				64 - 176		
1800	000000				UTP		
2100		Ground Water Level not Intercepted	Hurewai & Te Hapua fine sandy loam				
2400							
2700							
3000							
3300							
3600							
3900							
4200							
4500							
4800							
5100							
5400							


Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

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**BOREHOLE LOG NO - AH3**

**Project:** 44B Houhora Heads Road  
**Client:** Kiri Sloane & Craig Hobson  
**Job No:** 22-066



**PK ENGINEERING**  
 CHARTERED PROFESSIONAL ENGINEERS

<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	


Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	
				TOPSOIL, brown, soft 50mm			
300	%%%	Ground Water Intercepted at 1.3m	Hurewai & Te Hapua fine sandy loam	SAND black, very fine Wet from 1.1m	22	106	
600	%%%				19	102	
900	%%%				0	224	
1200	%%%				48	160	
1500	%%%					224	
1800	%%%					224	
2100							
2400							
2700							
3000							
3300							
3600							
3900							
4200							
4500							
4800							
5100							
5400							

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	




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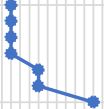
**BOREHOLE LOG NO - AH4**

**Project: 44B Houhora Heads Road**  
**Client: Kiri Sloane & Craig Hobson**  
**Job No: 22-066**



**PK ENGINEERING**  
 CHARTERED PROFESSIONAL ENGINEERS

<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	


Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)
				50mm TOPSOIL, dark brown, peaty, silty.		
300	%%%			SILT, black, wet from 1.1m	48 102	
600	%%%				32 51	
900	%%%				38 80	
1200	%%%				54 160	
1500	%%%				32 86	
1800	%%%				32 112	
				GWL @ 1.1m		
2100				Hurewai & Te Hapua fine sandy loam		
2400						
2700						
3000						
3300						
3600						
3900						
4200						
4500						
4800						
5100						
5400						

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	




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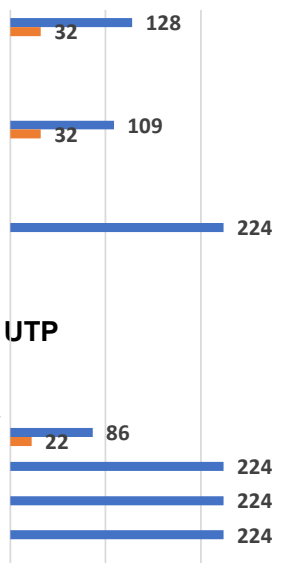
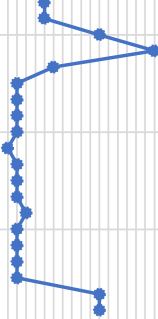
**BOREHOLE LOG NO - AH5**

**Project: 44B Houhora Heads Road**  
**Client: Kiri Sloane & Craig Hobson**  
**Job No: 22-066**



**CHARTERED PROFESSIONAL ENGINEERS**

<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	


Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)
				TOPSOIL, brown, silty		
300	000000	Ground Water Level Intercepted @ 1.5m	Hurewai & Te Hapua fine sandy loam	SAND, brown, very fine, wet from 1.5m		
600	000000					
900	000000					
1200	000000					
1500	000000					
1800	000000					
2100						
2400						
2700						
3000						
3300						
3600						
3900						
4200						
4500						
4800						
5100						
5400						

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	




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**BOREHOLE LOG NO - AH6**

**Project: 44B Houhora Heads Road**  
**Client: Kiri Sloane & Craig Hobson**  
**Job No: 22-066**



**PK ENGINEERING**  
 CHARTERED PROFESSIONAL ENGINEERS

<b>Graphic Symbol</b>	@@@	#####	%%%	000	++++	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	
				TOPSOIL , 50mm			
300	000000			silty SAND, brown- orange	224		
600	000000			SAND,,brown -orange, fine	UTP		
900	000000				UTP		
1200	000000				UTP		
1500	000000			SAND, yellow, fine	61 131		
1800	000000				55 133		
2100		Ground Water Level not Intercepted	Hurewai &Te Hapua fine sandy loam				
2400							
2700							
3000							
3300							
3600							
3900							
4200							
4500							
4800							
5100							
5400							

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

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P K ENGINEERING LIMITED													PENETROMETER HOLE No.						
90 KERIKERI RD Phone (09) 4073255 EMAIL <a href="mailto:pk.engin@pkengin.co.nz">pk.engin@pkengin.co.nz</a>													SHT. 1 of 2						
Location: 44B Houhora Heads Road													Job No. 22-066						
Driven by: RD													Date: 3/08/2022						
R.L at Ground Level: n/a											GWL:								
Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4
50					2550	7		2		5050					7550				
100					2600	3		3		5100					7600				
150					2650	3		3		5150					7650				
200					2700	3		3		5200					7700				
250					2750	3		3		5250					7750				
300					2800	4		3		5300					7800				
350					2850	4		3		5350					7850				
400					2900	4		3		5400					7900				
450					2950	4		2		5450					7950				
500					3000	4		2		5500					8000				
550					3050	6		2		5550					8050				
600					3100	6		3		5600					8100				
650					3150	5		3		5650					8150				
700					3200	5		3		5700					8200				
750					3250	5		3		5750					8250				
800					3300	6		3		5800					8300				
850					3350	6		3		5850					8350				
900					3400	6		3		5900					8400				
950					3450	6		6		5950					8450				
1000					3500	7		6		6000					8500				
1050					3550	7		6		6050					8550				
1100					3600	7		6		6100					8600				
1150					3650	7		6		6150					8650				
1200					3700	6		8		6200					8700				
1250					3750	6		8		6250					8750				
1300					3800	6				6300					8800				
1350					3850					6350					8850				
1400					3900					6400					8900				
1450					3950					6450					8950				
1500					4000					6500					9000				
1550					4050					6550					9050				
1600					4100					6600					9100				
1650					4150					6650					9150				
1700		6			4200					6700					9200				
1750		6			4250					6750					9250				
1800		6			4300					6800					9300				
1850	4	6			4350					6850					9350				
1900	4	6			4400					6900					9400				
1950	4	6			4450					6950					9450				
2000	4	13			4500					7000					9500				
2050	4	5			4550					7050					9550				
2100	4	5			4600					7100					9600				
2150	4	5			4650	3				7150					9650				
2200	4	8			4700	3				7200					9700				
2250	5	8			4750	3				7250					9750				
2300	5	8	2	3	4800					7300					9800				
2350	5		2	6	4850					7350					9850				
2400	5		2	6	4900					7400					9900				
2450	5		2	12	4950					7450					9950				
2500	7		2		5000					7500					10000				

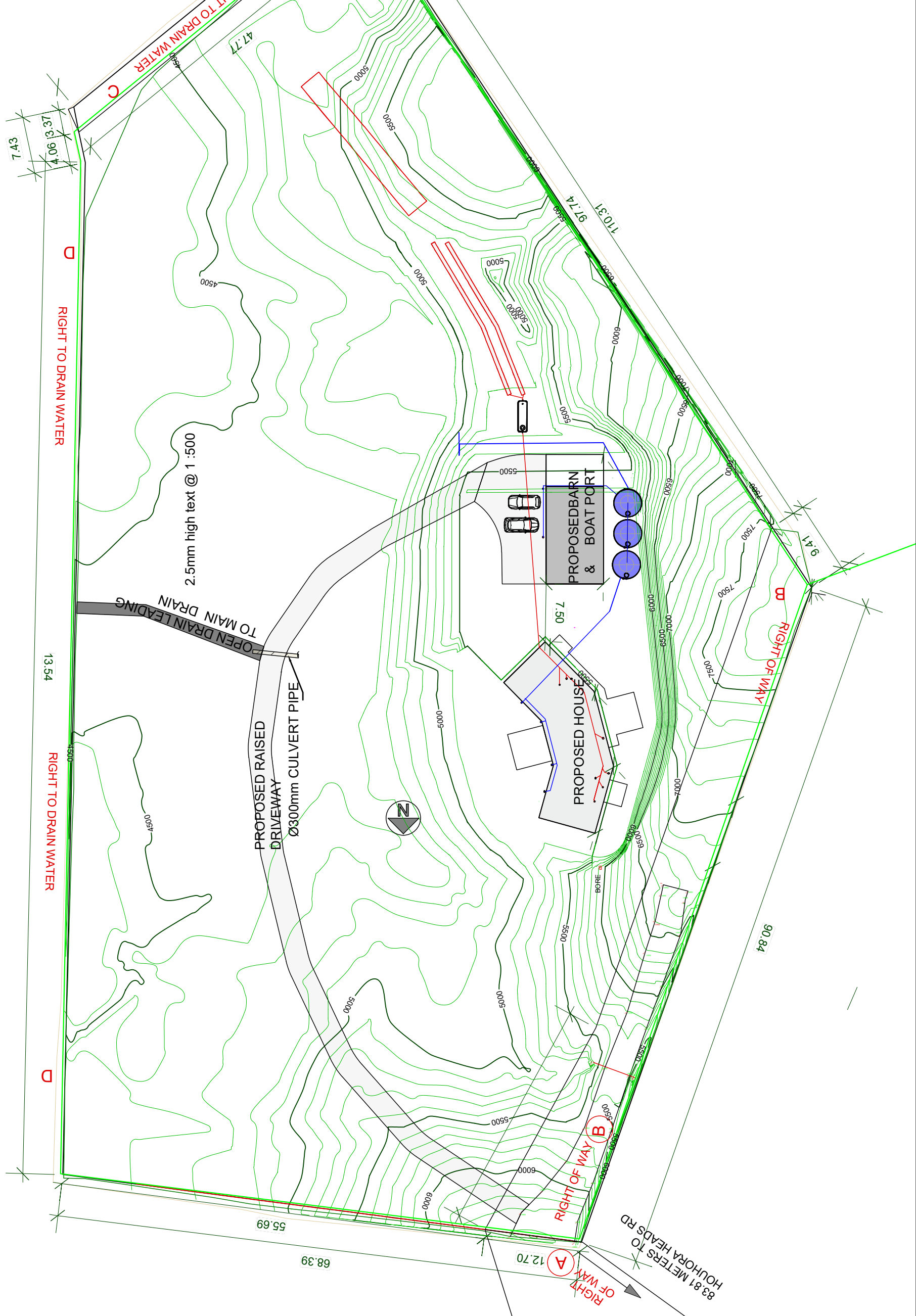


P K ENGINEERING LIMITED													PENETROMETER HOLE No.					
90 KERIKERI RD Phone (09) 4073255 EMAIL <a href="mailto:pk.engin@pkengin.co.nz">pk.engin@pkengin.co.nz</a>													SHT. 2 of 2					
Location: 44B Houhora Heads Road													Job No. 22-066					
Driven by: RD													Date: 3/08/2022					
R.L at Ground Level: n/a													GWL:					
Depth	PT5	PT6			Depth	PT5	PT6											
50					2550	3	3			5050					7550			
100					2600	3	3			5100					7600			
150					2650	4	4			5150					7650			
200					2700	3	4			5200					7700			
250					2750	3	4			5250					7750			
300					2800	3	4			5300					7800			
350					2850	3	4			5350					7850			
400					2900	12	4			5400					7900			
450					2950	12	4			5450					7950			
500					3000		4			5500					8000			
550					3050		4			5550					8050			
600					3100		4			5600					8100			
650					3150		4			5650					8150			
700					3200		4			5700					8200			
750					3250		3			5750					8250			
800					3300		4			5800					8300			
850					3350		4			5850					8350			
900					3400		4			5900					8400			
950					3450		5			5950					8450			
1000					3500		5			6000					8500			
1050					3550		5			6050					8550			
1100					3600		6			6100					8600			
1150					3650		6			6150					8650			
1200					3700		6			6200					8700			
1250					3750		6			6250					8750			
1300					3800		6			6300					8800			
1350					3850		6			6350					8850			
1400					3900					6400					8900			
1450					3950					6450					8950			
1500					4000					6500					9000			
1550					4050					6550					9050			
1600					4100					6600					9100			
1650					4150					6650					9150			
1700					4200					6700					9200			
1750					4250					6750					9250			
1800					4300					6800					9300			
1850		2			4350					6850					9350			
1900		2			4400					6900					9400			
1950		2			4450					6950					9450			
2000	6	2			4500					7000					9500			
2050	6	2			4550					7050					9550			
2100	12	2			4600					7100					9600			
2150	18	2			4650					7150					9650			
2200	7	2			4700					7200					9700			
2250	3	2			4750					7250					9750			
2300	3	3			4800					7300					9800			
2350	3	3			4850					7350					9850			
2400	3	3			4900					7400					9900			
2450	2	3			4950					7450					9950			
2500	3	3			5000					7500					10000			

P K ENGINEERING LIMITED														PENETROMETER HOLE No.					
90 KERIKERI RD Phone (09) 4073255 EMAIL <a href="mailto:pk.engin@pkengin.co.nz">pk.engin@pkengin.co.nz</a>														SHT. 1 of 2					
Location: 44B Houhora Heads Road														Job No. 22-066					
Driven by: MS														Date: 26/07/2023					
R.L at Ground Level: n/a											GWL:								
Depth	PT1	PT2	PT3	PT4	Depth	PT5	PT6	PT7	PT8	Depth	PT9	PT10	PT11	PT4	Depth	PT1	PT2	PT3	PT4
50	1	1	1	RUSHED	50	2	1	1	1	50	1	5	1		2550				
100	1	1	1		100	3	2	2	1	100	3	12	1		2600				
150	3	1	1		150	15	2	3	2	150	1	17	1		2650				
200	2	1	1		200	22	2	7	1	200	2	16	2		2700				
250	1	1	1		250	26	15	7	2	250	1	6	3		2750				
300	1	1	1		300	20	16	10	1	300	2	6	1		2800				
350	1	1	1		350	13	24	7	1	350	2	9			2850				
400	1	1	3		400	10	25	7	1	400	2	9	1		2900				
450	1	1	3		450	9		8	1	450	1	9			2950				
500	1	1	4		500	9		12	1	500	1	10	1		3000				
550	1	1	5	550				1	550	1	10			3050					
600	1	1	4	600				1	600	1				3100					
650	1	1	2	650				1	650	1				3150					
700	1	1	2	700				1	700	1				3200					
750	1	1	2	750				1	750	1			1	3250					
800	1	16+	2	800				1	800	1				3300					
850	12		4	850				1	850	1				3350					
900	10+		4	900				1	900	1				3400					
950			9	950				1	950	1				3450					
1000			10	1000				2	1000	1			1	3500					
1050				1050				4	1050	1				3550					
1100				1100				2	1100	1			2	3600					
1150				1150				2	1150	1			4	3650					
1200				1200				3	1200	2			6	3700					
1250				1250				4	1250	2			8	3750					
1300				1300				5	1300	2			10	3800					
1350				1350				4	1350	1			10	3850					
1400				1400				6	1400	1				3900					
1450				1450				5	1450	2				3950					
1500				1500				6	1500	2				4000					
1550				1550				12	1550	1				4050					
1600				1600					1600	1				4100					
1650				1650					1650	1				4150					
1700				1700					1700	1				4200					
1750				1750					1750	1				4250					
1800				1800					1800	1				4300					
1850				1850					1850	1				4350					
1900				1900					1900	2				4400					
1950				1950					1950	2				4450					
2000				2000					2000	5				4500					
2050				2050					2050	4				4550					
2100				2100					2100	6				4600					
2150				2150					2150	5				4650					
2200				2200					2200	3				4700					
2250				2250					2250	3				4750					
2300				2300					2300	3				4800					
2350				2350					2350	6				4850					
2400				2400					2400	8				4900					
2450				2450					2450	12				4950					
2500				2500					2500					5000					

**Notes:**

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4. IN THE EVENT THAT THERE IS ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS THE DRAWINGS OF THIS PROJECT SHALL TAKE PRECEDENCE WITH THE DETAIL DRAWINGS TAKING PRECEDENCE OVER THE GENERAL NOTES.



REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		



**PK ENGINEERING**  
 CHARTERED PROFESSIONAL ENGINEERS  
 LEVEL 1 - ANZ BANK  
 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: tecampk@pkengin.co.nz

**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 44B HOHORA HEADS ROAD

**SITE:** 44B HOHORA HEADS  
 ROAD LOT 2 DP 530683

**TITLE:** PROPOSED HOUSE AND BARN  
 LOCATION PLAN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:500	4/09/2023	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG1	20	0



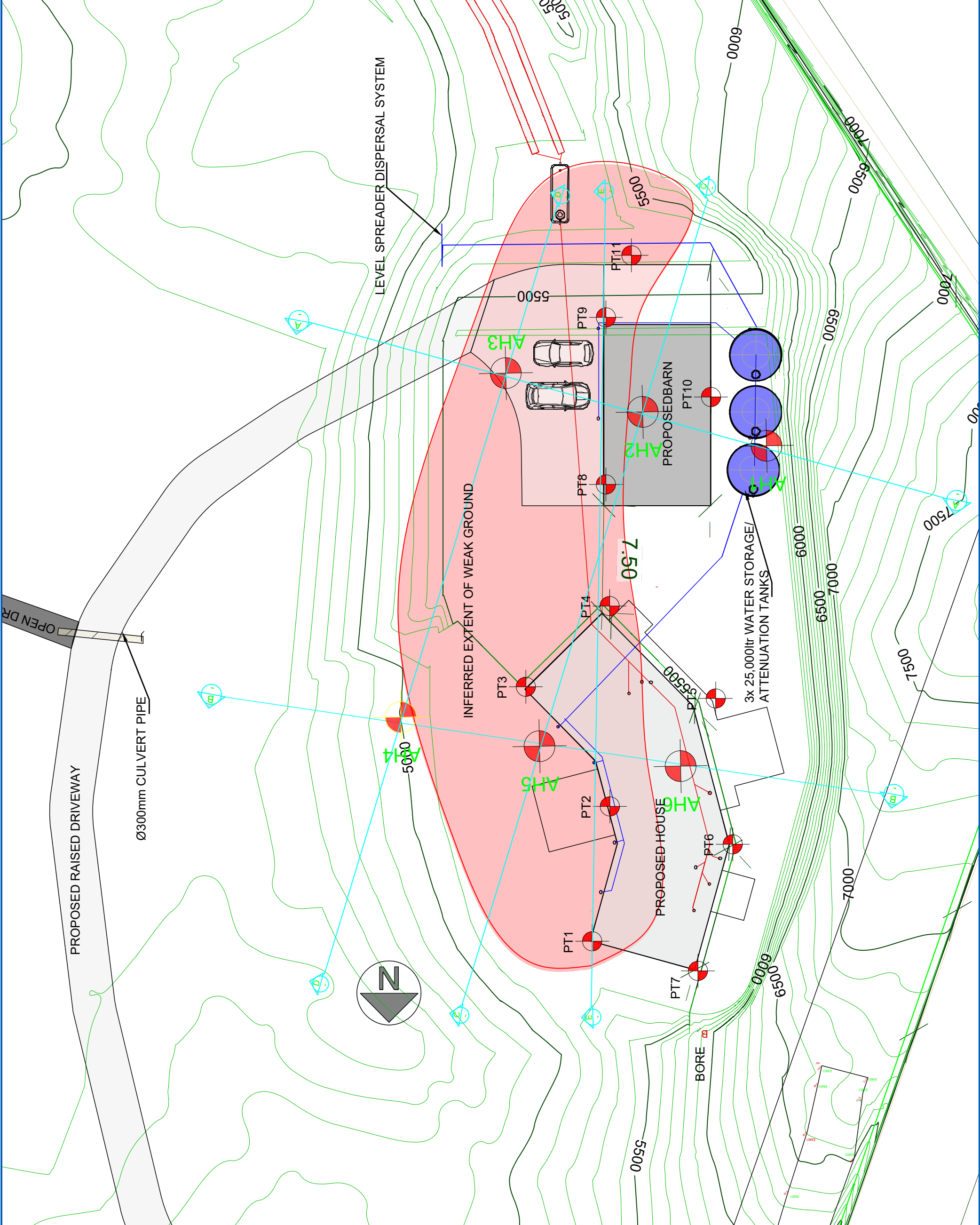
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REV: DESCRIPTION:	BY: DATE:
STATUS: ISSUED TO CLIENT	

**CHARTERED PROFESSIONAL ENGINEERS**  
 LEVEL 1 - ANZ BANK  
 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teampk@pkengin.co.nz

CLIENT: KIRI SLOANE & CRAIG HOBSON 44B HOUHORA HEADS ROAD	SITE: 44B HOUHORA HEADS ROAD LOT 2 DP 530683
TITLE: PROPOSED HOUSE AND BARN SITE PLAN	
SCALE AT AS: 1:250	DATE: 4/09/2023
PROJECT NO: 22-066	DRAWING NO: A3/SG2
	CHECKED: PK
	REVISION: 0

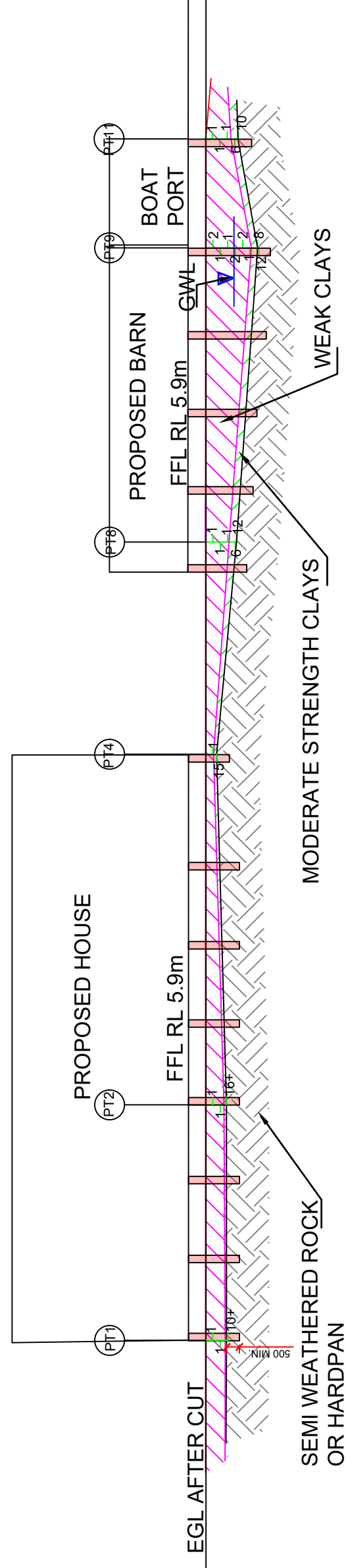




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ALL PILES LOCATED ON THE EASTERN SIDE OF THE PROPOSED HOUSE AND SOUTHERN END OF THE PROPOSED BARN AND BOAT PORT TO BE EMBEDDED A MINIMUM OF 500mm INTO ROCK.



**CROSS SECTION E - E**

REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		

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 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teampk@pkengn.co.nz

**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 44B HOUHORA HEADS ROAD

<b>SITE:</b>	44B HOUHORA HEADS ROAD LOT 2 DP 530683
<b>TITLE:</b>	PROPOSED HOUSE AND BARN CROSS SECTION E - E
<b>SCALE AT A3:</b>	DATE: 4/09/2023 1:200 DRAWN: RD CHECKED: PK
<b>PROJECT NO:</b>	22-066 DRAWING NO: A3/SG3 REVISION: 2/ 0

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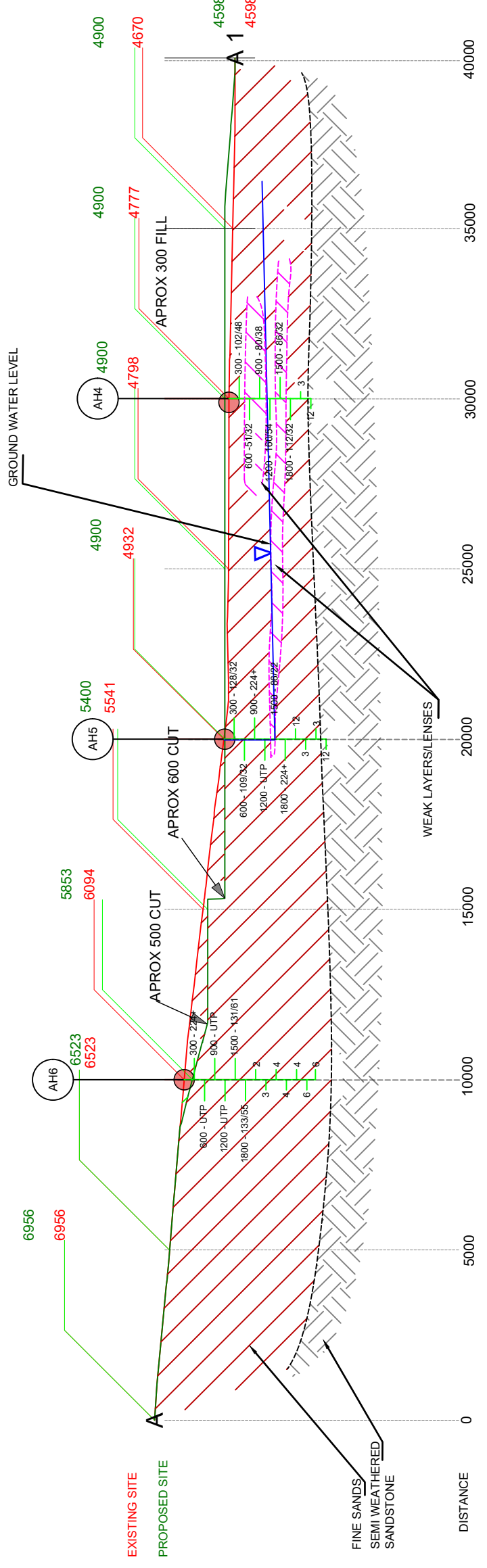
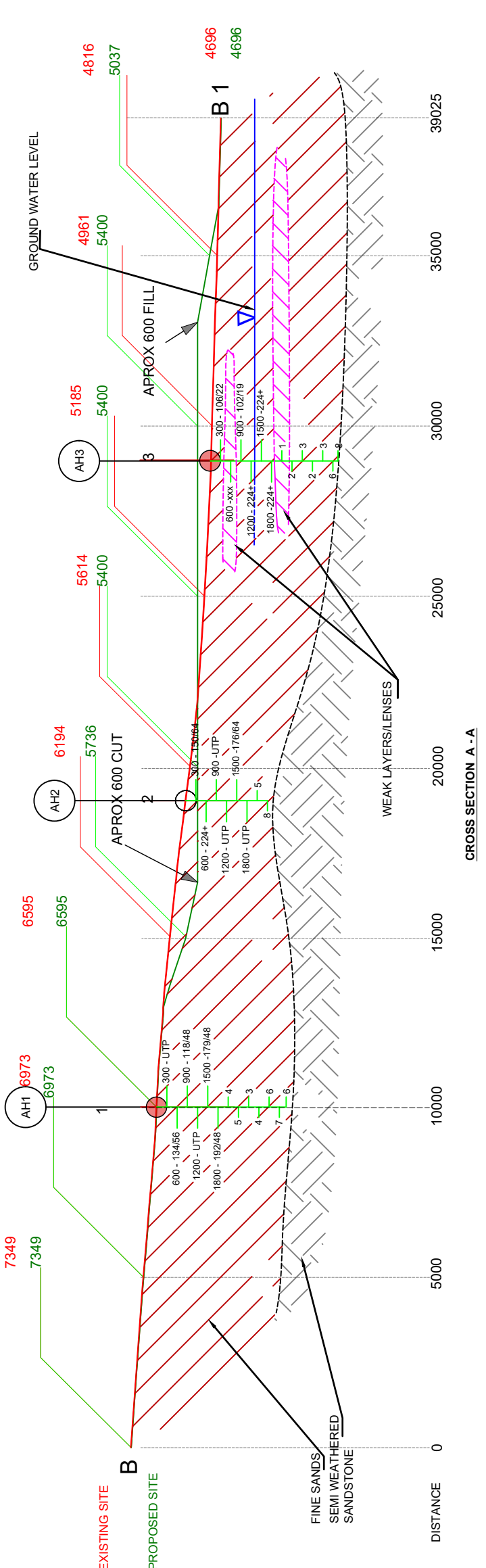
REV:	DESCRIPTION:	BY:	DATE:
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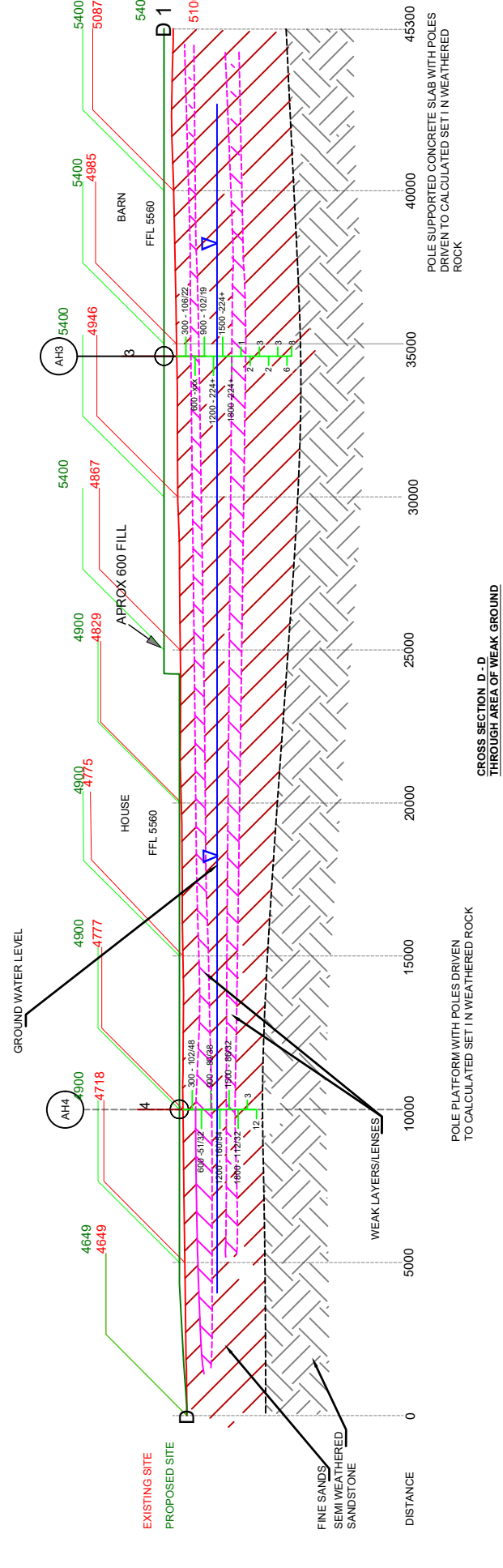
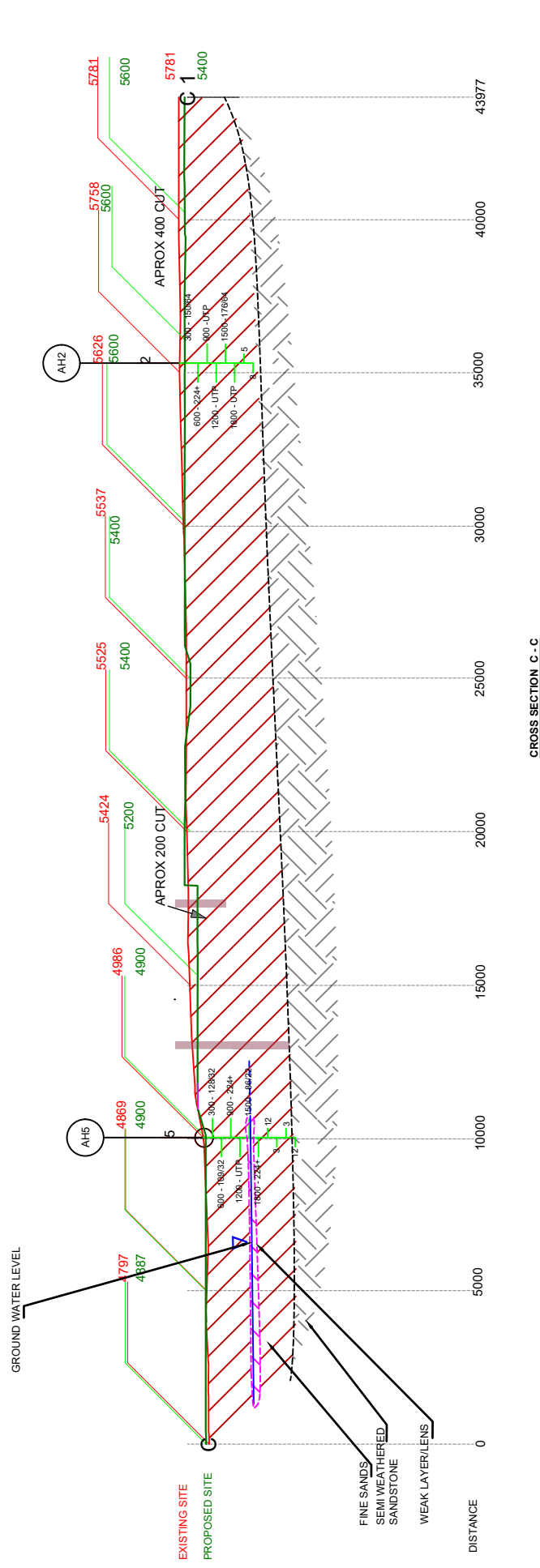
**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 44B HAUHORA HEADS ROAD

<b>SITE:</b>	44B HOUHORA HEADS ROAD LOT 2 DP 530683
<b>TITLE:</b>	PROPOSED HOUSE AND BARN CROSS SECTION A - A
<b>SCALE AT A3:</b>	DATE: 4/09/2023 DRAWN: RD CHECKED: PK
<b>PROJECT NO:</b>	22-066
<b>DRAWING NO:</b>	A3/SG4
<b>REVISION:</b>	23 0



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 STATUS: ISSUED TO CLIENT



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 Email: teompk@pkengin.co.nz

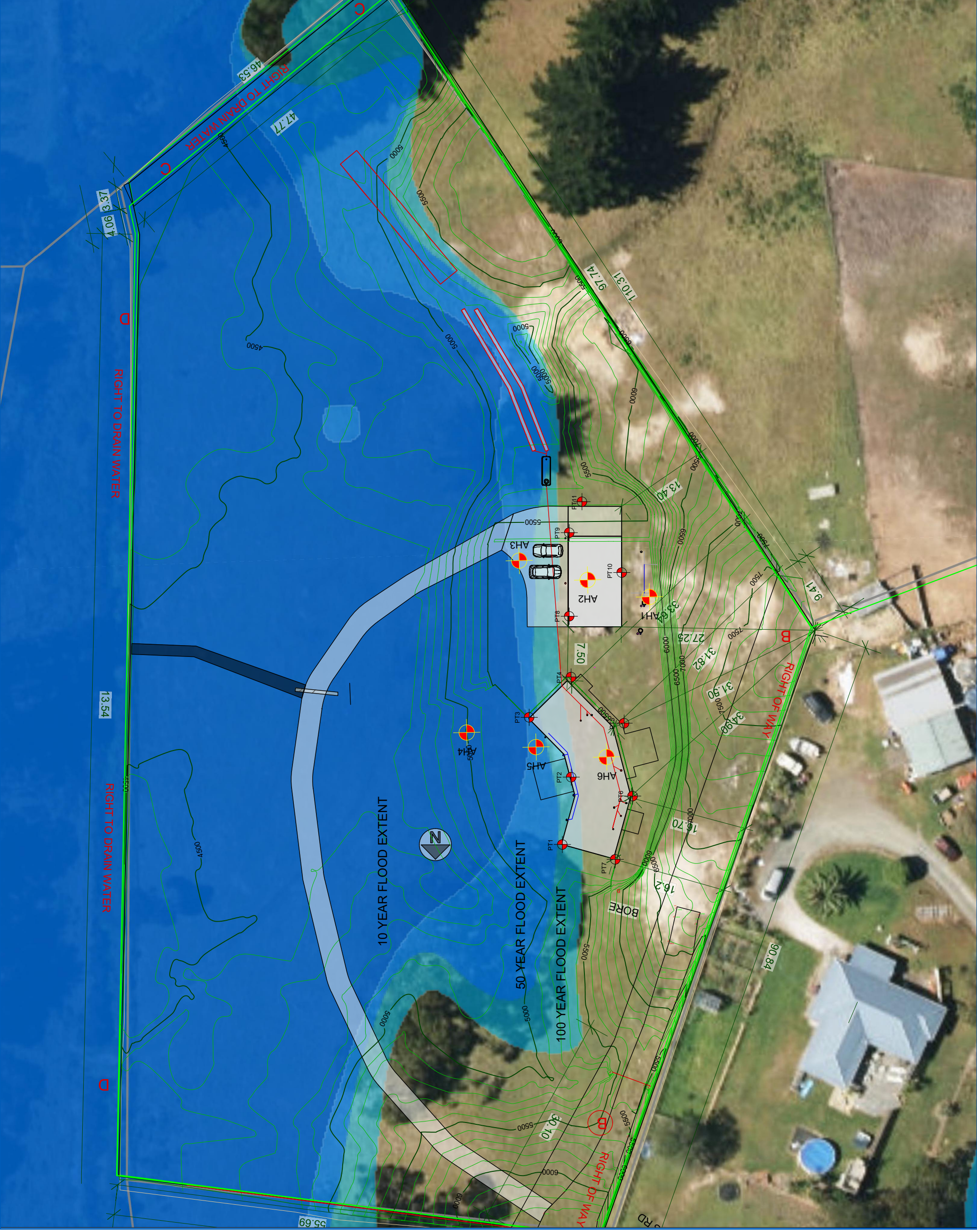
CLIENT: KIRI SLOANE & CRAIG HOBSON  
 448 HOUHORA HEADS ROAD

SITE: 448 HOUHORA HEADS  
 ROAD LOT 2 DP 530683

TITLE: PROPOSED HOUSE AND BARN  
 CROSS SECTION C - C & D - D

SCALE AT AS: DATE: 4/09/2023 DRAWN: RD CHECKED: PK  
 PROJECT NO: DRAWING NO: A3/SG5 REVISION: 24 0





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REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		

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 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
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**CLIENT:**  
 KIRI SLOANE & CRAIG HOBSON  
 448 HAUHORA HEADS ROAD

**SITE:**  
 448 HAUHORA HEADS ROAD  
 LOT 2 DP 530683

**TITLE:**  
 PROPOSED HOUSE AND BARN  
 NATURAL HAZARDS FLOODING

SCALE AT AS:	DATE:	DRAWN:	CHECKED:
1:500	4/09/2023	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG6	0	



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REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		



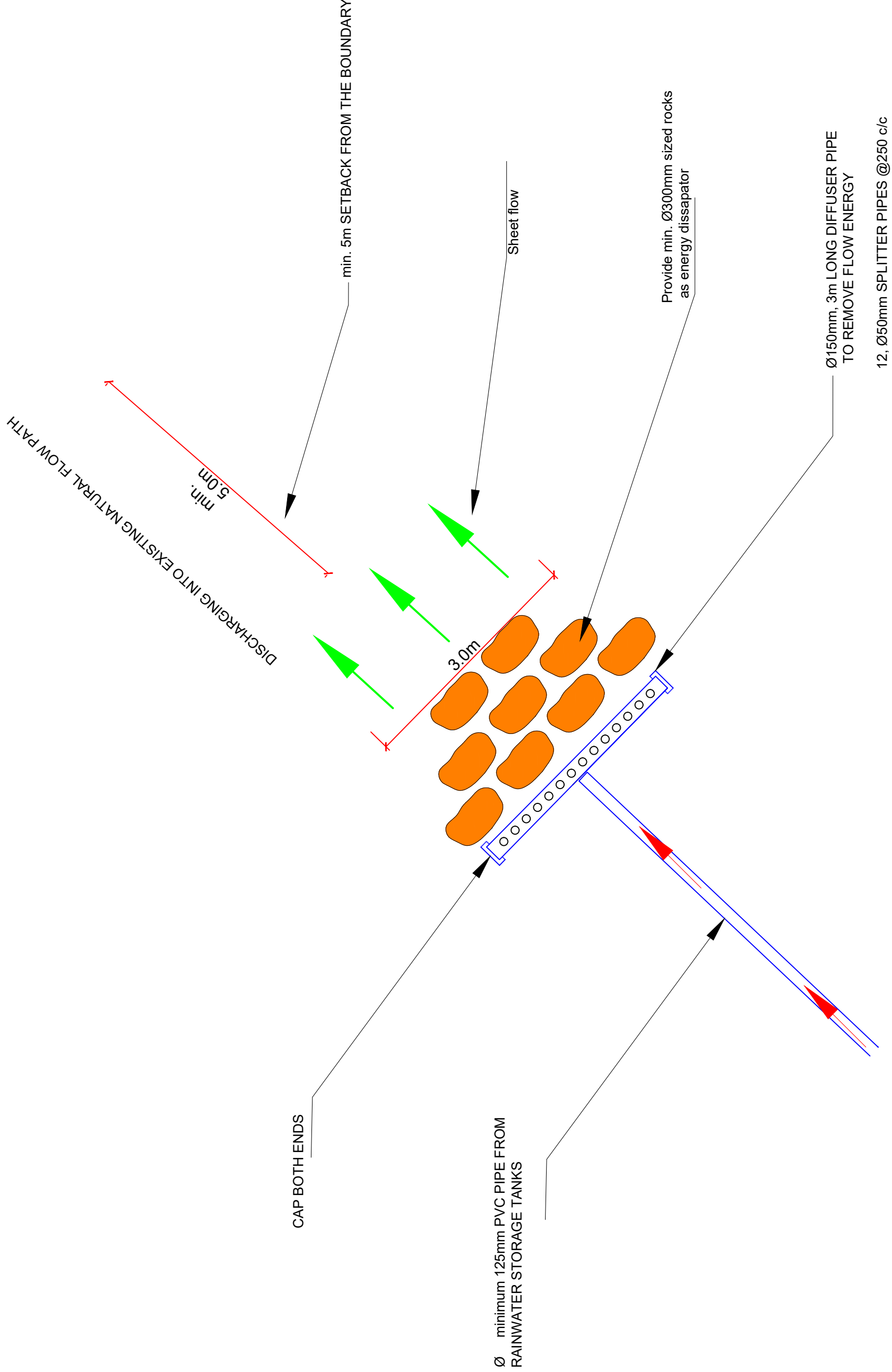
LEVEL 1, ANZ BANK  
 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teompk@pkengin.co.nz

**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 44B HOUHORA HEADS ROAD

**SITE:** 44B HOUHORA HEADS  
 ROAD LOT 2 DP 530683

**TITLE:** PROPOSED HOUSE AND BARN  
 DISPERSAL SYSTEM DETAIL

SCALE AT AS:	DATE:	DRAWN:	CHECKED:
1:50	4/09/2023	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG7	26	0



CAP BOTH ENDS

Ø minimum 125mm PVC PIPE FROM RAINWATER STORAGE TANKS

Sheet flow

DISCHARGING INTO EXISTING NATURAL FLOW PATH

min. 5.0m

min. 5m SETBACK FROM THE BOUNDARY

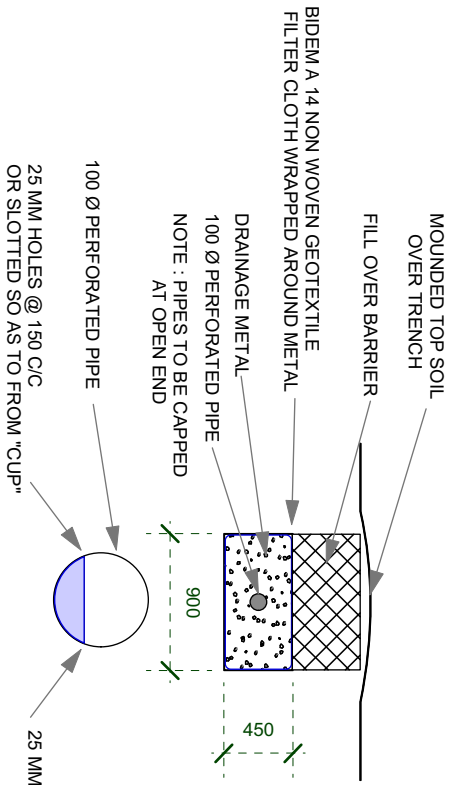
3.0m

Provide min. Ø300mm sized rocks as energy dissipator

Ø150mm, 3m LONG DIFFUSER PIPE TO REMOVE FLOW ENERGY

12, Ø50mm SPLITTER PIPES @250 c/c

**EFLUENT TRENCH DETAILS**  
**REFER TO SITE & SEWERAGE PLAN FOR LOCATION**  
 AS PER TP 58 APPENDIX F



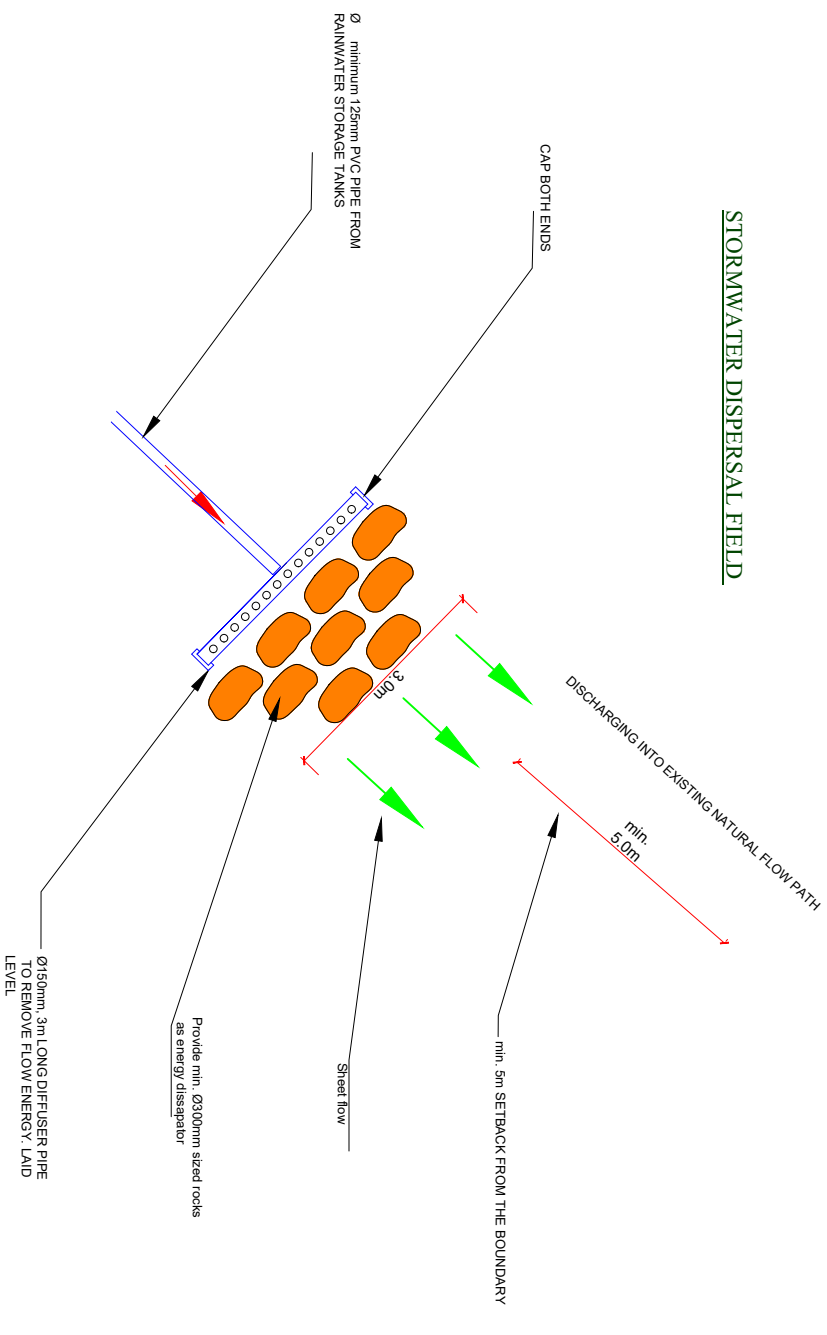
NOTE: PERCOLATION TESTS SHOW THAT ABSORPTION IS BEST INTO TOP SOIL REGION TRENCHES SHOULD BE LAID LEVEL SO THAT EVEN LOADS OCCUR

NOTE : ALLOW 3 BEDROOM 5 PERSON @ 160 L/P/D = 800 L

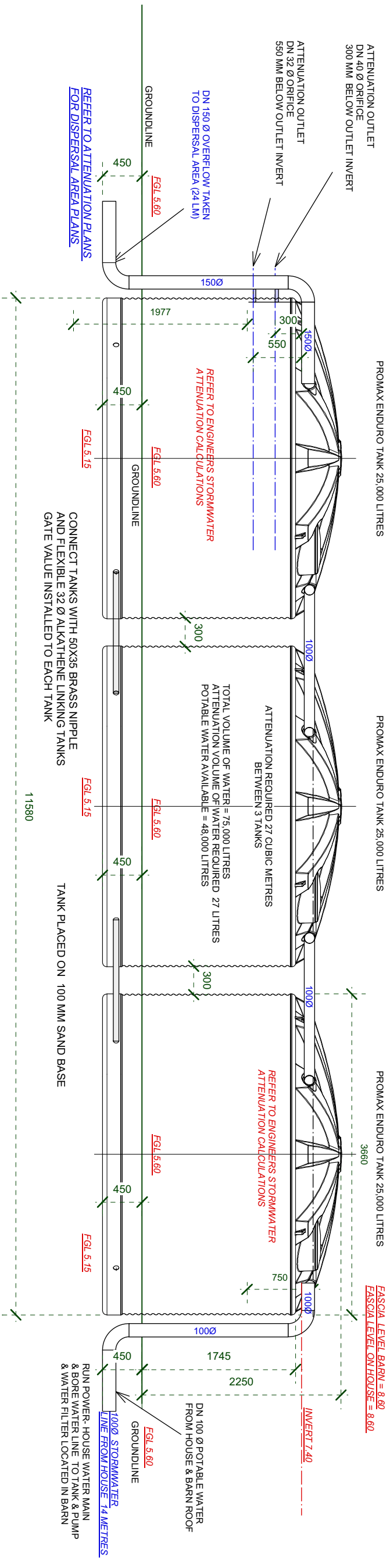
800 /KSAT 20 = 40 M2  
 40 M2 /0.9 = 44 LM

**INSTALL 2 X 22 LONG TRENCHS = 900 W X 450 D**  
**18 M3 OF DRAINAGE METAL REQUIRED.**

**STORMWATER DISPERSAL FIELD**



**ATTENUATION THRU SECTION - 3 - 25,000 LITRES PROMAX ENDURO WATER TANKS**



IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title		Client Name		Site Address		Date	Scale	Title	
THE FARM HOUSE		KIRI SLOANE & CRAIG HOBSON		LOT 2 36 HOUHORA HEADS RD PUKENUI		JULY 2023	1:50 1:100	ATTENUATION THRU WATER TANKS STORMWATER DISPOSAL & WASTE WATER DISPOSAL AREA	
Job Number		Drawing No.		Date		Scale		Title	
220901		SHT 05.0		JULY 2023		1:50 1:100		ATTENUATION THRU WATER TANKS STORMWATER DISPOSAL & WASTE WATER DISPOSAL AREA	

**1 Rational method 48hr**

Pre - Development water flow		Roof & decks 1 (m <sup>2</sup> )	Concrete & smooth seal 2 (m <sup>2</sup> )	Metaled area Or rough seal 3 (m <sup>2</sup> )	Other Impervious 4 (m <sup>2</sup> )	Vegetation 5 (m <sup>2</sup> )	Bush 6 (m <sup>2</sup> )
<b>Total area.</b>	<b>Area (m<sup>2</sup>)</b>	0	0	0	0	405	0
<b>Runoff coefficient</b>	Ci (coefficient)	0.96	0.96	0.8	0.65	0.59	0.59
<b>Rainfall intensity</b>	I (mm/hr)	2.99	2.99	2.99	2.99	2.99	2.99
<b>Flow rate of surface water</b>	Qc (m <sup>3</sup> /sec)	0.000	0.000	0.000	0.000	0.000	0.000
<b>Pre - development flow of developed area</b>	Qp (m <sup>3</sup> /sec) / Qp (L/sec)	0.0002	0.20				

Post - Development water flow		Any area where there is a change in the impermeability values				Pre-development area where there is a change in impermeable surfaces but not collected in attenuation system		Any area where there is a change in the impermeability values
Total area.	Area (m <sup>2</sup> )	Roof & decks 1 (m <sup>2</sup> )	Concrete & smooth seal 2 (m <sup>2</sup> )	Metaled area Or rough seal 3 (m <sup>2</sup> )	Vegetation 4 (m <sup>2</sup> )	Concrete & smooth seal 5 (m <sup>2</sup> )	Metaled area or vegetation 6 (m <sup>2</sup> )	Metaled area or seal 7 (m <sup>2</sup> )
405.00	405.00	405	0	0	0	0	0	0
<b>Runoff coefficient</b>	Ci (coefficient)	0.96	0.96	0.9	0.59	0.2	0.3	FALSE
<b>Rainfall intensity rate</b>	I (mm/hr)	3.33	3.33	3.33	3.33	2.99	2.99	2.99
<b>Flow rate of surface water</b>	Qc (m <sup>3</sup> /sec)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Flow rate of surface water</b>	Qc (L/sec)	0.36	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total included in attenuation system calc's post - development flow</b>	Qa (m <sup>3</sup> /sec) / Qa (L/sec)	0.000	0.16					
<b>Post - Pre development flow</b>	Qtpp (m <sup>3</sup> /sec) / Qtpp (L/sec)	0.0002	0.16					
<b>Total post development flow Developed flow + undeveloped flow 0 to 10min</b>	Qatt (m <sup>3</sup> /sec) / Qatt (L/sec)	0.0004	0.36					

**1b Rational method 48hr**

Total catchment pre-development flow		Roof & decks 1 (m <sup>2</sup> )	Concrete & smooth seal 2 (m <sup>2</sup> )	Metaled area Or rough seal 3 (m <sup>2</sup> )	Other Impervious 4 (m <sup>2</sup> )	Vegetation 5 (m <sup>2</sup> )	Bush 6 (m <sup>2</sup> )
<b>Total area.</b>	<b>Area (m<sup>2</sup>)</b>	0	0	0	0	405	0
<b>Runoff coefficient</b>	Ci (coefficient)	0.96	0.96	0.8	0.8	0.59	0.59
<b>Rainfall intensity</b>	I (mm/hr)	2.99	2.99	2.99	2.99	2.99	2.99
<b>Flow rate of surface water</b>	Qc (m <sup>3</sup> /sec)	0.000	0.000	0.000	0.000	0.000	0.000
<b>Catchment area pre - development flow</b>	Qcap (m <sup>3</sup> /sec) / Qcap (L/sec)	0.0002	0.20				

312.1019108

**2**

Select 1 for type of tank/area, 0 for other	Round	Square	Calculation (initial)		Calculation (initial)		Calculation (initial)		Calculation (final)	
	1	0	Total tank area m <sup>2</sup>	Total tank volume m <sup>3</sup>	usable height hmax (m)	Additional area m <sup>2</sup>	Additional area m <sup>2</sup>	Additional area m <sup>2</sup>	Additional area m <sup>2</sup>	
Estimate storage volume			31.56	14.20	0.45	Nil				
Adjust to match max Vstored	Num. Of tanks	Tank radius r (m)	31.56	14.20	OK	Same as initial				
Round area	3	1.83	31.56	14.20	0.445	Final volume				
Square/rectangular area	0	Width	0.00	0.00	14.03	Same as initial				
Short tube, 0.76	Orifice type "u"	g			0.063					
Thin sharp, 0.62	0.76	9.8067			0.45	Same as initial				
					0.174	Not used				
					1.24	1.24				
<b>Pre - development flow of developed area</b>	48hr	24hr	12hr	6hr	2hr	60	30			
	C20	L20	U20	A020	AM20	AV20	BE20			
	0.00020	0.00034	0.00055	0.00088	0.00176	0.00262	0.00379			
<b>Pre-development flow matches 2hr 40min. Intensity Uses (80min.crossover O126) as a source value Do not change</b>	Qp (m <sup>3</sup> /sec)	Qp (L/sec)	Qin max.		48hr program		Slope factor adjustment at Min.crossover			
	0.0015	1.5127	0.00631		Min.crossover		Chart point (min.)			
	OK				Chart point (min.)		0.91			
For calculation purposes this section changes the dia only and thereby the area	Dia check	Dia	Area	Qout 1520 (L/sec)	Qout (m <sup>3</sup> /sec)	1520	peak flow			
The information is not used for anything else	0.0292	0.02921	0.0007	1.464	0.00146	1520	Chart point (max.)			
		29.21					0.15			

**4 Calculate maximum storage volume**

Chart intensity hr values steps used	Chart intensity accumulated minute steps	Storm duration-THR (hr)	Storm duration-Event data, TMINSDirect to Atten. mins	Attenuation calc. plus orifice flow out Qa (L/sec)	Catchment pre-devel. plus orifice flow out Qtin (L/sec)	For period 2081-2100 CC (RCP6) Intensity.		Houhora Current(0 deg)	
						Post-devel I, (mm/hr)	Pre-devel I, (mm/hr)	Post-devel I, (mm/hr)	Pre-devel I, (mm/hr)
48	720	12.00	720	0.16	0.30	10 yr	10 yr	3.33	2.99
24	1080	6.00	360	0.3	0.6	5.72	5.05	9.6	8.31
12	1260	3.00	180	0.5	0.9	15.6	13.3	31.9	26.5
6	1380	2.00	120	0.8	1.4	47.8	39.4	69.3	57.1
2	1410	0.50	30	1.7	2.5	84.9	70	118	97
1	1425	0.25	15	2.5	3.5	118	97	118	97
30	1430	0.08	5	3.7	4.8	84.9	70	69.3	57.1
20	1435	0.08	5	4.5	5.7	69.3	57.1	69.3	57.1
10	1440	0.08	5	6.3	7.6	47.8	39.4	47.8	39.4
10	1445	0.08	5	6.3	7.6	31.9	26.5	31.9	26.5
20	1450	0.08	5	4.5	6.0	15.6	13.3	15.6	13.3
30	1455	0.08	5	3.7	5.2	9.6	8.31	9.6	8.31
6	1470	0.25	15	2.5	4.1	5.72	5.05	5.72	5.05
2	1500	0.50	30	1.7	3.3	3.33	2.99	3.33	2.99
6	1620	2.00	120	0.8	2.1				
12	1800	3.00	180	0.5	1.3				
24	2160	6.00	360	0.3	0.6				
48	2880	12.00	720	0.2	0.3				

Catchment flow Qpat (cell MAX(P109:P130))	Qcap max.	Qp (m <sup>3</sup> /sec)	Qp (L/sec)	Qout max. (m <sup>3</sup> /sec)	Qout max. (L/sec)	Vstored max. Vol. stored, (m <sup>3</sup> )
Catchment flow = orifice flow out + catchment pre-development flow	3.090	0.0031	3.1	0.00307	3.07	14.032
For calculation purposes this section changes the dia only and thereby the area	Dia check	Dia	Area			OK
The information is not used for anything else	0.0418	0.04174	0.0014			OK
		41.74				

**Use this orifice size for final design**





	Fixed value	100yr	10yr
u	g	Desc hrs	Desc hrs
0.76	9.8067	1.7	4

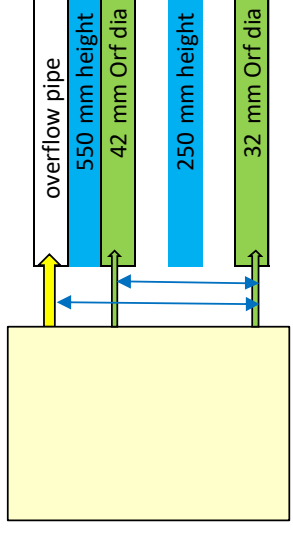
Adjust until orifices are closest to the values of tab 10yr & 100yr "cell D136"

Change orifice factor "u" to suit, short tube 0.76 & thin sharp edge 0.62

	Va100yr	Qav	ho100yr	hav	Or100yr
100yr <b>100yr tab</b>	28.41 <i>Cell H86</i>	0.0046	0.55	0.28	<b>0.0579</b> <b>43.1</b>
10yr <b>10yr tab</b>	13.72 <i>Cell H86</i>	0.0010	0.25	0.13	<b>0.0319</b> <b>37.0</b>

0.55	<b>ho100yr</b>	Total storage height required
0.032	<b>Or100yr</b>	Size of lower orifice (fitted 150mm above bottom/base if tank for attenuation only)
0.25	<b>ho10yr</b>	Storage height at which Ortop is fitted
0.042	<b>Ortop</b>	Size of second orifice (fitted at ho10yr above lower orifice Or10yr)

0.30 Height from overflow outlet invert to Ortop invert



	Vdet	Qav	htop	hhalf	
100 - 10yr	14.69	0.0014	0.30	0.15	0.1500
10yr cor.	17.35	0.0012	0.40	0.20	0.0319
					0.0008
					Area
100-10yrcor	11.06	0.0018	0.3	0.15	<b>Ortop</b> 0.0420

#### Attenuation System Parameters

	Orifice diameter	Orifice invert location
ARI 10	32 mm	550 mm below overflow invert
ARI 100	42 mm	300 mm below overflow invert
Tank size	3x25k Total	75,000 litres @ 1.8 m Ø
ARI 10		13,720.0 litres
ARI 100		28,410.0 litres
Reuse		46,590.0 litres

BOREHOLE LOG NO - AH5

Project: 36 Hauhora Heads Road  
 Client: Kiri Sloane  
 Job No: 22-066



Graphic Symbol	@@@	#####	%%%	ØØØ	####	■	ÐÐÐÐ	In situ shear vane reading	■
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	■
								Scale Penetrometer	●

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)
				TOPSOIL, brown, silty		
300	ØØØØØ	Ground Water Level Intercepted @ 1.5m	Hurewai & Te Hapua fine sandy loam	SAND, brown, very fine, wet from 1.5m	32 128	
600	ØØØØØ				32 109	
900	ØØØØØ				224	
1200	ØØØØØ				UTP	
1500	ØØØØØ				GWL @ 1.5m	
1800	ØØØØØ				22 86	
					224	
					224	
					224	
2100						
2400						
2700						
3000						
3300						
3600						
3900						
4200						
4500						
4800						
5100						
5400						

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

**BOREHOLE LOG NO - AH6**

**Project:** 36 Hauhora Heads Road  
**Client:** Kiri Sloane  
**Job No:** 22-066



Graphic Symbol	@@@	#####	%%%	000	####	■	DDDD	In situ shear vane reading	
	FILL	CLAY	SILT	SAND	GRAVEL	TOP SOIL	Organic Soil	Remoulded shear vane reading	
								Scale Penetrometer	

Depth (mm)	Graphical Log	GWL	Soil Type	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/300mm)	
				TOPSOIL , 50mm			
300	000000			silty SAND, brown- orange	224		
600	000000			SAND,,brown -orange, fine	UTP		
900	000000				UTP		
1200	000000				UTP		
1500	000000			SAND, yellow, fine	61 131		
1800	000000				55 133		
2100		Ground Water Level not Intercepted	Hurewai & Te Hapua fine sandy loam				
2400							
2700							
3000							
3300							
3600							
3900							
4200							
4500							
4800							
5100							
5400							

Drill Methods	50-100 mm hand auger	<b>Note:</b> 1. The subsurface data described above has been determined at a specific borehole location. The data will not identify any variations away from the location. 2. UTP - Unable to penetrate.
Test Location	Refer to site plan	
Test Date	3/08/2022	
Inspector	RD	

# P K ENGINEERING LIMITED

90 KERIKERI RD Phone (09) 4073255 EMAIL [pk.engin@pkengin.co.nz](mailto:pk.engin@pkengin.co.nz)

PENETROMETER HOLE No.

SHT. 1 of 2

Location: 36 Houhora Heads Road

Job No. 22-066

Driven by: RD

Date: 3/08/2022

R.L at Ground Level: n/a

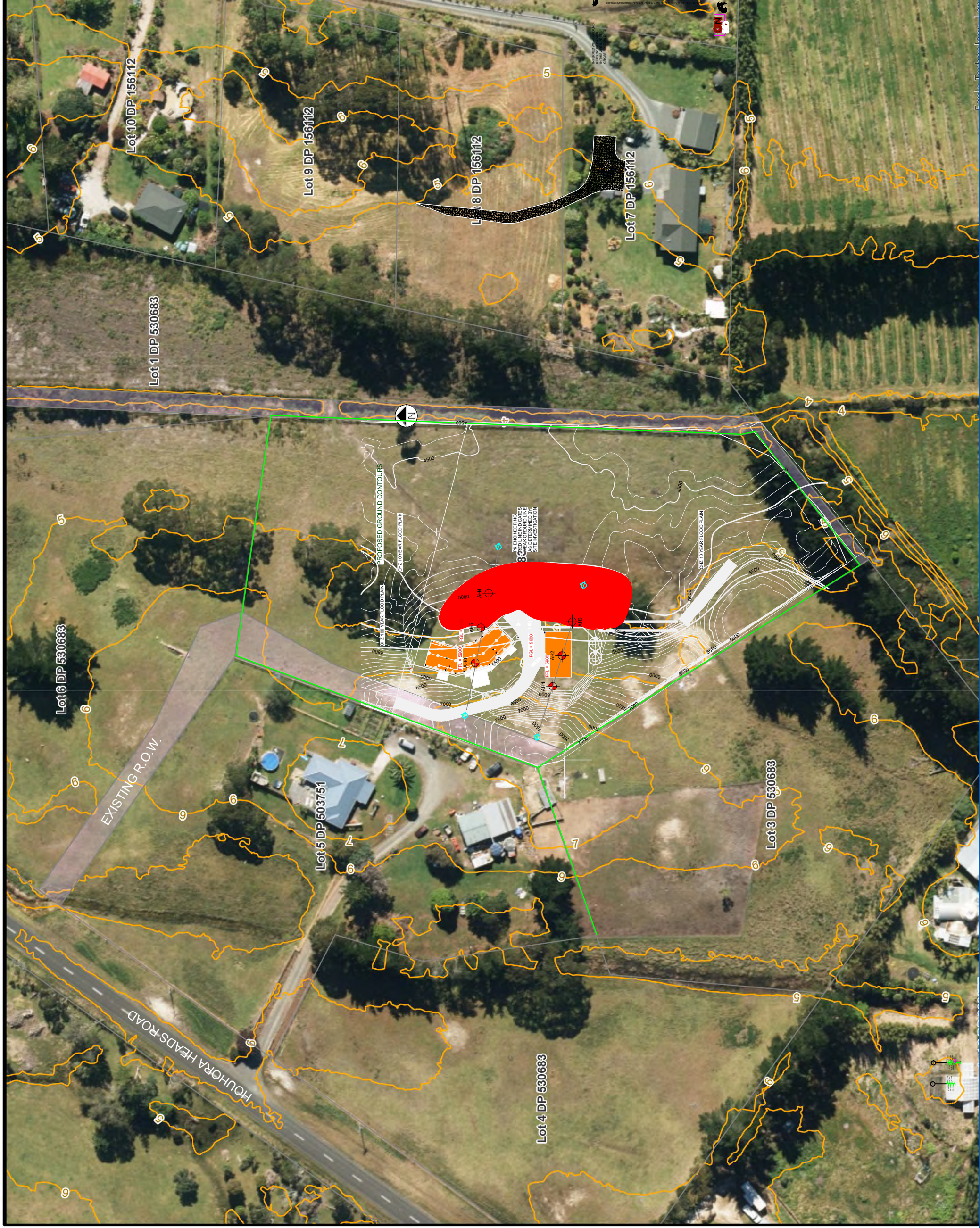
GWL:

Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4
50					2550	7		2		5050					7550				
100					2600	3		3		5100					7600				
150					2650	3		3		5150					7650				
200					2700	3		3		5200					7700				
250					2750	3		3		5250					7750				
300					2800	4		3		5300					7800				
350					2850	4		3		5350					7850				
400					2900	4		3		5400					7900				
450					2950	4		2		5450					7950				
500					3000	4		2		5500					8000				
550					3050	6		2		5550					8050				
600					3100	6		3		5600					8100				
650					3150	5		3		5650					8150				
700					3200	5		3		5700					8200				
750					3250	5		3		5750					8250				
800					3300	6		3		5800					8300				
850					3350	6		3		5850					8350				
900					3400	6		3		5900					8400				
950					3450	6		6		5950					8450				
1000					3500	7		6		6000					8500				
1050					3550	7		6		6050					8550				
1100					3600	7		6		6100					8600				
1150					3650	7		6		6150					8650				
1200					3700	6		8		6200					8700				
1250					3750	6		8		6250					8750				
1300					3800	6				6300					8800				
1350					3850					6350					8850				
1400					3900					6400					8900				
1450					3950					6450					8950				
1500					4000					6500					9000				
1550					4050					6550					9050				
1600					4100					6600					9100				
1650					4150					6650					9150				
1700		6			4200					6700					9200				
1750		6			4250					6750					9250				
1800		6			4300					6800					9300				
1850	4	6			4350					6850					9350				
1900	4	6			4400					6900					9400				
1950	4	6			4450					6950					9450				
2000	4	13			4500					7000					9500				
2050	4	5			4550					7050					9550				
2100	4	5			4600					7100					9600				
2150	4	5			4650	3				7150					9650				
2200	4	8			4700	3				7200					9700				
2250	5	8			4750	3				7250					9750				
2300	5	8	2	3	4800					7300					9800				
2350	5		2	6	4850					7350					9850				
2400	5		2	6	4900					7400					9900				
2450	5		2	12	4950					7450					9950				
2500	7		2		5000					7500					10000				









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REV: DESCRIPTION: BY: DATE:  
 STATUS: ISSUED TO CLIENT

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 CHARTERED PROFESSIONAL ENGINEERS  
 LEVEL 1, ANZ BANK  
 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teampk@pkengin.co.nz

**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 36 HOUHORA HEADS ROAD  
 HOUHORA

**SITE:** 36 HOUHORA HEADS ROAD  
 LOT 2 DP 530683

**TITLE:** PROPOSED NEW DWELLING  
 LOCATION PLAN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:1000	4/10/2022	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG1	0	





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	ISSUED TO CLIENT		

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 36 HOUHORA HEADS ROAD  
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**SITE:** 36 HOUHORA HEADS ROAD  
 LOT 2 DP 530683

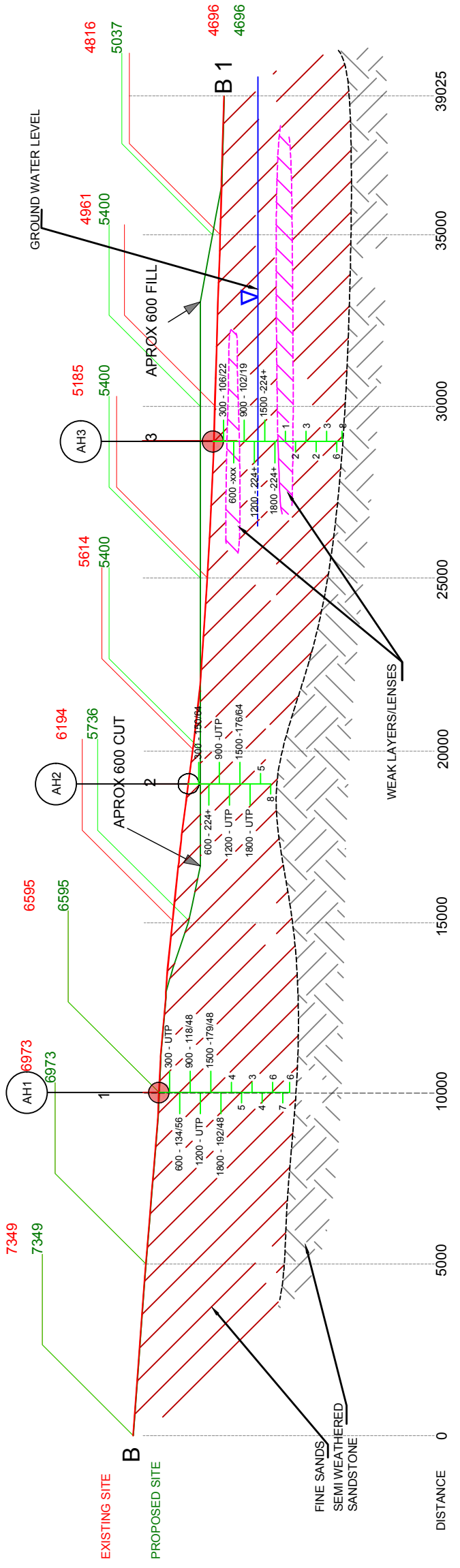
**TITLE:** PROPOSED NEW DWELLING  
 SITE PLAN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:250	4/10/2022	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG2	0	

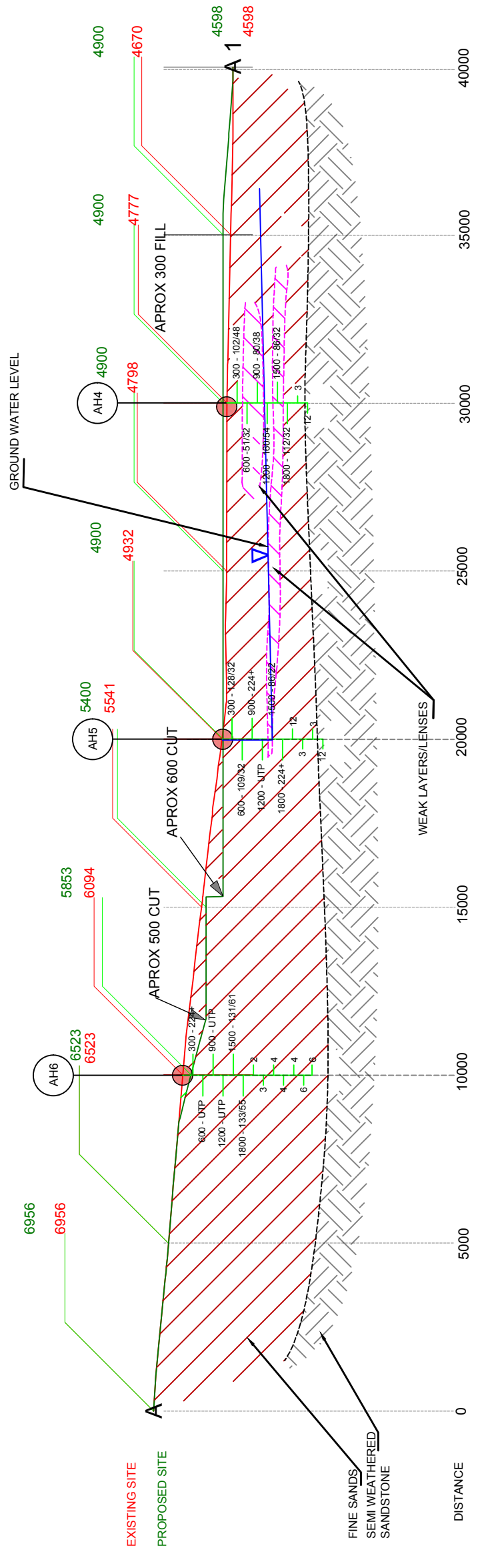


**Notes:**

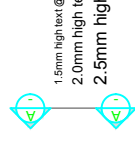
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CROSS SECTION A - A



CROSS SECTION B - B



REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		

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 LEVEL 1, ANZ BANK  
 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teampk@pkengin.co.nz

**CLIENT:** KIRI SLOANE & CRAIG HOBSON  
 36 HOUHORA HEADS ROAD  
 HOUHORA

**SITE:** 36 HOUHORA HEADS ROAD  
 LOT 2 DP 530683

**TITLE:** PROPOSED NEW DWELLING  
 CROSS SECTION A - A & B - B


SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:150	4/10/2022	RD	PK
PROJECT NO:	DRAWING NO:	REVISION:	
22-066	A3/SG3	0	



**Notes:**

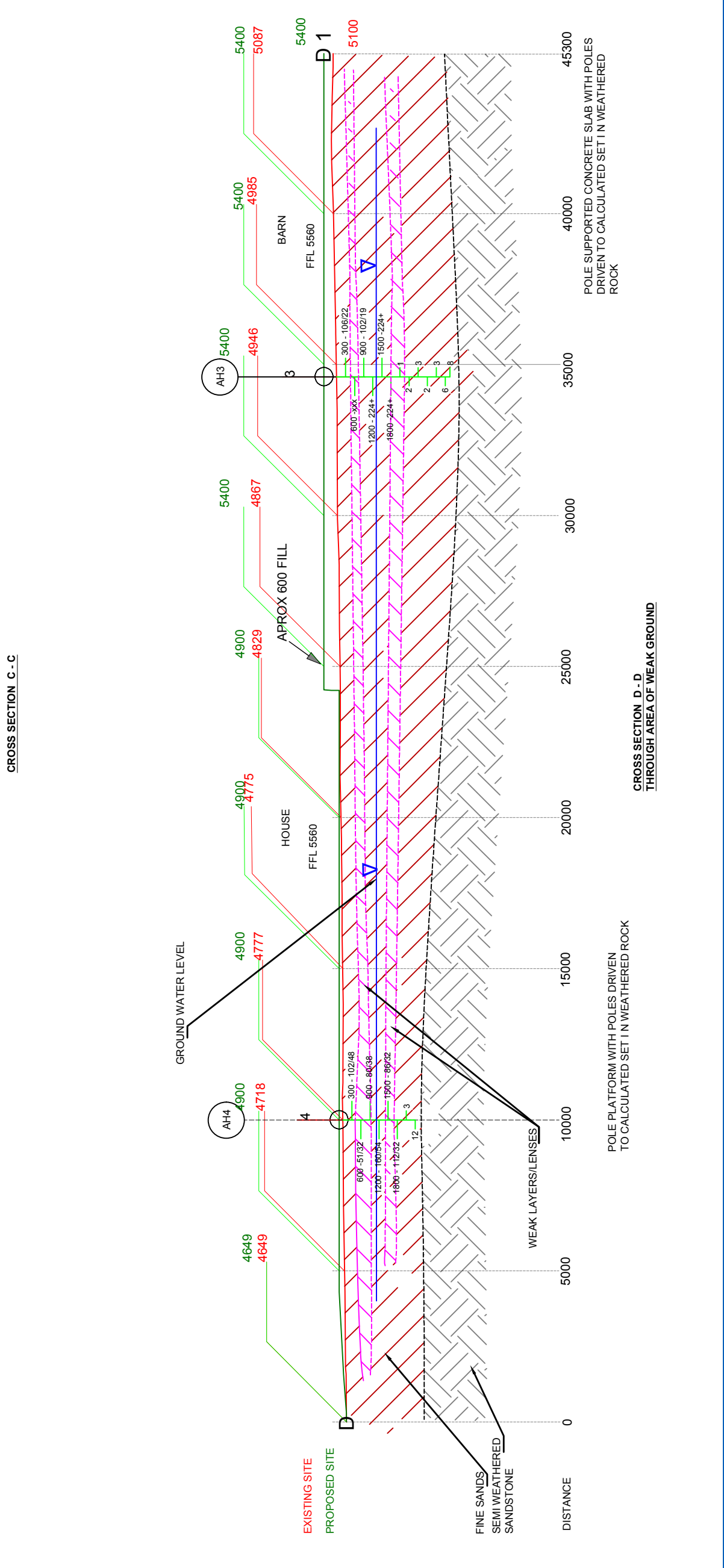
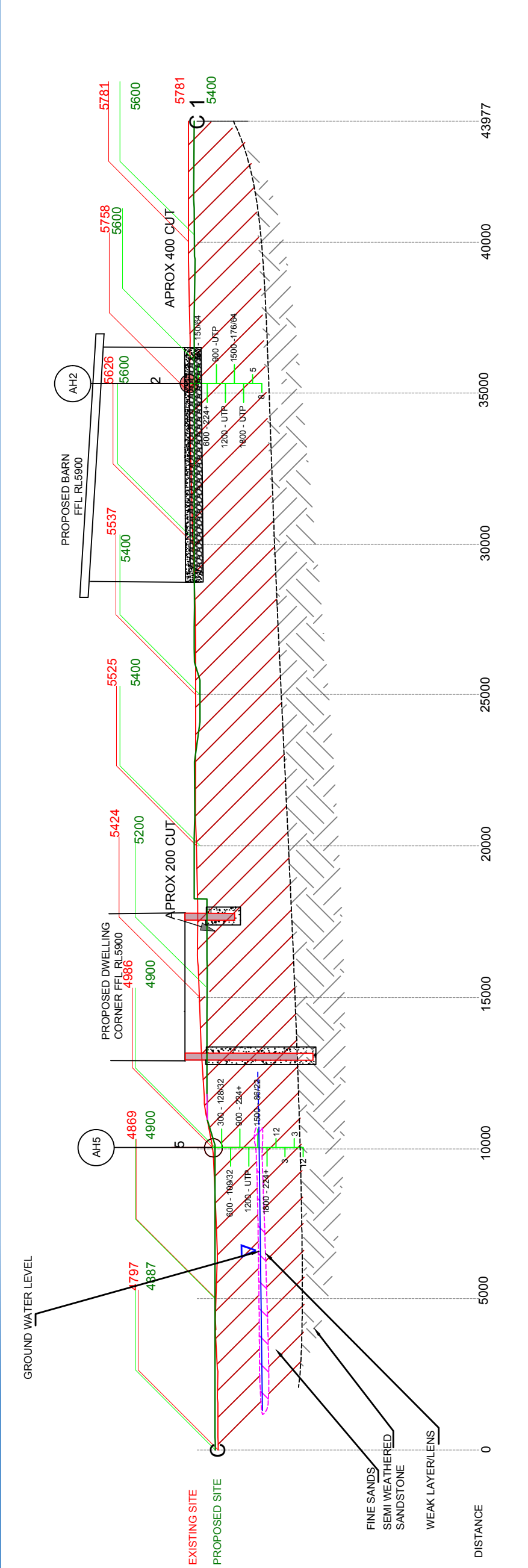
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REV:	DESCRIPTION:	BY:	DATE:
	ISSUED TO CLIENT		



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 90 KERIKERI ROAD, KERIKERI  
 PO BOX 464, KERIKERI  
 Phone Number: 09 407 3255  
 Email: teampk@pkengn.co.nz

<b>CLIENT:</b>	KIRI SLOANE & CRAIG HOBSON 36 HOUHORA HEADS ROAD HOUHORA
<b>SITE:</b>	36 HOUHORA HEADS ROAD LOT 2 DP 530683
<b>TITLE:</b>	PROPOSED NEW DWELLING CROSS SECTIONS C - C & D - D
<b>SCALE AT A3:</b>	DATE: 4/10/2022 DRAWN: RD CHECKED: PK
<b>PROJECT NO:</b>	22-066
<b>DRAWING NO:</b>	A3/SG4
<b>REVISION:</b>	0



## Effluential DrainLayers Ltd

3778 Main North Road

R.D.4

Kaitaia 0484

Phone 09 409 8854 Fax 09 409 7720 Mobile 0274 8855 84

### Executive Summary

10/7/2022

Kiri Sloane & Craig Hobson

TP 58 & TP10

36 Houhora Heads Road

Pukenui

The enclosed TP58 and TP10 documents for the building application show:  
The planned/designed treatment & effluent system has all septic waste contained within the certificate of title boundaries.

The evaluation of the design for septic waste treatment and disposal is developed from on site evaluation and Ksat testing to support conclusions.

Septic waste is being contained within the boundaries in accordance with the 1.5m septic waste boundary offset, and has been placed as high as possible to minimize potential hazards.

The soil type (HO) Houhora sand is a highly absorbent media

The building site is well elevated and well away from any environmentally challenging areas which helps to provide environmental security

There are no environmental or HAIL hazards found. Attenuation calculations & designs have been supplied.


Drive way attenuation has been split between fall areas.

While technically the property is considered to be in a flood plain it is elevated and serviced by a main drain on one boundary which crosses under the Houhora Heads road through a 0.900mm culvert and then through farm property to the Houhora Harbour.

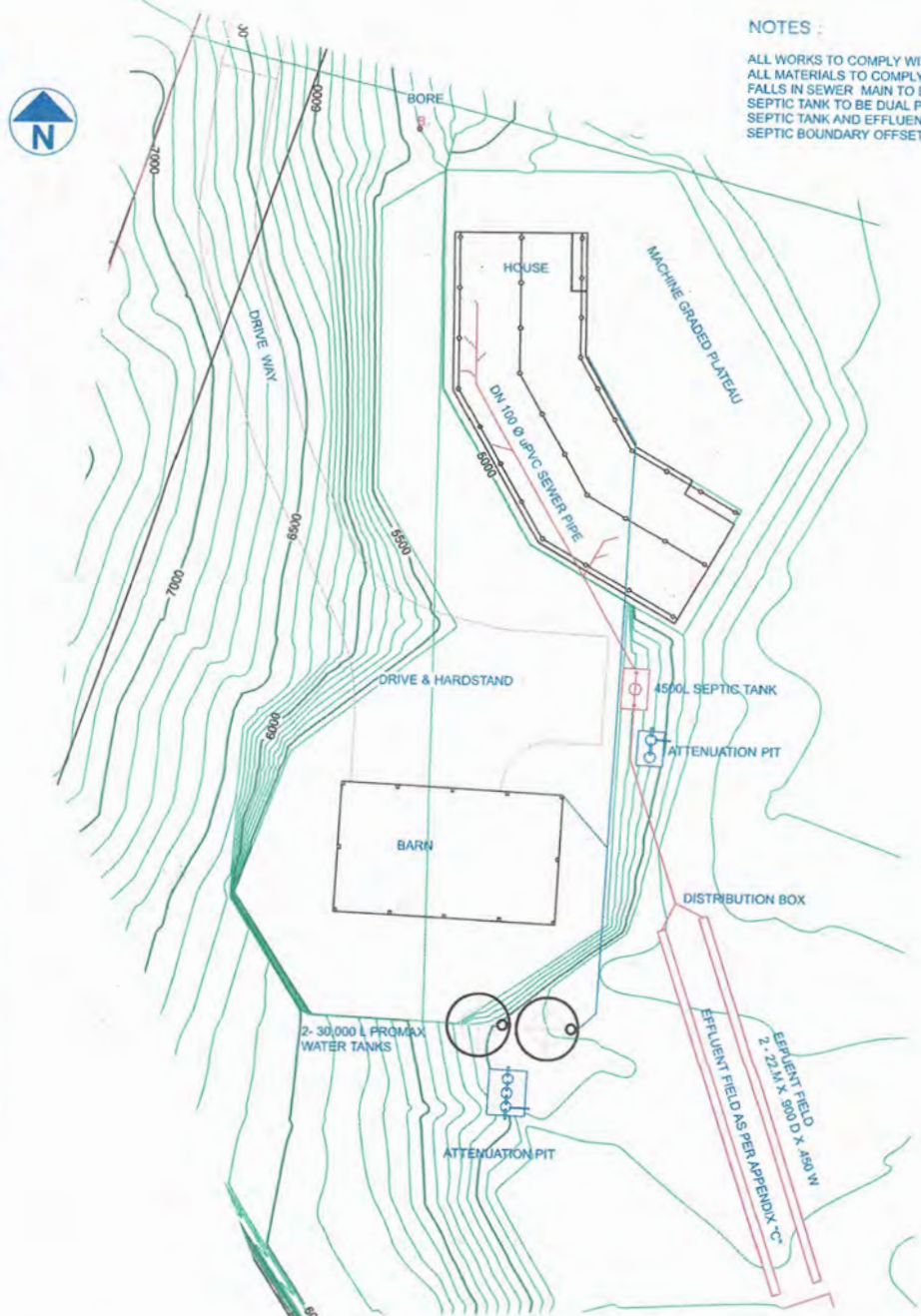
The flood risk is therefore minimal.

Eric Wagener Certifying Registered Drainlayer 05877

Robert Wagener Associate Engineer







NOTES :

- ALL WORKS TO COMPLY WITH AS/NZS 3500
- ALL MATERIALS TO COMPLY WITH AS/NZS 1280
- FALLS IN SEWER MAIN TO BE MINIMUM OF 1:60
- SEPTIC TANK TO BE DUAL PARTITION 4500L CAPACITY
- SEPTIC TANK AND EFFLUENT FIELD TO BE NO CLOSER THAN 3 M TO BUILDINGS
- SEPTIC BOUNDARY OFFSET TO BE A MINIMUM OF 1.5 M

IMPORTANT: VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK - REFER ALL DISCREPANCIES TO SALT DESIGN

Project Title <b>THE FARM HOUSE</b>	Client Name <b>KIRI SLOANE &amp; CRAIG HOBSON</b>	Site Address <b>LOT 2 36 HOUIHORA HEADS RD PUKENUI</b>	Date AUGUST 2022	Scale 1:300 1:750	Title <b>SITE - SEPTIC STORMWATER &amp; DRAINAGE PLAN</b>	E.J.WAGENER CERTIFYING REGISTERED DRAINLAYER 05877 3778 MAIN NORTH ROAD - RD 4 KAITAIA 0484 PHONE 09 409 8854 MOBILE 0274 8855 84
			Job Number 220501	Drawing No. SHT 06.0		



# PRODUCER STATEMENT

## DESIGN: ON-SITE EFFLUENT DISPOSAL SYSTEMS (T.P.58)

ISSUED BY: ...Eric Wagener..... (approved qualified design professional)

TO: ...Craig Hobson & Kiri Sloane  
(owner).....

TO BE SUPPLIED TO: .....Far North District Council.....

PROPERTY LOCATION: Lot 2 36 Houhora Heads Road Pukenui  
.....

LOT...2.....ID 864005.....VALUATION NUMBER...00011 8302.....


TO PROVIDE : Design an on-site effluent disposal system in accordance with Technical paper 58 and provide a schedule to the owner for the systems maintenance.

THE DESIGN: Has been in accordance with G13 (Foul Water) G14 (Industrial Liquid Waste) B2 (durability 15 years) of the Building Regulations 1992.

As an independent approved design professional covered by a current policy of Professional Indemnity Insurance (Design) to a minimum value of \$200,000.00, I BELIEVE ON REASONABLE GROUNDS that subject to:

- (1) The site verification of the soil types.
- (2) All proprietary products met the performance requirements.

The proposed design will met the relevant provisions of the Building Code and 8.15 of The Far North District Council Engineering Standards.

.....(Signature of approved design professional)

Certifying Registered Drainer.....(Professional qualifications)

.....05877.....(Licence Number or professional Registration number)

Address ...3778 Far North Road R.D4 Kaitaia.....

Phone Number...09 409 8854.....

Fax Number .....

Cell Phone .....0274 885584.....

Date ...10/7/2022.....

**Note:** This form is to accompany every application for a Building Consent incorporating a T.P.58. Approval as a design professional is at Councils discretion.

### On-site Wastewater Disposal Site Evaluation Investigation Checklist



**FAR NORTH DISTRICT COUNCIL**

# **Appendix E**

**TP58**

## **On-site Wastewater Disposal Site Evaluation Investigation Checklist**

**Part A –Owners Details**

**1. Applicant Details:**

Applicant Name	Craig Hobson & Kiri Sloane	
Company Name		
	First Name(s)	Surname
Property Owner Name(s)	Craig Kiri	Hobson Sloane

Nature of Applicant*	owners
----------------------	--------

(\*i.e. Owner, Leasee, Prospective Purchaser, Developer)

**2. Consultant / Site Evaluator Details:**

Consultant/Agent Name	Eric Wagener		
Site Evaluator Name			
Postal Address	3778 Far North Road		
	R.D.4		
	Kaitaia		
Phone Number	Business	094098854	Private
	Mobile	0274885584	Fax
Name of Contact Person	Eric Wagener		
E-mail Address	ewagener@xtra.co.nz		

**3. Are there any previous existing discharge consents relating to this proposal or other waste discharge on this site?**

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	(Please tick)
If yes, give Reference Numbers and Description				

**4. List any other consent in relation to this proposal site and indicate whether or not they have been applied for or granted**

If so, specify Application Details and Consent No.  
(eg. LandUse, Water Take, Subdivision, Earthworks Stormwater Consent)




**Part B- Property Details**

**1. Property for which this application relates:**

Physical Address of Property	36 Houhora Heads Road
	R.D.4 kaitaia
Territorial Local Authority	FAR NORTH DISTRICT COUNCIL
Regional Council	NORTHLAND REGIONAL COUNCIL
Legal Status of Activity	Permitted                      Controlled:                      Discretionary:
Relevant Regional Rule(s) (Note 1)	
Total Property Area (m <sup>2</sup> )	1227m <sup>2</sup>
Map Grid Reference of Property If Known	

**2. Legal description of land (as shown on Certificate of Title)**

Lot No.	2	ID No.	864005	ID	
Other (specify)					

Please ensure copy of Certificate of Title is attached

**PART C: Site Assessment - Surface Evaluation**

(Refer TP58 - Sn 5.1 General Purpose of Site Evaluation and Sn 5.2.2(a) Site Surface Evaluation)

Note: Underlined terms defined in Table 1, attached

Has a relevant property history study been conducted?

Yes	<input checked="" type="checkbox"/> Y	No	<input type="checkbox"/>	(Please tick one)
-----	---------------------------------------	----	--------------------------	-------------------

If yes, please specify the findings of the history study, and if not please specify why this was not considered necessary.

see survey	-The study basically revealed that this land has been rural lifestyle for many years.



**1. Has a Slope Stability Assessment been carried out on the property?**

Yes		No	N	Please tick
-----	--	----	---	-------------

If No, why not?

Site is mildly undulating. There is no sign of erosion either on this site or on other built adjacent sections
--

If Yes, please give details of report (and if possible, please attach report):

Author	
Company/Agency	
Date of Report	
Brief Description of Report Findings:-	

**2. Site Characteristics (See Table 1 attached):**

Provide descriptive details below:
<b>Performance of Adjacent Systems:</b>
All are performing well and are basically modern designs
<b>Estimated Rainfall and Seasonal Variation:</b>
Information available from N.I.W.A MET RESEARCH
1200>1300mm
<b>Vegetation / Tree Cover:</b>
Grass
<b>Slope Shape: (Please provide diagrams)</b>
Flat - building platform is on an area with around a 1-2 degree slope
<b>Slope Angle:</b>
Refer to topo maps for >degree
<b>Surface Water Drainage Characteristics:</b>
There are no concerns with surface water retention, slopes direct water away from the Primary system and effluent sites
<b>Flooding Potential: YES/NO</b>
No. While considered a flood plain, this area is well drained, and is on a mild parabolic dune structure a major boundary drain ensures that surface water is well disposed of
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 years and/or 20 year and/or 100 year return period flood level, relative to disposal area.
<b>Surface Water Separation:</b>
+20m
<b>Site Characteristics: or any other limitation influencing factors</b>



**3. Site Geology**

**Check Rock Maps**

The soil is a mix of Ruakaka Sand, & Houhora Sand Soil Class 3 where the build is planned and Tangatiki Peaty Sand on the lower plateau

Geological Map Reference Number      290

**4. What Aspect(s) does the proposed disposal system face? (please tick)**

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

**5. Site clearances,( Indicate on site plan where relevant)**

Separation Distance from	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries	+3m	Check Council requirements +3m
Surface water, rivers Creeks drains etc	+30	+30m
Groundwater	+1.6m	+1.6m
Stands of Trees/Shrubs	3m	3m
Wells, water bores	+20	+20
Embankments/retaining walls	N/A	N/A
Buildings	+3m	+13m
Other (specify):		

**PART D: Site Assessment - Subsoil Investigation**

(Refer TP58 - Sn 5.1 General Purpose of Site Evaluation, and Sn 5.2.2(a) Site Surface Evaluation and Sn 5.3 Subsurface Investigations)

Note: Underlined terms defined in Table 2, attached

**1. Please identify the soil profile determination method:**

Test Pit	(Depth                      m	No of Test Pits	
Bore Hole	(Depth    1.8                      m	No of Bore Holes	2
Other (specify):			

Soil Report attached?

Yes      Y      No            Please tick

**2. Was fill material intercepted during the subsoil investigation?**

Yes            No            Please tick

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


**3. percolation testing (mandatory and site specific for trenches in soil type 4 to 7)**

Please specify the method      Constant Head Ksat




Test Report Attached?	Yes	Y	No		Please tick
-----------------------	-----	---	----	--	-------------

**4. Are surface water interception/diversion drains required?**

Yes		No	N		Please tick
-----	--	----	---	--	-------------

If yes, please show on site plan

**4a Are subsurface drains required** No

If yes enter details

**5. Please state the depth of the seasonal water table:**

Winter	+1.8m	m	Measured	Yes	Estimated	
Summer	As Above	m	Measured	Yes	Estimated	

**6. Are there any potential storm water short circuit paths?**

Yes		No	No		Please tick
-----	--	----	----	--	-------------

If the answer is yes, please explain how these have been addressed


**7. Based on results of subsoil investigation above, please indicate the disposal field soil category (Refer TP58 Table 5.1)**

Is Topsoil Present?	Yes	If so, Topsoil Depth?	100mm>	(m)
---------------------	-----	-----------------------	--------	-----

Soil Category	Description	Drainage	Tick One
1	Gravel, coarse sand	Rapid draining	
2	Coarse to medium sand	Free draining	
3	Medium-fine & loamy sand	Good drainage	Houhora Snd
4	Sandy loam, loam & silt loam	Moderate drainage	
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow drainage	
6	Sandy clay, non-swelling clay & silty clay	Slow draining	
7	Swelling clay, grey clay, hardpan	Poorly or non-draining	

**Reasons for placing in stated category**

Soil tests and soil maps

**PART E: Discharge Details**

**1. Water supply source for the property (please tick):**

Rainwater (roof collection)	Tank
Bore/well	
Public supply	



**2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available**

(Refer TP58 Table 6.1 and 6.2)

Number of Bedrooms	2 - 3 - 4			3
Design Occupancy	5			(Number of People)
Per capita Wastewater Production	140	160	180	(tick) (Litres per person per day)
Other - specify	200	220		
				Note per new dwelling
	800			
Total Daily Wastewater Production				(litres per day)

**3. Do any special conditions apply regarding water saving devices**

a) Full Water Conservation Devices?	no				(Please tick)
b) Water Recycling - what %?	%				(Please tick)

If you have answered yes, please state what conditions apply and include the estimated reduction in water usage


**4. Is Daily Wastewater Discharge Volume more than 2000 litres:**

Yes		(Please tick)
No	No	(Please tick)

*Note if answer to the above is yes, an N.R.C wastewater discharge permit may be required*

**5. Gross Lot Area to Discharge Ratio:**

Gross Lot Area	1227m2	Note L/D Ratio is for all dwellings
Total Daily Wastewater Production	800	(Litres per day)(from above)
Lot Area to Discharge Ratio	1.53	

**7. Does this proposal comply with the Northland Regional Council Gross Lot Area to Discharge Ratio of greater than 3?**

Yes	Yes	No		Please tick
-----	-----	----	--	-------------

**8. Is a Northland Regional Council Discharge Consent Required?**

Yes		No	no	(Please tick)
-----	--	----	----	---------------



**PART F: Primary Treatment** (Refer TP58 Section 7.2)

1. Please indicate below the no. and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing: If not 4500 litre, dual chamber explain why not

Number of Tanks	Type of Tank	Capacity of Tank (Litres)
1		
	Concrete	4500L
	Total Capacity	4500L

2. Type of Septic Tank Outlet Filter to be installed? Bio filter

**PART G: Secondary and Tertiary Treatment**

(Refer TP58 Section 7.3, 7.4, 7.5 and 7.6)

1. Please indicate the type of additional treatment, if any, proposed to be installed in the system: (please tick)

Secondary Treatment		
Home aeration plant		
Commercial aeration plant		
Intermediate sand filter		
Recirculating sand filter		
Recirculating textile filter		
Clarification tank		
Tertiary Treatment		
Ultraviolet disinfection		
Chlorination		
Other	Specify	

**PART H: Land Disposal Method**

(Refer TP58 Section 8)

1. Please indicate the proposed loading method: (please tick)

Gravity	X
Dosing Siphon	
Pump	

2. High water level alarm to be installed in pump chambers

Yes

If not to be installed, explain why




**3. If a pump is being used, please provide the following information:**

Total Design Head		(m)
Pump Chamber Volume		(Litres)
Emergency Storage Volume		(Litres)

**4. Please identify the type(s) of land disposal method proposed for this site: (please tick)**  
(Refer TP58 Sections 9 and 10)

Surface Dripper Irrigation			
Sub-surface Dripper irrigation			
Standard Trench	As per "C"		
Deep Trench			
Mound			
Evapo-transpiration Beds			
Other		Specify	As per design C

**5. Please identify the loading rate you propose for the option selected in Part H, Section 4 above, stating the reasons for selecting this loading rate:**

Loading Rate	Ksat 20	(Litres/m <sup>2</sup> /day)
Disposal Area	Design	40 (m <sup>2</sup> )
	reserve	40 (m <sup>2</sup> )

**Explanation** (Refer TP58 Sections 9 and 10)

Test showed better than ksat25 refer to site tests

**6. What is the available reserve wastewater disposal area** (Refer TP58 Table 5.3)

Reserve Disposal Area (m <sup>2</sup> )	40m <sup>2</sup>
Percentage of Primary Disposal Area (%)	100%

**7. Please provide a detailed description of the design and dimensions of the disposal field and attach a detailed plan of the field relative to the property site:**

**Description and Dimensions of Disposal Field:**

See Design Appendix C

Plan Attached?	Yes	yes	No		(Please tick)
----------------	-----	-----	----	--	---------------

**If not, explain why not**




**PART I: Maintenance & Management**

(Refer TP58 Section 12.2)

1. Has a maintenance agreement been made with the treatment and disposal system suppliers?

Yes			No	(Please tick)
-----	--	--	----	---------------

Name of Suppliers

--

**PART J: Assessment of Environmental Effects**

1. Is an assessment of environmental effects (AEE) included with application?

(Refer TP58 section 5. Ensure all issues concerning potential effects addressed)

Yes	See enclosed			(Please tick)
-----	--------------	--	--	---------------

If Yes, list and explain possible effects

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**PART K: Is Your Application Complete?**

1. In order to provide a complete application you have remembered to:

Fully Complete this Assessment Form	Y
Include a <i>Location Plan</i> and <i>Site Plan</i> (with Scale Bars)	Y
Attach an Assessment of Environmental Effects (AEE)	Y

**1. Declaration**

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

Name	Eric Wagener	Signature	
Position	Certifying Registered Drainlayer 05877	Date	

**Note**

Any alteration to the site plan or design after approval will result in non compliance.

## APPENDIX – A

### ASSESSMENT OF ENVIRONMENTAL EFFECTS

#### Summary:

Kiri Sloane Craig Hobson  
36 Houhora Heads Road  
Pukenui  
R.D.4  
Kaitaia

In Preparing this design and recommendations the writer has taken into account:

- Subsoil structure, surface structure and the ability to contain effluent on the residential site.
- Ground water separation and potential for contamination.
- Evaluated the potential for effluent disposal and assessed the absorption field ability to cope with design load.
- Adopted and evaluated design criteria as they apply to standard septic tank systems.
- Selected a simple solution and design recommendation for any additions to effluent disposal.
- Calculated the daily water use and combined that into the calculations for effluent disposal in m<sup>2</sup> requirements plus 100% reserve.
- Evaluated visually the potential for surface water contamination and potential for system short circuit.
- Identified that there is enough area within the proposed site constraints to allow for any designed load, and the designed effluent disposal.
- Identified that there is capacity for reserve if the reserve is required
- Identified and recorded the site aspect, and location
- Included topographical, site, and location maps.
- Included site drainage location
- Stipulated design criteria
- Referred to the design criteria in T.P.58 Manual for On Site Disposal with particular reference to soil categories “Appendix D”
- Taken note of the special clauses of the consent notices, and evaluated the impact that this building proposal may have.
- Used for assessment purposes calculations based on site land bore investigation, and percolation tests, balancing that against seasonal absorption variations.
- Taken note of overland surface water drainage patterns
- Concluded from careful evaluation that there will be no environmental effects which cannot be easily remedied.



Background to the summary for the assessment of environmental effects and mitigation measures Appendix A-

Owner: Kiri Sloane & Craig Hobson  
36 Houhora Heads Road  
Pukenui  
R.D.4  
Kaitaia

The property is located off Houhora Heads Road

This is a large section with minor adjacent development. While listed as being in a flood zone the property is bounded by a substantial drain which ultimately discharges into the Houhora Harbour via the Ariaiwa River. The under-road culvert is at least 900mm in diameter, the drain has good fall and has never flooded in living memory. The property has a number of soil types present, the lower areas consists of peaty sandy soil, the upper areas where the building platform is located are partly consolidated Ruakaka and Houhora sands.

Natural surface water is directed away from all proposed buildings via the natural contours of the land.

Risk Assessment:

The section is most likely best described as semi rural lifestyle. The surrounding land area and scattered vegetation provide a significant buffer from the road.

While listed as flood prone on Regional Council maps the area is well drained as stated above.

There is no native flora or fauna present, neither are there any native wildlife species of concern present.

The building platform is above any local recognised flood level. There are no ecological risks. No Hail issues have been identified with this area. The effluent system has been placed so that maximum separation possible is achieved from any assessed risk area. The wastewater and septic system has been designed using rates and design calculations from the ARC TP58 Design Manual approved by the FNDC.

The soakage into the sand structures is good in all seasons. Groundwater in winter is at a depth greater than 1.2m. This is significantly deeper than the designed effluent disposal system.

Impact on surface water:

Visual evaluation of the site showed that adequate falls have been allowed for at the current effluent disposal site. This disposal area will not be affected by surface water. The primary treated effluent has been designed to be disposed of into the soil by trenches. There is sufficient slope on the section to ensure that there will be no surface water retention for any length of time which could affect or compromise the effluent disposal system chosen.



The effluent system is not seen to pose any threat to surface water for the above risk matrix reasons, or pose a threat to others in the near vicinity.

#### Impact on groundwater:

On site exploration and extensive testing has shown:

- Tests carried out on the site indicate that the soil falls into a category 2. Category 3 has been used for assessment. There will be adequate area for reserve areas. The property in general, has acceptable buffer areas.
- Current tests indicate a better absorption factor than that used for calculation but this has seasonal factors to consider. Category 3 has been used for calculations.
- The decision tree process upon which the design was evaluated involved the careful analysis of soil structure, consideration of the areas available, the depth of soil available and the ability of the site to safely contain effluent discharge. The soil loading rates used were as a result of Ksat tests, those recommended in T.P58, and ASNZS standards.

Having taken all the above factors into consideration it is believed that there will be little possibility of any effect on groundwater. There is a buffer between the effluent site and any risk area. The location of the effluent disposal systems has been placed so that the horizontal movement of any contaminants would not cause a hazard or have any effect on the immediate environment.

#### Impact on the soil:

It is generally accepted that the degree of nitrogen leaching increases with higher soil carriage water (rain fall and effluent loading rate). Therefore, low effluent loading rates can assist in the mitigation of nitrogen leaching.

The primary mechanism for reducing nitrogen discharges into the receiving environment is the reduction of the organic load. In this case the opportunity for intensive organic load is not considered a major factor due to the low occupancy.

The soil at the effluent site is classified as being a mix of Ruakaka and Houhora Sands. This soil type is classed as very well drained in soil maps. The testing that was carried out concurs with the soil classification of a category 3 soil. Therefore category 3 has been used for assessment calculations.

#### Storm Water:

Storm water overflow from impervious surfaces, is covered by roof water being discharged to tank storage with the overflow being controlled via 100mm uPVC pipes to a spreader and then to the main Boundary drain. The flow charts for determining whether there is a requirement for attenuation uses the impervious to land mass ratio of >2%. TP10 Stormwater Attenuation states that attenuation can be disposed of to ground where applicable. Due to the high absorption rates, the distance from the rural road, and the slope of the property towards the rear where discharge will be directed it is unlikely that runoff from impermeable surfaces will have a negative effect on council infrastructure.

Design mitigation measures:

The system installed for effluent disposal (appendix C ) has been designed to maximise the potential for basal ground area, wall and transpiration disposal.

The separation distance of wastewater distribution from potential groundwater aquifers, which were not found, minimises the opportunity for any aquifer contamination. Storm water and storm water treatment is managed so that there will be no impact on effluent disposal.

Amenity Values:

An in-depth study of the immediate areas of impact indicates that this proposed development is having no more impact on the surrounding land users or occupiers than that currently existing. The current systems for the neighbouring dwellings into similar structures show no sign of septic stress.

Conclusion:

The summary of factors taken into consideration "Appendix A" leads to the conclusion that there are no environmental effects which are not mitigated by adequate design.

It is our assessment that there are no environmental effects that would give reasons for concern with this building development.

E.J.Wagener Certifying Registered Drainlayer 05877



Engineer

# Effluential DrainLayers Ltd

3778 Main North Road

R.D.4

Kaitaia 0484

Phone 09 409 8854 Fax 09 409 7720 Mobile 0274 8855 84

15/05/2022

Kiri and Craig Hobson

Houhora Heads Road

Houhora

## Report on Storm Water Attenuation

### **Purpose**

To control/assist the management of the effects of stormwater runoff from building developments and mitigate the impact this has on infrastructural assets.

### **Considerations**

It needs to be accepted that the impact is greater in densely populated areas and less in urban/rural.

The definition of soakage is the process where a permeable substance receives a liquid, in this case where storm water is disposed of into ground, or effective runoff slowed so as to minimize effects on the environment or infrastructure.

The infiltration factor ksat assessment, assists in mitigating runoff impact.

Characteristics that determine permeability are soil structure, soil particle size, and geomorphology.

The flow rate of the soakage discharge is also dependent upon the soakage area and the hydraulic pressure forcing water into the absorbent media.

### **Site Description**

The property is located at Houhora Heads Road, Houhora and is 12,770m<sup>2</sup>.

This is a large section predominantly covered in grass with a few trees. The property is relatively flat, having an elevated part to the west and after an abrupt fall gently slopes to the southeast. There is an open drain along the entire length of the south-eastern boundary line. This drain ultimately reaches the Raio Creek.

Natural surface water would be directed away from a new building via the contours of the land.

The soil type is listed as Ruakaka peaty sandy loam, this is probably true of parts of the lower areas of the section. Soil maps class this as poorly drained. However onsite testing indicates that the building area soil is made up of Tangitiki sand, Sand stone, and Houhora sand. The drainage is markedly better than that stated in soil maps.



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The principle being used in this case is that stormwater generated by the building roof areas and hardstand is discharged via an absorption pit, 40mm overflow orifice and spreader to the main drain and from there directly to the Houhora Harbour. The driveway area discharging onto the Houhora Heads Road is partly a shared access R.O.W and discharges into a roadside drain which then discharges into the main drain and subsequently the Houhora Harbour. . The cumulative effects from this sized development will be minor, in relation to the whole.

Devices which discharge water via infiltration through soil provide a storm water quality benefit to the receiving environment and the in-situ soil acts as a filter media for removing contaminants. This is a known beneficial factor and provides for infiltration devices to be used as storm water quality treatment.

On site observation indicates that there is not, and is unlikely to be, any erosion from this source.

It is most unlikely given the percentage of impervious surfaces that there will be any environmental effect which cannot be contained within the boundaries with this proposed development.

This combination of circumstance lessens the impact on the downstream environment while providing for the maximum soil absorption as proposed by TP10, again lessening the potential impact on infrastructure.

### **Regional Plan:**

The Northland Regional Council proposed rule C6.4.2 provides for the diversion and discharge of stormwater from outside a public stormwater network, provided that (amongst other conditions) the discharge or diversion does not cause or increase nuisance or damage to other property. In this case there will be no affected neighbouring properties.

Therefore, this proposal is in accordance with NRC Rule C6.4.2.

### **Conclusion:**

Any stormwater overflow from this proposed building will be discharged via a spreader bar to the surrounding environment at the south-east of the building site. There will be no cumulative effect on FNDC infrastructure.

Eric Wagener Certifying Registered Drainlayer 05877

Robert Wagener (Engineer) Effluential Drainlayers Associate



## Effluential DrainLayers Ltd

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### **Design Criteria**

Soakage devices must be 3m from dwellings.

The Far North District Council aligns storm water attenuation requirements with other authorities.

The Whangarei District Council requires site attenuation when the percentage of impermeable surfaces exceeds 2%.

The Auckland Regional Council prepared TP10 as a reference on a similar basis and ASNZS 1547 is also structured in the same manner.

The spread sheet used in calculating Attenuation requirements has been developed in conjunction with the FNDC stormwater Engineer.

The Far North District Council information was designed specifically to enable storm water design to be expedited quickly. The ARC prepared TP10 on the same basis. ASNZS1547 is also structured in the same manner.

Therefore, attenuation is only required when the ratio of impermeable surfaces to total property area exceeds 2%. However other factors can influence the requirement to attenuate.

### **Design Calculations**

All calculations submitted are via FNDC Stormwater calculation spread sheet. It is a given that new calculations may be required should future development take place.

Run off from impervious surfaces on a total land area of 12,770m<sup>2</sup> is of marginal concern. The estimated additional impermeable surfaces have been calculated as: residential 336m<sup>2</sup>, driveway 422m<sup>2</sup>. This is a combined total of 758m<sup>2</sup> out of an overall 12,770m<sup>2</sup>.

The ratio of impermeable surfaces to overall area is 6%.

In line with the design criteria above, the property, with a ratio of 6%, should require attenuation. However, given that there is a large open drain along the south-eastern boundary, that within 400m drains to the Raio Creek, it is unlikely that the proposed development will have a negative effect on council infrastructure.

### **Design Proposal**

Any development has some adverse effects however in relation to the major area the effects are small, with stormwater having no immediate effect on any regional infrastructure.











Pre - Development water flow		48hr		Pre-development					
(Original water flow)	Area (m <sup>2</sup> )	Roof & decks 1 (m <sup>2</sup> )	Concrete & smooth seal 2 (m <sup>2</sup> )	Metalized area Or rough seal 3 (m <sup>2</sup> )	Other Impervious 4 (m <sup>2</sup> )	Slope %	10	CI correction	0.00
	542.00	0	0	0	0				
<p><b>Runoff coefficient</b> Use "C" values from FNDC TR55 chart Generally do not use slope adjustment Ci factor if using TR55</p>									
<p><b>Rainfall intensity</b> Rainfall Data from NIWA, Hirds 4, RCP6, 2081-2100 Use an appropriate event for the situation</p>									
<p><b>Flow rate of surface water</b></p>									
<p>Pre - development flow of developed area</p>									
<p>Qp (m<sup>3</sup>/sec) 0.0003 Qp (L/sec) 0.27</p>									
<p><b>Post - Development water flow</b></p>									
<p>Any area where there is a change in the impermeability values</p>									
<p>Total area. 542.00</p>									
<p>Use "C" values from FNDC TR55 chart Generally do not use slope adjustment Ci factor if using TR55</p>									
<p><b>Rainfall intensity rate</b> Rainfall Data from NIWA, Hirds 4, RCP6, 2081-2100 Use an appropriate event for the situation</p>									
<p><b>Flow rate of surface water</b></p>									
<p>Total included in attenuation system calc's post - development flow</p>									
<p>Qa (m<sup>3</sup>/sec) 0.000 Qa (L/sec) 0.19</p>									
<p>Post - Pre development flow</p>									
<p>Qdpp (m<sup>3</sup>/sec) 0.0002 Qdpp (L/sec) 0.19</p>									
<p>Total post development flow Developed flow + undeveloped flow 0 to 10min</p>									
<p>Qatt (m<sup>3</sup>/sec) 0.0005 Qatt (L/sec) 0.45</p>									
<p>Any area where there is no change to the impermeability values</p>									
<p>Pre-development area where there is a change in impermeable surfaces but not collected in attenuation system</p>									
<p>Concrete &amp; smooth seal 5 (m<sup>2</sup>)</p>									
<p>Metalized area Or vegetation 6 (m<sup>2</sup>)</p>									
<p>Vegetation 8 (m<sup>2</sup>)</p>									
<p>Metalized area or seal 7 (m<sup>2</sup>)</p>									
<p>Vegetation 8 (m<sup>2</sup>)</p>									
<p>Any area where there is no change to the impermeability values</p>									
<p>Post-development area where there is a change in impermeable surfaces but not collected in attenuation system</p>									
<p>Concrete &amp; smooth seal 5 (m<sup>2</sup>)</p>									
<p>Metalized area Or vegetation 6 (m<sup>2</sup>)</p>									
<p>Vegetation 8 (m<sup>2</sup>)</p>									
<p>Metalized area or seal 7 (m<sup>2</sup>)</p>									
<p>Vegetation 8 (m<sup>2</sup>)</p>									
<p>Any area where there is no change to the impermeability values</p>									
<p>Total impermeable excluded from attenuation system collection</p>									
<p>Qby (m<sup>3</sup>/sec) 0.000 Qby (L/sec) 0.00</p>									
<p>Total no change, excluded from attenuation system calc's</p>									
<p>Qby (m<sup>3</sup>/sec) 0.000 Qby (L/sec) 0.00</p>									







Kiri Sloane House 22

Attenuation cu meters required 15.2

absorption rate ex Ksat 0.358

pit design absorption factor 5.4416

Pit size = m3 required - absorbtion 9.7584

pit length 2.6

pit width 2.2

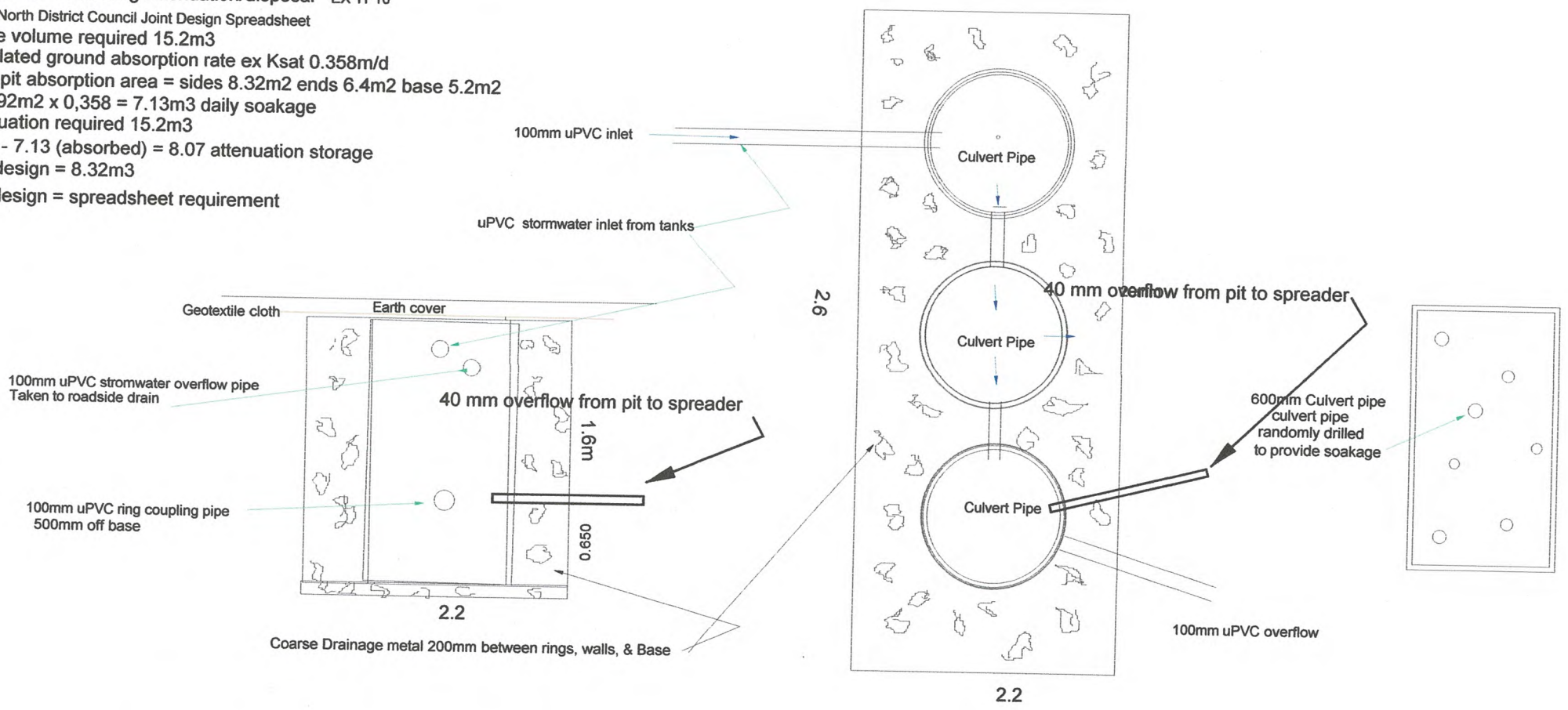
pit height 1.7

cubic capacity 9.724

OK

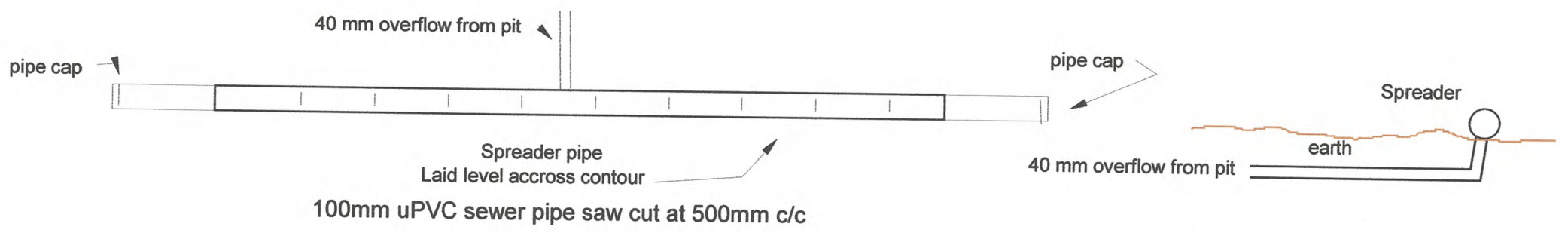
Appendix B

Stormwater Soak Ring Attenuation/disposal EX TP10  
 Ex Far North District Council Joint Design Spreadsheet  
 House volume required 15.2m<sup>3</sup>  
 Calculated ground absorption rate ex Ksat 0.358m/d  
 Total pit absorption area = sides 8.32m<sup>2</sup> ends 6.4m<sup>2</sup> base 5.2m<sup>2</sup>  
 = 19.92m<sup>2</sup> x 0,358 = 7.13m<sup>3</sup> daily soakage  
 Attenuation required 15.2m<sup>3</sup>  
 15.2 - 7.13 (absorbed) = 8.07 attenuation storage  
 Pit design = 8.32m<sup>3</sup>  
 Pit design = spreadsheet requirement



Attenuation Trench/Pit  
 Sloane Hobson Houhora Heads Road  
 E.J.Wagener 05877

Appendix D



**Kiri Sloane & Dion Hobson**

E.J.Wagener Certifying Registered Drainlayer 05877



## Effluential DrainLayers Ltd

3778 Main North Road

R.D.4

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Phone 09 409 8854 Fax 09 409 7720 Mobile 0274 8855 84

### Site Evaluation Work Sheet

Date

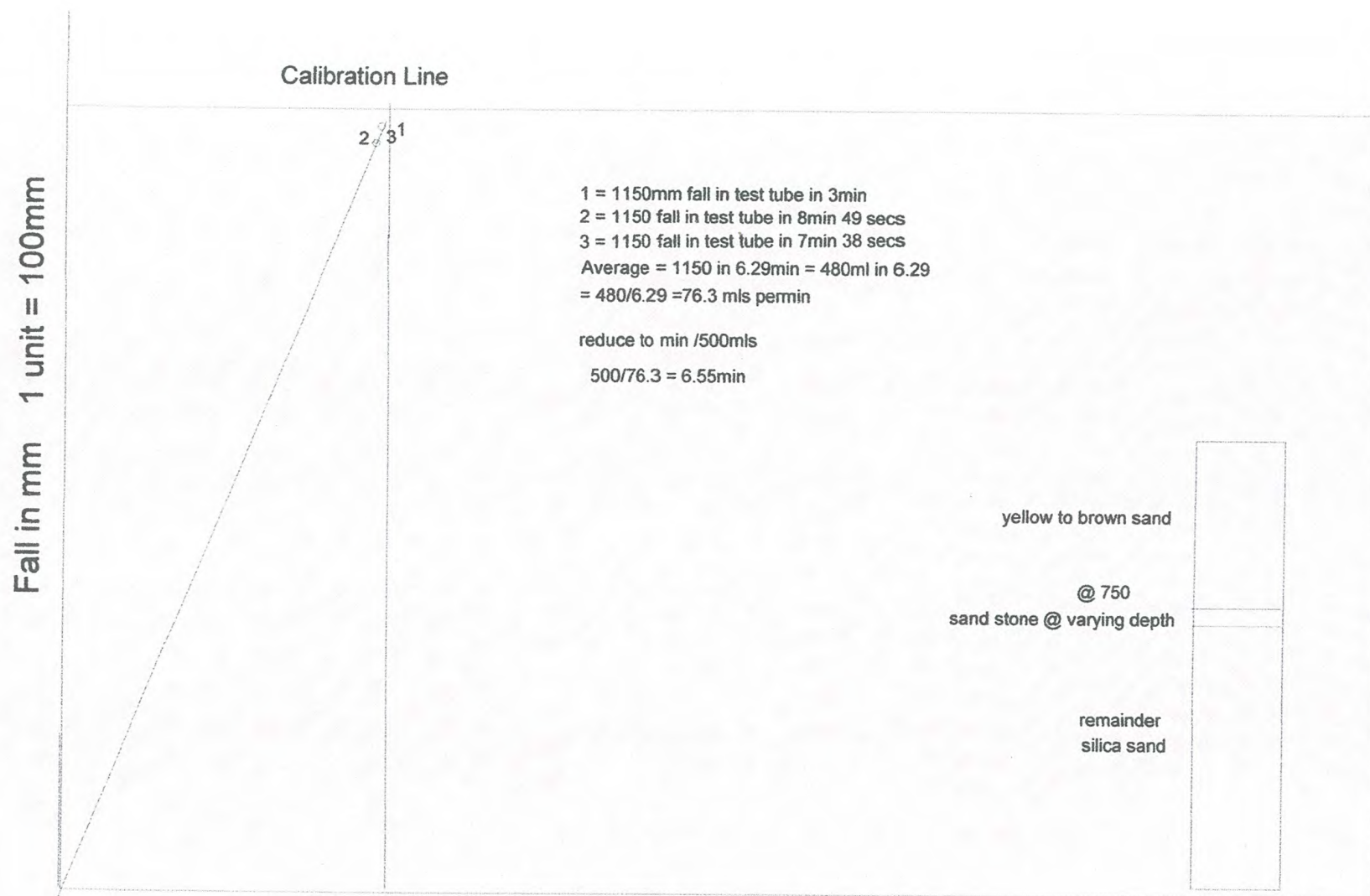
Weather conditions:

Owner/s: Kiri Sloane & Craig Hobson
-------------------------------------

Property Location	36 Houhora Heads Road	Pukenui	
-------------------	-----------------------	---------	--

Slope & falls	1 > degree	
Drains Present Cut off (shallow) Main Deep Location on site Sketch	Nil	Slopes at effluent site approx. 2 degree
Soil type 3 Sand  Colour/s consistency	Top soil 100>150mm Sandy soil 2>3	Sub soil 1.800mm sandy soil loose structure
Drill depth	Auger size 90mm	Depth 800mm
Ground water	Not found @ 2m	@ test depth
Suggested disposal	Trench	
Water Supply Type	Water Tank & Bore	
Ground cover Trees & shrubs	Mainly Grasses- small garden	
Surface water issues Ground water issues	Nil	No Ground water found at > than 2m
Ksat test	Constant Head	

Height of water in tube @ start	1120
Height of water in tube Finish	Mt
Time taken (up to 1hr)	1 = 3min 2 = 8.49min 3 = 7 :38
Test depth from surface	150mm



0.500Mil 1 unit = 050ml

K Sat Chart

Kiri Sloane & Craig Hobson

E.J.Wagener 05877 Certifying Registered Drainlayer



**EFFLUENTIAL DRAINLAYERS LTD**

3788 MAIN NORTH ROAD  
RD 4  
KAITAIA, 0646

Outcome of Permeability Test in accordance with AS/NZS 1547:2000, Clause 4.1F3

**Inputs**

Hole Diameter	9	cm.
Depth of Water in Test Hole	38	cm.
Time to deplete reservoir by 500ml	6.55	min.

**Outputs**

Permeability ( $K_{sat}$ )	0.026	cm/min
	0.367	m/d



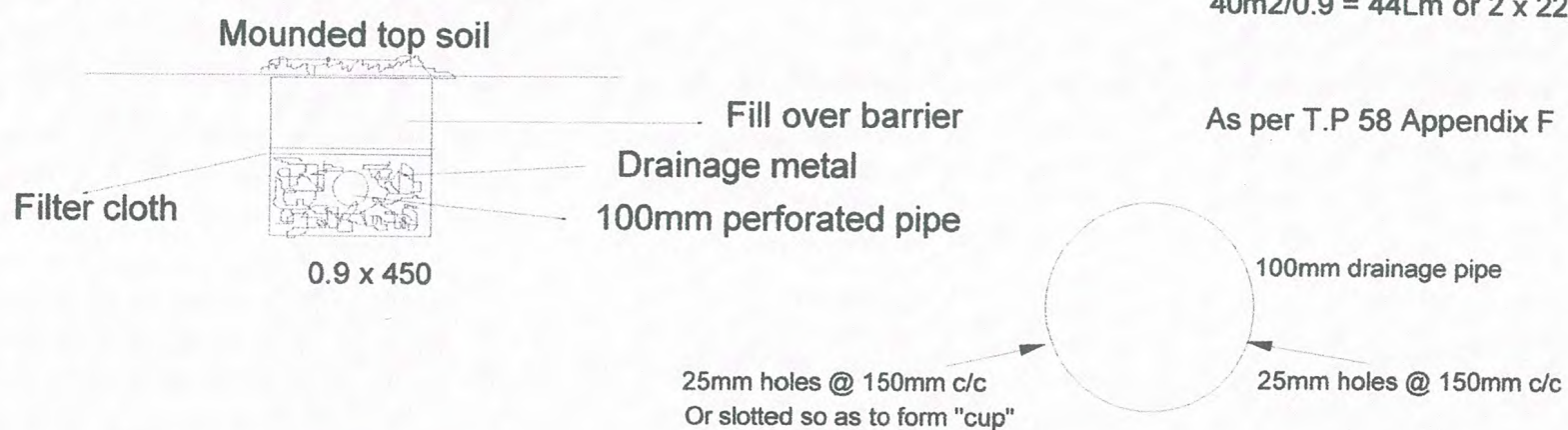
## Appendix C

Note: Percolation tests show that absorption is best into the topsoil region

Trenches should be laid level so that even loading occurs

Note: Allow 3 bedroom 5 person @160L/P/D = 800L  
 $800/\text{ksat}_{20} = 40\text{m}^2$   
 $40\text{m}^2/0.9 = 44\text{Lm}$  or  $2 \times 22\text{Lm}$

Note: Pipes to be capped at open ends



# Effluent Trench Details

## Kiri Sloane & Craig Hobson

E.J.Wagener 05877