Far North District Council

Private Bag 752, Memorial Ave
Kaikohe 0440, New Zealand
Freephone: 0800 920 029
Phone: (09) 401 5200
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

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: Jayson Summerville & Carolien Burgering

Electronic Address for Service (E-mail): [redacted]

Phone Numbers: [redacted]

Postal Address: (*or* alternative method of service under section 352 of the Act) [redacted]

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

Name/s: Martin O'Brien

Electronic Address for Service (E-mail): martin@obrienconsulting.co.nz

Phone Numbers: Work: 027 4075208, 09 4075208 Home: _____

Postal Address: (*or* alternative method of service under section 352 of the Act) 153B Kerikeri Inlet Road, Kerikeri

Post Code: 0230

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: Jayson Summerville & Carolien Burgering

Property Address/: Location: 11 Lonegum Lane, Kerikeri

7. Application Site Details:

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

Site Address/ Location: 11 Lonegum Lane, Kerikeri

Legal Description: Lot 5 DP 572115 Val Number:

Certificate of Title:

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

Site Visit Requirements:

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

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

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

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.

A dwelling with a roof area of 282m² and 242m² concrete drive are proposed on the 3,001m² lot

A Resource Consent as a Controlled Activity is due to a breach of permitted rule 8.7.5.1.5 of the Far

North District Plan. Total impermeable surfaces are 17.5% of the lot area (524m²) over the 12.5%

permitted surface allowance. The stormwater section of the Suitability Report by RS Engineers and

further details in the short report provided by O'Brien Design Consulting outline mitigation measures.

Architectural Plans are provided.

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) [redacted]

Email:

Postal Address:

Phone Numbers:

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

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

Name [redacted] (please print)

Signa [redacted] (signature of bill payer – **mandatory**) Date: **3 November 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. 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: [redacted] (please print)

Signature: [redacted] (signature) Date: **3 November 2023**

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

Checklist (please tick if information is provided)

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

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **1038401**

Land Registration District **North Auckland**

Date Issued 04 May 2022

Prior References
209716

Estate Fee Simple

Area 3001 square metres more or less

Legal Description Lot 5 Deposited Plan 572115

Registered Owners

[redacted]

Interests

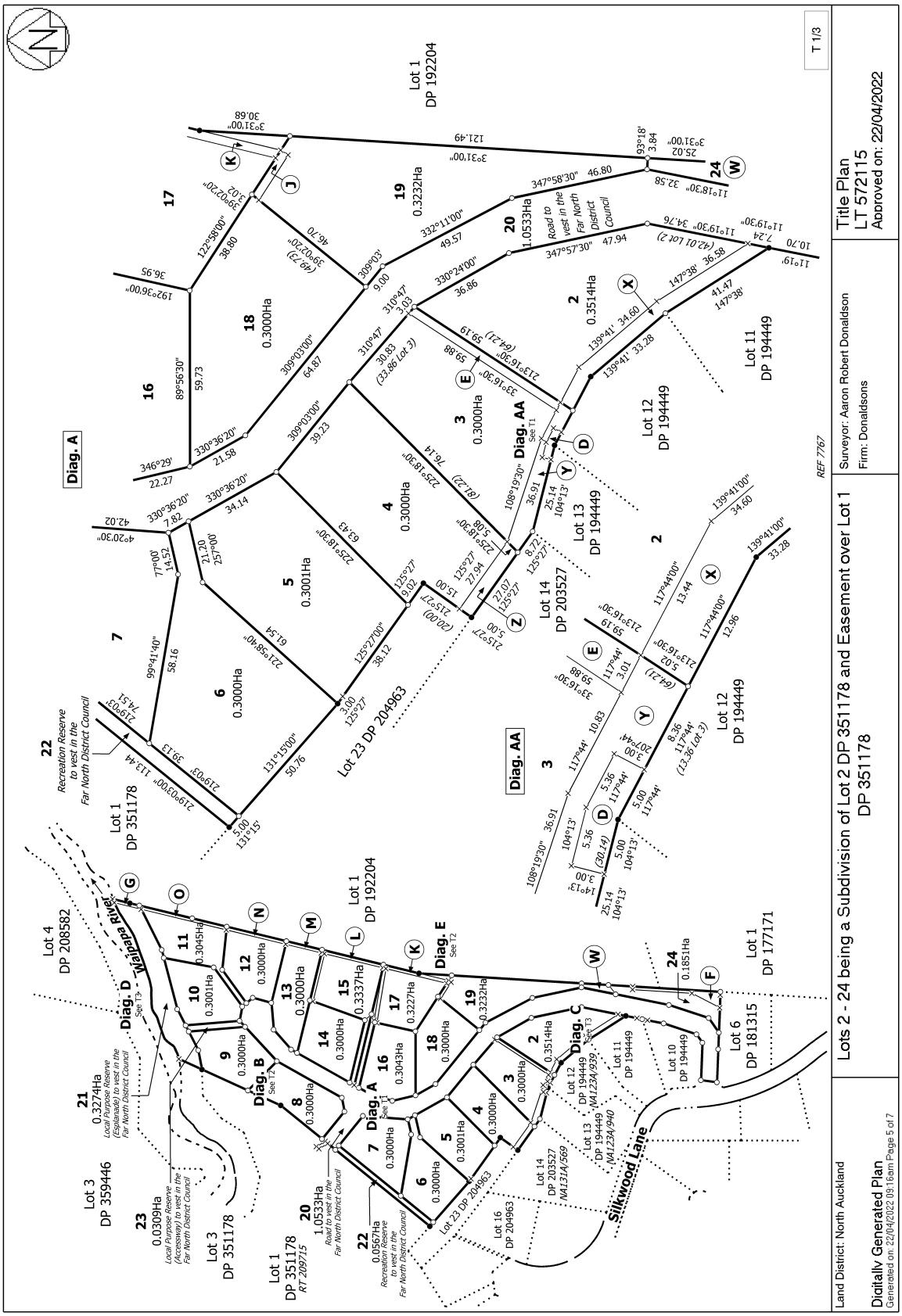
Appurtenant hereto is a right to drain water specified in Easement Certificate D203729.5 - 10.10.1997 at 1.10 pm

12370541.10 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 4.5.2022 at 11:56 am

Land Covenant in Covenant Instrument 12370541.13 - 4.5.2022 at 11:56 am

Fencing Covenant subject to Section 6(2) of the Fencing Act 1978 in Deed 12370541.16 - 4.5.2022 at 11:56 am

Fencing Covenant in Transfer 12487715.1 - 5.8.2022 at 4:01 pm


Title Plan
LT 572115
Approved on: 22/04/2022
Lots 2 - 24 being a Subdivision of Lot 2 DP 351178 and Easement over Lot 1 DP 351178
Land District: North Auckland
Digitally Generated Plan
Generated on: 22/04/2022 09:16am Page 5 of 7
Surveyor: Aaron Robert Donaldson
Firm: Donaldsons
T 1/3
REF 7767
Diag. A
Diag. AA
Diag. B
Diag. C
Diag. D
Diag. E
Waipapa River
Stikwood Lane
Lot 1 DP 192204
Lot 1 DP 351178
Lot 3 DP 359446
Lot 3 DP 351178
Lot 4 DP 208582
Lot 1 DP 351178 RT 209715
Lot 23 DP 204963
Lot 16 DP 204963
Lot 14 DP 203527
Lot 13 DP 194449
Lot 12 DP 194449
Lot 11 DP 194449
Lot 10 DP 194449
Lot 6 DP 181315
Lot 1 DP 177171
Recreation Reserve to vest in the Far North District Council
Road to vest in the Far North District Council
Local Purpose Reserve (Esplanade) to vest in the Far North District Council
Local Purpose Reserve (Accessway) to vest in the Far North District Council

View Instrument Details

Instrument No	12370541.10
Status	Registered
Date & Time Lodged	04 May 2022 11:56
Lodged By	Thompson, Emma Jane
Instrument Type	Consent Notice under s221(4)(a) Resource Management Act 1991

Affected Records of Title	Land District
1038398	North Auckland
1038399	North Auckland
1038400	North Auckland
1038401	North Auckland
1038402	North Auckland
1038403	North Auckland
1038404	North Auckland
1038405	North Auckland
1038406	North Auckland
1038407	North Auckland
1038408	North Auckland
1038409	North Auckland
1038410	North Auckland
1038411	North Auckland
1038412	North Auckland
1038413	North Auckland
1038414	North Auckland
1038416	North Auckland

Annexure Schedule Contains 2 Pages.

Signature

Signed by Emma Jane Thompson as Territorial Authority Representative on 07/06/2022 11:29 AM

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

Far North District Council

[illegible]

Te Kaunihera o Te Tokerau Ki Te Raki

[illegible]

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221: CONSENT NOTICE

REGARDING **RC2180670-RMAVAR/C**
Being the subdivision of Lot 2 DP 351178
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 8, 9, 10, and 11 DP 572115

(i) The lots contain areas which are identified by Northland Regional Council as likely to be flood susceptible, wherein there is a potential risk to life, property and the environment due to natural hazard processes.

Lots 1 to 18 DP 572115

(ii) In conjunction with the construction of any building which includes a wastewater treatment and effluent disposal system, the lot owner shall submit for Council approval an onsite wastewater TP58 report prepared by a chartered professional engineer or an approved Council report writer.

The report shall and identify a suitable method of wastewater treatment for the proposed development along with an identified effluent disposal area, plus a reserve disposal area.

(iii) In conjunction with the construction of any building requiring building consent, the lot owner shall submit for the approval of Council a report prepared by a suitably qualified and experienced practitioner, detailing the on-site retention and flow attenuation of stormwater from the site such that the flow is limited to the pre-development level for rainfall events up to those with a 10% AEP plus allowance for climate change.

Far North District Council

[redacted]

Te Kaunihera o Tai Tokerau Ki Te Raki

[redacted]

Lot 24 DP 572115

(iv) The owner shall not build any construction within the restrictive land covenant area as detailed on the approved survey plan

(v) The land shown as area 'W' on the approved survey plan is subject to a restrictive covenant in favour of Far North District Council for future road.

(vi) Council is entitled to take the covenant land referenced in point (v) above and in condition 4(l)(v) of subdivision consent RC2180670 for roading purposes at any time without fee.

SIGNED [redacted] Mr Patrick John Killalea - Authorised Officer
By the FAR NORTH DISTRICT COUNCIL
Under delegated authority:
PRINCIPAL PLANNER – RESOURCE MANAGEMENT

DATED at **KERIKERI** this 3rd day of May 2022

Resource Consent Application Assessment of Environmental Affects

Date:	3rd November 2023
Clients Name:	Jayson Summerville and Carolien Burgering
Site Address:	11 Lonegum Lane, Kerikeri
Legal Description:	Lot 5 DP 572115

Lot 5 DP 572115 is located off 11 Lonegum, Kerikeri. The 3,001m² section is currently grassed with a slight slope to the northeast. The property is zoned Rural Living in the Far North District Plan. It is proposed that a 3-bedroom dwelling with an office is constructed onto the lot.

An application for Resource Consent is applicable for Lot 5 due to a breach of the following activities:

1. Rural Living Zone: Far North District Plan, Section 8.7.5.1.5, Stormwater Management:

   "The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 12.5% or 3,000m² whichever is the lesser".

Application for Stormwater Management as a Controlled Activity is due to impermeable surfaces being a total of 17.5% of the total lot area (524m²), over the 12.5% permitted impermeable surface allowance.

Appendix I provides a Site Location Plan, Site Plan with details, Floor Plan, and Elevations.

The Suitability Report written by RS Engineers, 29th September 2023, outlines mitigation measures for stormwater covering this part of the Resource Consent. In summary a rainwater storage tank with restricted outlets will reduce peak flows to predevelopment levels. The report is provided in Appendix II. Stormwater mitigation is discussed in Section 7, p 4 and 5.

Further to the Suitability Report Sarah Scott from RS Engineers has provided a table via email, 2nd November 2023, outlining assessment criteria from Section 8.7.5.2.2 of the District Plan.

(a) The extent to which building site coverage and Impermeable Surfaces contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment;	Attenuation of impervious surfaces reduces runoff to predevelopment levels for coverage exceeding the Permitted Activity.

(b) The extent to which Low Impact Design principles have been used to reduce site impermeability;	Attenuation is provided for all newly formed impervious surfaces so that post-development flows including climate change are less than pre-development levels for up to the 10% rainfall event.
c) Any cumulative effects on total catchment impermeability;	The impervious area exceeding the Permitted Activity of the district plan is 149m^2. Given the proximity of the stream and flows reduced to pre-development levels the exceeding area is considered to have no negative effects.
(d) The extent to which building site coverage and Impermeable Surfaces will alter the natural contour or drainage patterns of the site or disturb the ground and alter its ability to absorb water;	Stormwater from roof runoff is collected and discharged directly to the stormwater network of the subdivision.
e) The physical qualities of the soil type;	Kerikeri Volcanic being moderately drained.
f) The availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites;	Stormwater from roof runoff is collected and discharged directly to the stormwater network of the subdivision.
(g) The extent to which paved, Impermeable Surfaces are necessary for the proposed activity;	Not considered necessary.
(h) The extent to which landscaping and vegetation may reduce adverse effects of run-off;	Existing or additional vegetation will aid reducing runoff however none is proposed as part of the stormwater attenuation system.
(i) The means and effectiveness of mitigating stormwater runoff to that expected by permitted activity threshold.	Attenuation is provided for impervious surfaces in exceedance of the Permitted activity so that post-development flows including climate change are less than pre-development levels for up to the 10% rainfall event.

District Plan Assessment

Residential Intensity: Complies

Sunlight Rule: Complies

Stormwater Management:

<u>Impermeable Surfaces</u>

Proposed dwelling roof area:	282m²
Proposed concrete driveway:	<u>242m²</u>
Total proposed:	524m²

Total permitted = 3,001m² x 12.5% = 375.1m²

Total proposed = 524m², making up 17.5% of the lot, does not comply, RC required

Setbacks to Boundaries: 3m min. Complies

Building Height:

Permitted: 9m max

Proposed: 4.5m approx. Complies

Building Coverage:

Proposed dwelling: 239.5m²

Total permitted = 10% of gross site area = 300.1m²

Total Proposed = 239.5 = 7.9% Complies

Earthworks

Driveway cut:	8.8m³
Main Cut:	140.0m³
Total Cut:	148.8m³
Fill:	148.8m³
Cut/Fill:	297.6m³

Total permitted = 300m³ Complies

This short report along with the stormwater section of RS Engineers provides assessment of environmental effects regarding stormwater management.

Martin O'Brien

O'Brien Design Consulting

Martin@obrienconsulting.co.nz

09 407 5208

027 4075208

Appendix I Architectural Plans

Proposed Dwelling

Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

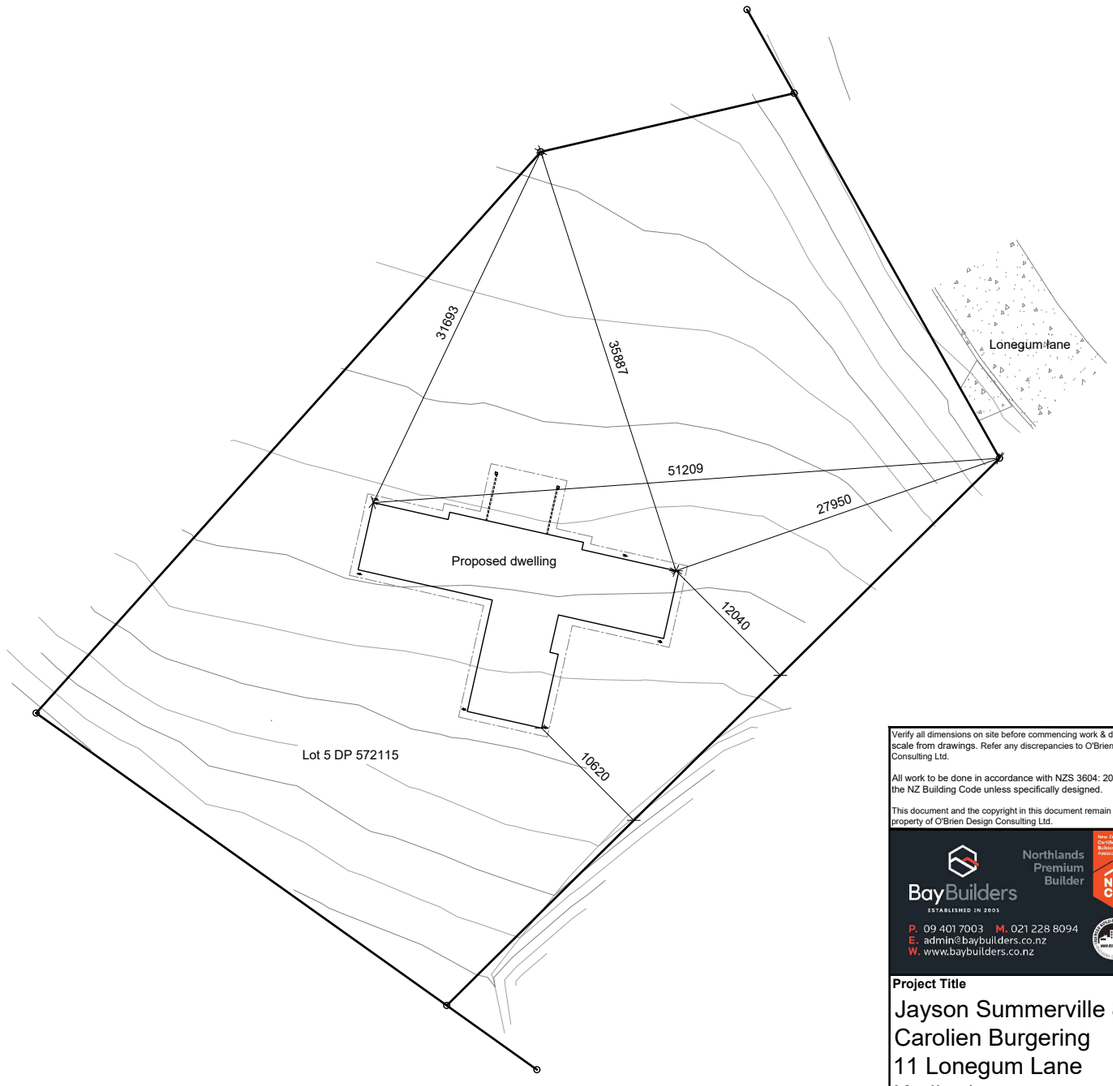
BayBuilders
ESTABLISHED IN 2003
Northlands Premium Builder
New Zealand Certified Builders Association
NZ CB
P. 09 401 7003 M. 021 228 8094
E. admin@baybuilders.co.nz
W. www.baybuilders.co.nz
LICENSED BUILDING PRACTITIONER
www.dbh.govt.nz

Construction Plans
Date: 26 October 2023
Job Number: 7991
Drawn by:

O'BRIEN DESIGN CONSULTING

Designer Sheet Index		
Sheet No.	Sheet Title	Rev
A01a	Site Location Plan	K
A01b	Site Plan	K
A01c	Wastewater Disposal Field Plan	K
A02	Floor Plan	K
A03	Elevations	K
A04	Drainage Plan	K
A05	Foundation Plan	K
A06	Roof Plan	K
A07	Framing & Lintel Plan	K
A08	Bracing Plan	K
A09	Section	K
A10	Foundation Edge Details	K
A11	Threshold Details	K
A12	Hold Down Details	K
A13	Vertical Oblique Details	K
A14	Vertical Oblique Details	K
A15	Weatherboard Cladding Detail	K
A16	Roof Details	K
A17	Roof Details	K
A18	Membrane Details	K
A19	Membrane Details	K
A20	Drainage Details	K
A21	Hot Water Cylinder	K
Revisions		

Engineer Sheet Index		
Sheet No.	Sheet Title	Rev
S0.1	Cover Page	-
S0.2	Typical Steel Detailing	-
S0.3	Typical Pipe Penetration Details	
S1.1	Raft Floor Plan	-
S2.1	Raft Floor Details	-
S2.2	Raft Floor Details	
A08	Bracing Plan (Markup)	-
A02	Floor Plan (Markup)	-
SD1	Connections Detail	-
Revisions		
-	-	-



Verify all dimensions on site before commencing work & do not scale from drawings. Refer any discrepancies to O'Brien Design Consulting Ltd.

All work to be done in accordance with NZS 3604: 2011 and the NZ Building Code unless specifically designed.

BayBuilders
ESTABLISHED IN 2003
Northlands Premium Builder
P. 09 401 7003 M. 021 228 8094
E. admin@baybuilders.co.nz
W. www.baybuilders.co.nz

Project Title

Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

Sheet Title

Site Location Plan

Drawn	26 October 2023
Project No	7991
Rev	K
Sheet	A01a

Scale (A3 Original) 1: 500

5 2.5 0 5 10 m

Lot 1 DP 572115
Lot area: 3001m²
Corrosion zone: C
Wind zone: High
Rural Living Zone
District plan compliance:

Residential intensity: Complies

Sunlight rule: Complies

Stormwater Management

(Impermeable surfaces):
Proposed concrete driveway: 242m²
Proposed dwelling: 282m²
Total proposed: 524m²

Total permitted = 12.5% of gross site area= 375.1m²
Total proposed = 524m² = 17.5% Does not comply,
Resource consent required

Setbacks to boundaries: 3m min. Complies

Building height:
Permitted: 9m max
Proposed: 4.5m approx. Complies

Building Coverage:

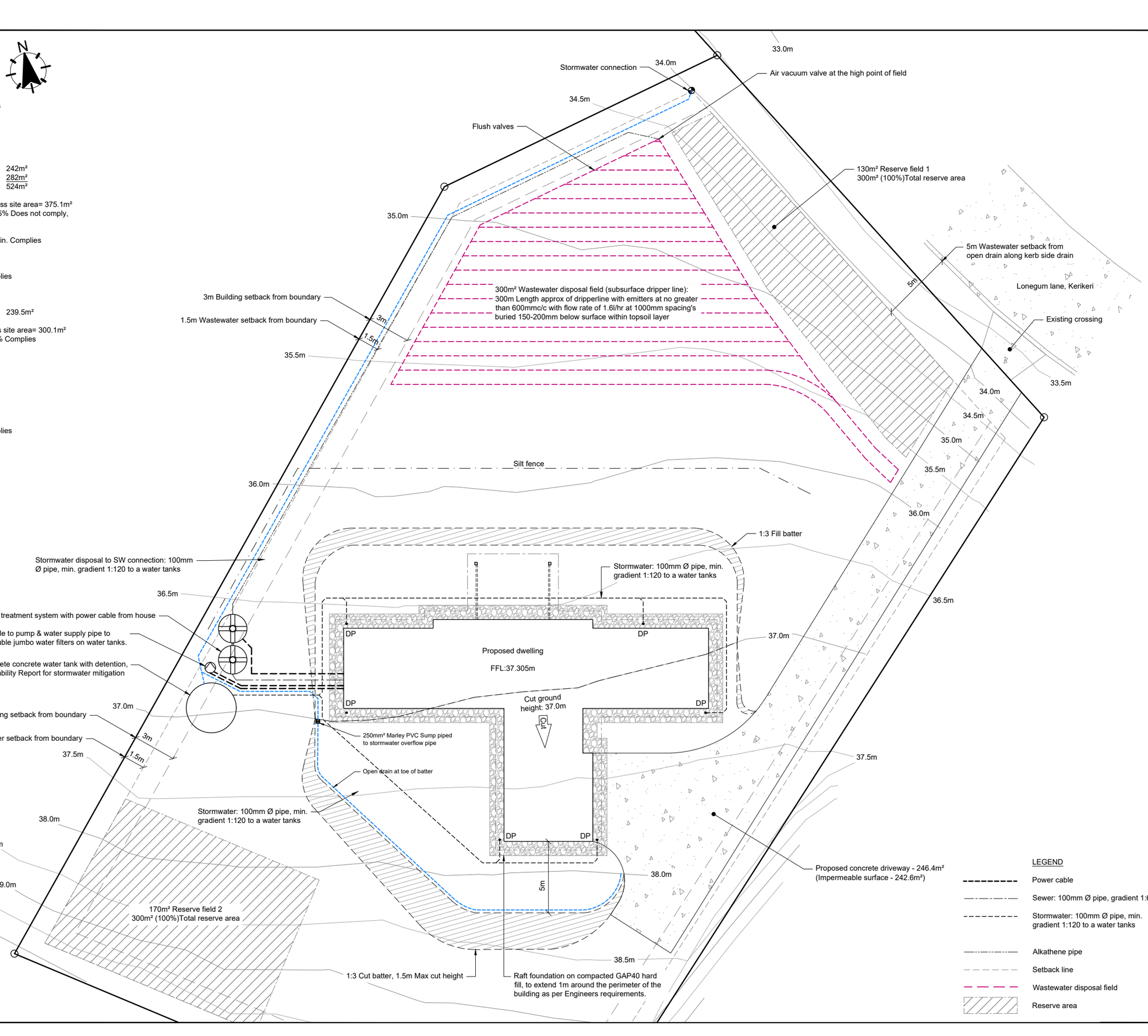
Proposed dwelling: 239.5m²

Total permitted = 10% of gross site area= 300.1m²
Total Proposed = 239.5 = 7.9% Complies

Earthworks

Driveway cut: 8.8m³
Main cut: 140.0m³
Total cut: 148.8m³
Fill: 148.8m³
Cut/Fill: 297.6m³

Total permitted = 300m³ Complies



NOTES

1. All heights shown are existing ground heights.
2. All drainage to comply with AS/NZS3500 & NZBC G13/AS1. All drainage is diagrammatical, drainlayer to determine on site drainage layout and provide asbuilt plan when complete.
3. Length of dripper lines to be no more than 100m between feed points.
4. Dripper lines to follow contour lines
5. Dripper lines to be setback:
   - 1.5m from buildings
   - 1.5m from property boundaries
   - 5m from any intermittent storm water flow path such as a drain or overland flow path down slope of the field
6. Overflow from water tanks to be directed well away from the proposed wastewater disposal field.
7. Smoke alarms are to be installed in accordance with the New Zealand Building Code Clause F7 Section 3.0:
   - Smoke alarms shall be installed on or near the ceiling in every sleeping space or within 3m of every sleeping space door.
8. The works which are being proposed will comply with Earthworks EW-S3 Accidental Discovery Protocol and Earthworks EW-S5 Erosion and Sediment Control - Auckland Council Guideline Document GD005 GD05 Erosion and Sediment Control.pdf (aucklanddesignmanual.co.nz)

LEGEND

- Power cable
- Sewer: 100mm Ø pipe, gradient 1:60
- Stormwater: 100mm Ø pipe, min. gradient 1:120 to a water tanks
- Alkathene pipe
- Setback line
- Wastewater disposal field
- Reserve area

BayBuilders ESTABLISHED IN 2005
Northlands Premium Builder
P. 09 401 7003 M. 021 228 8094
E. admin@baybuilders.co.nz
W. www.baybuilders.co.nz

Project Title
Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

Sheet Title
Site Plan

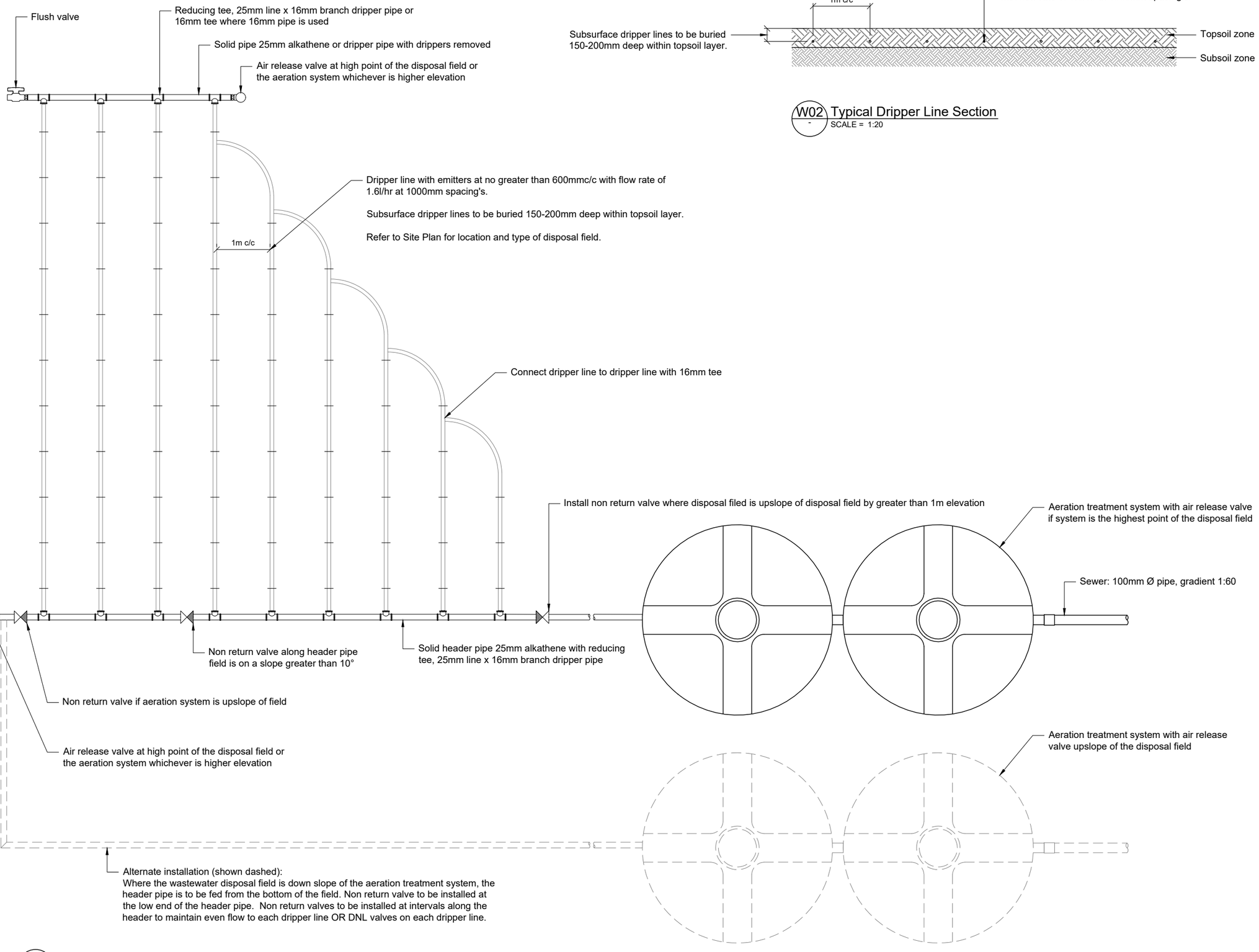
Drawn 26 October 2023

Project No 7991

Rev K

Sheet A01b

Scale (A3 Original) 1: 250
2.5 1.25 0 2.5 5 m



W01 - Typical Wastewater Disposal Field Plan
SCALE = 1:20

W02 - Typical Dripper Line Section
SCALE = 1:20

NOTES

1. All drainage is diagrammatical, do not scale from drawing.
2. Length of dripper lines to be no more than 100m between feed points.
3. Dripper lines to follow contour lines.
4. Dripper lines to laid on even ground, laying dripper lines on gully's or humps in the ground can cause ponding.
5. Air release valve to be at the high point in the disposal field or at the system if that is a higher elevation, locations shown on detail are indicative.
6. The works which are being proposed will comply with Earthworks EW-S3 Accidental Discovery Protocol and Earthworks EW-S5 Erosion and Sediment Control - Auckland Council Guideline Document GD005 GD05 Erosion and Sedimen Control.pdf (aucklanddesignmanual.co.nz)

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Project Title
Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

Sheet Title
Wastewater Disposal Field Plan

Drawn 26 October 2023

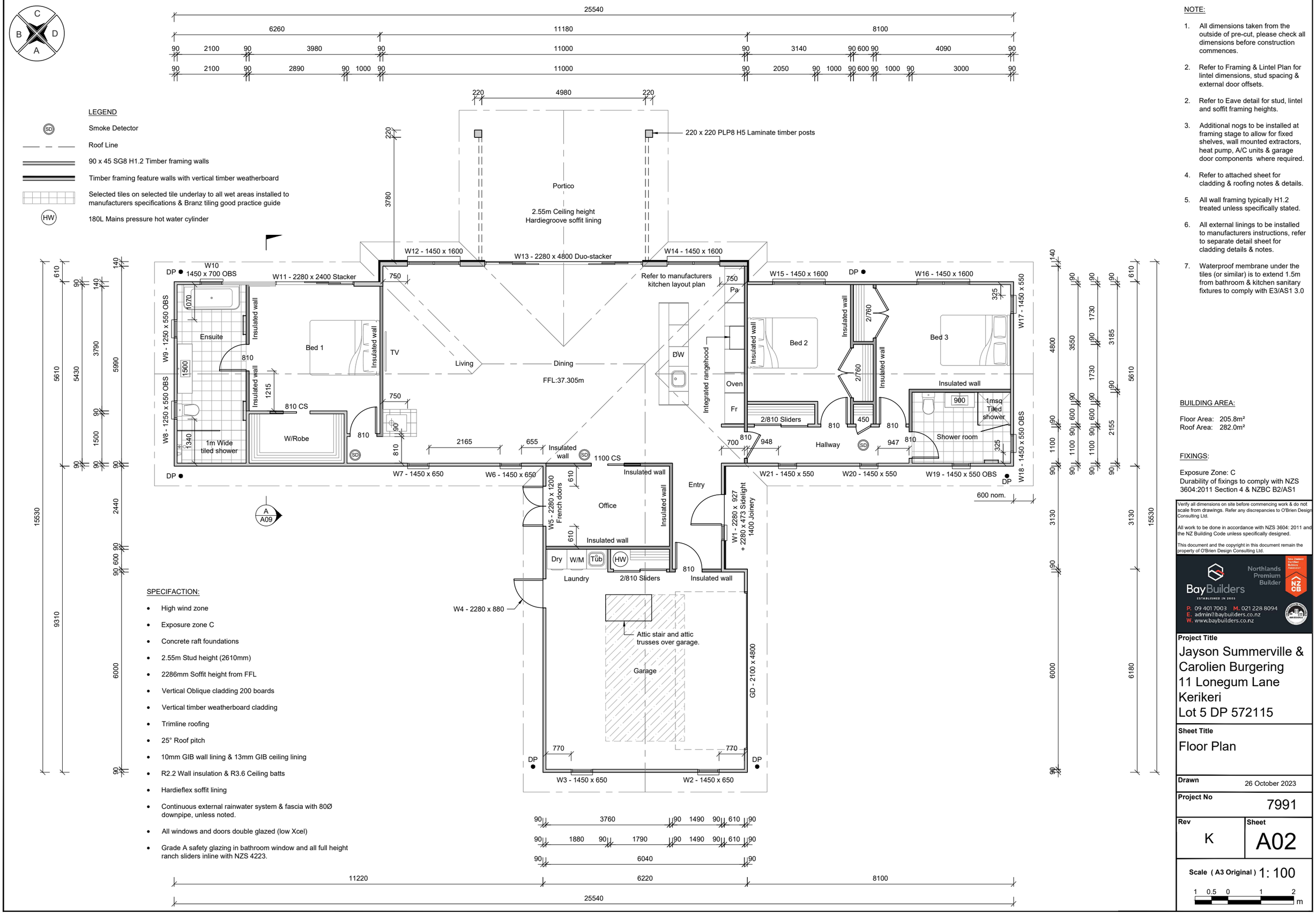
Project No 7991

Rev K

Sheet A01c

Scale (A3 Original) 1: 20

0.2 0.1 0 0.2 0.4 m



SPECIFACTION:

- High wind zone
- Exposure zone C
- Concrete raft foundations
- 2.55m Stud height (2610mm)
- 2286mm Soffit height from FFL
- Vertical Oblique cladding 200 boards
- Vertical timber weatherboard cladding
- Trimline roofing
- 25° Roof pitch
- 10mm GIB wall lining & 13mm GIB ceiling lining
- R2.2 Wall insulation & R3.6 Ceiling batts
- Hardieflex soffit lining
- Continuous external rainwater system & fascia with 80Ø downpipe, unless noted.
- All windows and doors double glazed (low Xcel)
- Grade A safety glazing in bathroom window and all full height ranch sliders inline with NZS 4223.

NOTE:

1. All dimensions taken from the outside of pre-cut, please check all dimensions before construction commences.
2. Refer to Framing & Lintel Plan for lintel dimensions, stud spacing & external door offsets.
2. Refer to Eave detail for stud, lintel and soffit framing heights.
3. Additional nogs to be installed at framing stage to allow for fixed shelves, wall mounted extractors, heat pump, A/C units & garage door components where required.
4. Refer to attached sheet for cladding & roofing notes & details.
5. All wall framing typically H1.2 treated unless specifically stated.
6. All external linings to be installed to manufacturers instructions, refer to separate detail sheet for cladding details & notes.
7. Waterproof membrane under the tiles (or similar) is to extend 1.5m from bathroom & kitchen sanitary fixtures to comply with E3/AS1 3.0

BUILDING AREA:

Floor Area: 205.8m²
Roof Area: 282.0m²

FIXINGS:

Exposure Zone: C
Durability of fixings to comply with NZS 3604:2011 Section 4 & NZBC B2/AS1

BayBuilders
ESTABLISHED IN 2003
Northlands Premium Builder
P. 09 401 7003 M. 021 228 8094
E. admin@baybuilders.co.nz
W. www.baybuilders.co.nz

Project Title
Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

Sheet Title
Floor Plan

Drawn 26 October 2023

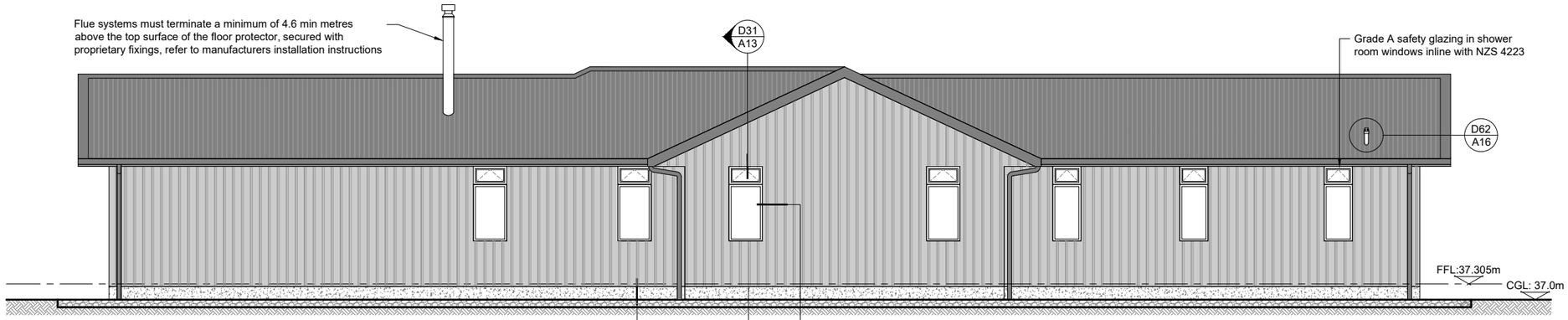
Project No 7991

Rev K

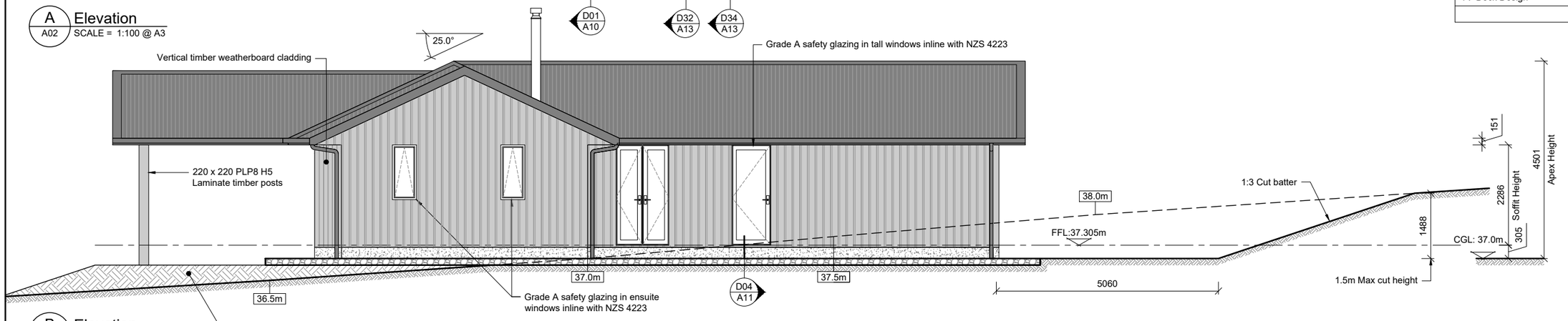
Sheet A02

Scale (A3 Original) 1: 100

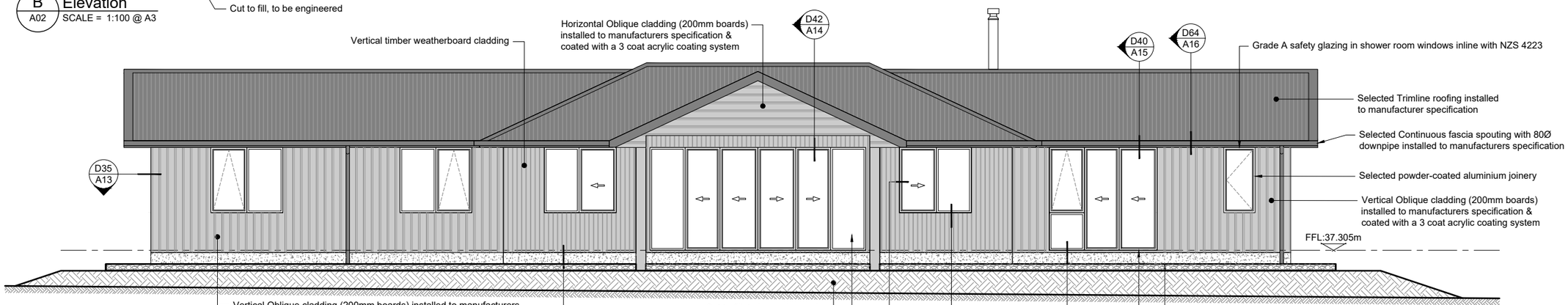
1 0.5 0 1 2 m



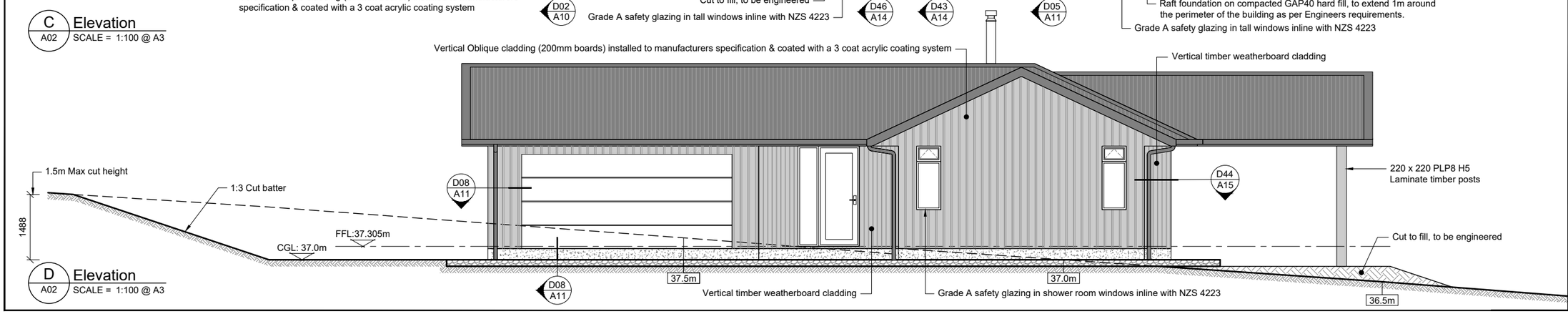
A Elevation
A02 SCALE = 1:100 @ A3



B Elevation
A02 SCALE = 1:100 @ A3



C Elevation
A02 SCALE = 1:100 @ A3



D Elevation
A02 SCALE = 1:100 @ A3

SPECIFICATIONS	
Cladding Type	Vertical & Weatherboard Cladding Weatherboard
Stud Height	2760
Roofing Type	Trimline
Roof Pitch	25°
Joinery	Aluminum
Wind Zone	High
Earth Quake Zone	1

RISK MATRIX					
Risk Factor	L	M	H	VH	Score
A. Wind Zone	0	0	1	2	1
B. Number of Storeys	0	1	2	4	0
C. Roof / Wall Intersection	0	1	3	5	0
D. Eave Width	0	1	2	5	1
E. Envelope Complexity	0	1	3	6	1
F. Deck Design	0	2	4	6	0
	Total				3

NOTE:

1. All heights shown are existing ground heights.
2. All external linings to be installed to manufacturers instructions, refer to separate detail sheet for cladding details & notes.
3. All windows and doors double glazed other than the garage joinery.
4. Grade A safety glazing in bathrooms & tall windows and sliders inline with NZS 4223.

FIXINGS:

Exposure Zone: C
Durability of fixings to comply with NZS 3604:2011 Section 4 & NZBC B2/AS1

BayBuilders
ESTABLISHED IN 2003
Northlands Premium Builder
P. 09 401 7003 M. 021 228 8094
E. admin@baybuilders.co.nz
W. www.baybuilders.co.nz

Project Title
Jayson Summerville & Carolien Burgering
11 Lonegum Lane
Kerikeri
Lot 5 DP 572115

Sheet Title
Elevations

Drawn 26 October 2023

Project No 7991

Rev K

Sheet A03

Scale (A3 Original) 1: 100

1 0.5 0 1 2 m

Appendix II Suitability Report RS Engineers

SUITABILITY REPORT

11 Lone Gum Lane

Kerikeri

(Lot 5 DP 572115)

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

SUITABILITY REPORT

11 Lone Gum Lane

Kerikeri

(Lot 5 DP 572115)

Report prepared for: J Summerville

Report reference: 18822

Date: 29/09/2023

Revision: 2

Document Control

Date	Revision	Description	Prepared by:	Reviewed by:	Authorised by:
04/09/2023	1	Building Consent Issue	S Scott	C Hay	M Jacobson
29/09/2023	2	Attenuation Design	S Scott	C Hay	M Jacobson

ace new zealand

association of consulting and engineering

Contents

Appendices

File: 18822
29 September 2023
Issue: 2

SUITABILITY REPORT

11 Lone Gum Lane, Kerikeri

(Lot 5 DP 572115)

1.0 Introduction

RS Eng Ltd (RS Eng) has been engaged by Jayson Summerville to investigate the suitability of his property (Lot 5 DP 572115) for residential construction. The purpose of this report is to assess the suitability of the building site making foundation, earthworks and on-site stormwater attenuation detail and design. Wastewater disposal is being covered by others.

The client proposes to construct a timber framed dwelling founded on a RibRaft concrete slab.

2.0 Site Description

This 3001m² property is located on the southern side of Lone Gum Lane, approximately 400m north of its intersection with Silkwood Lane. The property is near level, falling gently (<5°) towards the northeast. Ground cover across the property is lawn.

Figure 1: Lot 5 DP 572115

3.0 Desk Study

3.1 Referenced/Reviewed Documents

The following documents have been referenced in this report:

- GNS – Geology of The Whangarei Area – Edbrooke & Brook – 2009.
- PK Engineering – "*Site Development Report for Lots 8, 9, 10 & 11 of Proposed Subdivision of Lot 2 DP 351178 at Silkwood Lane, Kerikeri for Greg Moir"*, dated February 2018.
- Consent Conditions.

3.2 Site Geology

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

3.3 Subdivision Report

The underlying subdivision was reported on by PK Engineering in a report entitled, *"Site Development Report for Lots 8, 9, 10 & 11 of Proposed Subdivision of Lot 2 DP 351178 at Silkwood Lane, Kerikeri for Greg Moir"*, dated February 2018. Reference to this specific lot was not made, however the aforementioned report was attached the property file. This report outlines recommendations for flooding, stormwater and wastewater disposal.

4.0 Field Investigation

A Technician and Graduate Engineer from this office visited the property on 25 August 2023 to undertake a walkover inspection and three hand augers. The walkover inspection did not observe any signs of concern at the building site in relation to the proposal.

The hand augers were dug to a maximum depth of 2.6m below ground level (mBGL) and were terminated due to encountering impenetrable basalt. Shear Vane readings were taken within the hand augers. Soil and rock descriptions are in general accordance with the New Zealand Geotechnical Society guideline.

5.0 Subsoil Conditions

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

- Topsoil was encountered between depths of 0.25-0.4mBGL.
- The residual soils of Kerikeri volcanic group consisted of very stiff clayey silts and gravelly silts being moist and low plasticity, extending between depths of 1.1m-1.6mBGL. In-situ Undrained Shear Strengths from 123kPa to greater than 203kPa.

- Completely weathered basalt consisted of very stiff clayey silt with some gravels being moist and low plasticity and slightly sensitive. In-situ Undrained Shear Strengths from 116kPa to greater than 203kPa.
- Groundwater inflow was encountered between 1.1m and 1.7mBGL.

6.0 Geotechnical Assessment

6.1 Slope Stability

The soils underlying the property typically comprise very stiff Kerikeri Volcanic residual soils, derived from the weathering process of the underlying basalt. The volcanic material has inherently high soil strengths and is typically stable at steep gradients where not underlain by weak rocks.

The proposed building area is located in an area of near level topography. Based on the subsoil investigations detailed within this report, and review of the published geologies, RS Eng considers the risk of slope instability at the proposed building area to be low. Recommendations for site development have been made in the following sections.

6.2 Liquefaction

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

6.3 Expansive Soils

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

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

Based on the characteristics of subsoils encountered, laboratory testing undertaken in similar geology, RS Eng Ltd consider the soils as being Class M (Moderately expansive) as per AS2870.

7.0 Stormwater Assessment

The Consent Notice for the property states that stormwater attenuation should be provided so that flow is limited to the pre-development level for the 10% plus climate change rainfall event.

The new dwelling is proposed to have a roof and driveway area of 282m^2 and 242m^2, respectively. This makes up 17.5% of the lot area. As per section 8.7.5.2.2 of the District Plan Rural living environment rules, impervious coverage of less than 20% is considered a controlled activity.

Stormwater run off from the property is collected and piped via the development network which discharges to the Waipapa Stream located north the cul-de-sac of Lone Gum Lane, the stream then outlets to Kerikeri Inlet. The impervious area exceeding the Permitted activity of the district plan is 149m^2. It is proposed to provided attenuation for all newly formed impervious surfaces so that post-development flows including climate change are less than pre-development levels for up to the 10% rainfall event as per the consent conditions. Given the proximity of the stream and flows reduced to pre-development levels the exceeding area is considered to have no negative effects.

7.1 Attenuation

It is proposed to direct stormwater runoff from the roof of the new dwelling into a rainwater storage tank with restricted outlets which reduce the peak flows to predevelopment levels. The attenuation tank restricts stormwater runoff from the roof sufficiently to compensate for the increased flows from the driveway area.

The pre-development and post-development runoff flows were modelled using HydroCAD. The United States Department of Agriculture Technical Release 55 (TR55) Type 1A method was adopted for calculating the run-off flow, using rainfall depths from HIRDS 4 (High Intensity Rainfall Design System, NIWA) including an additional 20% rainfall depth to account for climate change. The subsoils have been assessed as Clay Loam, designated as Group C soils with good grass cover.

Table 1: Stormwater Attenuation Design Summary

	Pre-development	Post-development
Permeable Area (m^2) Grassed	 524	 0
Impervious Area (m^2) Roof Driveway	 0 0	 282 242
Peak flow l/s From surfaces **Total attenuated flows** Tank storage required	10% AEP 4.53	10% AEP+20% 6.79 **4.50** $7.3m^3$
Attenuation Tank Summary		
Tank	25,000L Duracrete or similar	
Tank Diameter	3.6m	
	Diameter	**Depth from Overflow**
Primary Orifice	30mm	0.72m

8.0 Engineering Recommendations

8.1 Site Subsoil Class

In accordance with NZS 1170.5:2004, Section 3.12.3 the site has been assessed for its Site Subsoil Class. Based on the observation listed above RS Eng considers the site soils lie within Site Class C *"Shallow Soil Site."*

8.2 Earthworks

To form access to and create a building platform for the dwelling, earthworks are required. To suitably develop the building area, we recommend as follows:

- The proposed building area and new driveway should be shaped to prevent any ponding of stormwater.
- Cuts and fills shall be limited to a maximum depth of 1.5m and 1.0m without further review by a Chartered Professional Engineer.
- Consideration to the sensitively of the completely weathered basalt when exposed by excavation as well as cuts extending beyond the ground water table will be required.
- RS Eng shall undertake inspection of the cut platform to confirm the subsoil conditions to see if geotextile, site drainage/subsoils and/or retaining will be beneficial/required.
- Cut and fill batters should be sloped at angles less than 1V to 3H or be suitably retained.
- Site works shall generally be completed in accordance with NZS4431.

8.3 Shallow Foundations

It is proposed to construct a timber framed type dwelling on a RibRaft floor slab. To suitably found the proposed dwelling the following is recommended;

- The RibRaft slab shall be specifically designed for Class M soils and be placed on a minimum of 150mm compacted granular hardfill extending 1.0m beyond the building envelope.
- Isolated standard NZS3604 type foundations shall extend to a minimum depth of 0.6m below cleared ground level to account for Class M soils.

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

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

8.4 Timber Pole Retaining Walls

Retaining walls shall be specifically designed by a suitably experienced Chartered Professional Engineer similar with the contents of this report, using the soil parameters presented in Table 2 below.

Table 2: Assessed Retaining Wall Design Parameters

Parameter	Residual Soils	Completely Weathered Basalt
Soil Density (kN/m³)	18	18
Friction Angle (°)	28	28
Undrained Shear Strength (kPa)	60	50

8.5 Stormwater Disposal

Stormwater overflow from the attenuation tank shall be disposed of in a controlled manner. Stormwater shall be piped to the stormwater connection available for this property. Paved areas shall be shaped to disperse stormwater evenly.

9.0 Construction Monitoring and Producer Statements

RS Eng recommend a suitably experienced Chartered Professional Engineer monitor the construction of the following works:

- Cut platform to confirm the subsoil conditions to see if geotextile, site drainage/subsoils and/or retaining will be beneficial/required.
- Earthworks operation to confirm suitable stripping, benching and fill compaction.

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

10.0 Conclusions

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

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

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

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

11.0 Limitations

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

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

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

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

Prepared by:

[redacted]

Sarah Scott
Engineering Technician
NZDE(Civil)

Reviewed by:

[redacted]

Codie Hay
Engineering Technician

Approved by:

[redacted]

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

Appendix A

Drawings

NOTES:

- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- These drawings are to be read in conjunction with specifications - plans take precedence.
- If any part of these documents are unclear, please contact RSEng Ltd.
- This plan is copyright to RSEng Ltd and should not be reproduced without prior permission.

KEY

Hand Auger Location

Contours are shown at 0.5m crs.
Contours are derived from LiDAR (2018) and are shown at NZVD(2016).

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

Title
GEOTECH INVESTIGATIONS
SITE PLAN

Client
J SUMMERVILLE

Location
11 LONE GUM LANE
KERIKERI

Date	Rev	Notes
21/08/2023	A	First Issue

Scale	Original	Rev
1:250	A3	A

Drawn	Approved	File #	Sheet
SS	MJ	18822	1

Appendix B

Subsurface Investigations

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

HAND AUGER LOG

HOLE NO.: HA1

CLIENT: Jayson Summerville
PROJECT: Geotechnical Investigations
JOB NO.: 18822

SITE LOCATION: 11 Lone Gum Lane, Kerikeri
CO-ORDINATES: 1686566mE, 6103885mN
ELEVATION: Ground
START DATE: 25/08/2023
END DATE:
LOGGED BY: SS

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3603	WATER
TS	SILT; dark brown. Firm; moist; non-plastic; Organic.		0.0 – 0.2	TS			
Kerikeri Volcanics	SILT, with some clay; brown . Very stiff; moist; low plasticity.		0.2 – 0.4				
	Sandy SILT & GRAVEL, with some clay; brown and orange. Very stiff; moist; non-plastic; gravel, angular to subangular; sand, fine to medium.		0.4 – 0.6			203+	
	Clayey SILT, with some sand; brown and red. Very stiff; moist; low plasticity; sand, fine.		0.6 – 0.8				
			0.8 – 1.0			203+	
	Completely weathered; BASALT. Clayey SILT, with some sand, with trace gravel; pink orange brown black red motlling. Very stiff; moist; low plasticity; gravel, subangular to angular.		1.0 – 1.2				
	Some sub angular gravels, dark brown		1.2 – 1.4				
	Clayey SILT, with some sand, with trace gravel; brown and yellow. Very stiff; moist; low plasticity; gravel, subangular to angular.		1.4 – 1.6			160 36	
	Some sub angular gravels, black brown red yellow		1.6 – 1.8				
			1.8 – 2.0			203+	
	Unable to penetrate basalt End Of Hole: 2.30m		2.0 – 2.2				
			2.2 – 2.4				
			2.4 – 2.6				
			2.6 – 2.8				
			2.8 – 3.0				

Groundwater Not Encountered

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

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

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

HAND AUGER LOG

HOLE NO.: HA2

CLIENT: Jayson Summerville
PROJECT: Geotechnical Investigations

JOB NO.: 18822

SITE LOCATION: 11 Lone Gum Lane, Kerikeri
CO-ORDINATES: 1686544mE, 6103898mN
ELEVATION: Ground

START DATE: 25/08/2023
END DATE:
LOGGED BY: SS

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3603	WATER
TS	SILT; dark brown. Firm; moist; non-plastic; Organic.		0.0 – 0.2	TS			
Kerikeri Volcanics	Clayey SILT; brown . Very stiff; moist; low plasticity.		0.2 – 0.4			123 44	
	Gravelly SILT, with some clay; brown . Very stiff; moist; low plasticity; gravel, subangular to angular.		0.4 – 0.8				
	Some gravels, becoming orange		0.8 – 1.0			203+ -	
	Completely weathered; BASALT. Clayey SILT, with some sand, with minor gravel; orange pink red white mottling. Very stiff; moist; low plasticity; sand, fine; gravel, subangular to angular.		1.0 – 1.4			203+ -	◁
	Some purple fine sand, pink red yellow white		1.4 – 2.0			203+ -	
	Unable to penetrate basalt End Of Hole: 2.60m		2.0 – 2.6			116 29	

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

PHOTO(S)

REMARKS

WATER

- ▼ Standing Water Level
- ▷ Out flow
- ◁ In flow

INVESTIGATION TYPE

- ☑ Hand Auger
- ☐ Test Pit

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

HAND AUGER LOG

HOLE NO.: HA3

CLIENT: Jayson Summerville
PROJECT: Geotechnical Investigations

JOB NO.: 18822

SITE LOCATION: 11 Lone Gum Lane, Kerikeri
CO-ORDINATES: 1686550mE, 6103882mN
ELEVATION: Ground

START DATE: 25/08/2023
END DATE:
LOGGED BY: SS

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: GEO3603	WATER
TS	SILT; dark brown. Firm; moist; non-plastic; organic .		0.0 – 0.2	TS			
Kerikeri Volcanics	Clayey SILT; brown . Very stiff; moist; low plasticity.		0.2 – 0.4			148	
	Gravelly SILT; brown and orange. Very stiff; moist; non-plastic; gravel, angular to subangular.		0.4 – 0.6			58	
	Clayey SILT minor gravels; orange red brown . Very stiff; moist; low plasticity.		0.6 – 1.0			203+	◁
	Unable to penetrate gravels End Of Hole: 1.60m		1.0 – 1.6			UTP	

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

PHOTO(S)

REMARKS

WATER

- ▼ Standing Water Level
- ▷ Out flow
- ◁ In flow

INVESTIGATION TYPE

- ☑ Hand Auger
- ☐ Test Pit

Appendix C

Stormwater Attenuation

NOTES:

- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- These drawings are to be read in conjunction with specifications - plans take precedence.
- If any part of these documents are unclear, please contact RSEng Ltd.
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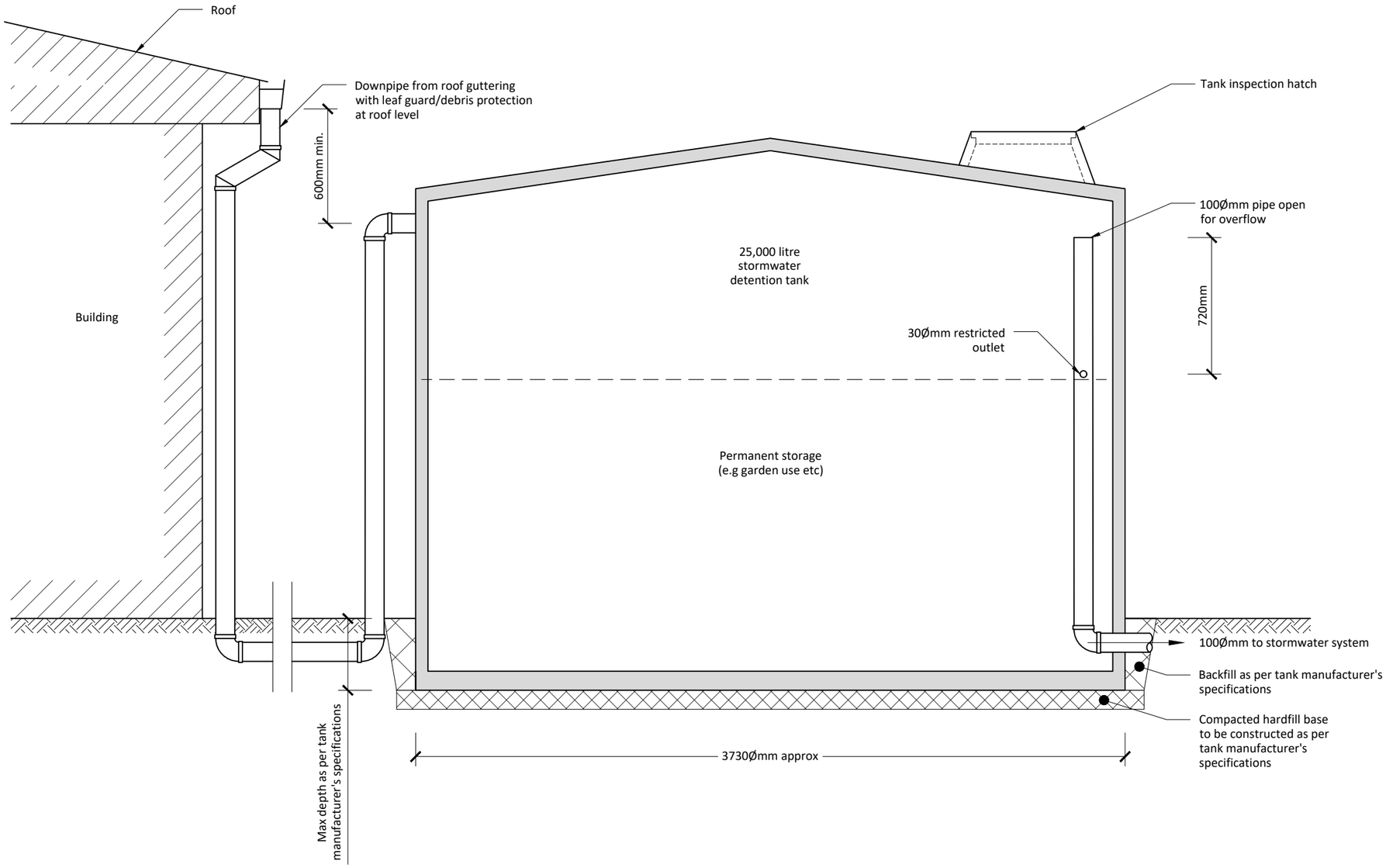


STORMWATER ATTENUATION 25,000L CONCRETE TANK DETAIL

1:25

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

Title
STORMWATER ATTENUATION
CONCRETE TANK DETAIL

Client

Location

Date	Rev	Notes
23/12/2021	A	Original Issue

Scale	Original	Rev
1:25	A3	A

Drawn	Approved	File #	Sheet
MYH	MJ		1

Location

Address search	11 Lone Gum Lane

Site Information

To generate a set of results, either click on an existing data point, or a new location and enter a site name, then press the Generate Report button.

Latitude	-35.2041011
Longitude	173.9509474
Site Name	11 Lone Gum Lane
Site Id	

Output Table Format

- (●) Depth - Duration - Frequency
- ( ) Intensity - Duration - Frequency

Generate Report

Results

Spreadsheet Download

Site Details | Historical Data | RCP2.6 Scenario | RCP4.5 Scenario | RCP6.0 Scenario | RCP8.5 Scenario

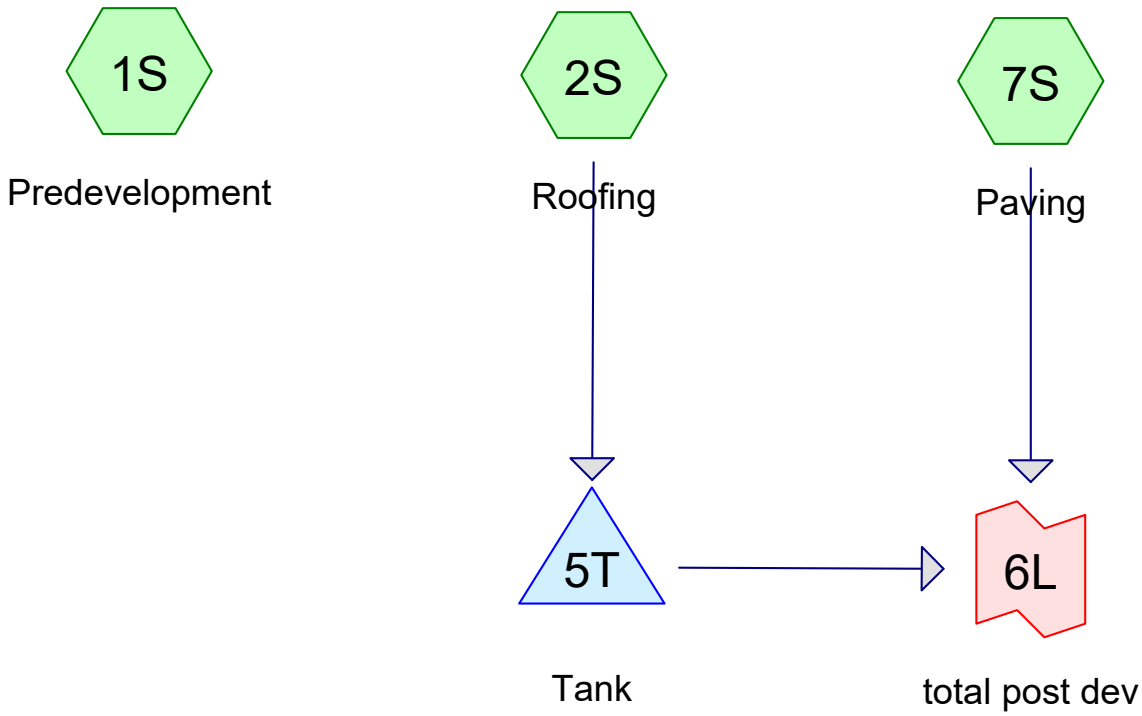
Rainfall depths (mm) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	9.92	14.3	17.7	25.3	35.7	58.6	76.8	96.6	116	126	131	135
2	0.500	10.9	15.7	19.4	27.8	39.2	64.3	84.4	106	127	138	145	149
5	0.200	14.1	20.3	25.2	36.2	51.1	84.1	110	139	167	182	190	196
10	0.100	16.4	23.8	29.5	42.3	59.9	98.8	130	164	197	214	225	231
20	0.050	18.8	27.3	33.8	48.6	68.8	114	150	189	228	248	260	268
30	0.033	20.2	29.3	36.4	52.4	74.2	123	162	205	247	268	281	290
40	0.025	21.2	30.8	38.3	55.1	78.1	129	170	216	260	283	297	306
50	0.020	22.0	32.0	39.7	57.2	81.0	134	177	224	271	294	309	318
60	0.017	22.6	32.9	40.9	58.9	83.5	138	183	231	279	304	319	328
80	0.013	23.7	34.4	42.7	61.6	87.4	145	191	242	293	319	334	344
100	0.010	24.4	35.5	44.2	63.7	90.4	150	198	251	303	330	346	357
250	0.004	27.6	40.1	49.9	72.1	102	171	225	286	346	377	396	408

Depth standard error (mm) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	1.3	1.6	1.8	2.5	3.5	6.6	9.1	14	18	20	22	22
2	0.500	1.4	1.8	2.0	2.7	3.9	7.2	10	16	20	23	25	25
5	0.200	2.0	2.6	2.9	3.8	5.5	10	14	22	27	31	34	34
10	0.100	2.6	3.4	3.8	4.9	7.2	13	18	26	33	37	41	41
20	0.050	3.2	4.4	5.0	6.3	9.4	17	23	31	39	44	48	49
30	0.033	3.7	5.1	5.9	7.3	11	19	26	35	42	48	53	53

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
40	0.025	4.1	5.7	6.6	8.1	12	22	29	37	45	52	57	57
50	0.020	4.4	6.2	7.2	8.8	14	24	32	39	48	55	60	60
60	0.017	4.6	6.6	7.7	9.4	15	25	34	41	50	57	63	63
80	0.013	5.1	7.4	8.6	10	16	29	38	44	53	61	67	68
100	0.010	5.5	8.0	9.3	11	18	31	42	46	56	65	71	71
250	0.004	7.4	11	13	16	25	45	59	58	70	80	89	88



Subcat Reach Pond Link

Routing Diagram for Stormwater Attenuation Design 2023-10-04
Prepared by RS Eng Ltd, Printed 4/10/2023

Summary for Subcatchment 1S: Predevelopment

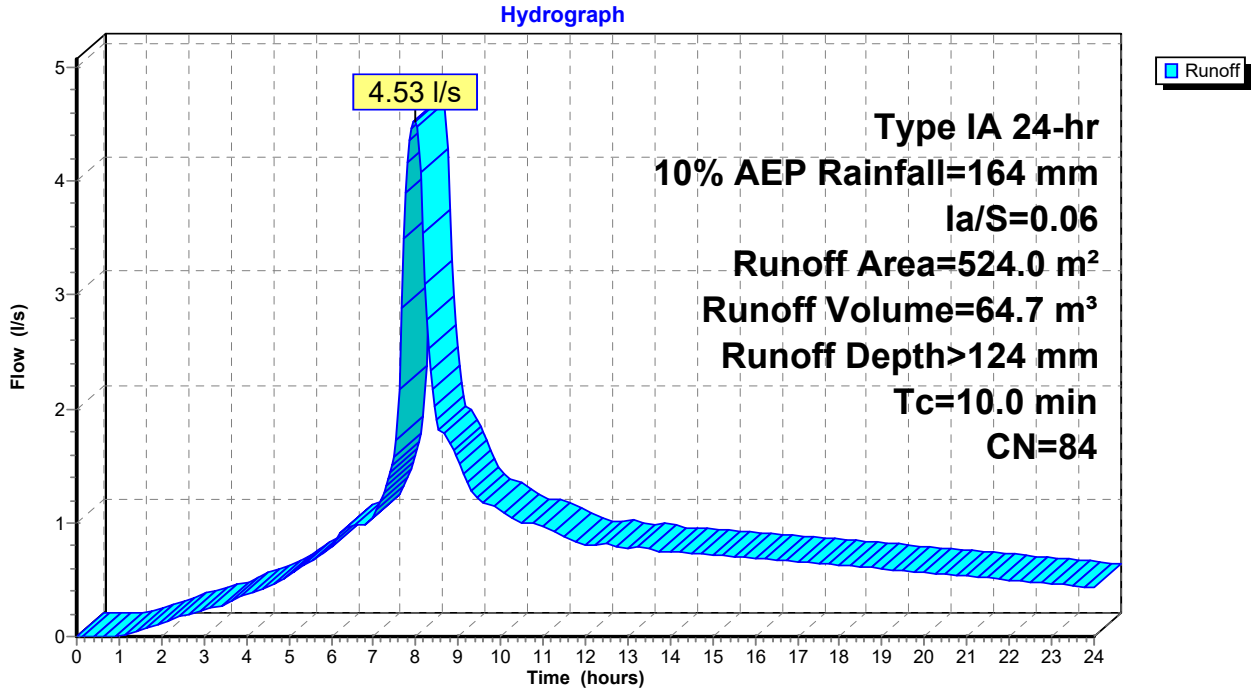
Runoff = 4.53 l/s @ 7.97 hrs, Volume= 64.7 m³, Depth> 124 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10% AEP Rainfall=164 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	524.0	84	50-75% Grass cover, Fair, HSG C
	524.0		100.00% Pervious Area

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

Subcatchment 1S: Predevelopment



Summary for Subcatchment 2S: Roofing

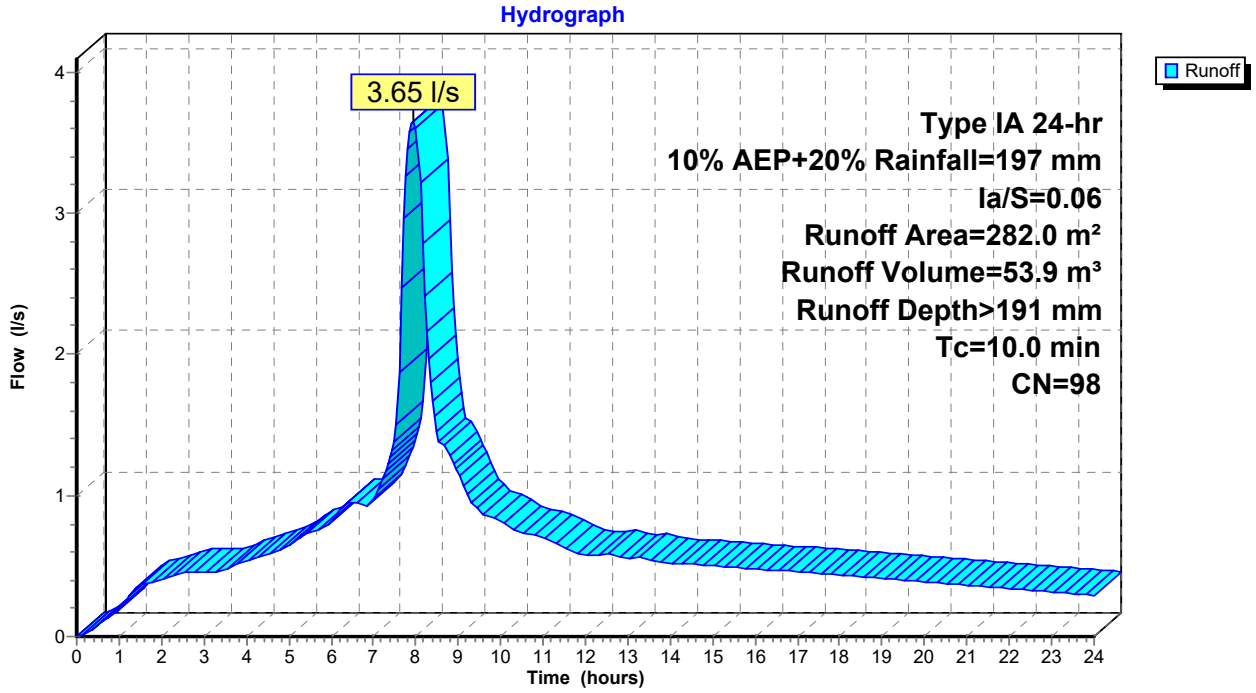
Runoff = 3.65 l/s @ 7.94 hrs, Volume= 53.9 m³, Depth> 191 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10% AEP+20% Rainfall=197 mm, Ia/S=0.06

	Area (m²)	CN	Description
*	282.0	98	House roof
	282.0		100.00% Impervious Area

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

Subcatchment 2S: Roofing



Summary for Subcatchment 7S: Paving

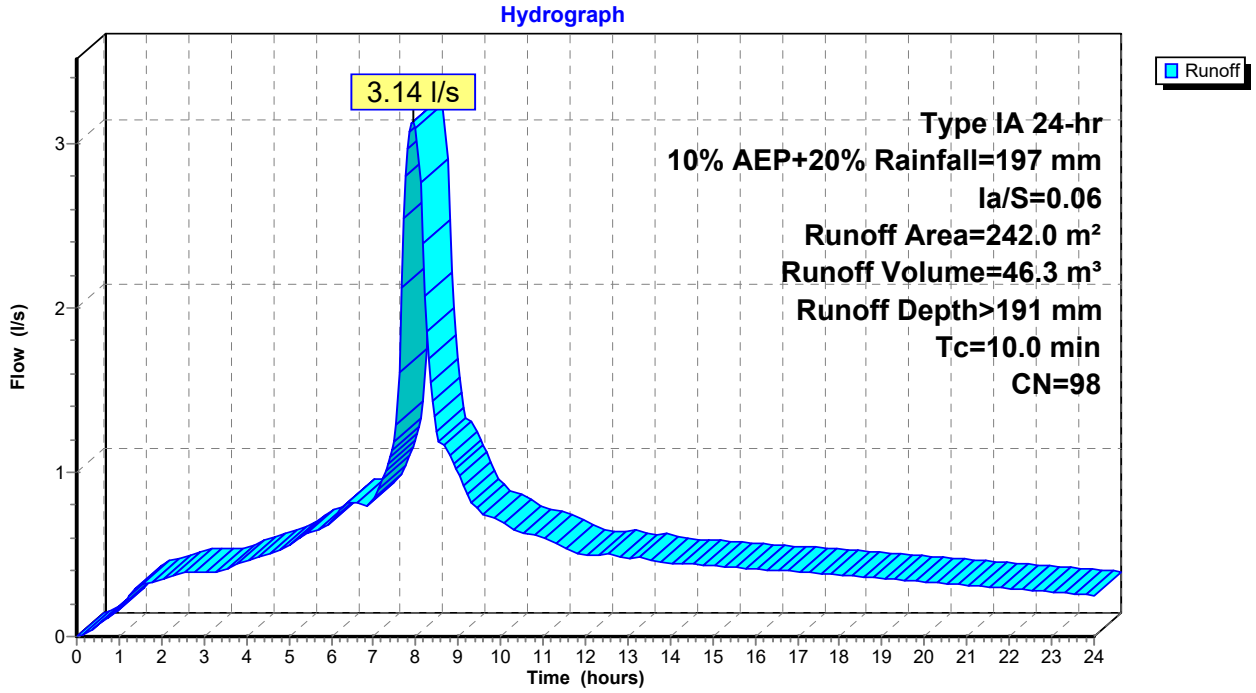
Runoff = 3.14 l/s @ 7.94 hrs, Volume= 46.3 m³, Depth> 191 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10% AEP+20% Rainfall=197 mm, Ia/S=0.06

Area (m²)	CN	Description
242.0	98	Paved parking, HSG A
242.0		100.00% Impervious Area

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

Subcatchment 7S: Paving



Summary for Pond 5T: Tank

Inflow Area = 282.0 m²,100.00% Impervious, Inflow Depth > 191 mm for 10% AEP+20% event
Inflow = 3.65 l/s @ 7.94 hrs, Volume= 53.9 m³
Outflow = 1.57 l/s @ 8.44 hrs, Volume= 53.5 m³, Atten= 57%, Lag= 30.3 min
Primary = 1.57 l/s @ 8.44 hrs, Volume= 53.5 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 0.716 m @ 8.44 hrs Surf.Area= 10.2 m² Storage= 7.3 m³

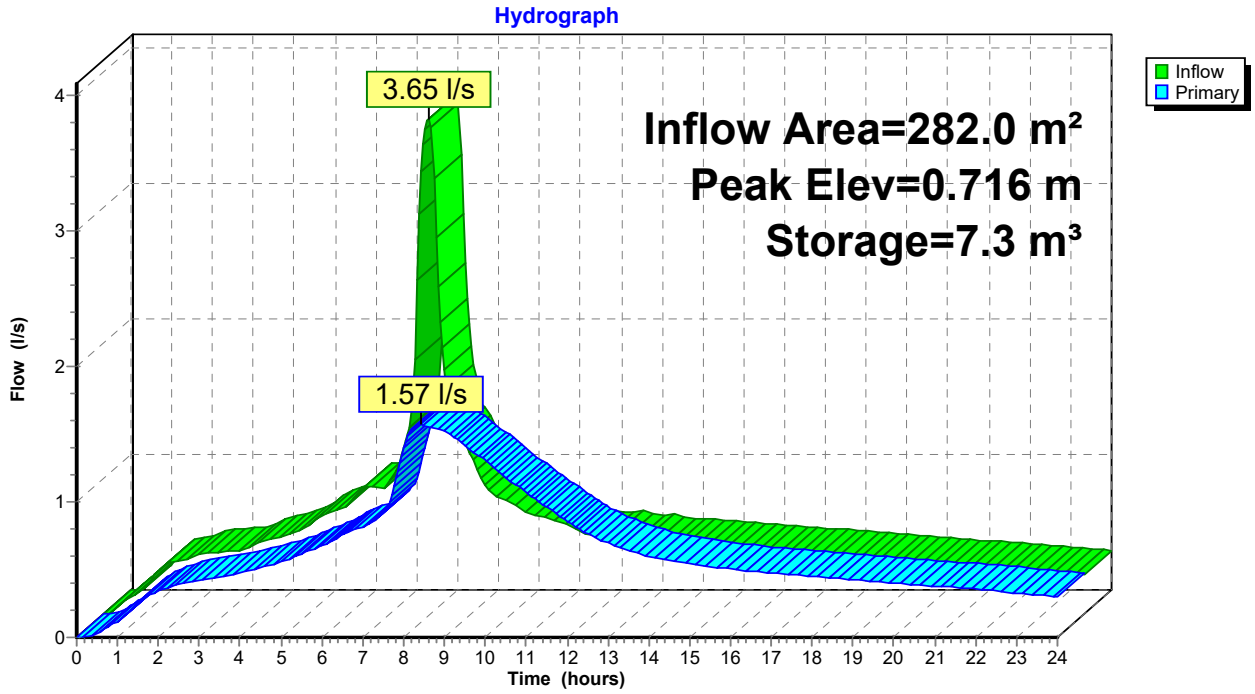
Plug-Flow detention time= 43.9 min calculated for 53.5 m³ (99% of inflow)
Center-of-Mass det. time= 37.6 min (684.6 - 647.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	25.4 m³	**3.60 mD x 2.50 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**30 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.57 l/s @ 8.44 hrs HW=0.716 m (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.57 l/s @ 2.22 m/s)

Pond 5T: Tank



Summary for Link 6L: total post dev

Inflow Area = 524.0 m²,100.00% Impervious, Inflow Depth > 190 mm for 10% AEP+20% event
Inflow = 4.50 l/s @ 7.99 hrs, Volume= 99.7 m³
Primary = 4.50 l/s @ 7.99 hrs, Volume= 99.7 m³, Atten= 0%, Lag= 0.0 min

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

Link 6L: total post dev