THOMSON SURVEY LIMITED

SURVEYORS AND RESOURCE PLANNERS

Our Reference: 10864

17 June 2026

Resource Consents Department
Far North District Council
JB Centre
KERIKERI

Dear Sir/Madam

RE: Proposed subdivision / land use at 124 & 126 Kerikeri Road – OC1 HoldCo Limited

I am pleased to lodge, on behalf of OC1 HoldCo Limited, application for subdivision and associated land use, over two adjacent titles at 124 & 126 Kerikeri Road. The proposal involves the subdivision of both titles as well as residential development over both titles. It creates a total of 6 lots with residential development on each of those new lots. The proposal also requires consent pursuant to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health because of historic uses on some of the application site land.

The application is for land zoned Residential in the Operative District Plan and Mixed Use in the Proposed District Plan. The ODP is the more restrictive of the two, where the proposal is a discretionary activity.

Payment has been made separately.

Regards

Lynley Newport
Senior Planner
THOMSON SURVEY LTD

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After Hours: Office Manager: Sam Lee 021 1370060

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

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of 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***

◯ **Change of Consent Notice (s.221(3))**

◯ **Certificate of Compliance (s.139)**

◯ **Extension of time (s.125)**

◯ **Discharge:** Total voume = _____ m³
Note; volumes >3m³ requires NRC Consent.

☑ **Subdivision**

◯ **Existing Use Certicicate (s.139A)**

☑ **Consent under National Environmental Standard**
(e.g. Assessing and Managing Contaminants in Soil)

◯ **Other (please specify)** _____

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

3. Would you like to opt out of the fast track process?

☑ **Yes** ◯ **No**

4. Consultation

Have you consulted with Iwi/Hapū? ◯ **Yes** ☑ **No**

If yes, which groups have you consulted with? Ngati Rehia

Who else have you consulted with? Immediately adjacent neighbours

For any questions or information regarding iwi/hapū consultation, please contact:
The Resource Consents Planning Technicians, **planning_technicians@fndc.govt.nz**

5. Applicant details

Name/s: OC1 HoldCo Limited (J A Lodge)

Email:

Phone number:

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

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

If yes, please provide details.

6. Address for correspondence

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

Name/s: Lynley Newport at Thomson Survey Ltd

Email:

Phone number:

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

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

7. Details of property owner/s and occupier/s

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

Name/s: # 124 owned by J A Lodge; # 126 currently owned by B & N Leslie (vacant site)

Property address/
location:

8. Application site details

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

Name/s: see item 5

Site address/ location: 124 & 126 Kerikeri Road
KERIKERI
Postcode 0294

Legal description: Lots 14 & 15 DP 41328 **Val Number:**

Certificate of title: NA46C/261 & NA46C/262

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.

The property is currently tenanted. Please provide the Property Manager (Cara Downie at

9. Description of the proposal

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

Subdivision & Land Use consent for a two stage development to create 6 lots from 2 existing titles (4 additional); and to build residential units on each, also in two stages; requiring consent pursuant to the DIstrict Plan and the NES for Assessing and Managing Contaminants in Soil to Protect Human Health. Property zoned Residential.

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

The proposal has been prepared in accordance with the following version of the FNDC Engineering Standards:

◯ **2009** ☑ **2023**

10. Would you like to request public notification?

◯ **Yes** ☑ **No**

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

(more than one circle can be ticked):

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

◯ **Regional Council Consent (ref # if known)** Ref # here (if known)

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

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

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

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

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

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

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

13. Natural hazards (National Policy Statement for Natural Hazards 2025)

Is the site subject to known or potential natural hazards (for example, flooding, coastal inundation, erosion, or unstable land), as contemplated by the National Policy Statement for Natural Hazards 2025? ◯ **Yes** ☑ **No**

If yes, please identify the relevant natural hazard(s) by ticking the applicable box(es) below:

- ◯ **Flooding**
- ◯ **Landslips**
- ◯ **Coastal Erosion**
- ◯ **Coastal Inundation**
- ◯ **Active Faults**
- ◯ **Liquefaction**
- ◯ **Tsunami**

Please ensure all relevant technical reports are submitted with the application.

14. Assessment of environmental effects:

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

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

15. Draft conditions:

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

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

16. Billing Details:

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

Name/s: (please write in full) OC1 HoldCo Limited

Email:

Phone number:

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

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

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

Name: (please write in full) Joshua Andrew Lodge

Signature:
(signature of bill payer)

Date 15 June 2026

MANDATORY

17. 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.

18. Declaration

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

Name (please write in full) Joshua Andrew Lodge

Signature

Date 15 June 2026

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

See overleaf for a checklist of your information...

Checklist of your information

Please tick if information is provided

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

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

OC1 HoldCo Limited

PROPOSED SUBDIVISION & LAND USE
Under the Operative Far North District Plan & Proposed District Plan
&
CONSENT Under the NES for Assessing and Managing Contaminants in Soil to Protect Human Health

6 Unit Residential Development at 124 & 126 Kerikeri Road, Kerikeri

PLANNER'S REPORT & ASSESSMENT OF ENVIRONMENTAL EFFECTS

Thomson Survey Ltd
Kerikeri

1.0 THE PROPOSAL

The applicant proposes to subdivide two adjacent titles at 124 & 126 Kerikeri Road to create a total of 6 residential lots, all in the range of 319m^2 to 337m^2 in area; and to build on all 6 lots. Because the buildings may precede the issue of title this application includes a land use consent component for breaches of residential intensity.

The proposal is to be given effect to in two stages – Stage 1 being Lots 1-3 and associated residential dwellings on those 'lots'; and Stage 2 being Lots 4-6 and associated residential dwellings on those 'lots'. Lots 1-3 are located on 124 Kerikeri Road and Lots 4-6 are located on 126 Kerikeri Road.

In addition, because of each proposed lot having a portion of the shared driveway (impermeable), the impermeable surface coverage per lot, exceeds the permitted activity threshold of 50% of total lot area, up to but not exceeding the controlled activity threshold of 60%.

All proposed buildings will comply with the required boundary setback applying in the zone, i.e. 1.2m on internal boundaries and 3m from road boundary, except for a very minor infringement within Lot 4, where the building is 1.1m as opposed to 1.2m from the northern boundary. Given the proximity of the proposed buildings to new boundaries, and the height of the buildings (4.5m at nearest point) there will be breaches of the sunlight rule on the northern boundary of Lots 4-6 and southern boundary of Lots 1-3.

Proposed building coverage does not exceed the zone's permitted activity threshold of 45% of total lot area.

In terms of district wide aspects, the site earthworks required to give effect to the land use will exceed the zone's 200m^3 per site permitted threshold.

A part of the site (primarily Lot 14 DP 41378) has historically been used for horticulture (circa 1953). Such use had ceased by 1968. Around 2019/2020 a tunnel house may have been erected on Lot 15 DP 41378. This was gone by 2005. Given these historic uses, the proposal is deemed to be subject to assessment under the NES for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS). A Preliminary Investigation Report (PSI) and subsequent Site Management Report (SMR), supplemented by a Technical Memorandum assessing the soil characteristics, supports this application. The proposed development is a discretionary activity under the NES-CS.

The property is within the central part of Kerikeri with 3 water services availability. This application includes a request, therefore, for a total of 6 connections (four additional) to both sewerage and water reticulated services. The site will discharge attenuated stormwater to Council stormwater system within Kerikeri Road. The existing dwelling on the application site has connections of 3 waters. This existing dwelling will eventually be removed to accommodate the proposed development.

Access will utilise the existing crossing to 124 Kerikeri Road, increasing its width to double in order to provide one centrally located shared access to and through the proposed lots.

The proposal includes stacked parking (garage and one outdoor) for each of the proposed dwellings. The shared right of way is to be utilised for manouevring.

The units themselves are designed to be single storey. Whilst they are of modest size, with floor area of 140m^2 apiece, they are 3 bedroom. Each lot is sized and orientated so as to provide for private open space.

A scheme plan is attached in Appendix 1. Architectural and site plans are attached in Appendix 2.

1.2 Scope of this Report

This assessment and report accompanies the Resource Consent Application made by the applicant, and is provided in accordance with Section 88 and Schedule 4 of the Resource Management Act 1991. The application seeks consent to subdivide land and to construct 6 modestly sized dwellings, iin two stages, with associated site earthworks, on two adjacent titles, as a discretionary activity application. The information provided in this assessment and report is considered commensurate with the scale and intensity of the activity for which consent is being sought. Applicant details are contained within the Application Form 9.

2.0 PROPERTY DETAILS

Location:	124 & 126 Kerikeri Road, Kerikeri. Location map attached in Appendix 3.
Legal description:	Lots 14 & 15 DP 41378
Records of Title:	NA46C/261 and NA46C/262. Copies of titles attached in Appendix 4.

3.0 SITE DESCRIPTION

3.1 Physical & Mapped characteristics

The properties are accessed off the north western side of Kerikeri Road. One property (#124) supports an existing residential dwelling. The other is vacant. The sites are residential in nature, with those parts of the site not supporting buildings, in grassed lawns and plantings. The site is almost level with very little fall from northwest to southeast.

The Civil Site Suitability Report and environmental reports supporting the application have further site details.

As stated earlier the site is within the serviced area for 3 waters. The site is not mapped as being subject to any natural hazard. The site is zoned Residential in the Operative District Plan (ODP) and Mixed Use in the Proposed District Plan (PDP).

The above photograph is looking into the site from front gate at 124 Kerikeri Road, looking northwest. Vacant 126 Kerikeri Road at right of picture. Dwelling at front of 124 Kerikeri Road will require removal to provide for a new dwelling to be within Lot 1, Stage 1.

The above photograph is taken from the south eastern corner of 126 Kerikeri Road looking north west across proposed Lot 4 into the site.

3.2 Legal Interests on Titles

There are no interests registered on either title that affect the proposed development.

3.3 Consent History

The property file indicates building consent history only for both 124 and 126 Kerikeri Road.

124 Kerikeri Road:
BP 144764, issued in 1962 for a dwelling;
BP 144914, also issued in 1962 for workshop/garage/nursery room.
BC-1996-1527, issued in 1996 for a new garage; and
BC-2019-721, issued in 2019 for the decommissioning of on-site wastewater system and connection to reticulated system.

126 Kerikeri Road:
BP 6071055, issued in 1989 for a tunnel house although it is unclear if this was cancelled or not.

4.0 SCHEDULE 4 – INFORMATION REQUIRED IN AN APPLICATION

Clauses 2 & 3: Information required in all applications

(1) An application for a resource consent for an activity must include the following:	
(a) a description of the activity: .	Refer Sections 1 and 5 of this Planning Report.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Sections 6 & 7 of this Planning Report.
(b) a description of the site at which the activity is to occur:	Refer to Section 3 of this Planning Report.
(c) the full name and address of each owner or occupier of the site:	This information is contained in the Form 9 attached to the application.
(d) a description of any other activities that are part of the proposal to which the application relates:	Refer to Sections 3 and 5 of this Planning Report for existing activities within the site. The application is for subdivision and land use pursuant to the Operative District Plan (and Proposed District Plan should this take legal effect prior to consent being issued for this application).
(e) a description of any other resource consents required for the proposal to which the application relates:	Due to (a) a part of the site being historically in orchard; and (b) potential for tunnel house(s) to have been on site; the proposal is also subject to assessment pursuant to the NES for Assessing and Managing Contaminants in Soil to Protect Human Health.
(f) an assessment of the activity against the matters set out in Part 2:	Refer to Section 8 of this Planning Report.
(g) an assessment of the activity against any relevant provisions of a document referred to in section	Refer to Sections 5 & 8 of this Planning Report.

104(1)(b), including matters in Clause (2): (*a) any relevant objectives, policies, or rules in a document; and* *(b) any relevant requirements, conditions, or permissions in any rules in a document; and* *(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).*	
(3) An application must also include any of the following that apply:	
(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):	Refer sections 3 and 5.
(b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):	There is no existing resource consent. Not applicable.
(c) if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)).	The site is not within an area subject to a customary marine title group. Not applicable.

Clause 4: Additional information required in application for subdivision consent

(4) An application for a subdivision consent must also include information that adequately defines the following:	
(a) the position of all new boundaries: *(b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:* *(c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:*	Refer to Scheme Plans in Appendix 1.

(d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips: *(e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:* *(f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):* *(g) the locations and areas of land to be set aside as new roads.*	

Clause 5: Additional information required for application for reclamation – not applicable.

Clause 6: Information required in assessment of environmental effects

(1) An assessment of the activity's effects on the environment must include the following information:	
(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:	Refer to Sections 6 & 7 of this planning report. The activity will not result in any significant adverse effect on the environment.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Sections 6 & 7 of this planning report.
(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:	Not applicable as the application does not involve hazardous installations.
(d) if the activity includes the discharge of any contaminant, a description of— *(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and* *(ii) any possible alternative methods of discharge, including discharge into any other receiving environment:*	The subdivision does not involve any discharge of contaminant.
(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:	Refer to Sections 6 & 7 of this planning report.
(f) identification of the persons affected by the activity, any consultation	Refer to Section 9 of this planning report.

undertaken, and any response to the views of any person consulted:	
g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:	No monitoring is required as the scale and significance of effects does not warrant any.
(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).	No protected customary right is affected.

Clause 7: Matters that must be addressed by assessment of environmental effects (RMA)

(1) An assessment of the activity's effects on the environment must address the following matters:	
(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	Refer to Sections 6, 7 and 9 of this planning report and also to the assessment of objectives and policies in Section 7.
(b) any physical effect on the locality, including any landscape and visual effects:	Refer to Sections 6 & 7. The proposed activity will have less than minor adverse effects on the physical environment and landscape and visual amenity values.
(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	Refer to Sections 6 & 7. The proposal will result in no adverse effects in regard to habitat and ecosystems.
(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:	Refer to Sections 6 & 7, and above comments
(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:	The proposal will not result in the discharge of contaminants, nor any unreasonable emission of noise.
(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	The application site is not subject to natural hazards and does not involve hazardous installations.

5.0 ACTIVITY STATUS

5.1 Weighting assessment

The Operative District Plan is the only "Operative" plan. However, it is possible that this application will not have been consented, i.e. will still be in process, when decisions on submissions to the PDP are notified and the PDP has legal effect alongside the ODP. On that assumption, this application also considers the PDP when assessing compliance,

In terms of assessing the weighting to be given to the two plans, in this instance the property has a Residential zoning under one, and a Mixed Use zoning under the other. The MU zoning, and where it applies, attracted several submissions. Most favoured the concept of a MU Zone, but not necessarily the provisions to apply to it, nor where it should be applied. There remains potential, therefore, for appeal by submitters who did not have their submissions accepted.

Whilst it is highly likely the MU zone, and its intent, will remain, the final 'form' and content of the zone is not yet beyond challenge. On this basis, it is difficult to give the PDP's proposed zoning any greater weighting than the current ODP's Residential Zoning.

5.2 Operative Far North District Plan

The site is zoned Residential, is a sewered site, and has no resource features.

Subdivision Minimum Lot Sizes:

Table 13.7.2.1: Minimum Lot Sizes

(v) RESIDENTIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	**Restricted Discretionary Activity Status (Refer also to 13.8)**	**Discretionary Activity Status (Refer also to 13.9)**
The minimum lot sizes are 3,000m² (unsewered) and 600m² (sewered).		The minimum lot sizes are 2,000m² (unsewered) and 300m² (sewered)

All lots are less than 600m^2 but greater than 300m^2 in area. The sites are 'sewered' sites. The subdivision is a **discretionary** subdivision activity.

Land Use – Zone Rules:

The land use component of this proposal - 6 dwellings over two titles – is assessed for compliance below.

Residential Intensity:
In summary, six residential units on two existing sites breaches the zone's residential intensity permitted standard of 1 per 600m^2 (sewered site), but meets the discretionary residential intensity threshold of 1 per 300m^2.

Sunlight:
The proposed dwellings on Lots 1, 2 & 3 will breach the permitted activity Sunlight plan on their southern boundary; and Lots 4, 5 & 6 on their northern boundary.

Boundary Setback:
All buildings will comply with setback requirements from internal and road boundary except for a very minor infringement on Lot 4 where the corner of a building is 1.1m from boundary at its closest point rather than 1.2m.

Impermeable Surfaces (Stormwater Management):
In all cases the proposed impermeable surface associated with each dwelling will exceed the permitted activity threshold of 50%, but comply with the 60% threshold specified as a controlled activity.

I have not identified any other zone rule breaches resulting from the proposed dwellings.

District Wide Rules:

Excavation/Filling:
On the basis that there is to be approximately 567m^2 impermeable surface coverage on each of the two existing titles, it is assumed that the earthworks associated with the development (land use component) will breach the zone's permitted threshold of 200m^3 per site,

I have not identified any other district wide rules that the proposal breaches. Traffic Intensity per residential unit, where the first residential unit is exempt, results in only 20 daily one way traffic movements per existing site should each existing site (title) support three residential units – permitted. Access is to be to the required standard, as is parking and manouevring.

The proposal requires land use consent but defaults to discretionary activity status (at worst) therefore does not change the overall category of activity, which remains **discretionary**.

5.3 Proposed Far North District Plan

The Proposed District Plan (PDP) was publicly notified on 27th July 2022 and some rules were given immediate legal effect. Decisions on Submissions (and therefore when legal effect is granted for the PDP in its entirety pursuant to those decisions) may be publicly notified prior to any consent being issued for this application. An assessment of rules already having legal effect follows, and after that there is an assessment against rules in the PDP applying to the site should consent not be issued until after the PDP has legal effect in its entirety.

In regard to district wide considerations in the PDP, the only rules in the Subdivision chapter that are marked as having immediate legal effect are those pertaining to Environmental Benefit Subdivisions (not applicable in this instance); Subdivision of a site within a heritage area overlay (again not applicable); Subdivision of a site that contains a scheduled heritage resource (again not applicable); Subdivision of a site containing a scheduled site and area of

significance to Maori (not applicable); and Subdivision of a site containing a scheduled SNA (not applicable).

There are two earthworks rules and associated standards in the PDP that have legal effect. These rules can both be complied with via conditions of consent – ADP applying, and Erosion and Sediment Control measures.

In summary, I have not identified any rules in the PDP that had immediate legal effect when the PDP was first notified, and that must therefore be considered in determining activity status for this proposal.

Should the remainder of the PDP have legal effect whilst this application is with the Council, the following assessment is offered:

The site is proposed to be zoned Mixed Use. This has a minimum lot size of 250m^2 for sewered sites. The proposed subdivision would be a controlled activity under the PDP in terms of the subdivision component.

Residential activity is a permitted activity within the MU zone, provided it is located above ground level, or can be at ground level if outside the pedestrian frontage area within the township of Paihia. The proposed residential activity in this instance, whilst outside a pedestrian frontage area, is not in Paihia. This results in restricted discretionary consent required, pursuant to MUZ-R4, PER-1, simply because the residential units are at ground level.

Per-2 requires a 3 bedroom residential unit to have a minimum floor area of 82m^2, which all units in the proposed development comply with. Residential units are also required to meet NOISE-S5 Noise Insulation. This is intended to be complied with.

Buildings themselves, are required to comply with the standards outlined in the MUZ Standards 1-13, many of which are not applicable to the proposal. MUZ-S1 sets a maximum height of 12m which is complied with. MUZ-S2 species height to boundary, but only on boundaries with a zone other than MU, so does not apply. MUZ-S3 Setback is also limited to a zone interface which is not the case with this proposal. MUZ-S5 and 6 relate to pedestrian frontage areas, which do not affect the property. MUZ-S7 controls outdoor storage and is not overly applicable to residential activity.

MUZ-S8 is relevant in that it sets requirements for road frontage landscaping. It is intended to comply with this Standard. MUZ-S9 only applies at zone interfaces.

MUZ-S10 specifies a requirement for 10% of the site to be permeable – this is complied with. The balance of the MUZ standards only apply to a new proposed Opua Marine Business Park and are not relevant.

5.4 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS)

The site has historically (and quite a considerable time ago) been used for horticultural activities, just as much of the immediate surrounding area has been. That has not stopped residential development from occurring and actually being encouraged by the Council.

The application is supported by a Preliminary Site Investigation Report and by a Site Management Plan for proposed soil disturbance when developing the site for residential use. Those reports are supplemented by a Technical Memorandum covering off an analysis of soil characteristics. This involved soil testing. Based on the soil analytical results, contaminant concentrations (i.e., heavy metals and OCPs) did not exceed the NES:CS human health guidelines for residential land. Refer to Appendices 7-9.

However, despite that result, in the absence of a Detailed Site Investigation, the proposal defaults to discretionary activity status under the NES-CS – for subdivision and for soil disturbance. There is no change of land use, where the titles are already 'residential'.

Given there was no exceedance of NES-CS human health guidelines for residential land, it is considered that there is very low risk to long-term human health exposure in the proposed subdivision and soil disturbance activities (if undertaken) if these soils are to remain on site. Site soils are suitable for onsite use (subject to geotechnical suitability), however, as is standard practice under the NES-CS, any soils proposed for removal from site (if any) shall be disposed of to an appropriate managed fill facility.

6.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS - SUBDIVISION

6.1 Allotment Sizes and Dimensions

The properties that make up the subdivision site are zoned Residential in the ODP and Mixed Use in the PDP. Both sites can be regarded as sewered sites. The minimum lot size provided for in the ODP is 600m^2 with 300m^2 sites provided for as a discretionary activity. The ODP requires a 14m x 14m square building envelope for each proposed lot. This is not achieved in all instances, particularly the two lots with road frontage, noting the 3m road boundary setback requirement. This defaults to consent being required as restricted discretionary activity, not altering the overall category of consent.

The Mixed Use Zone has a minimum lot size of 250m^2 which the proposal complies with, and no minimum building envelope requirement.

Supporting reports show that the sites are capable of supporting the proposed development in terms of allotment size and dimension.

6.2 Natural and Other Hazards

The site is not subject to any natural hazards,

6.3 Water Supply

The application site is within a public water supply area and dwellings will be connected. In addition there is fire fighting water supply via nearby hydrants in road reserve.

6.4 Energy Supply & Telecommunications

The sites have existing power supply. Each new dwelling will have a power connection, noting however that this should not discourage or prevent the use of passive solar energy sources being utilised on individual lots/buildings. The Council will likely impose a requirement that each lot also has connection, or the ability to connect, to telecommunication services.

6.5 Stormwater Disposal

The proposed development on each of the lots will exceed the permitted activity 50% threshold, but be within the 60% controlled activity threshold. The application is supported by a Civil Site Suitability Report with generic recommendations in regard to stormwater, and then more detailed design of stormwater management for the dwellings, should they proceed in advance of s224c being issued for the subdivision.

The proposal is to utilise above ground slimline attenuation lots on each lot to manage increased stormwater runoff to the appropriate level. Refer to Civil Site Suitability Report and associated Stormwater Memorandum for further details – Appendices 4 and 5 respectively.

6.6 Sanitary Sewage Disposal

The site is within the Area of Benefit. Connections to Council's reticulated wastewater system is requested for all lots/dwellings.

6.7 Easements for any purpose

Easements are proposed as shown on the Scheme Plan – for access and services.

6.8 Property Access

Access is proposed to be via a centralised crossing and shared access internal to the site, of appropriate dimensions for use by 6 properties. The crossing to Kerikeri Road will be widened to double width, as required. The shared access will be utilised for vehicle manouevring internal to the site. Each lot can accommodate stacked parking, counting garage and outdoor space.

The access will be sealed or concrete surface, as required.

The above photo shows the existing formed crossing into 124 Kerikeri Road. This crossing is to be retained and widened for the development.

The above photo shows the same crossing looking in the opposite direction towards the Kerikeri CBD.

6.9 Building Locations

The existing house on the property will eventually need to be removed prior to doing construction works on proposed Lot 1. Each lot can accommodate a modestly sized building

and although there are some minor breaches of boundary setback and sunlight rules, I consider the proposed development to be an appropriate one for the site in terms of level of density; building location; and building design, particularly since the Council has indicated a willingness to rezone the surrounding area for higher density development.

6.10 Preservation and enhancement of heritage resources (including cultural), vegetation, fauna and landscape, and land set aside for conservation purposes

The site is zoned Residential in the ODP and Mixed Use in the PDP, both zones encouraging or providing for residential living. The site has no resource feature overlays. It contains no high or outstanding landscape or natural values, and no areas of significant indigenous vegetation or habitat. There is no land set aside for conservation purposes within the application site.

There are no listed or mapped Sites of Significance to Maori on the application site, nor any historic buildings, sites, notable trees or archaeological sites as mapped and/or listed in the District Plan or Far North Maps.

6.11 Soil

The site is residential with existing development. The proposal does not adversely impact on the life supporting capacity of soils.

6.12 Access to, and protection of, waterbodies

There are no qualifying water bodies to which access is required to be provided.

6.13 Land use compatibility (reverse sensitivity)

The site is zoned Residential and contains residential development, in an area dominated by that same land use. In terms of the ODP, the proposal does not pose any risk of reverse sensitivity issues arising. The site is proposed to be zoned Mixed Use in the PDP, as is all adjacent land. Whilst this may lead to more commercial activity, the zone itself promotes mixed use. As such reverse sensitivity is not considered to be an issue.

6.14 Proximity to Airports

The site is outside of any identified buffer area associated with the Bay of Islands Airport.

6.15 Natural Character of the Coastal Environment

The site is not within the Coastal Environment.

6.16 Energy Efficiency and renewable Energy Development/Use

Individual future lot owners may take the opportunity to install energy efficiency devices when they build.

6.17 National Grid Corridor

The National Grid does not run through the application site.

7.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS – LAND USE

This section of the AEE is restricted to assessing effects of the proposed residential development should it occur in isolation from the subdivision, and focuses on those areas where there are identified breaches. These breaches, under the ODP, include Residential Intensity; Sunlight; Stormwater Management (site coverage); Setback from Boundaries (only insofar as one lot); and Excavation/filling. The proposed ground level residential activity is a restricted discretionary under the PDP, only because the units are at ground level – refer to 7.5 below.

7.1 Character and Appearance of Buildings

The proposed residential units are similar in character to nearby residential developments in the general area, particularly the Kerikeri Village retirement living area and more recently constructed Kainga Ora housing blocks on nearby streets.

The buildings are proposed to be single storey but there will be breaches of the Sunlight rule on northern and southern boundaries. The northern boundary is with access road only, so effects of a sunlight breach on a property to the north with no residential dwelling located in proximity to boundary, are less than minor.

Written Approvals have been sought from the neighbouring properties to the south and west, although it should be noted that these properties are also proposed to be Mixed Use zone, so boundary based standards do not apply.

There are no breaches of building height, building coverage or setback from boundary apart from one very minor (0.1m) to the northern boundary of Lot 4 (with access leg). Refer to section 7.4 below.

7.2 Siting of buildings relative to adjacent buildings and road frontage

The buildings comply with road setback requirements. It is intended to landscape the road frontage. The residential units face inwards in parallel rows, i.e. face each other as opposed to other adjacent sites. Private open space within the development is provided down at least one side of each dwelling. The dwellings are single storey and modest in size. They will not be visually obtrusive.

7.3 Traffic movements

The proposed three dwellings per existing title does not breach the zone's permitted traffic intensity rule. This provides for 20 daily one way traffic movements where residential units are deemed to generate 10 movements and where the first residential unit on a title is exempt. The entrance to Kerikeri Road is existing and able to be upgraded to the appropriate standard. The entrance is located on a section of Kerikeri Road that is a low speed environment. On site parking can be readily accommodated.

7.4 Boundary Setback breach – Lot 4

On all lots except Lot 4 boundary setbacks comply with the District Plan requirements (both ODP and PDP). The only reason compliance isn't achieved on Lot 4 is because the lot is smaller than the others because of the splayed access leg on the adjacent property. This results in a minor (de minimus) boundary setback breach. The setback from the corner of the proposed dwelling to boundary is 1.1m as opposed to the required 1.2m. As such there is no real difference between compliance and non compliance and a dwelling in this location remains in keeping with existing character and form of the street. The affected boundary is an access leg, with no residential dwelling in proximity. The proposed building on Lot 4 will not restrict visibility for vehicle manouevring. Because the breach is so small I do not believe it necessary to mitigate by way of any additional planting on that particular boundary (noting existing vegetation and solid fence screening already in existence. It is only a corner of the building, and not the entire length of the building that breaches, so building maintenance and construction activities are not impacted.

7.5 Residential Activity at Ground Level (a PDP consideration)

The restricted discretionary assessment criteria outlined in the PDP guide the following assessment.

Each unit has private outdoor living space that is both functional and accessible; and each has a reasonable level of privacy and outlook. There is safe and convenient pedestrian access, with a footpath immediately at road frontage (both sides of Kerikeri Road) in both directions. The building design and layout maintains high amenity. The road frontage is to be landscaped such that streetscape retains high amenity.

7.6 Earthworks

Siteworks for the creation of access and construction of buildings will exceed the zone's permitted activity thresholds. They will be subject to Erosion and Sediment Control in accordance with GD-05 as required by the PDP's earthworks works already having legal effect. Similarly the earthworks will be subject to the ADP, also as required by the PDP.

A portion of excavated soil will remain on site to be utilised for some landscaping. The majority, however, will be removed from site. This removal will be subject to the requirements of the reports provided pursuant to the NES-CS – refer 7.7 below.

The site is urban, and almost level. Erosion and Sediment Controls will ensure no off site effects in terms of adjacent properties. It is proposed that prior to any site works for each stage commencing, the consent holder provide to the Council a Construction Management Plan which will incorporate measures for controlling and mitigating any adverse effects of earthworks, including vehicular movements associated with ground preparation construction works. Refer also to commentary in Section 7.7 below in regard to the NES-CS and supporting technical reports in that regard.

The site is not near any waterbody and contains no indigenous vegetation or habitat. The site has no outstanding landscape or natural values and no known heritage or cultural values.

7.7 Soil Disturbance pursuant to the NES-CS

The soils within the development area have been tested, with no exceedances of NES-CS public health guidelines/standards. However, the NES-CS also contains thresholds as to volume of soil disturbance on the site and volume of soil removal from the site. This soil disturbance forms part of the consent requirements under the NES-CS.

The Site Management Plan provided in support of this application lays out measures to be taken when carrying out soil disturbance activities on the site. The risk to human health has been shown to be low given the results of soil testing. The risk will be further reduced in following protocols laid out in the Site Management Plan supporting the application. It should be noted, however, that the Site Management Plan provided was written prior to confirmation there were no exceedance of NES-CS standards.

Note section 4.1 of the SMP has now been addressed in that soil testing has since taken place, finding no exceedance. Many of the suggested management measures are repetitive to what one might find in a Construction Management Plan.

I am of the opinion that earthworks can be undertaken on the site for the purposes of providing access and building platforms, subject to appropriate conditions such that effects on the environment and on public health are less than minor.

8.0 STATUTORY ASSESSMENT

8.1 Far North District Plan Objectives and Policies

Objectives and policies relevant to this proposal are considered to be primarily those listed in Chapters 7.6 (Residential Zone); and 13 (Subdivision), of the District Plan.

Subdivision Objectives & Policies

Objective 13.3.1 is an enabling objective, seeking to provide for subdivision of land in such a way as will be consistent with the purpose of the zone. That purpose is providing for "*the development of residential areas where the effects of activities permitted in the zone are compatible with sustainable development and with the existing character and amenity which is typically medium density residential living*". I consider the proposal to be consistent with the purpose of the zone and one that will promote sustainable development consistent with the existing character and amenity.

The proposal is appropriate for the site and does not adversely affect any of the matters listed in Objective 13.3.2.

Objectives 13.3.3 and 13.3.4 refer to outstanding landscapes or natural features; and scheduled heritage resources; and to land in the coastal environment. By proposing development on residential zoned land that is none of these things, the proposal is consistent

with these objectives as it will not create any adverse effects on the values and character outlined in the two objectives.

Development is existing and the site is connected to the Council's reticulated water supply (Objective 13.3.5).

The site is not known to contain any sites of cultural significance to Maori, or wahi tapu (Objective 13.3.7 and Policy 13.4.11).

The sites will have power connections (13.3.8).

The proposal will make efficient use of existing services (13.3.10).

The proposal has had regard to the matters listed in Policy 13.4.1, where relevant.

Access to the site is off existing public roads via existing driveways (13.4.2 and 13.4.5).

The site is not subject to any significant hazard (13.4.3).

The site is not known to contain any heritage resources and is not in the coastal environment. It does not contain any outstanding landscape of natural features (13.4.6).

The properties will be connected to Council's reticulated water supply (13.4.8).

S6 matters (National Importance) have been adequately considered. The proposal is an appropriate use of the site (13.4.13).

The subdivision has had regard to the underlying zone's objectives and policies, where relevant (13.4.14).

In summary, I believe the proposal to be consistent with the above Objectives and Policies.

Residential Zone Objectives and Policies

Objective 7.6.3.1 is not overly relevant as the proposed subdivision is within an established residential area. The proposed development is of a type, scale and intensity in keeping with the character and amenity of the area (7.6.3.2).

Policies 7.6.4.5 and 7.6.4.6 are relevant to land uses other than residential and are not relevant in this instance.

Policy 7.6.4.7 requires sufficient land to be available for a household unit and that unit's outdoor space, planting, parking and manoeuvring. This proposed development achieves this.

Policy 7.6.4.8 requires that building and other impermeable surfaces only take up a limited portion of the site so as to provide for open space around buildings, and to provide for planting and to reduce adverse hydrological, ecological and amenity effects. Whilst impermeable surfaces will breach permitted activity thresholds, they will meet the controlled activity threshold. In addition supporting reports shows stormwater management is feasible with minimal, if any, off site effects.

Policy 7.6.4.9 requires adequate access to sunlight and daylight. There are breaches of the sunlight rule on both northern and southern boundaries, where the former is with an access leg only, with no adverse effects on adjacent properties in terms of access to sunlight and daylight. Written Approval has been sought from the owner of the property to the south, although that boundary is already fenced and there is intervening close boarded fence and vegetation in place already, and that property is proposed to also be zoned Mixed Use in the PDP.

Policy 7.6.4.10 requires that provision be made to ensure a reasonable level of privacy for inhabitants of buildings. The proposed layout achieves a reasonable level of privacy given the site's location and zoning.

8.2 Proposed District Plan (PDP)

The sites are zoned Mixed Use in the PDP. The proposed lot sizes comply with the PDP's controlled activity minimum lot size and as such the proposal would be considered consistent with the PDP's subdivision objectives and policies, especially given that the sites can be serviced. An assessment follows, utilising the Recommended updated Subdivision provision wording resulting from the PDP's hearings process.

SUB-O1 *Subdivision results in the efficient use of land, which:*
a. achieves the objectives of each relevant zone, precinct, development area, overlays and the district wide provisions;
b. contributes to the existing and planned local character and sense of place;
c. avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;
d. avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;
e. does not increase risk from natural hazards or risks are mitigates and existing risks reduced; and
f. manages adverse effects on the environment.

The subdivision results in the efficient use of land, and is consistent with the zone's objectives. The development will be consistent with the planned character of the area. No reverse sensitivity issues will arise given that the zone intentionally provides for a "mixed use". The proposed land use will not prevent the land from achieving the objectives of the zone. There is no increased risk from natural hazards and less than minor adverse effects on the environment.

SUB-O2 *Subdivision provides for the:*
a. Protection of highly productive land; and
b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, ~~Areas of High Natural Character, Outstanding Natural Character~~, wetland, lake and river margins, ~~Significant Natural Areas~~ areas of significant indigenous vegetation and significant habitats of indigenous fauna, Sites and Areas of Significance to Māori, and Historic Heritage.

N/A. The site does not feature any of the matters addressed in the above objective.

SUB-O3 *Infrastructure is planned to service the proposed subdivision and development where:*
a. there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and
b.where no existing connection is available infrastructure ~~should be~~ is planned and ~~consideration be given to~~ connections made with the wider infrastructure network.

The application site is within an area of benefit for Council's existing infrastructure (3 waters and roading) services.

SUB-O4
Subdivision is accessible, connected, and integrated with the surrounding environment including by ~~and~~ providing for:
a. Safe transport connections including active modes of public transport where practicable;
b. new, and connection to existing public open spaces;
c. esplanade where land adjoins the coastal marine area; and
d. esplanade where land adjoins other qualifying water bodies.

The application sites are adjacent to the Kerikeri CBD, ideally located for vehicular and pedestrian access to amenities. There are no nearby public open spaces and no requirement for any esplanade.

SUB-OX
Subdivision protects the long-term availability and productive capacity of highly productive land by avoiding inappropriate subdivision that would compromise its use for farming and forestry activities.

N/A noting the zoning and absence of highly productive land.

SUB-OY
Subdivision occurs in a sequenced and coherent manner in locations and at a rate that enables growth and development to be supported by additional infrastructure.

The proposed development is of a level envisaged in the PDP and which can readily be serviced.

SUB-P1 *Enable boundary adjustments that: ….*

Not relevant – application is not a boundary adjustment.

SUB-P2 *Enable subdivision for the purpose of public works, infrastructure, reserves or access.*

Not relevant – application does not involve public works, infrastructure, reserves or access lots.

SUB-P3 *Provide for subdivision where it results in allotments that:*
a. are consistent with the planned environment ~~purpose, characteristics and qualities~~ of the zone or precinct;
b. comply with the minimum allotment sizes for each zone or precinct;
c. have an adequate size and appropriate shape to contain a building platform; and
d. have legal and physical access.

The lots are consistent with the planned environment of the zone, and comply with the minimum lot sizes to apply to that zone. Each lot can accommodate a building platform and have legal and physical access.

~~SUB-P4~~
~~Manage subdivision of land as detailed in the district wide, natural environment values, historical and cultural values and hazard and risks sections of the plan~~

SUB-P5
Manage subdivision design and layout in the General Residential, Mixed Use, Medium Density Residential, Town Centre and Settlement zoneto
provide for safe, connected and accessible environments by:
a. minimising vehicle crossings that could affect the safety and efficiency of the current and future transport network;
b. avoid cul-de-sac development unless the site or the topography prevents future public access and connections;
c. providing for development that encourages social interaction, neighbourhood cohesion, a sense of place and is well connected to public spaces;
d.contributing to a well connected transport network that safeguards future roading connections; and
e. maximising accessibility, (including for emergency response)
connectivity by creating walkways, cycleways and an interconnected transport network; and
f. providing additional infrastructure where required..

The proposal reduces the number of crossings onto Kerikeri Road. There is no cul-de-sac involved in access because access is private and will remain so, internal to the development. The proposal will encourage social interaction, neighbourhood cohesion and a sense of place. The site adjoins Kerikeri Road and is close to amenities. It contributes to a well connected transport network, providing for residential living in a location able to optimise vehicular (including cycle) and pedestrian access.

SUB-P6 *Require infrastructure to be provided in an integrated and comprehensive manner by:*
a. demonstrating that the subdivision will be appropriately serviced (including telecommunications) and integrated with existing and planned infrastructure if available; and
b. ensuring that the infrastructure is provided is in accordance with the planned environment ~~purpose, characteristics and qualities~~ of the zone.

The application includes requests for connections to Council 3- waters.

SUB- P7
Require the vesting of esplanade reserves or esplanade strips when subdividing to specific allotment sizes land adjoining the coast or other qualifying water bodies.

The site does not adjoin any waterbody.

SUB-P8 *Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision: ....*

Site is not zoned Rural Production.

SUB-PX
Avoid subdivision that:
a. Within the Horticulture Precinct, is not provided for in PREC1-P5:
b. In all other parts of the Rural Production Zone:…..

Site is not zoned Rural Production, nor in the proposed Horticulture Precinct.

SUB-P9
~~Avoid subdivision [sic] rural lifestyle subdivision in the Rural Production zone and~~ Restrict rural residential subdivision inthe Rural Lifestyle zone unless the development ~~achieves the environmental outcomes required in the management plan subdivision rule~~. ….

The site is not zoned Rural Lifestyle.

SUB-P10
To protect amenity and character by avoiding the subdivision of minor residential units from

principalresidential units where resultant allotments do not comply with minimum allotment size and resi dential density.

Not applicable. There are no minor residential units.

SUB-P11 *Consider the following matters where relevant when assessing and managing the effects of subdivision:*
~~Manage 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:~~
a. The potential for reverse sensitivity effects that would prevent or adversely affect activities already established on land from continuing to operate;
b. consistency with the scale, density, design and character of the environment and purpose of the zone;
c. the location, scale and design of buildings and structures;
d.the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;
e. managing natural hazards;
f. Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and
g. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Reverse sensitivity is not considered an issue given the intended mixed uses within the zone. The sites will be developed in a manner that is consistent with the planned character of the area. The site is not subject to natural hazards. The site contains no historic heritage or cultural values, nor any natural features or landscapes, nor natural character or indigenous biodiversity values.

The site is zoned Mixed Use in the Proposed District Plan.

MUZ-O1
The Mixed Use zone is the focal point for the district's commercial, community and civic activities, and provides for compatible residential development ~~where it~~ that complements ~~and is not incompatible with~~ these activities.

MUZ-O2
Development in the Mixed Use zone is of a form, scale, density and design quality that contributes positively to the vibrancy, safety and amenity of the zone.

MUZ-O3
Enable land use and subdivision in the ~~Light Industrial~~ mixed use zone where there is adequacy and capacity of available or programmed development infrastructure to support it.

MUZ-O4
The adverse environmental effects generated by activities within the zone are managed, in particular at zone boundaries.

MUZ-O5
Residential activity in the Mixed Use zone is located above commercial activities to ensure active street frontages, except where the interface is with the Open Space zone.

The proposal is consistent with the above objectives. Residential development in this location will complement the planned character of the Mixed Use zone, and to the zone's vibrancy,

safety and amenity. The proposed development is within a serviced area. Adverse effects can be appropriately managed.

MUZ-P1
Enable a range of commercial (including supermarkets), community, civic and residential activities in the Mixed Use zone where:
a. they support the function, role, sense of place and amenity of the zone, while recognising the existing environment; and
b. there is:
- *i. existing infrastructure to support development and intensification, or*
- *ii. additional infrastructure capacity can be provided to service the development and intensification.*

The proposal is consistent with the enabling intent of the above policy.

~~***MUZ-P2***~~
~~*Require all subdivision in the Mixed Use zone to provide wastewater, stormwater and potable water supply the following reticulated services and local electricity distribution network to the boundary of each lot and encourage all subdivision to provide the following reticulated services to the boundary of each lot: a. telecommunications: i. fibre where it is available; ii. copper where fibre is not available; iii. copper where the area is identified for future fibre deployment. b. local electricity distribution network.; and c. wastewater, potable water supply and stormwater where they are available.*~~

MUZ-P3
Require development in the Mixed Use zone to contribute positively to:
a. high quality streetscapes;
b. pedestrian amenity;
c. safe movement of people of all ages and abilities;
d. community well-being, health and safety; and
e. traffic, parking and access needs.

The proposed development maintains a high quality streetscape and provides for pedestrian amenity and the safe movement of people of all ages and abilities. Traffic, parking and access needs are catered for. Community well-being, health and safety are provided for.

MUZ-P4
Require development in the Mixed Use zone that is adjacent to Residential and Open Space zones to maintain the amenity values of those areas, having specific regard to:
a. visual dominance;
b. privacy;
c. shadowing;
d. ambient noise; and
e. light spill.

N/A – not adjacent to the zones referred to.

MUZ-P5
Restrict activities that are likely to have an adverse effect on the function, role, sense of place and amenity of the Mixed Use zone, including:

a. residential activity~~, retirement facilities~~ supported residential care and visitor accommodation on the ground floor of buildings, to locations outside of the Pedestrian Frontage Overlay; ~~except where a site adjoins an Open Space zone;~~
~~b. light or heavy industrial activity;~~
c. storage and warehousing;
d. large format retail activity and trade suppliers; ~~and~~
e. waste management activity;
f. Retirement villages; and
g. Educational facilities

The site is outside a pedestrian frontage overlay, and is none of the other referenced activities.

MUZ-P6
Promote energy efficient design and the use of renewable electricity generation in the construction of mixed use development.

MUZ-P7
Consider the following effects when assessing applications to establish residential, ~~early childhood,~~ retirement and education facilities:
a. the level of ambient noise;
b. reduced privacy;
c. shadowing and visual domination; and
d. light spill.; and
e. reverse sensitivity.

These matters have all been addressed in the AEE. The activity is one provided for in the zone. Each residential unit provides for privacy for its inhabitants. Being single storey buildings, there is little risk of visual domination. There is a breach of the sunlight rule on the southern boundary that may cause some shadowing over a small part of adjacent land to the south, however there is existing close boarded fence and vegetation already on that boundary. Light spill internal to the site will be minimal. There is minimal risk of reverse sensitivity effects given that the zone itself provides for a combination of commercial and residential land uses.

MUZ-PXX
Avoid the establishment of:
a. residential activity, visitor accommodation or supported residential care on the ground floor of a building within the pedestrian frontage overlay;
b. Industrial and offensive trade activities and landfill; and
c. primary production and rural industry

The proposal avoids a-c.

MUZ-P8
~~Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration~~ Consider of the following matters where relevant when assessing and managing the effects of land use and subdivision in the Mixed Use zone~~: to the application~~:
a. consistency with the scale, density, design, amenity and character of the planned mixed use environment;
b. the location, scale and design of buildings or structures, outdoor storage areas, parking and internal roading;

c. opportunities for connectivity, within and between developments, public open space, services and facilities;
d. at zone interfaces:
i. any setbacks, fencing, screening or landscaping required to address potential conflicts;
ii. any adverse effects on the character and amenity of adjacent;
e. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; including:
i. opportunities for water sensitive design ~~low impact design~~ methods;
ii. management of three waters infrastructure and industrial and trade waste;
f. managing natural hazards;
g. the adequacy of roading infrastructure to service the proposed activity;
h. any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity, and
i. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

The proposal will be consistent with the scale, density, amenity and character of the planned mixed use environment. The layout is appropriate for the site, providing opportunities for connectivity.

3 waters infrastructure is available. The site is not subject to hazards. The site is not known to have any historic heritage values, natural features, landscapes or indigenous biodiversity values.

In summary, the proposal is consistent with the proposed PDP's Mixed Use zone objectives and policies.

8.3 Part 2 Matters

5 Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The proposal provides for peoples' social and economic well being, and for their health and safety, while sustaining the potential of natural and physical resources, safeguarding the life-supporting capacity of air, water, soil and the ecosystems; and avoiding, remedying or mitigating adverse effects on the environment.

6 Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

(f) the protection of historic heritage from inappropriate subdivision, use, and development:

(g) the protection of protected customary rights:

(h) the management of significant risks from natural hazards.

The site does not exhibit any s6 Matters of National Importance.

7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(b) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(e) [Repealed]

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(h) the protection of the habitat of trout and salmon:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

Relevant matters within s7 have had regard to.

8 Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

The principles of the Treaty of Waitangi have been considered and it is believed that this proposed subdivision does not offend any of those principles.

In summary, it is considered that all matters under s5-8 inclusive have been adequately taken into account.

8.4 National and Regional Policy Statements & Environmental Standards

The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS) had been addressed earlier in this report.

Providing for residential development in appropriate locations is consistent with national policy direction in regard to urban development.

The Regional Policy Statement for Northland contains objectives and policies related to infrastructure and regional form and economic development. These are enabling in promoting sustainable management in a way that is attractive for business and investment. The proposal is consistent with these objectives and policies.

9.0 CONSULTATION & S95 ASSESSMENT

9.1 S95A Public Notification Assessment

A consent authority must follow the steps set out in s95A to determine whether to publicly notify an application for a resource consent. Step 1 specifies when public notification is mandatory in certain circumstances. None of these circumstances exist. Step 2 of s95A specifies the circumstances that preclude public notification. No such circumstance exists. Step 3 of s95A must therefore be considered. The application is not subject to a rule or national environmental standard that requires public notification. This report and AEE concludes that the activity will not have, nor is it likely to have, adverse effects on the environment that are more than minor. In summary public notification is not required pursuant to Step 3 of s95A.

9.2 S95B Limited Notification Assessment

A consent authority must follow the steps set out in s95B to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified pursuant to s95A. Step 1 identifies certain affected groups and affected persons that must be notified. No affected group of persons as listed in s95B exist in this instance. Step 2 of s95B specifies the circumstances that preclude limited notification. Neither circumstance exists and Step 3 of s95B must be considered. The application is not solely for a boundary activity. The s95E assessment below concludes that there are no affected persons to be notified.

9.3 S95D Level of Adverse Effects

The AEE in this report assesses effects on the environment and concludes that these will be no more than minor.

9.4 S95E Affected Persons

A person is an 'affected person' if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor). A person is not an affected person if they have provided written approval for the proposed activity. In this instance Written Approvals have been sought from:

Alvinucy Investments Limited, Lot 17 DP 53915, 122 Kerikeri Road (on southern boundary); and A M S Rennes & E A M Schoffeimeer, Lot 16 DP 53915, 1 King Street (western boundary).

The written approval from the owners 1 King Street, at the back of the application site, has been provided and this is attached in Appendix 10. At time of writing this report, the Written Approval from the owners of 122 Kerikeri Road was anticipated, but not yet received. Whilst there is a sunlight breach on this southern boundary under the ODP, no such breach will occur under the PDP, where no height to boundary, or other boundary requirement applies within the zone, only on a zone interface. The northern boundary is with an access leg in with no nearby residential dwelling. I do not consider the proposal to adversely affect any activity that may on the access leg entrance way/driveway.

The proposal is being discussed with Ngati Rehia in parallel with lodging the application. Results of those discussions will be provided to the Council when available.

9.0 CONCLUSION

The site is considered suitable for the proposed subdivision and residential development. Effects on the wider environment are, I believe, capable of remedy and mitigation through conditions of consent, such that they will be no more than minor. The proposal is considered consistent with the relevant objectives and policies of the Operative and Proposed District Plans, and relevant objectives and policies of the Regional Policy Statement, and consistent with Part 2 of the Resource Management. There is no District Plan rule or national environmental standard that requires the proposal to be publicly notified. I have not identified any affected persons.

It is requested that the Council give favourable consideration to this application and grant consent.

Signed Dated 17th June 2026
Lynley Newport,
Senior Planner
Thomson Survey Ltd

10.0 LIST OF APPENDICES

Appendix 1 Scheme Plan(s)

Appendix 2 Architectural and Site Plans

Appendix 3 Location Plan

Appendix 4 Record of Title & Relevant Instruments

Appendix 5 Civil Site Suitability Report

Appendix 6 Stormwater Memorandum

Appendix 7 Preliminary Site Investigation

Appendix 8 Site Management Plan

Appendix 9 Technical Memorandum

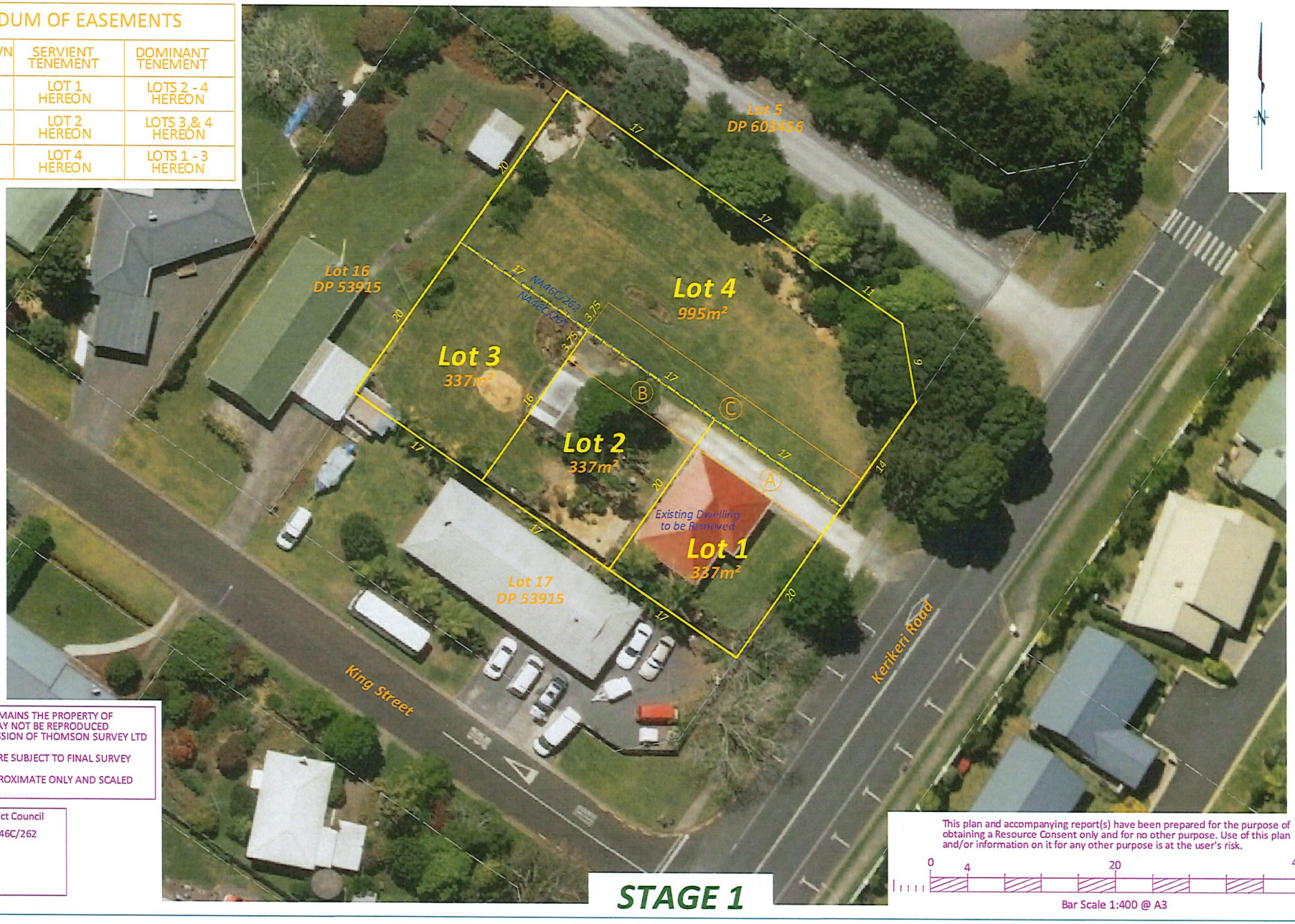
Appendix 10 Record of Consultation

Appendix 1

Scheme Plan(s)

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	(A)	LOT 1 HEREON	LOTS 2 - 4 HEREON
	(B)	LOT 2 HEREON	LOTS 3 & 4 HEREON
	(C)	LOT 4 HEREON	LOTS 1 - 3 HEREON



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AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA46C/261 & NA46C/262
Total Area: 2006m²
Zoning: Residential
Resource features: NIL

STAGE 1

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PROPOSED SUBDIVISION OF LOTS 14 & 15 DP 41378

124 & 126 KERIKERI ROAD, KERIKERI

PREPARED FOR: J. LODGE

	Name	Date
Survey		
Design		
Drawn	KY	26.11.25
Approved		
Rev	KY	16.06.26

ORIGINAL
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SHEET SIZE A3

10864 Scheme 20260616 Stage 1

Surveyors Ref. No: 10864

Sheet 1 of 1

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNICATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	(A)	LOT 1 HEREON	LOTS 2 - 4 HEREON
	(B)	LOT 2 HEREON	LOTS 3 & 4 HEREON
	(C)	LOT 4 HEREON	LOTS 1 - 3 HEREON

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Resource features: NIL

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	Ⓓ	LOT 5 HEREON	LOT 6 HEREON

EXISTING EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	CREATED BY
RIGHT OF WAY, TELECOMMUNICATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	Ⓒ	LOT 4 HEREON	(STAGE 1)
	Ⓓ	LOT 5 HEREON	

STAGE 2

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Local Authority: Far North District Council
Comprised in: Lot 4 (Stage 1)
Total Area: 995m²
Zoning: Residential
Resource features: NIL

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PROPOSED SUBDIVISION OF LOT 4 (STAGE 1)

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Sheet 1 of 1

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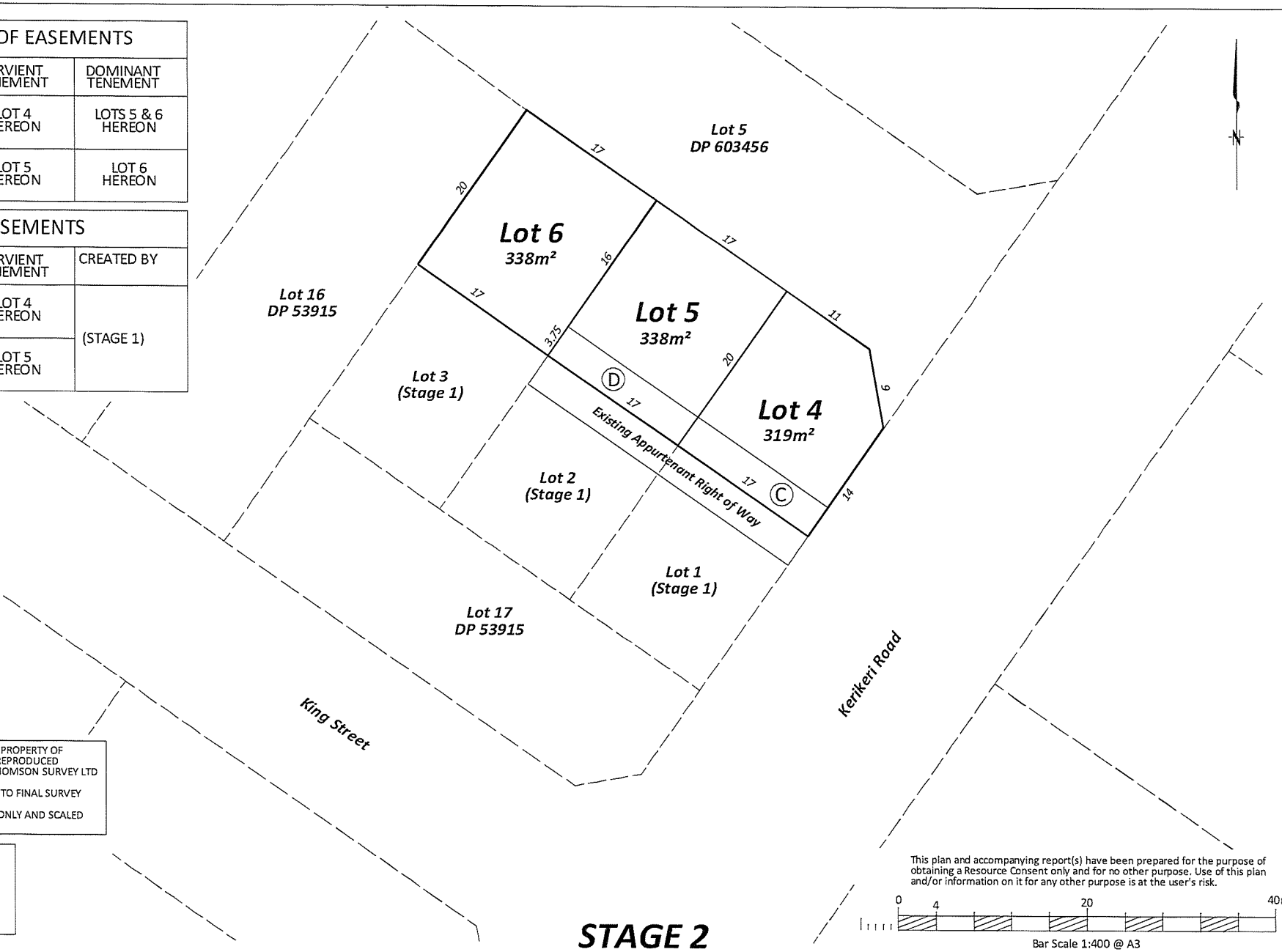
	Ⓓ	LOT 5 HEREON	LOT 6 HEREON

EXISTING EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	CREATED BY
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	Ⓒ	LOT 4 HEREON	(STAGE 1)
	Ⓓ	LOT 5 HEREON	



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Zoning: Residential
Resource features: NIL

STAGE 2

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	(D)	LOT 5 HEREON	LOTS 2, 3 & 6 HEREON

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OVERALL

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10864 Scheme 20260616 Overall

Surveyors Ref. No: 10864

Sheet 1 of 1

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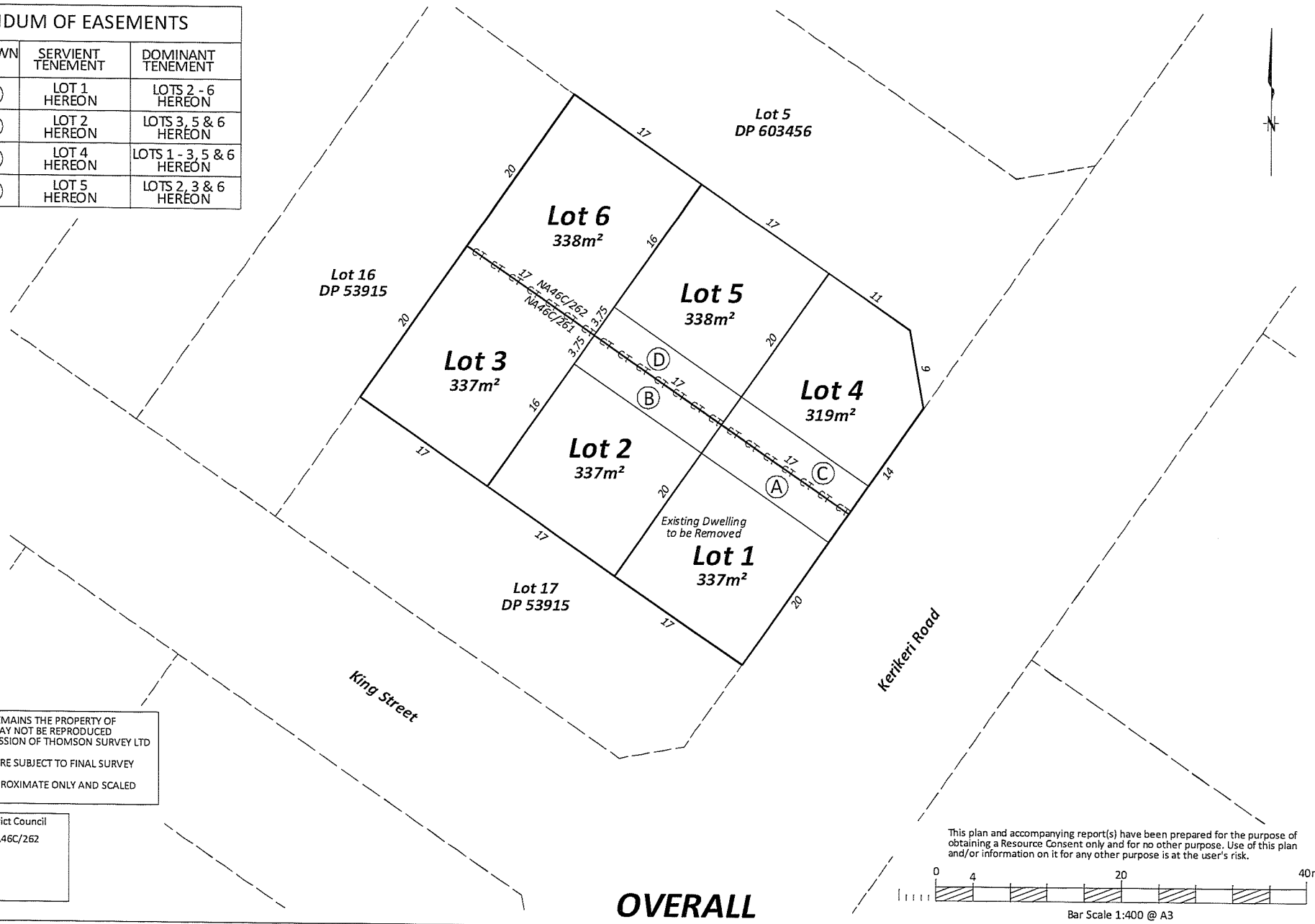

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124 & 126 KERIKERI ROAD, KERIKERI

PREPARED FOR: J. LODGE

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Rev	KY	16.06.26

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SHEET SIZE A3

10864 Scheme 20260616 Overall

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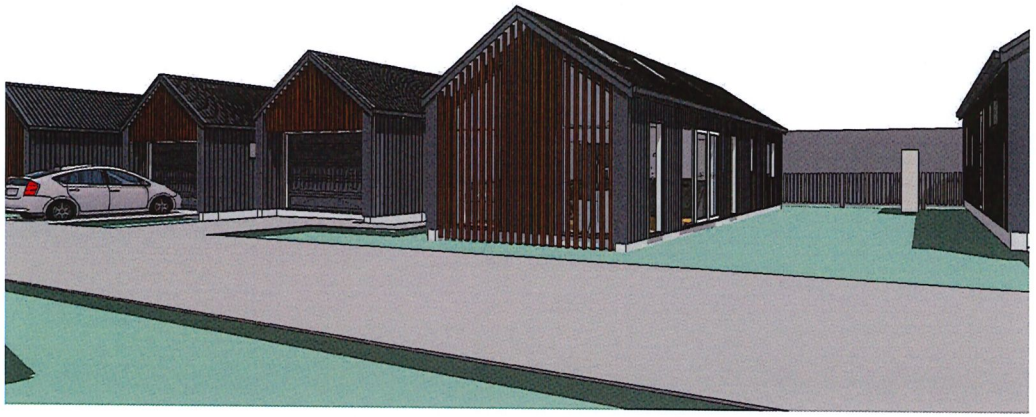
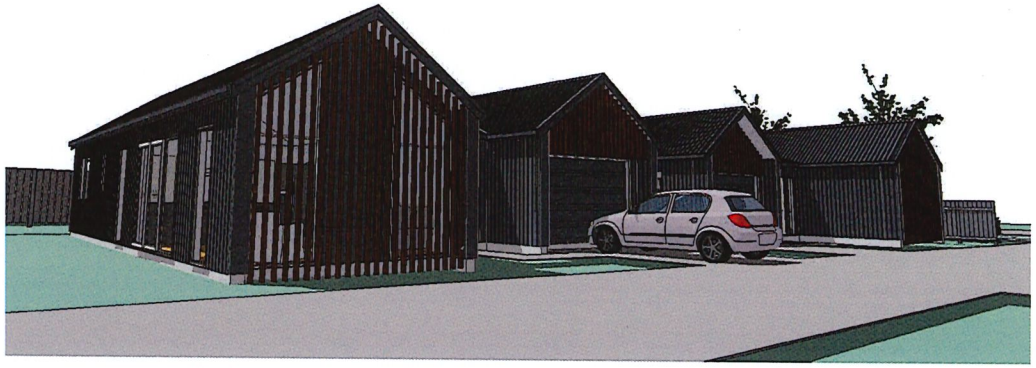
Sheet 1 of 1

Appendix 2

Architectural and Site Plans





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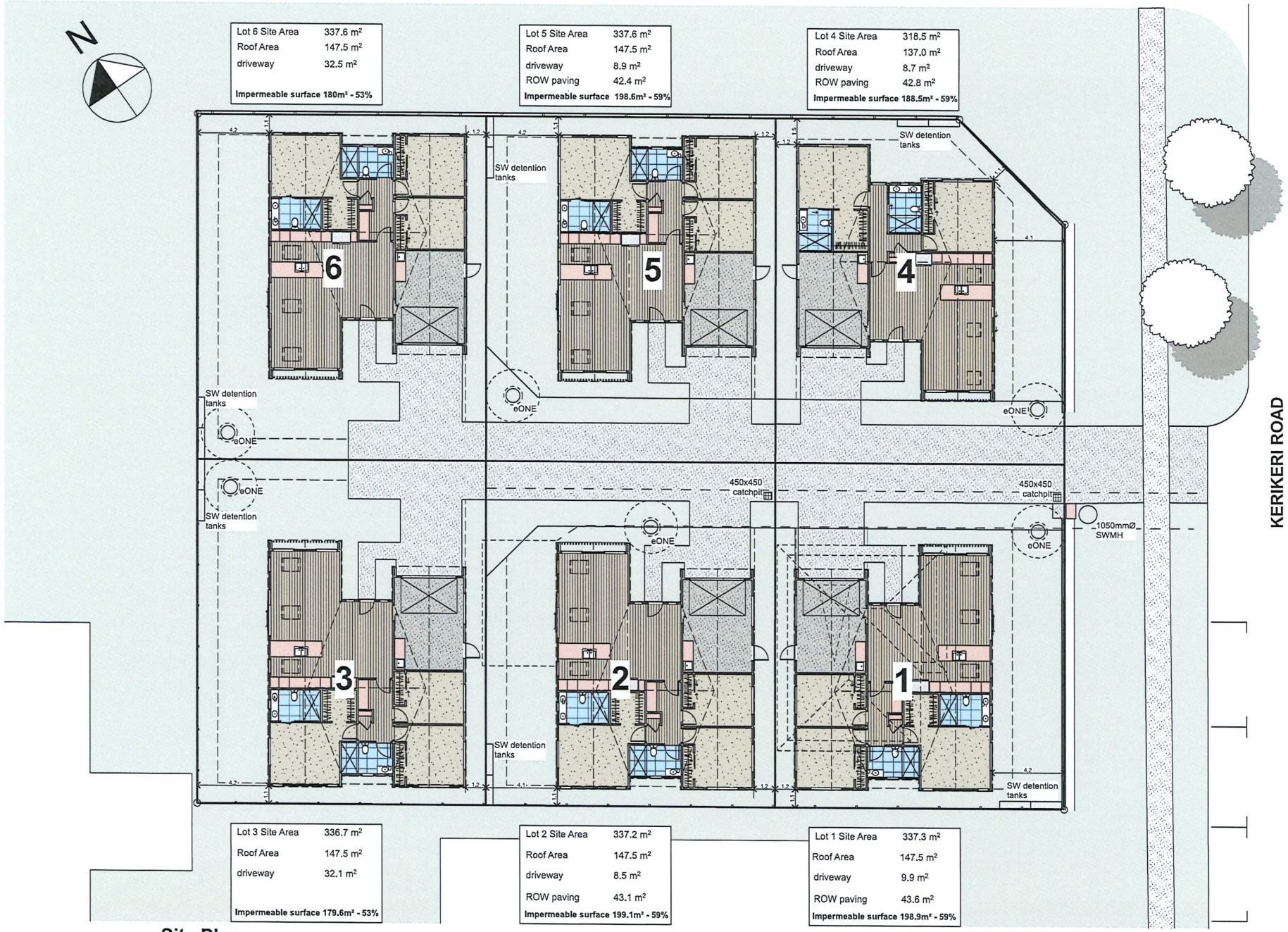
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G



Site Plan

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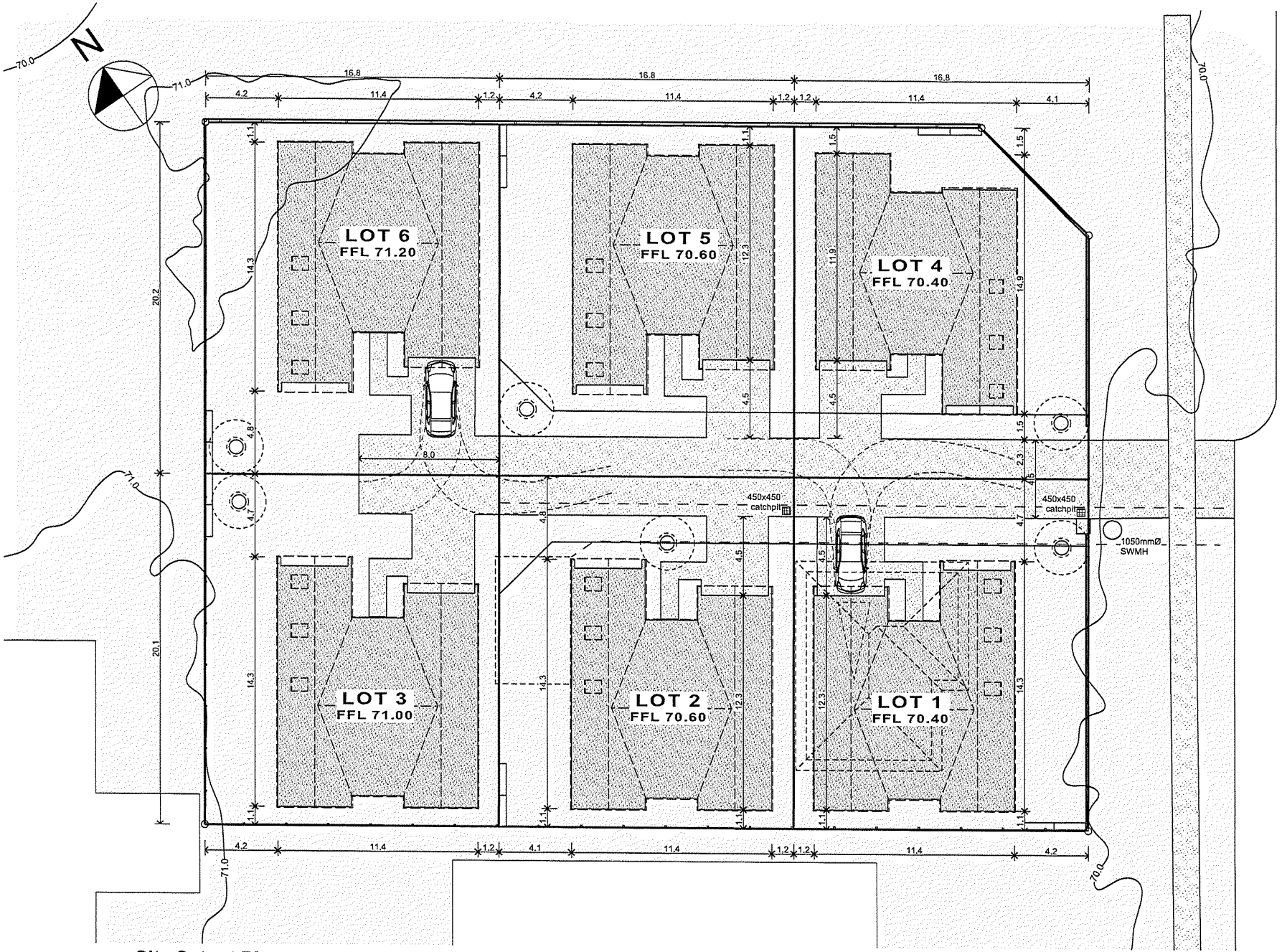
Site Plan
Proposed Development at 124-126 Kerikeri Road
CONCEPT

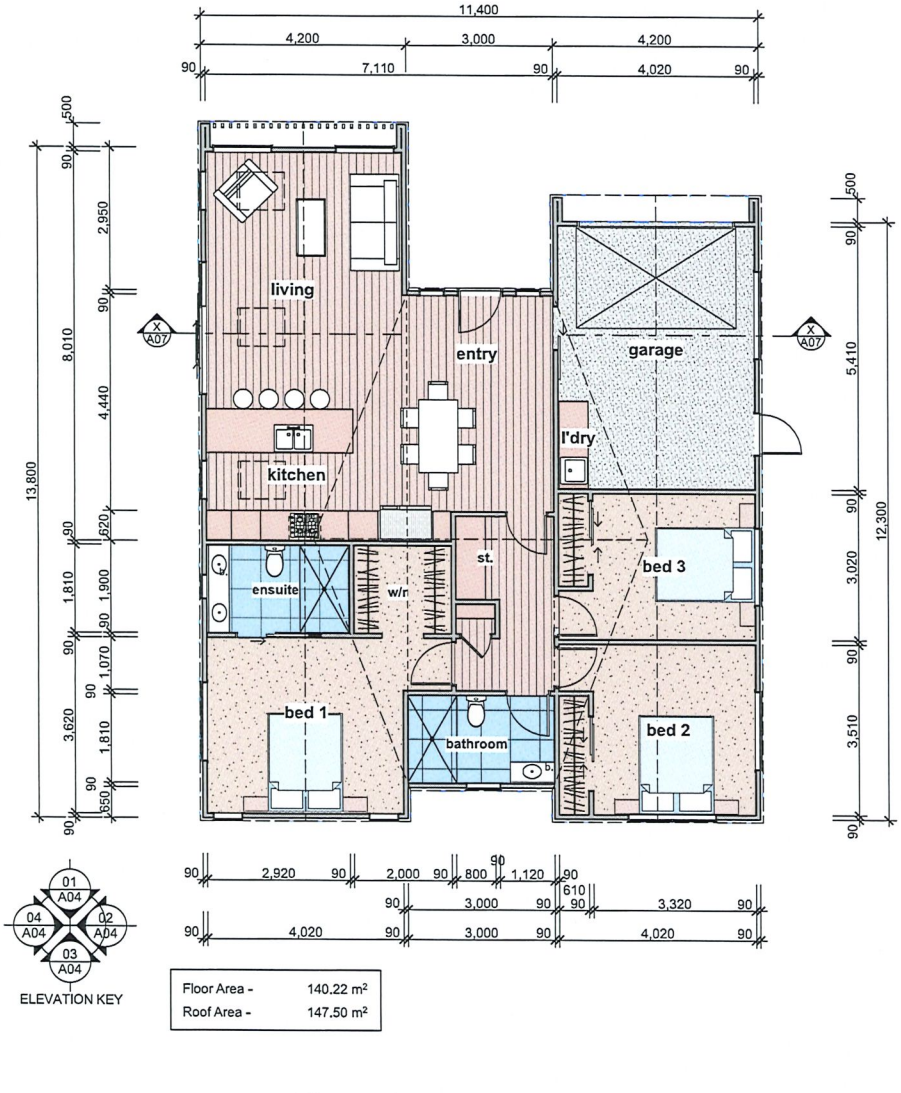
Lodge Development
cadl
6/05/2026
2025-0694 G



Site Setout Plan Scale1:200

Site Setout Plan
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G



Floor Area -	140.22 m²
Roof Area -	147.50 m²

Floor Plan Lot 2,3

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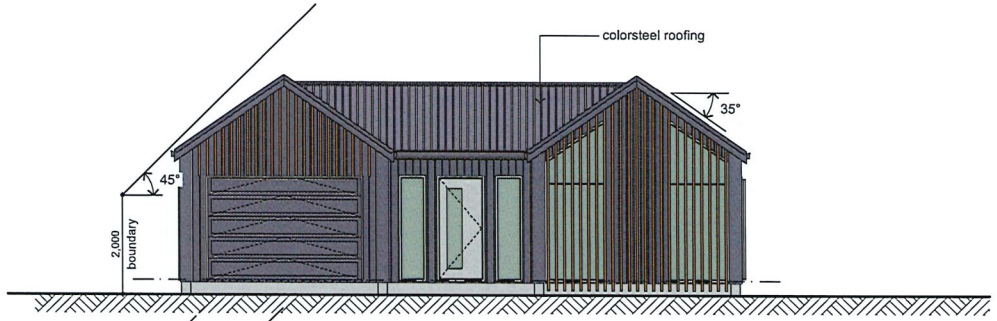

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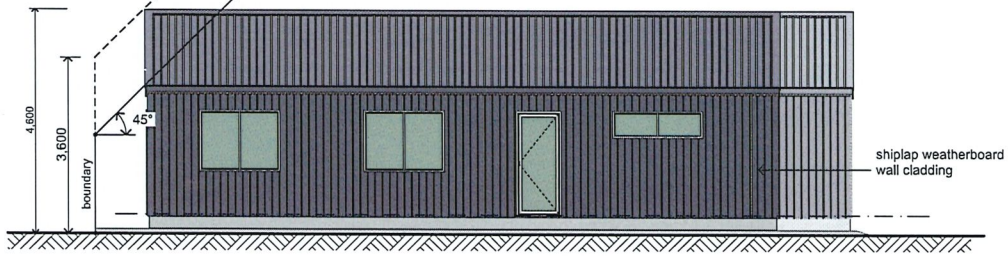
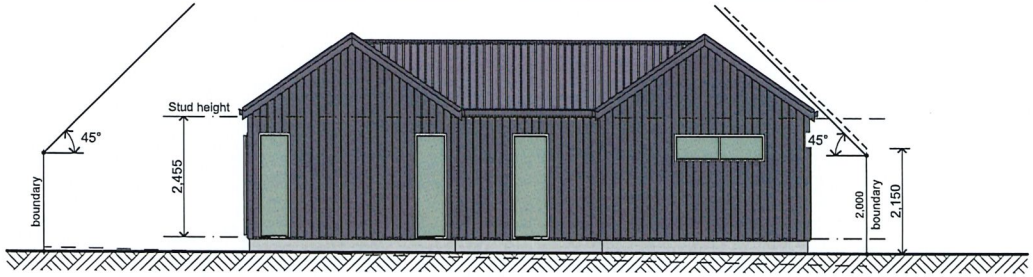


02 Elevation Scale1:100



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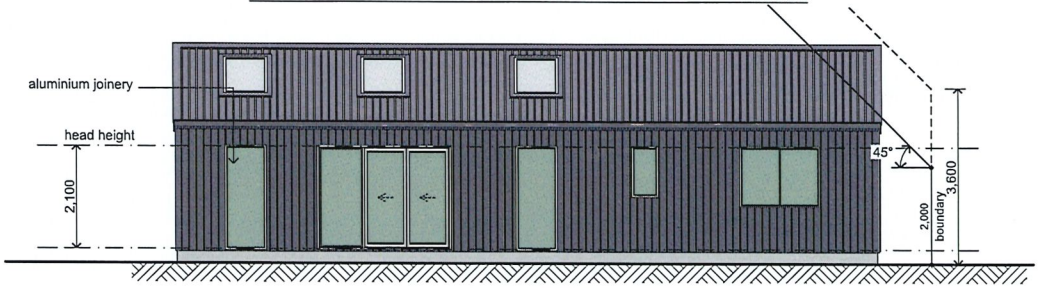
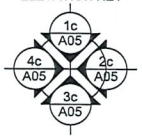


04 Elevation Scale1:100

Plan Lot 2 & 3
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

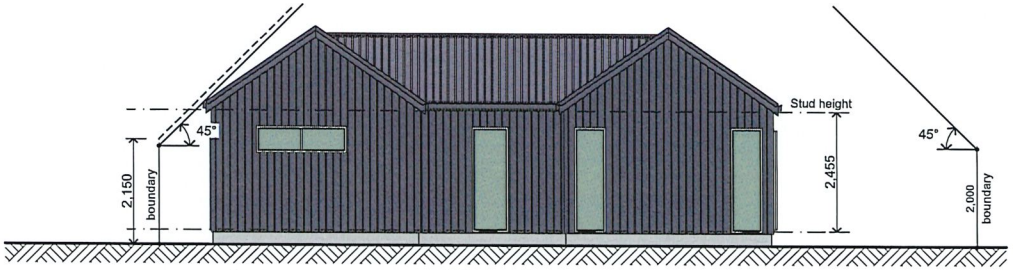
ELEVATION KEY



Roof Area -	147.50 m²
Floor Area -	140.22 m²

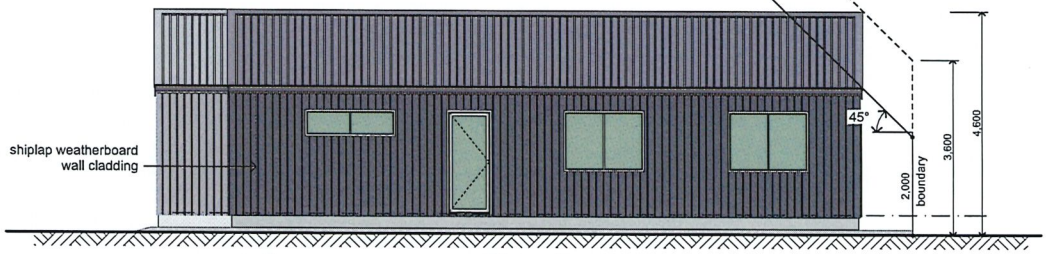
Floor Plan Lot 1,5,6

Scale1:100



1c Elevation

Scale1:100



2c Elevation

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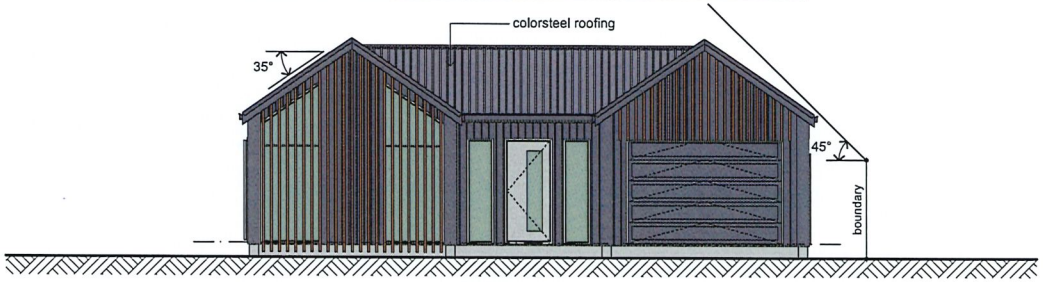


3c Elevation

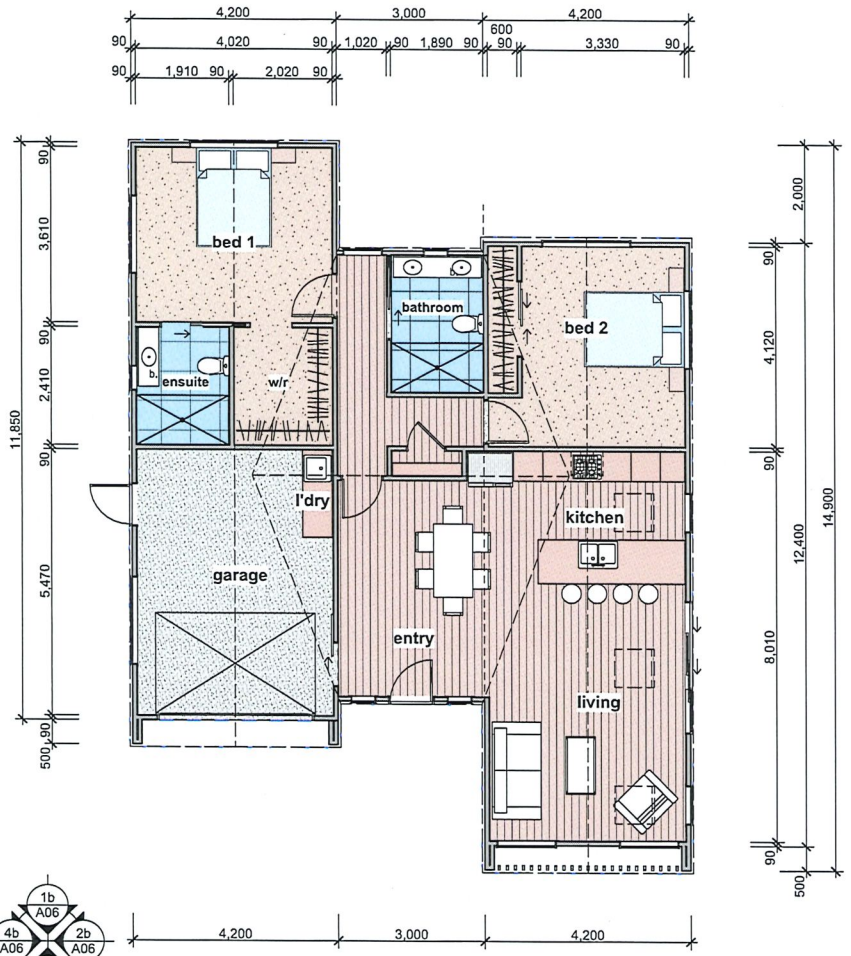
Scale1:100

4c Elevation

Scale1:100

Plan Lot 1 , 5 & 6
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

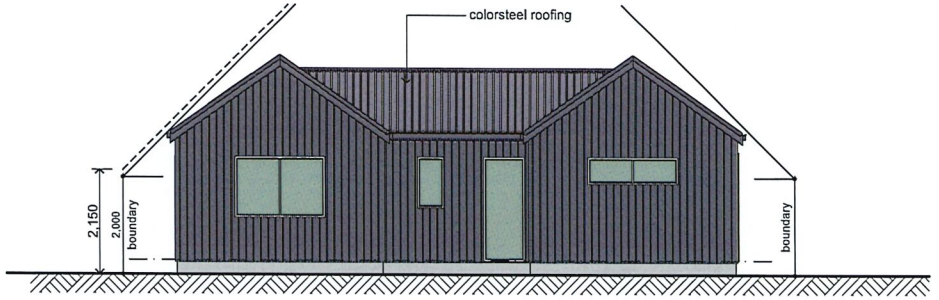


ELEVATION KEY

Roof Area -	137.00 m²
Floor Area -	129.60 m²

Floor Plan Lot 4

Scale1:100



Elevation

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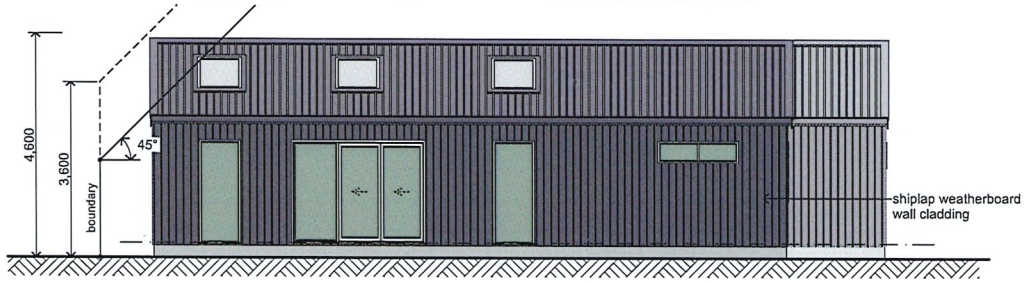
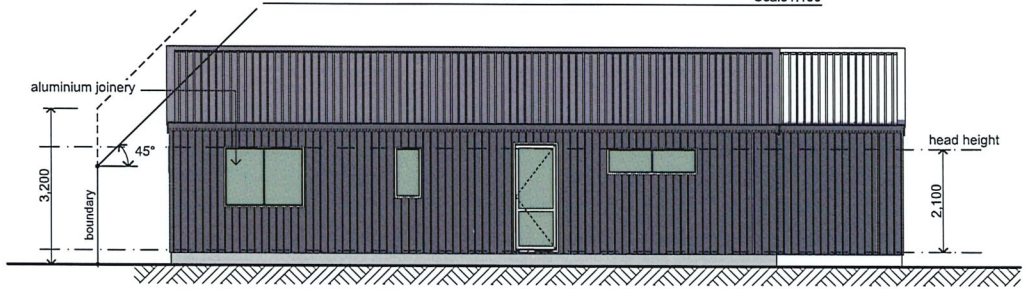


Elevation

Scale1:100

Elevation

Scale1:100

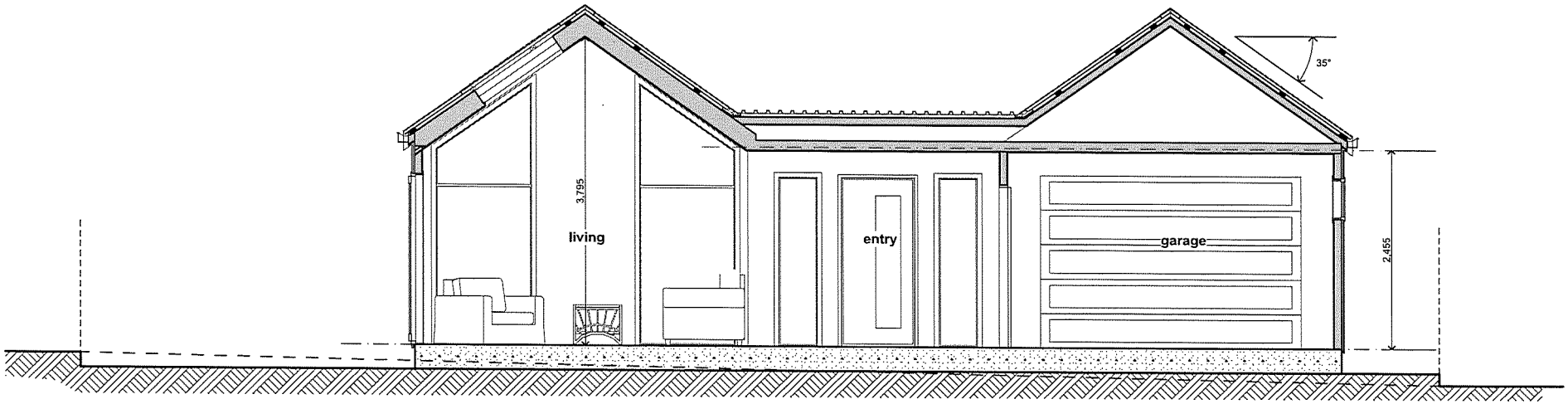


Elevation

Scale1:100

Plan Lot 4
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G



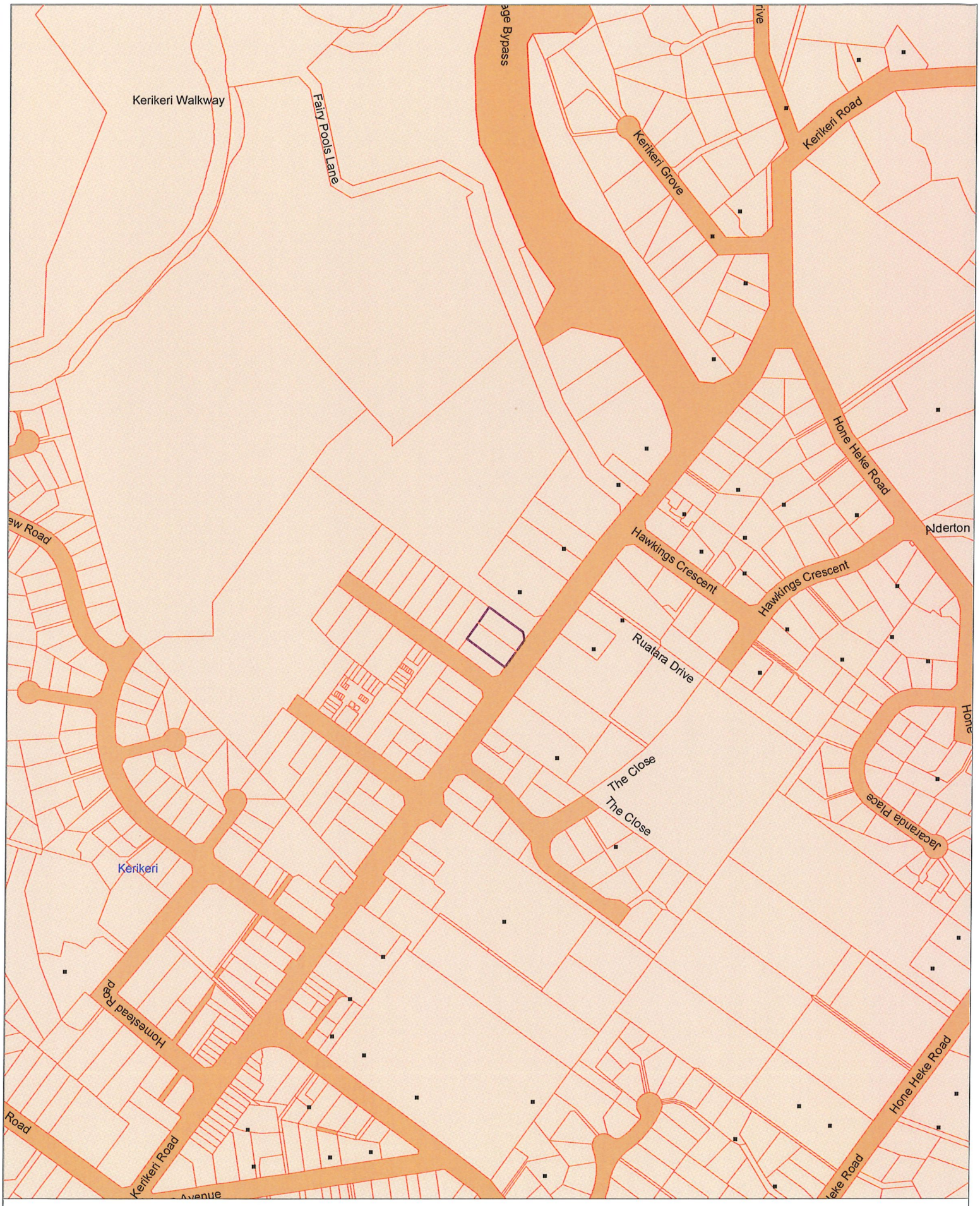
Section X-X Scale1:50

Section
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

Appendix 3

Location Plan



0 50 100 150 200 250 300 350 400 450 500 550 600m

QuickMap
Custom Software Ltd

Any person wishing to rely on the information shown on this map must independently verify the information

Scale 1:5000 Topographical and Cadastral map derived from LINZ data. Printed: 17-Jun-2026 02:23.

Appendix 4

Record of Title & Relevant Instruments

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

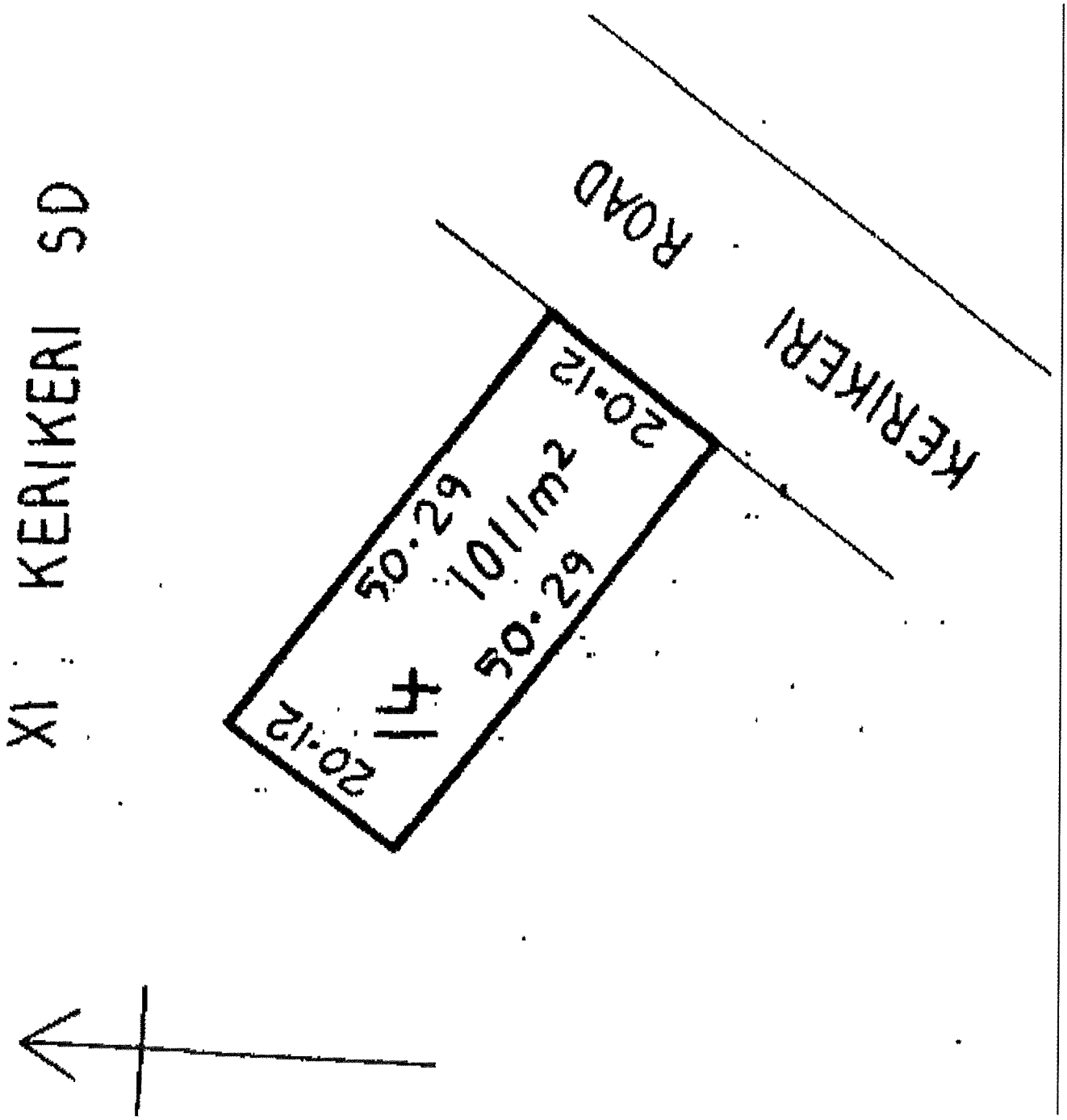
Identifier	**NA46C/261**
Land Registration District	**North Auckland**
Date Issued	27 August 1979

Prior References
NA2026/28

Estate	Fee Simple
Area	1011 square metres more or less
Legal Description	Lot 14 Deposited Plan 41378
Registered Owners	
Joshua Andrew Lodge	

Interests

13399324.3 Mortgage to ANZ Bank New Zealand Limited - 29.9.2025 at 3:10 pm


KERIKERI ROAD
XI KERIKERI SD
20.12
50.29
1011m²
50.29
20.12
14

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

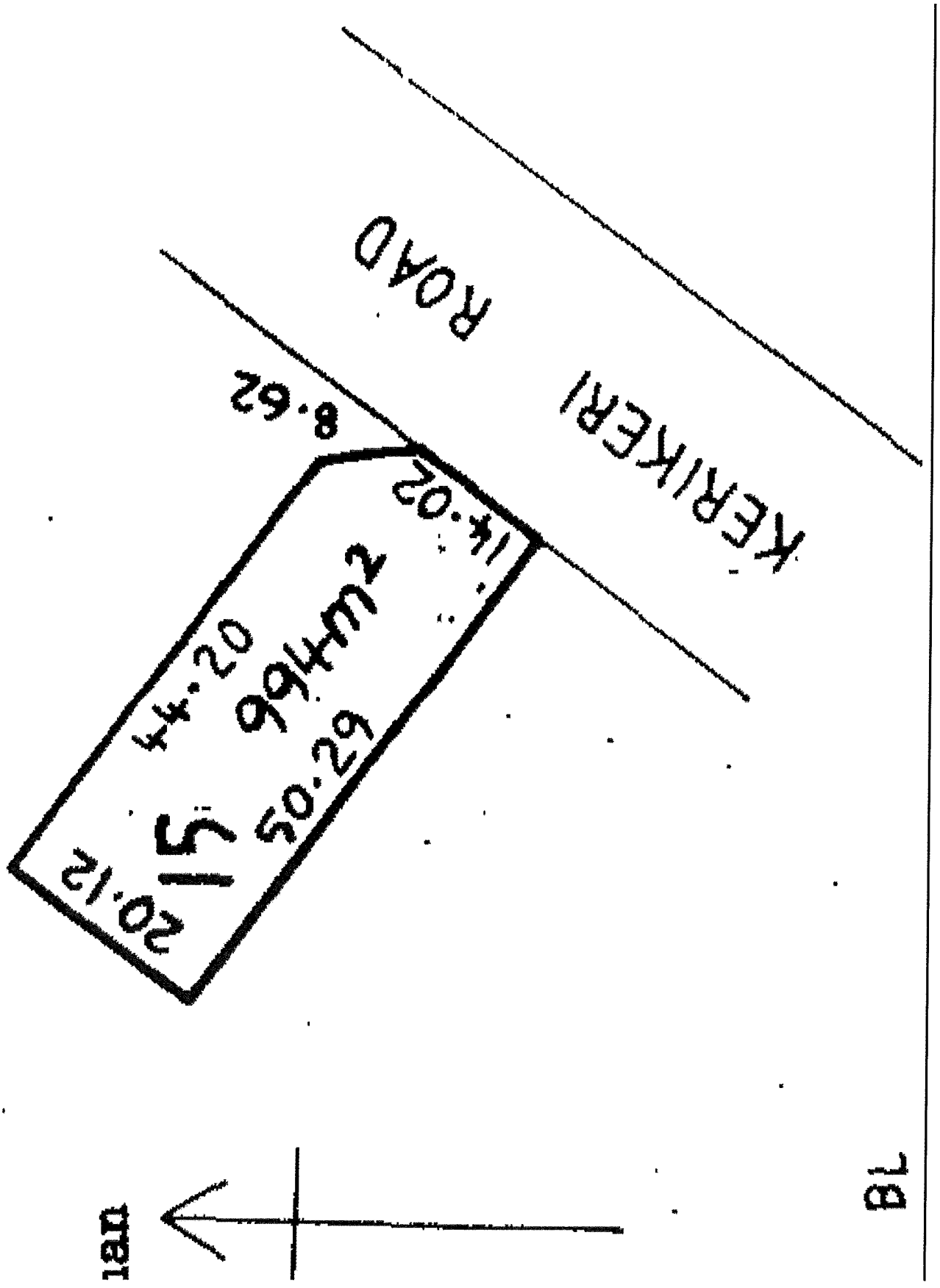
Identifier	**NA46C/262**
Land Registration District	**North Auckland**
Date Issued	27 August 1979

Prior References
NA2026/28

Estate	Fee Simple
Area	994 square metres more or less
Legal Description	Lot 15 Deposited Plan 41378

Registered Owners
Nigel Bruce Leslie and Bertha Leslie

Interests


KERIKERI ROAD
29.62
20.14
44.20
994m2
50.29
21.02
15
BL
Plan

Appendix 5

Civil Site Suitability Report

Wilton Joubert Limited
09 527 0196
196 Centreway Road,
Orewa, Auckland, 0931

SITE	**124 & 126 Kerikeri Road, Kerikeri**
LEGAL DESCRIPTION	**Lots 14 & 15 DP 41378**
PROJECT	**Proposed 6-Lot Subdivision**
CLIENT	**OC1 HoldCo Limited**
REFERENCE NO.	**144124**
DOCUMENT	**Civil Site Suitability Report**
STATUS/REVISION NO.	**01 – Resource Consent**
DATE OF ISSUE	**30 January 2026**

Report Prepared For	Email
OC1 HoldCo Limited	jalodge@live.com

Authored by	**P. McSweeney** *(BE(Hons) Civil)*	Civil Engineer	patrick@wjl.co.nz	
Approved by	**B. Steenkamp** *(CPEng, BEng Civil, CMEngNZ, BSc (Geology))*	Senior Civil Engineer	bens@wjl.co.nz	

1 EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

Legal Description:	Lots 14 & 15 DP 41378
Lot Sizes:	Proposed Lot 1 – 337m² Proposed Lot 2 – 337m² Proposed Lot 3 – 337m² Proposed Lot 4 – 319m² Proposed Lot 5 – 338m² Proposed Lot 6 – 338m²
Development Type:	2-into-6 lot subdivision
Scope:	Civil Site Suitability Investigation: - Wastewater Assessment - Stormwater Assessment - Water Supply Assessment - Access Assessment
Development Proposals Supplied:	Subdivision Scheme Plan by Thomson Survey (Ref No: 10864, dated: 12.12.2025).
District Plan Zone:	Residential Zone
Wastewater:	• Subdivision to be serviced by a low pressure sewer (LPS) reticulation system. 1 x new 40mmØ connection to be provided for each lot. • Boundary kit required for each new connection. • Each allotment should be provided with an individual on-lot wastewater pump station, comprising a prefabricated pump chamber with minimum 12-hour emergency storage. • 2 x existing site connections recommended to be utilised for proposed Lots 2 & 5.
Stormwater Management – District Plan Rules:	7.6.5.1.6 – Permitted Activities – Stormwater Management - The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 50%. 7.6.5.2.1 – Controlled Activities – Stormwater Management - The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 60% or 600m², whichever is the lesser. We note that the ROW coverage (approximately 152m²) should be included in the coverage calculations. This may either be assigned to Lots 1, 2, 4 & 5 according to the actual ROW coverage on each of these lots.
Stormwater Management:	• It is recommended that primary stormwater discharge be directed to the reticulated stormwater network via an extension of the network into the property. • It is recommended that service location along the indicated stormwater extension alignment be undertaken prior to construction to determine if any other existing services may inhibit the construction of the extension. In the case that existing services prevent the construction of the

	extension, the alternative discharge point specified herein (kerb discharge) should be utilised for subdivision stormwater drainage. • If the stormwater network extension is not feasible, it is recommended that primary runoff be discharged to kerb discharge outlets. • For future developments exceeding the Permitted Activity coverage rules, on-lot attenuation to Permitted flow rates should be implemented.
Water Supply:	• Each lot (except Lot 1) will require a 20mm I.D connection to the existing 150mmØ water main (Asset ID: WL2226) with 1 water meter per lot. Connections and water meters are to be installed in accordance with the FNDC Engineering Standards 2023 Sheets 46 & 47. • For an assumed occupancy per dwelling of 5, the peak hourly water demand will amount to 313ℓ/hr (or 0.09ℓ/s) for each lot and 1875ℓ/hr (or 0.52ℓ/s) for the entirety of the subdivision. FNDC must be consulted to verify that adequate pressure is available in the network to service future developments at the proposed subdivision. • It is recommended that the existing connection and water meter serving the existing dwelling within the bounds of proposed Lot 1 be utilised to serve the future development at Lot 1.
Access:	• It is proposed that all lots are to be accessed from a shared Right of Way (ROW) extending from Kerikeri Road, with the centreline of the ROW alignment following the central boundary between existing Lots 14 & 15 DP 41378. • A new double vehicle crossing is to be constructed to serve the proposed lots in compliance with the Far North District Council Engineering Standards (May 2023) Sheet 18. It is recommended that the widened side bay be extended to the northern edge of the new vehicle crossing extent, with the kerb and carriageway formed to match the specifications and layerworks of the existing carriageway. • The ROW access is to be formed to a minimum surfacing width of 4.5m with a crossfall of 3%. Primary runoff generated over the ROW is to be collected via minimum 2 x catchpits with 450x450mm grate inlet covers (or 1 x Type 2 catchpit). • Vehicle crossing sight distances will be compliant.

2 INTRODUCTION

2.1 SCOPE OF WORK

Wilton Joubert Limited (WJL) was engaged by the client to undertake a civil site suitability assessment (wastewater, stormwater, water supply & access assessment) to support a 1-into-6 lot subdivision of Lots 14 & 15 DP 41378, as depicted to us on the supplied Subdivision Scheme Plan by Thomson Survey (Ref No: 10864, dated: 12.12.2025).

At the time of report writing, no development plans have been supplied to WJL for the future development of the proposed lots.

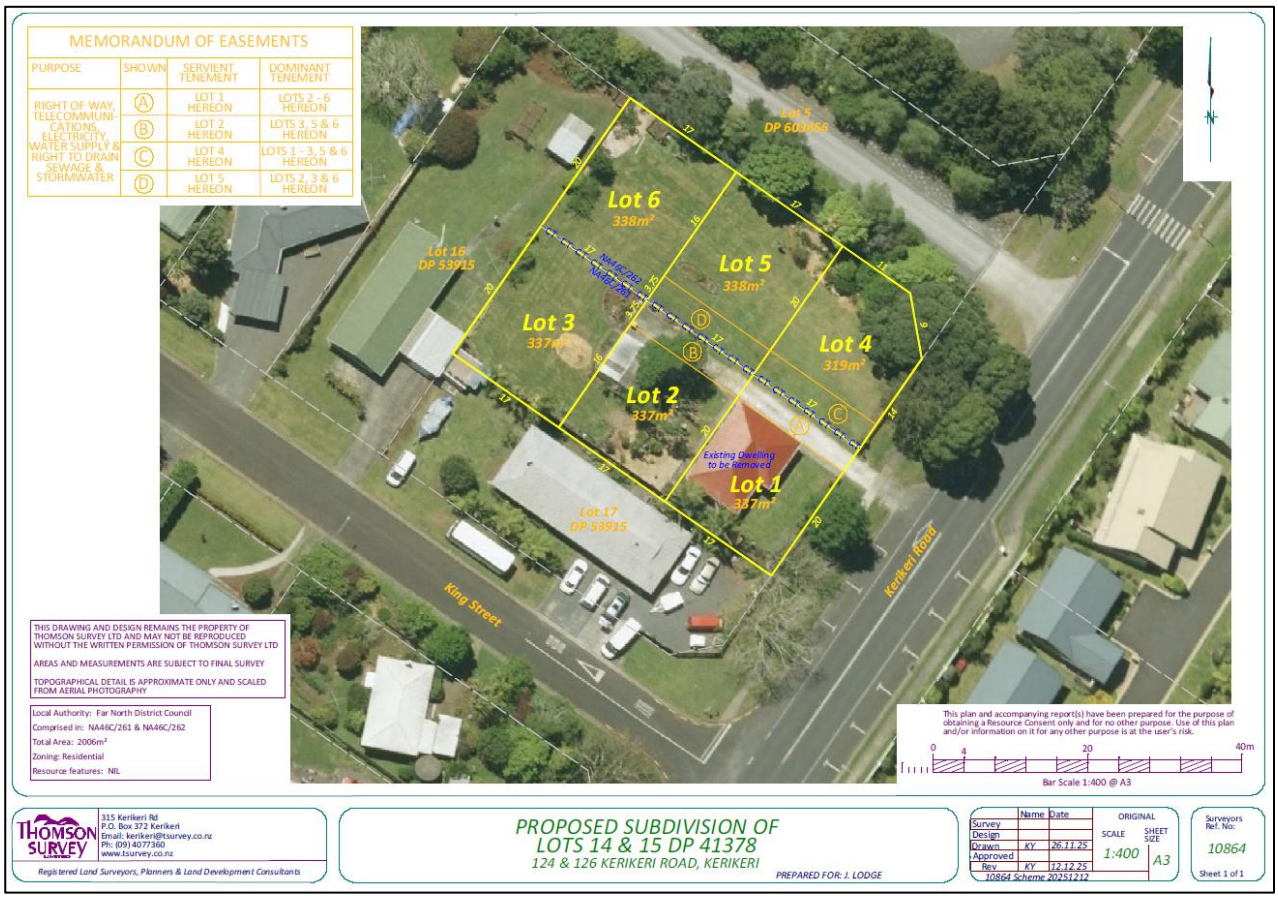


Figure 1: Subdivision Scheme Plan by Thomson Survey.

Any revision of the supplied drawings and/or development proposals with wastewater, stormwater, water supply and/or access implications should be referred back to us for review. This report is not intended to support Building Consent applications for the future proposed lots, and any revision of supplied drawings and/or development proposals including those for Building Consent, which might rely on wastewater, stormwater, water supply and/or access assessments herein, should be referred to us for review.

3 SITE DESCRIPTION

The subject site consists of two lots, 124 & 126 Kerikeri Road (Lots 14 & 15 DP 41378 respectively), comprising a combined area of 2,006m². The site is located within a 'Residential Zone' under the Operative FNDC District Plan on the northern side of the Kerikeri central urban area.

The properties are situated on the north-western side of Kerikeri Road, with access to the existing development on 124 Kerikeri Road being directly from the road via a metalled vehicle crossing. The roadside edge of the vehicle crossing borders a widened section of the Kerikeri Road carriageway that serves as a parallel parking area. An existing single-storey dwelling is located within 124 Kerikeri Road, with 126 Kerikeri Road being vacant and lawn-covered with intermittent shrubs, trees and garden areas. Topography across the site generally falls from northwest to southeast from 71.0m at the north-western boundary to 70.0m at the south-eastern boundary (grade <2°).

FNDC Water Services maps indicate the following:

- Two reticulated 40mmØ low pressure sewer (LPS) connections extend into the properties from a 75mmØ LPS main in the north-eastern berm of Kerikeri Road. A separate 90mmØ sewer main (pressurised) follows the alignment of the aforementioned 75mmØ main (pressurised), though no connections to the property from the 90mmØ main are shown.
- A stormwater catchpit is located on the northern side of the Kerikeri Road carriageway approximately 12m south of the southern corner of 124 Kerikeri Road. A ~15m long 300mmØ lead from the catchpit drains southwest to a stormwater manhole in the carriageway.
- The existing development is served by reticulated water supply from a 150mmØ water main in the north-eastern berm of Kerikeri Road. A water meter is located within the southern corner of 124 Kerikeri Road.
- An overland flow path (OLFP) is indicated as overspilling from the northern to southern kerb of Kerikeri Road on the corner of Kerikeri Road and King Street, with the OLFP data dated April 2010.

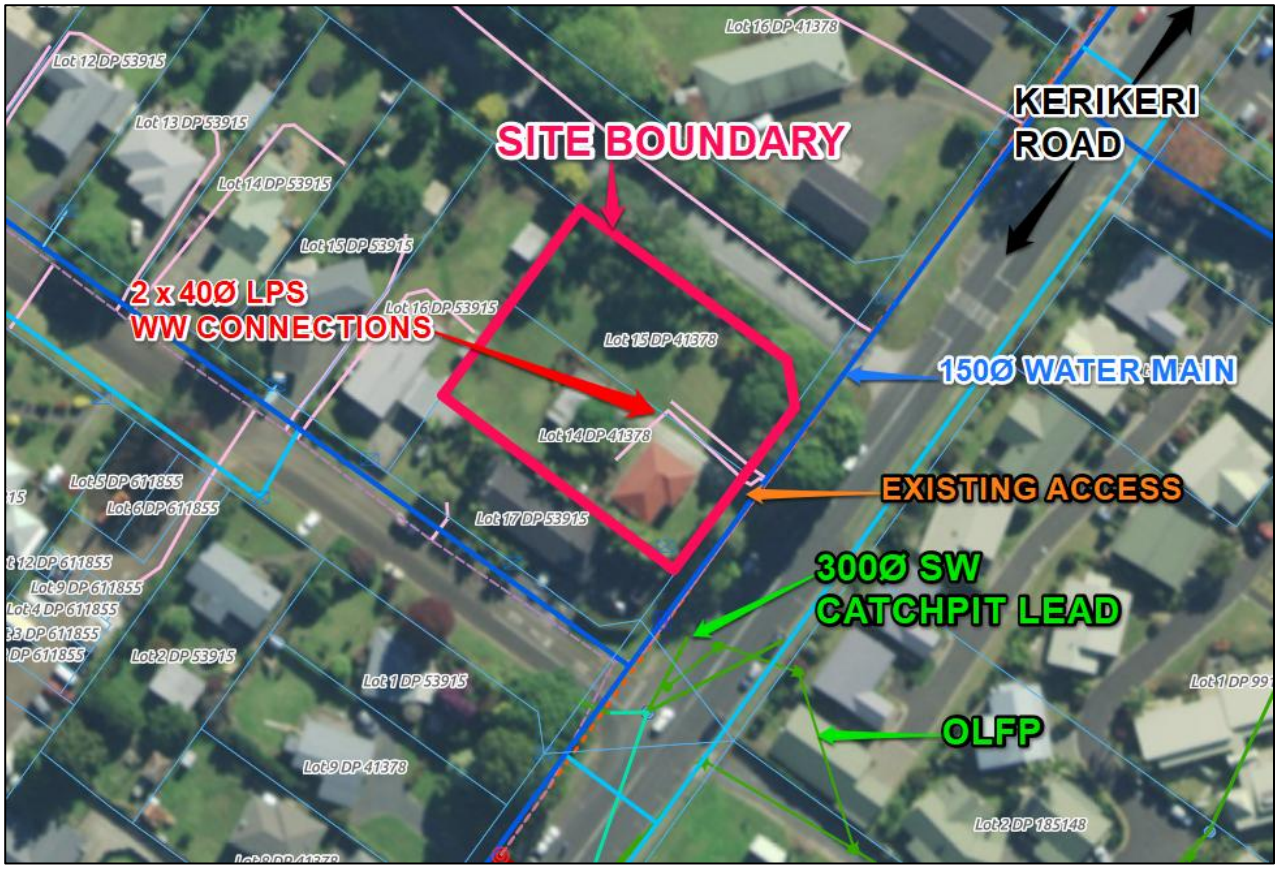


Figure 2: Screenshot Aerial View of the Site from FNDC GIS Water Services Map Showing Site Boundaries (pink), Public Stormwater (green), Public Potable Water (blue) and public wastewater (red).

4 SUBDIVISION PROPOSALS

In reviewing the supplied Subdivision Scheme Plan (see Figure 1), it is our understanding that the client intends to subdivide the two properties into six individual allotments with similar lot sizes as per the following:

Proposed Lot	1	2	3	4	5	6
Area	337m²	337m²	337m²	319m²	338m²	338m²

All lots are to be accessed from a shared Right of Way (ROW) extending from Kerikeri Road, with the centreline of the ROW alignment following the central boundary between existing Lots 14 & 15 DP 41378. Easements encompassing the ROW on proposed Lots 1, 2, 4 & 5 will be registered for ROW, telecommunications, electricity, water supply, and right to drain sewage and stormwater. See Figure 1.

5 WASTEWATER

It is proposed that the six-lot subdivision be serviced by a low pressure sewer (LPS) reticulation system, connecting to the existing public wastewater network. The LPS system has been selected as an appropriate servicing solution given the urban nature of the development, site topography, and the absence of a conveniently located gravity sewer connection point.

Each allotment should be provided with an individual on-lot wastewater pump station, comprising a prefabricated pump chamber equipped with duplex or duty/standby grinder pumps (as required by Council standards) with a minimum 12-hour emergency storage volume (daily wastewater flow and subsequent pump chamber design/specification to be confirmed at building consent once occupancy data available). The pump stations should be located within private property boundaries and positioned to allow gravity inflow from the dwelling while maintaining appropriate setbacks from buildings and boundaries. A boundary kit consisting of an isolation valve, flushing access point, and check valve (all valves being made of stainless steel) will also be required for each lot connection, and should be installed within the road reserve on the subdivision boundary.

Conservatively assuming an occupancy of 5 persons per household for each lot, the estimated wastewater flow production from each lot amounts to 0.06ℓ/s (PWWF). As shown in the appended calculations, a 40mmØ connection to each lot will be sufficient to accommodate these flows.

Wastewater from each lot will be conveyed via a network of small-diameter pressure pipes installed within the internal access corridor and/or road reserve. The reticulation will discharge to the nearest LPS connection point or pressure sewer connection point, subject to confirmation and approval by Far North District Council.

It is recommended that the two existing connections to the site be utilised for proposed Lots 2 & 5 respectively, provided that a suitably qualified professional can confirm on-site that the existing connections meet the above requirements. An existing sewer meter is located within the extent of the proposed vehicle crossing – this meter is to be relocated outside the vehicle crossing or retrofitted with a trafficable housing and cover. The existing 40mm service line from each of the existing boundary kits is to be relocated along the ROW easement.

6 STORMWATER MANAGEMENT

6.1 ASSESSMENT CRITERIA

District Plan Requirements

As below, the site resides in a Residential Zone under the Operative District Plan.

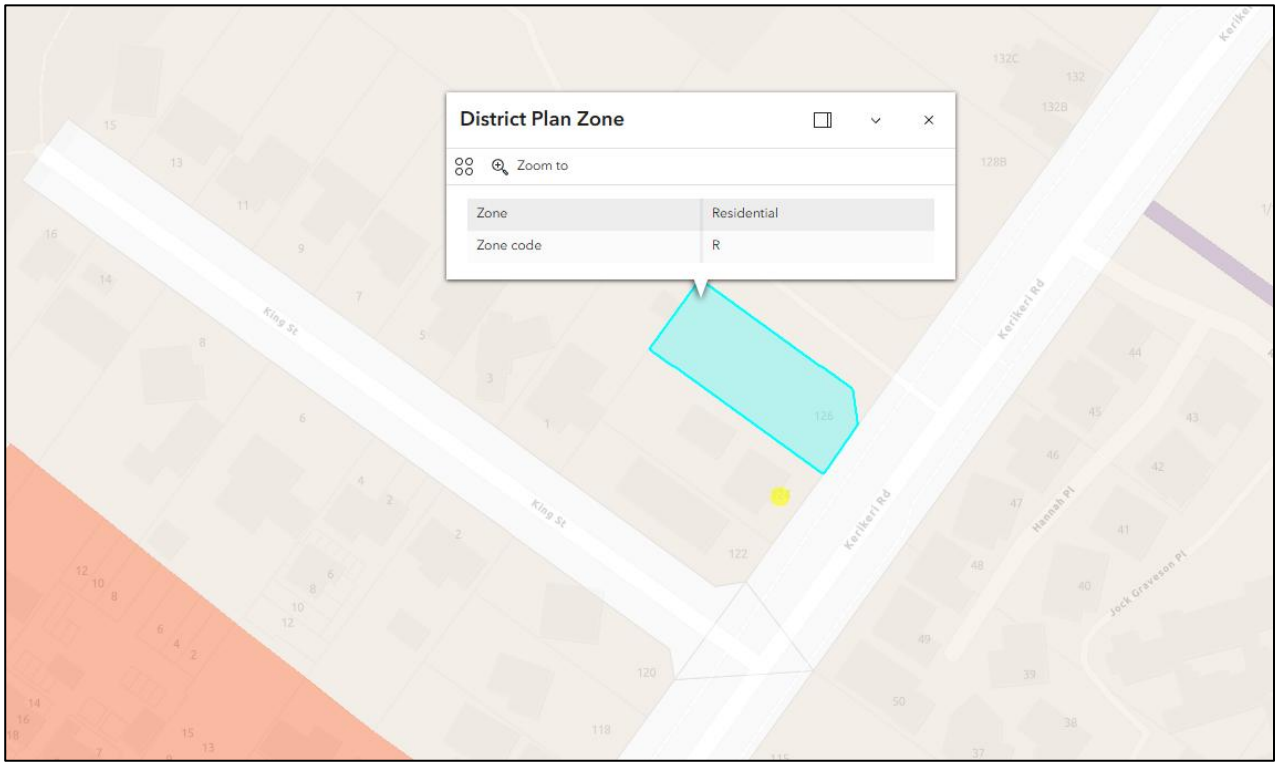


Figure 3: Snip of FNDC Maps Showing Site in Residential Zone.

As per the Far North District Council District Plan, following Stormwater Management Rules Apply:

7.6.5.1.6 – Permitted Activities – Stormwater Management - The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 50%.

7.6.5.2.1 – Controlled Activities – Stormwater Management - The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 60% or 600m², whichever is the lesser.

To comply with the parameters of the Permitted Activity Rule (7.6.5.1.6), Lots 1 – 6 must not exceed an impermeable area of 50% of the lot area. The maximum permitted impermeable area and anticipated activity status for Lots 1 – 6 are as follows:

Table 1: Proposed Lots Maximum Permitted Impermeable Coverage

Lot	Maximum Permitted Impermeable Area (50%)
1	168.5 m²
2	168.5 m²
3	168.5 m²
4	159.5 m²
5	169 m²
6	169 m²

A site-specific district plan assessment in accordance with Section 7.6.5.2.1 of the FNDC District Plan will be required for any lot that exceeds 50% impermeable area coverage or Section 11.3 for any lot that exceeds 60% impermeable area coverage. This should be included in the site-specific attenuation report required for each lot where necessary.

We note that the ROW coverage (approximately 152m²) should be included in the coverage calculations. This may either be assigned to Lots 1, 2, 4 & 5 according to the actual ROW coverage on each of these lots.

Stormwater Management Approach

It is recommended that primary stormwater discharge from future developments at the proposed lots be directed to the reticulated stormwater network via an extension of the network into the property as detailed in Section 6.3.1 below.

In the event that the stormwater network extension cannot feasibly be constructed, we recommend that primary stormwater discharge from future developments at the proposed lots be directed to kerb discharge outlets on the northern Kerikeri Road kerb as detailed in Section 6.3.2 below.

For future developments exceeding the Permitted Activity coverage rules, on-lot attenuation to Permitted flow rates should be implemented – detention tank and soakpit concept designs are specified in Section 6.4 below to demonstrate the feasibility of on-lot attenuation in such a case. We note that while some soakage is available in the underlying soils that can be utilised to balance flows back to Permitted levels, we do not deem soakage to be a viable solution for the disposal of all primary runoff generated across the subdivision due to development intensity and space constraints.

In addition, to appropriately mitigate stormwater runoff from the future proposed impermeable areas, we recommend utilising Low Impact Design Methods as a means of stormwater management. Design guidance should be taken from 'The Countryside Living Toolbox' design document, and where necessary, 'Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual' Auckland Regional Council (2003).

Stormwater Design Parameters

The Type IA storm profile was utilised for the attenuation calculations in accordance with TR-55. HydroCAD® software has been utilised in design for a 50% AEP 24-hour rainfall value of 107mm and a 20% AEP 24-hour rainfall value of 140mm. Rainfall data was obtained from HIRDS and increased by 20% to account for climate change.

6.2 ON-LOT PRIMARY STORMWATER MANAGEMENT

6.2.1 Stormwater Runoff from Roof Areas

Stormwater runoff from the roof of future proposed buildings must be captured by a proprietary guttering system and conveyed to the discharge point via sealed pipes. Leaf filters may be installed to prevent blockages over time.

6.2.2 Stormwater Runoff from Hardstand Areas

Future concrete hardstand areas are recommended to be shaped to shed runoff to catchpits, from which runoff is to be directed to the lot's discharge point via sealed pipes. Catchpits should have suitable sumps for pre-treatment prior to discharge.

The installation of standard catchpits within the extent of metal surface areas may lead to frequent blockages in the system. Therefore, it is recommended that any metalled hardstand areas should be shaped to shed runoff to channel drains, which in turn may drain to silt traps for the collection of runoff. Runoff is to be directed from the silt trap(s) to the discharge point via sealed pipes.

6.3 PRIMARY RUNOFF DISCHARGE POINT

6.3.1 Option 1 - Stormwater Network Extension

It is recommended that the stormwater network be extended from the existing stormwater catchpit (lead Asset ID: KK_SWL0169) into the proposed subdivision via a new line extension consisting of a 150mmØ pipe laid at a grade of 1%, with a new 1050mmØ manhole at the property entrance to accommodate a line direction change. See the appended Stormwater Longsection C210 for an indicative layout. Additionally, a 100mmØ connection to each lot from the stormwater extension should be provided.

As per the appended calculations, the primary runoff flow generated across the subdivision under the assumption that each lot is developed to the Permitted Activity coverage (50% lot area) amounts to 11.07ℓ/s. A 150mmØ PVC pipe at a grade of 1% will have a capacity of 18.0ℓ/s, and will therefore be sufficient to accommodate primary flows generated across the subdivision up to the Permitted Activity coverage for the 20% AEP storm event adjusted for climate change.

To assess the capacity of the existing 300mmØ catchpit lead, the catchment of the existing catchpit was delineated in the HEC-HMS software, the curve number of the catchment was extrapolated from property zoning per Table 2 below (assumed Maximum Probable Development – impermeable surfacing up to 50% for residential and 90% for road reserve) and the catchment flow was calculated in HydroCAD. The catchpit catchment flow rate amounts to 84.67ℓ/s for the 20% AEP + CC storm event – this includes the subject site being developed up to 50% coverage. Based on FNDC assets maps level, the receiving 300mmØ catchpit lead is estimated to have a capacity of 170.6ℓ/s, and will therefore be adequate to accommodate future development at the proposed development.

Table 2: Catchpit Catchment Area & Curve Number

Subcatchment	Area	CN
Road Reserve (90% Impermeable)	2,842m²	96
Residential (50% Impermeable)	5,269m²	86
Total	**8,111m²**	**90**

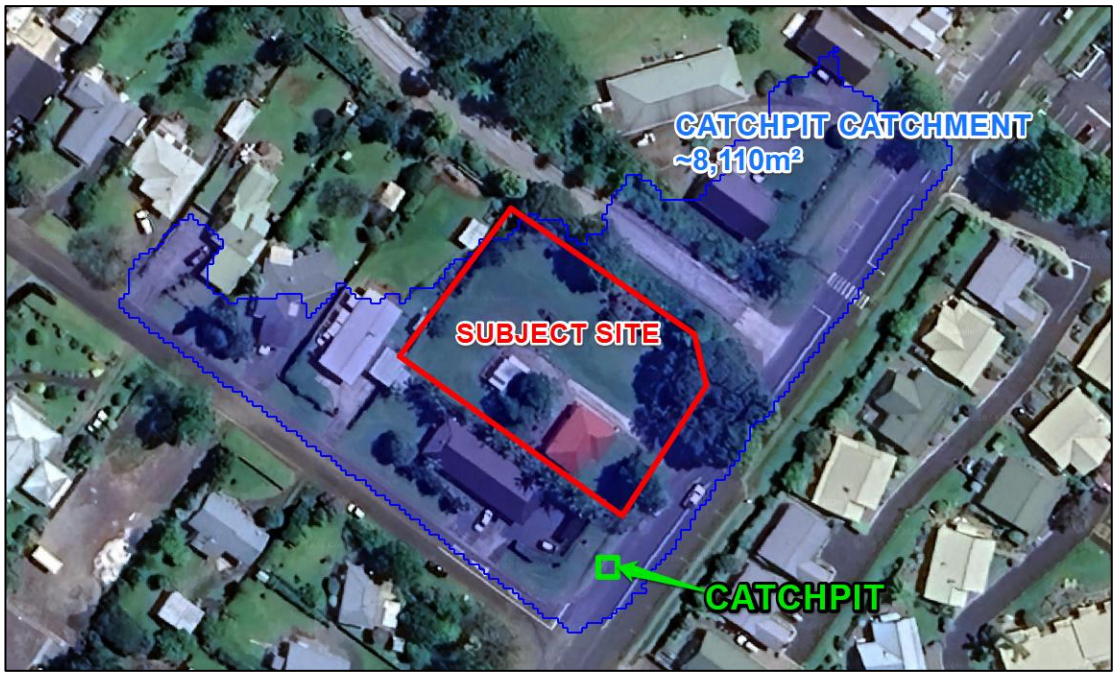


Figure 4: Aerial view of catchpit catchment. Catchment area in blue fill, background imagery sourced from Google Satellite.

Due to the shallow nature of the existing 300mmØ catchpit lead and flat topography around the subject site, the ground cover over the extension line may be relatively shallow. Available cover should be determined in detailed design; if minimum cover requirements per FNDC standards cannot be met, then additional pipe protection measures (such as concrete capping over the line) should be implemented in the design.

The stormwater extension as described will require detailed design and approval from FNDC. The extension as described herein and depicted in the appended plans is not for construction. This concept design is based on existing network levels extracted from FNDC assets maps and is intended only to demonstrate the feasibility of providing a stormwater extension to service the subdivision.

It is recommended that service location along the indicated stormwater extension alignment be undertaken prior to construction to determine if any other existing services may inhibit the construction of the extension. In the case that existing services prevent the construction of the extension, the alternative discharge point specified in Section 6.3.2 below (kerb discharge) should be utilised for subdivision stormwater drainage.

6.3.2 Option 2 – Kerb Discharge

An existing kerb discharge outlet currently services the existing dwelling, with the outlet being located south of the site on the northern Kerikeri Road kerb.

Figure 5: Google Street View – view of subject site from Kerikeri Road, facing north. Existing kerb Discharge outlet shown in bottom left of image.

If the piped stormwater extension as described in Section 6.3.1 above is determined as not being feasible, it is recommended that runoff from future developments at the subdivision be directed to a minimum of 3 x 100mmW x 60mmH (or equivalent capacity) kerb discharge outlets laid to a minimum grade of 1%.

Primary runoff drainage from on-lot roof/hardstand runoff collection devices (or detention devices if applicable) should be directed to a Type 2 catchpit chamber at the low-point of the Right of Way. Runoff is to drain via the three outlets specified above from this catchpit to the kerb.

Any hardstand catchpits or soakpit settling chambers installed on the lots must have a lid level at least 100mm higher than the lid level of the Right of Way Low Point catchpit. If this is not achievable, we recommend that a detention tank be utilised instead of a soakpit.

This option must be approved by the FNDC and the ROW and vehicle crossing detailed design must allow for the minimum drainage line grade from the catchpit to the outlets for this option to be hydraulically workable.

6.4 PRIMARY RUNOFF ATTENUATION

If impermeable areas resulting from future development at the proposed lots exceeds Permitted Activity coverage levels then on-lot attenuation should be implemented to provide an outflow flow rate equivalent to the Permitted Activity flow rate for the 50% AEP + CC and 20% AEP + CC storm events. At the time of report writing, no development proposals have been supplied for the eventual development of the proposed lots. As such, the below indicative stormwater attenuation designs are based off a range of Permitted Activity coverage exceedances to demonstrate feasibility.

6.4.1 Detention Tanks

Detention tanks may be installed between the roof area guttering and the discharge point to attenuate outgoing flow rates to Permitted levels. See Table 3 below for an indication of tank sizes for two separate exceedance scenarios.

Table 3: Permitted Coverage Exceedance Scenario - Detention Concepts

Permitted Coverage Flow Rate (50% AEP + CC & 20% AEP + CC)	Area Exceeding Permitted Coverage	Tank Configuration	Detention Tank Outflow (50% AEP + CC & 20% AEP + CC)	Detention Volume (50% AEP + CC & 20% AEP + CC)
1.69ℓ/s 1.86ℓ/s	50m²	1600mØ tank 28mmØ control orifice	1.37ℓ/s 1.69ℓ/s	1.4m³ 2.2m³ (cumulative)
	100m²	2200mØ tank 28mmØ control orifice	1.36ℓ/s 1.66ℓ/s	2.7m³ 4.0m³ (cumulative)

The above configurations described herein and depicted in the appended plans are not for construction, and are only intended to provide an approximate indication of on-lot attenuation setups for future developments exceeding Permitted impermeable coverage levels to demonstrate the feasibility of on-lot attenuation. Specific design for a detention system should be provided at the Building Consent stage by a suitably qualified professional if required. A site-specific district plan assessment in accordance with Section 7.6.5.2.1 of the FNDC District Plan will be required for any lot that exceeds 50% impermeable area coverage or Section 11.3 for any lot that exceeds 60% impermeable area coverage. This should be included in the site-specific attenuation report required for each lot where necessary.

6.4.2 Soakpits

Runoff from specific roof and/or hardstand areas may be directed to soakpits to mitigate the flow rate from these areas and subsequently reduce the overall flow rate off the site to Permitted levels. In this scenario, the catchment area of the soakpit must be equivalent to or greater than the total on-site impermeable area exceeding the Permitted Activity threshold.

Two soakage tests were conducted at the subject site in January 2026, with the corresponding Percolation Test Graph used in calculations appended to this report. Soakage rates of 120mm/hr & 240mm/hr have been calculated using methodology adopted from E1 Building Code. The most conservative of the two soakage rates (120mm/hr) has been used for soakpit sizing calculations.

The below stormwater soakage designs have been completed in accordance with the Far North District Council Engineering Standards (May 2023) – Section 4.3.20. The above soakage rate received a 0.25 reduction factor as per Council's design guidelines.

At the time of report writing, no development proposals have been supplied for the eventual development of the proposed lots. See Table 3 below for an indication of soakpit footprints for two separate exceedance scenarios.

Table 4: Concept Single-Lot Soakpit Configurations

Impermeable Coverage Exceeding Permitted Activity (single lot)	Soakpit type	Soakpit Dimensions
50m²	Rock-Filled (38% voids)	6.3m² x 1.0m deep
	Crate System (95% voids)	4.7m² x 0.78m deep
100m²	Rock-Filled (38% voids)	12.5m² x 1.0m deep
	Crate System (95% voids)	9.3m² x 0.78m deep

Settling chambers should be installed in-line between the soakpit(s) and roof/hardstand runoff collection devices for pre-treatment. An overflow outlet should be fitted from the settling chamber, above the soffit level of the soakpit, to the discharge point. The settling chambers should be located in a suitable secondary flow escape point such that any runoff spilling out of the settling chamber in a storm event exceeding the capacity of the primary system is not directed to structures and is able to be conveyed safely to lower-lying areas (i.e to the Right of Way).

Any soakpits should have a minimum horizontal offset to structures of 3.0m or as specified by a structural engineer.

The above configurations described herein and in the appended plans are not for construction, and are only intended to provide an approximate indication of the footprint of a soakpit system serving future developments to demonstrate feasibility. Specific design for a soakpit system should be provided at the Building Consent stage by a suitably qualified professional.

6.5 SECONDARY STORMWATER

Where required, overland flows and similar runoff from higher ground should be intercepted by means of shallow surface drains and/or small bunds near structures to protect these from both saturation and erosion, as well as any localised slope instability. Water collected in interceptor drains should be diverted away from building sites to stable disposal points.

The proposed Right of Way should be shaped to provide a low-point at the road frontage subdivision boundary, from which secondary flows can be conveyed over land to the Kerikeri Road carriageway, away from any structures.

6.6 DISTRICT PLAN ASSESSMENT

This section has been prepared to demonstrate the likely effects of the activity on stormwater runoff and the means of mitigating runoff.

In assessing an application under this provision, the Council will exercise discretion to review the following matters below, (a) through (r). In respect of matters (a) through (r), we provide the following comments:

13.10.4 – Stormwater Disposal

(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.	Stormwater attenuation / management recommendations / indicative designs are included in this report to ensure that future proposed development is compliant with the operative FNDC District Plan rules.

(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).	The application is deemed compliant with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009.
(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.	The application is deemed compliant with the Far North District Council Strategic Plan - Drainage.
(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.	Stormwater management should be provided for the subject lot by utilising Low Impact Design Methods. Guidance for design should be taken from 'The Countryside Living Toolbox' design document, and where necessary, *"Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual" Auckland Regional Council (2003).* All roof runoff will be collected for conveyance to either of the specified discharge points. Hardstand areas are to be shaped to shed runoff to catchpits for runoff conveyance to the discharge point without causing scour or erosion.
(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.	As above. Runoff from new roof areas will be collected and directed to the discharge point in a controlled manner, reducing scour and erosion. Hardstand areas are to be shaped to shed runoff to catchpits for runoff conveyance to the discharge point without causing scour or erosion.
(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.	Runoff from roof areas is free of litter, chemical spillages, or contaminants from roads. Hardstand areas are to be shaped to shed runoff to catchpits for runoff conveyance to the discharge point without causing scour or erosion. Catchpits are to have a suitable sump to serve as a pre-treatment device prior to discharging to the lot's discharge point.
(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.	No alteration to waterways is proposed.
(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.	The capacity of the receiving reticulated network has been assessed and verified as adequate to accommodate future development at the subdivision.

(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.	Not applicable.
(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.	Not applicable.
(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.	Provided that the recommendations herein are adhered to, no adverse effects to adjoining properties are anticipated for discharge to the potential discharge points specified herein. Runoff will be disposed of either to the reticulated network or in-ground in a controlled manner.
(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.	Not applicable.
(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.	Not applicable.
(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.	Right to drain stormwater easements will be registered for private connections extending outside the corresponding serviced lot. Network extensions may be vested in council at the discretion of the council.
(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.	Not applicable.
(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.	Not applicable.

(q) The need for and extent of any financial contributions to achieve the above matters.	Not applicable.
(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.	Not applicable.

7 POTABLE WATER

The FNDC on-line GIS Water Services Map indicates that a public 150mmØ water main is located through the northern berm of Kerikeri Road in proximity to the site, and should be available to service the subdivision.

Each lot (except Lot 1 – see below) will require a 20mm I.D connection to the existing 150mmØ water main (Asset ID: WL2226) with 1 water meter per lot. Connections and water meters are to be installed in accordance with the FNDC Engineering Standards 2023 Sheets 46 & 47.

For an assumed occupancy per dwelling of 5, the combined total water demand per day (assuming all lots developed) will amount to 9000ℓ and, in accordance with the FNDC Engineering Standards 2023, the peak hourly demand will amount to 1875ℓ/hr (or 0.52ℓ/s).

For an assumed occupancy per dwelling of 5, the water demand per day per lot will amount to 1500ℓ and the peak hourly demand will amount to 313ℓ/hr (or 0.09ℓ/s).

FNDC must be consulted to verify that adequate pressure is available in the network to service future developments at the proposed subdivision.

It is recommended that the existing connection and water meter serving the existing dwelling within the bounds of proposed Lot 1 be utilised to serve the future development at Lot 1.

8 ACCESS AND VEHICLE CROSSING

8.1 GENERAL

It is proposed that all lots are to be accessed from a shared Right of Way (ROW) extending from Kerikeri Road, with the centreline of the ROW alignment following the central boundary between existing Lots 14 & 15 DP 41378.

8.2 VEHICLE CROSSING

New vehicle crossings and accessways are to be designed and constructed in accordance with Council's Engineering Standards and Guidelines.

A new double vehicle crossing is to be constructed to serve the proposed lots in compliance with the Far North District Council Engineering Standards (May 2023) Sheet 18. The crossing should have a minimum width of 4.5m, a 6.0m width at the road-facing edge of the existing footpath, and a 7.2m width at the road seal edge with a kerb transition of 2%.

The northern side of the vehicle crossing as shown in the appended Site Plan C001 is shown as overlapping the berm, as the existing widened parking side bay transitions back to the regular carriageway width in this area. It is recommended that the widened side bay be extended to the northern edge of the new vehicle crossing extent, with the kerb and carriageway formed to match the specifications and layerworks of the existing carriageway. The existing tree in the berm is to be protected from the works.

Based on the conditions of the existing kerb, footpath and berm, we anticipate that there will be no issues with forming the vehicle crossing to the relevant standards.

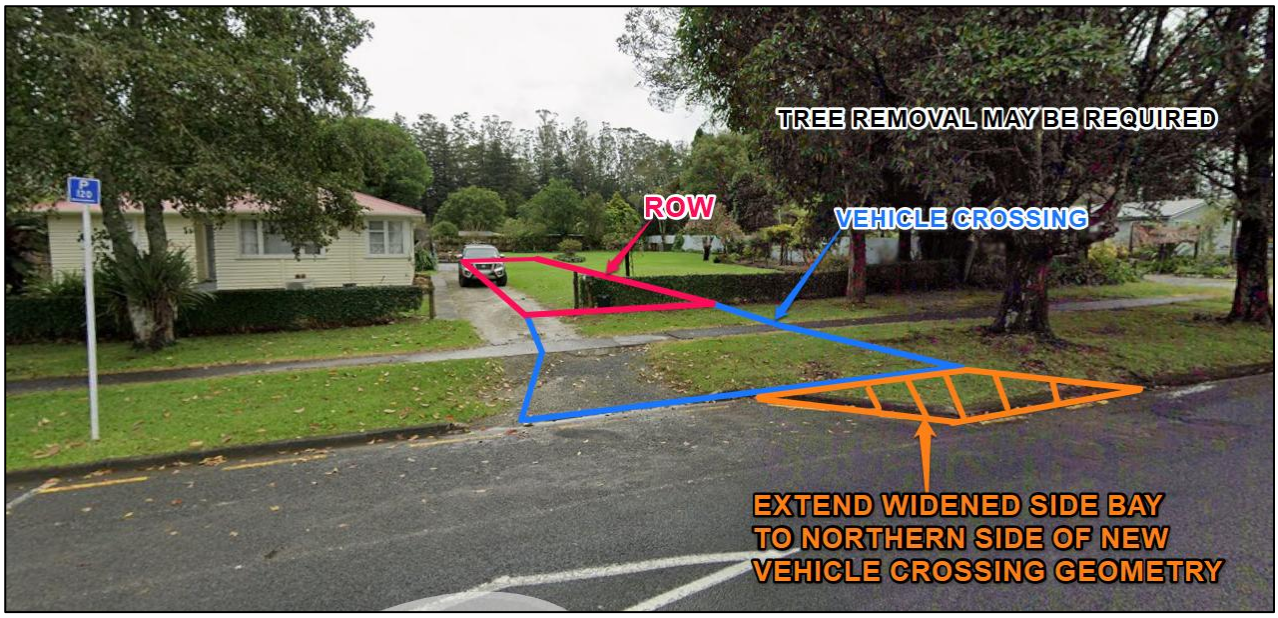


Figure 6: Google Street View – view of subject site from Kerikeri Road, facing northwest. ROW and vehicle crossing geometry shown indicatively only.

8.3 VEHICLE ACCESS

The proposed ROW is recommended to be constructed in accordance with the Far North District Council Engineering Standards (May 2023) – Table 3-16 Category B as shown in Figure 7 below.

Table 3-16: Minimum Width Requirements – Private Accessways

Category	Criteria (Household Units)	Minimum Legal Width (m)	Minimum Carriageway Width (m)				Footpath Width (m)	Minimum Surfacing Requirement
			Unsealed Shoulder	Surfacing Width[17]	Total			
	Urban							
A	2 - 4	4.0	-	1 x 3.0	3.0		-	Seal or Concrete
A(Alt)[1]	2 - 4	5.0	-	1 x 4.0	4.0		-	Seal or Concrete
B	5 - 8	6.0	-	1 x 4.5	4.5		1 x 0.95	Seal or Concrete
	Rural							
C	2	4.0	2 x 0.25	1 x 3.0	3.5		-	Aggregate[18]
C(Alt)[16]	2	5.0	2 x 0.25	1 x 4.0	4.5		-	Aggregate[18]
D	3 - 5	6.0	2 x 0.25	1 x 4.0	4.5		-	Aggregate[18]
E	6 - 8	10.0	2 x 0.25	2 x 2.75	6.0		-	Seal

Figure 7: Snip of Table 3-16 from FNDC Engineering Standards.

In accordance with the Far North District Council Engineering Standards (May 2023) – Section 3.2.28.2, the ROW access is to be formed to a minimum surfacing width of 4.5m with a crossfall of 3%. The proposed easements A-D will provide a legal width of 7.5m, exceeding the minimum 6.0m legal width requirement. The proposed access is 33.6m long, and will therefore not require passing bays.

Runoff generated over the proposed accessway should drain to a catchpit(s), from which flows are to be directed via sealed pipes to the stormwater discharge point. A minimum of 2 catchpits with grated inlet cover dimensions of 450x450mm (or 1 x Type 2 catchpit) will be adequate to receive primary runoff generated over the ROW for the 20% AEP + CC design storm.

8.4 SIGHT DISTANCES

Kerikeri Road has a posted speed limit of 50km/hr (NZTA National Speed Limits Register) up to the Kerikeri Road – Clark Road roundabout (located ~150m from the subject site along Kerikeri Road to the southwest), from which the posted limit changes to 30km/hr. The Far North District Council Engineering Standards (May 2023) – Sheet 4 notes that the minimum required sight distance for primary and secondary collector roads is 70m for a 50km/hr speed limit and 50m for a 40km/hr speed limit (minimum posted speed limit given in Sheet 4).

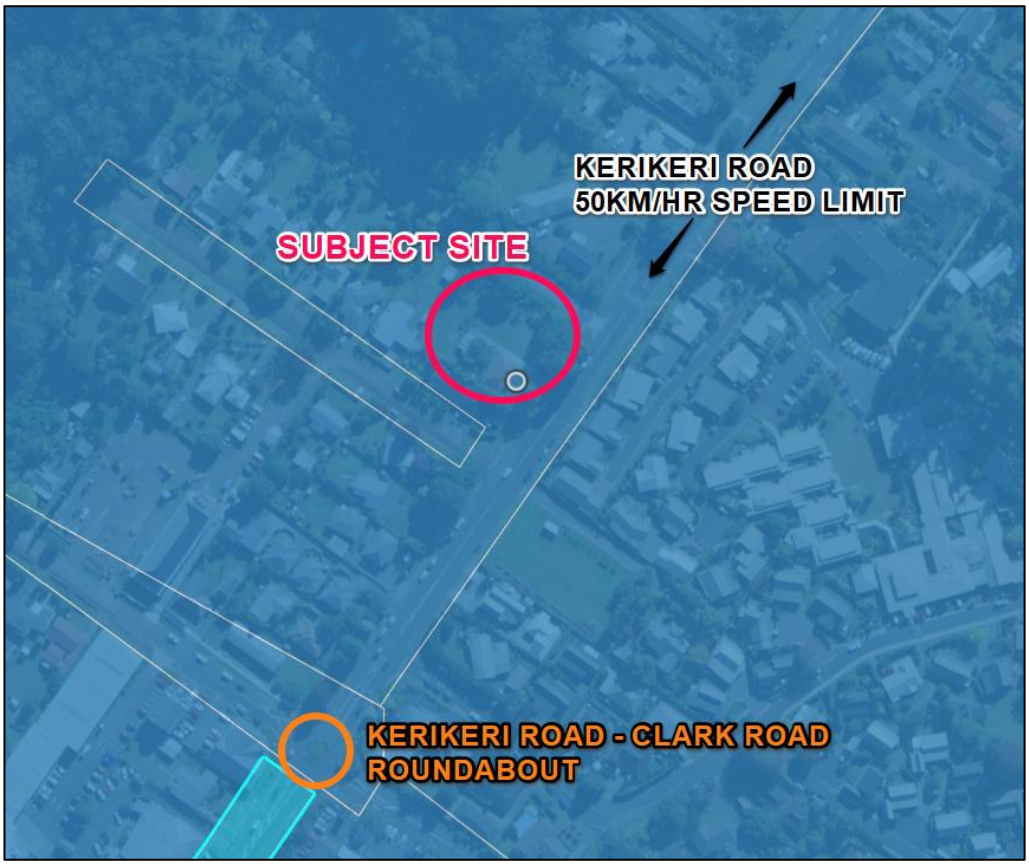


Figure 8: Screenshot from NZTA National Speed Limit Register map.

As shown in Figures 9 and 10 below, a sight distance of greater than 70.0m is available from the new crossing in the south-western direction.

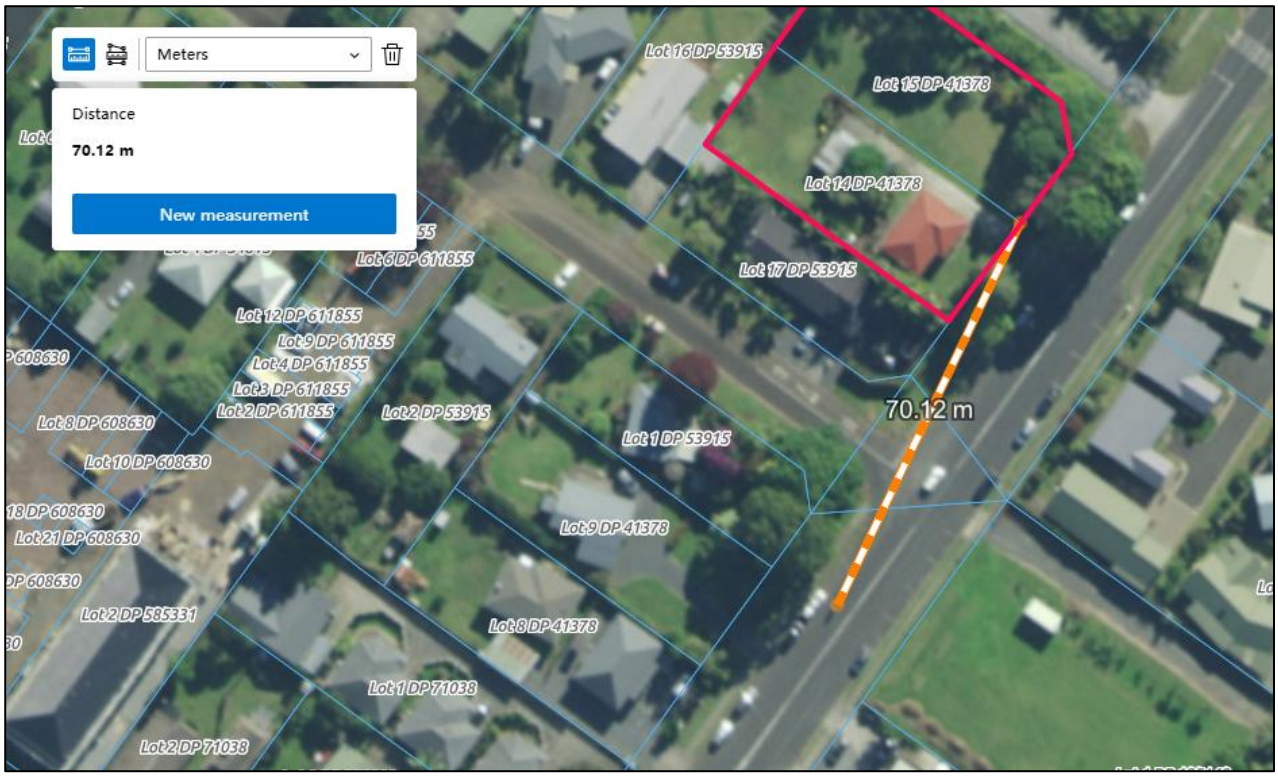


Figure 9: Screenshot from FNDC GIS maps showing 70m clear sight distance from crossing location along northeast-bound lane of Kerikeri Road.

Figure 10: Google Street View- view of new crossing location and northeast-bound lane of Kerikeri Road from Kerikeri Road, facing west.

As shown in Figures 11 and 12 below, a sight distance of greater than 70.0m is available from the new crossing in the north-eastern direction. Any obstruction presented by trees in the berm can be mitigated as vehicles exiting the site can pull forward into the widened side bay area for a clear view of the southwest-bound lane without obstructing traffic in the Kerikeri Road northeast-bound lane.

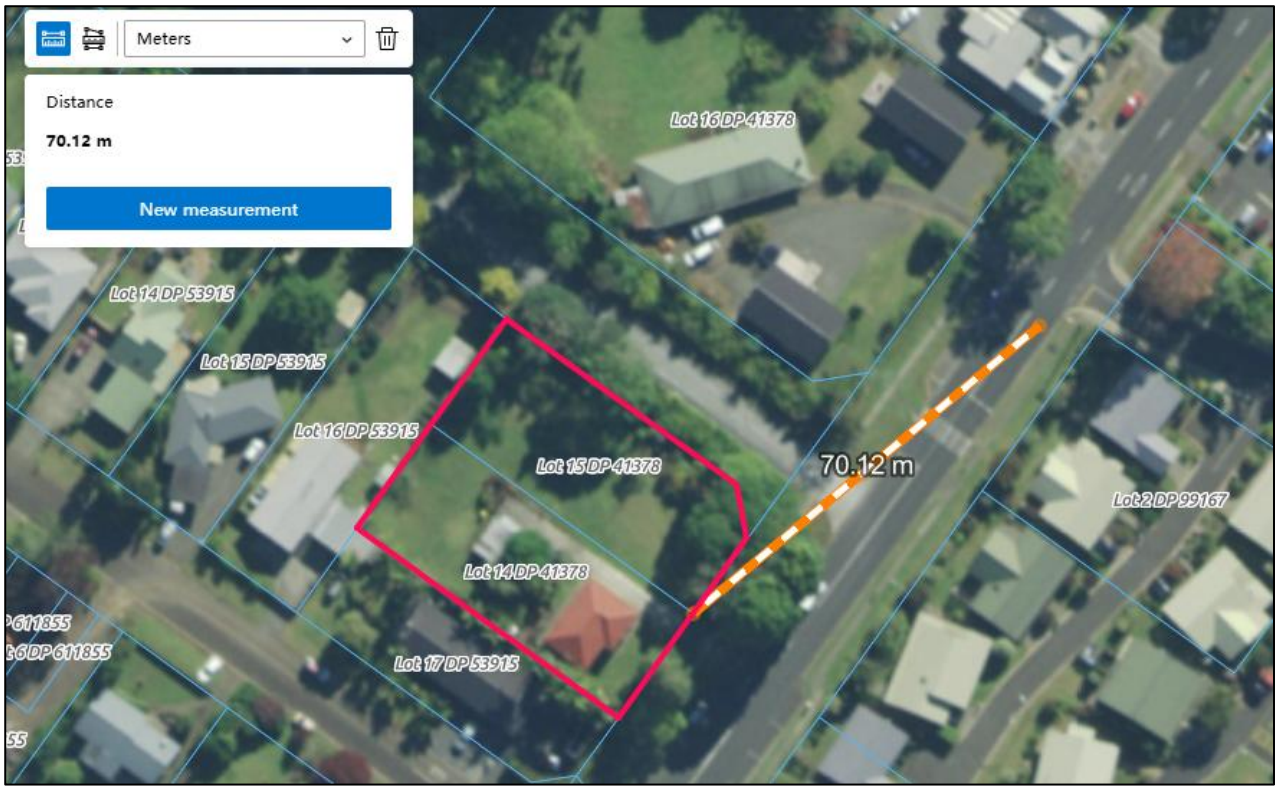


Figure 11: Screenshot from FNDC GIS maps showing 70m clear sight distance from crossing location along southwest-bound lane of Kerikeri Road.

Figure 12: Google Street View- view of new crossing location and southwest-bound lane of Kerikeri Road from Kerikeri Road, facing north.

9 LIMITATIONS

We anticipate that this report is to be submitted to Council in support of a Resource Consent application.

This report has been commissioned solely for the benefit of our client in relation to the project as described herein, and to the limits of our engagement, with the exception that the local Territorial Authority may rely on it to the extent of its appropriateness, conditions, and limitations, when issuing the subject consent.

Any variations from the development proposals as described herein as forming the basis of our appraisal should be referred back to us for further evaluation. Copyright of Intellectual Property remains with Wilton Joubert Limited, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants, or agents, in respect of any other civil aspects of this site, nor for its use by any other person or entity, and any other person or entity who relies upon any information contained herein does so entirely at their own risk. Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.

Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary and does not remove the necessity for the normal inspection of site conditions and the design of foundations as would be made under all normal circumstances.

Thank you for the opportunity to provide our service on this project, and if we can be of further assistance, please do not hesitate to contact us.

Yours faithfully,

WILTON JOUBERT LIMITED

Enclosures:

- Site Plan – C001 (1 sheet)
- Kerb Discharge & Detention Plan (1 sheet)
- Stormwater Longsection – C210 (1 sheet)
- Rock-Filled Soakpit Detail – C211 (1 sheet)
- Crate System Soakpit Detail – C212 (1 sheet)
- Detention Tank Detail – C213 (1 sheet)
- Wastewater Calculation Set (4 sheets)
- Stormwater Calculation Set (25 sheets)

NOTES:

1. SITE PLAN IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
2. BACKGROUND INFORMATION, CONTOURS & LOCAL SERVICES PROVIDED BY THE CLIENT & EXTRACTED FROM LOCAL COUNCIL GIS.
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4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE RELEVANT STANDARDS AND MUST BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY AT WORK ACT 2015.
5. PRIMARY RUNOFF FROM FUTURE DEVELOPMENTS TO BE DISCHARGED TO **EITHER** STORMWATER EXTENSION **OR** KERB DISCHARGE IF SW EXTENSION NOT FEASIBLE. REFER TO REPORT SECTION 6.

NEW CONCRETE ROW SERVICING LOTS 1-6 IN EASEMENTS A-D. MIN. 4.5m SURFACING WIDTH & 6.0m LEGAL WIDTH

LOT 6 338m²

LOT 5 338m²

LOT 4 319m²

LOTS 1, 3, 4 & 6 NEW 40mmØ CONNECTION TO PRESSURE SEWER MAIN WITH BOUNDARY KIT

EXISTING 40mmØ LOW PRESSURE SEWER CONNECTIONS TO BE UTILISED FOR LOTS 2 & 5

LOTS 2, 3, 4, 5 & 6 NEW 20mm I.D WATER CONNECTION TO 150Ø WATER MAIN WITH WATER METER FOR EACH LOT. WATER METERS / METER BANK TO HAVE TRAFFICABLE COVER IF INSIDE ROW

APPROX LOCATION EXISTING SEWER METER. RELOCATE TO OUTSIDE UPGRADED VEHICLE CROSSING OR INSTALL TRAFFICABLE COVER

EXTEND ASPHALTED SIDE BAY TO NORTHERN EXTENT OF NEW VEHICLE CROSSING. NEW KERB AND CARRIAGEWAY SPECIFICATIONS/LAYERWORKS TO MATCH EXISTING.

DOUBLE VEHICLE CROSSING TO BE CONSTRUCTED PER FNDC ENGINEERING STANDARDS 2023 SHEET 18

01 C210

100mmØ LOT CONNECTIONS TO STORMWATER EXTENSION

SW1 END-CAPPED 225mmØ UPVC LINE AT MIN GRADE 1%

2 x 450x450mm GRATE INLET COVER CATCHPITS FOR COLLECTION OF RUNOFF GENERATED FROM ROW. FLOWS DIRECTED TO RESPECTIVE LOT DISCHARGE POINT VIA SEALED PIPES

SWMH1 CONCEPT 1050mmØ SW MANHOLE TO ACCOMMODATE NETWORK EXTENSION

EXIST CONCRETE FOOTPATH

CONCEPT 150mmØ UPVC STORMWATER EXTENSION INTO SUBDIVISION AT MINIMUM GRADE 1%.

LOT 1 337m²

LOT 3 337m²

LOT 2 337m²

OUTLINE - EXISTING DWELLING TO BE REMOVED

LOT 16 DP 53915 NEIGHBOURING SINGLE-STOREY BUILDING & ATTACHED SHED

APPROX LOCATION EXISTING WATER METER - TO BE UTILISED FOR LOT 1

EXIST 150mmØ WATER MAIN

OLFP PER FNDC MAPS

75mmØ LOW PRESSURE SEWER LINE

LOT 17 DP 53915 NEIGHBOURING SINGLE-STOREY BUILDING

EXCP CONCEPT STORMWATER EXTENSION CONNECTING TO EXIST CATCHPIT WITH SIDE INLET

EXISTING HYDRANT

300mmØ CATCHPIT LEAD
FNDC MAPS:
LENGTH: 14.46m
US INV: 68.84
DS INV: 69.39

EDGE OF SEAL

ROAD CENTRELINE

EDGE OF FOOTPATH

KERIKERI ROAD

6000

7200

4500

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www.wiltonjoubert.co.nz

ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
01	JAN '26	PM	CIVIL SUITABILITY REPORT

DESIGNED BY: PM
DRAWN BY: PM
CHECKED BY: BGS
SURVEYED BY: OTHER

SERVICES NOTE

WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

RESOURCE CONSENT

DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **SITE PLAN**

PROJECT DESCRIPTION: **CIVIL SUITABILITY REPORT**

PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **1:250**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **144124-C001**
ISSUE: **01**

NOTES:

1. SITE PLAN IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
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4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE RELEVANT STANDARDS AND MUST BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY AT WORK ACT 2015.
5. PRIMARY RUNOFF FROM FUTURE DEVELOPMENTS TO BE DISCHARGED TO **EITHER** STORMWATER EXTENSION **OR** KERB DISCHARGE IF SW EXTENSION NOT FEASIBLE. REFER TO REPORT SECTION 6.

INDICATIVE 0.78m DEEP CRATE SYSTEM SOAKPIT FOOTPRINTS FOR FUTURE DEVELOPMENTS EXCEEDING PERMITTED ACTIVITY IMPERMEABLE COVERAGE:
50m² CATCHMENT - 4.7m² FOOTPRINT
100m² CATCHMENT - 9.3m² FOOTPRINT
MINIMUM 3.0m HORIZONTAL OFFSET TO STRUCTURES

INDICATIVE 1.0m DEEP ROCK-FILLED SOAKPIT FOOTPRINTS FOR DEVELOPMENTS EXCEEDING PERMITTED ACTIVITY IMPERMEABLE COVERAGE:
50m² EXCEEDANCE - 6.3m² FOOTPRINT
100m² EXCEEDANCE - 12.5m² FOOTPRINT
MINIMUM 3.0m HORIZONTAL OFFSET TO STRUCTURES
(OR PER STRUCTURAL ENGINEER'S DESIGN)

INDICATIVE DRAINAGE LINES CONVEYING PRIMARY RUNOFF TO LOW-POINT CATCHPIT. LID LEVELS OF ALL ON-LOT HARDSTAND CATCHPITS & SOAKPIT SETTLING CHAMBERS TO BE AT LEAST 100mm HIGHER THAN ROW CATCHPIT LID LEVEL.

PRIMARY RUNOFF DIRECTED TO TYPE 2 CATCHPIT CHAMBER AT LOW-POINT OF RIGHT OF WAY

3 x 100mmW x 60mmH UPVC KERB DISCHARGE OUTLETS TO NORTHERN KERIKERI ROAD KERB @ >1% GRADE

INDICATIVE 2.2mØ DETENTION TANK FOR FUTURE DEVELOPMENTS EXCEEDING PERMITTED ACTIVITY IMPERMEABLE COVERAGE WHERE RUNOFF IS DISCHARGED TO STORMWATER RETICULATION (NOT REQUIRED IF PRIMARY RUNOFF IS DISPOSED OF VIA SOAKPIT).

LOT 16 DP 53915
NEIGHBOURING
SINGLE-STOREY BUILDING
& ATTACHED SHED

LOT 17 DP 53915
NEIGHBOURING
SINGLE-STOREY BUILDING

LOT 6 338m²
LOT 5 338m²
LOT 4 319m²
LOT 1 337m²
LOT 3 337m²
LOT 2 337m²

03 C212
02 C211
04 C213
ST01
ST02

EDGE OF SEAL
ROAD CENTRELINE
EDGE OF FOOTPATH
EDGE OF SEAL
EDGE OF SEAL
KERIKERI ROAD

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RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE:
KERB DISCHARGE & DETENTION PLAN

PROJECT DESCRIPTION:
CIVIL SUITABILITY REPORT

PROJECT TITLE:
SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI

ORIGINAL DRAWING SIZE: A3
OFFICE: OREWA
DRAWING SCALE: 1:250
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: 144124-C200
ISSUE: 01

NOTES:

1. LONGSECTION IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
2. BACKGROUND INFORMATION, CONTOURS & LOCAL SERVICES PROVIDED BY THE CLIENT & EXTRACTED FROM LOCAL COUNCIL GIS.
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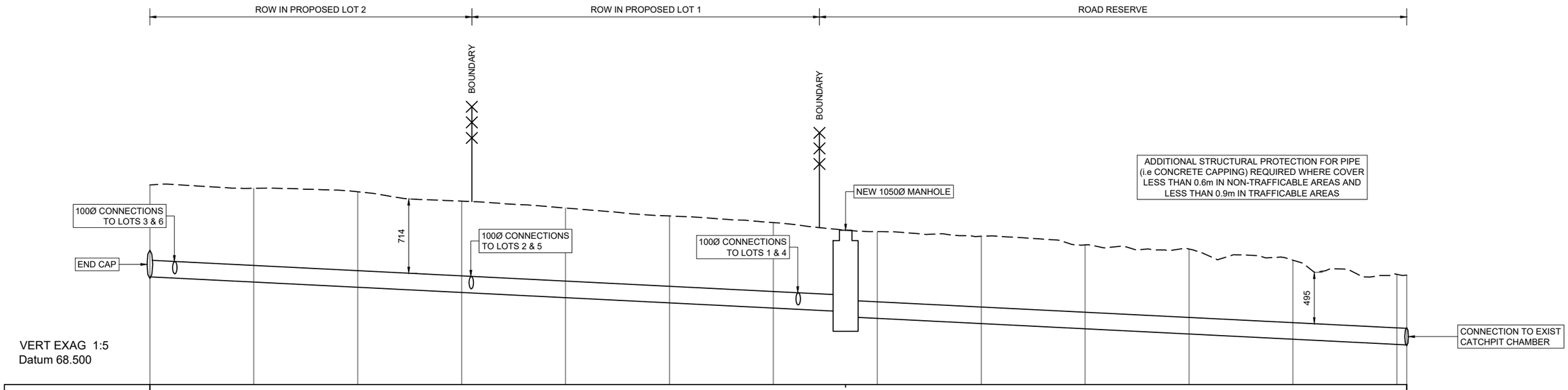
4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE RELEVANT STANDARDS AND MUST BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY AT WORK ACT 2015.



PIPE DETAILS	SW1	150Ø UPVC	SWMH1	150Ø UPVC EXCP
DEPTH TO INVERT	0.873		0.823	0.660
LID LEVEL			69.983	
INVERT LEVEL	69.545		69.210 / 69.160	68.890
GRADE & LENGTH	1.00% 33.478m			1.00% 26.994m

01 / C001 **CONCEPT STORMWATER LONGSECTION**
1:200

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RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **STORMWATER LONGSECTION**

PROJECT DESCRIPTION: **CIVIL SUITABILITY REPORT**

PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

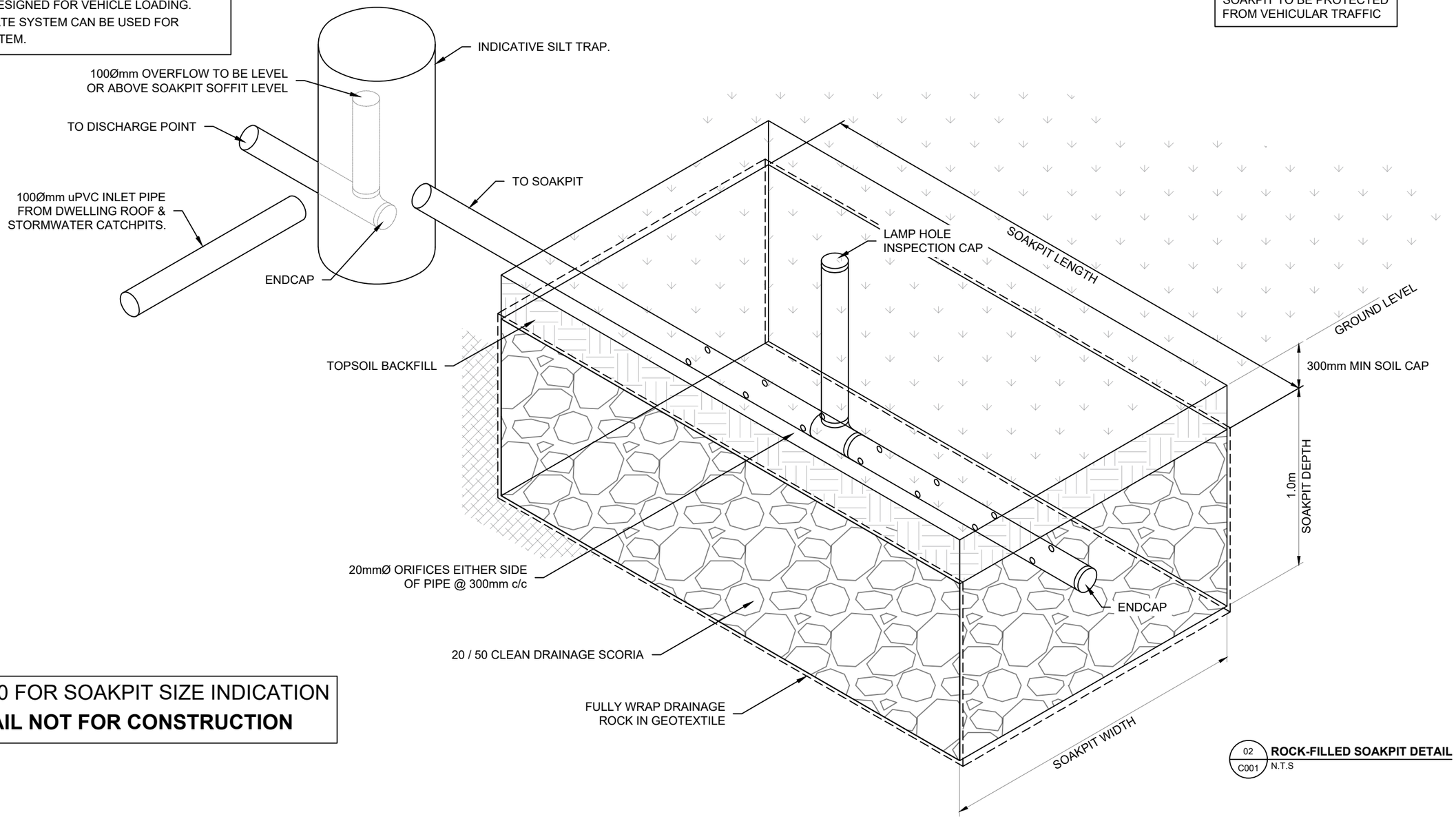
ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **1:200**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **144124-C210**
ISSUE: **01**

NOTES:

1. INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
2. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION
3. PIT TO BE FILLED WITH 20/50 CLEAN DRAINAGE SCORIA OR EQUIVALENT TO ENSURE VOID RATIO OF 0.38.
4. SITE ENGINEER TO INSPECT PIT EXCAVATION PRIOR TO PIT CONSTRUCTION.
5. SOAKPIT IS NOT DESIGNED FOR VEHICLE LOADING. ALTERNATIVE CRATE SYSTEM CAN BE USED FOR TRAFFICABLE SYSTEM.

NOTE:

SOAKPIT TO BE PROTECTED FROM VEHICULAR TRAFFIC



02 / C001 **ROCK-FILLED SOAKPIT DETAIL**
N.T.S

SEE C200 FOR SOAKPIT SIZE INDICATION
DETAIL NOT FOR CONSTRUCTION

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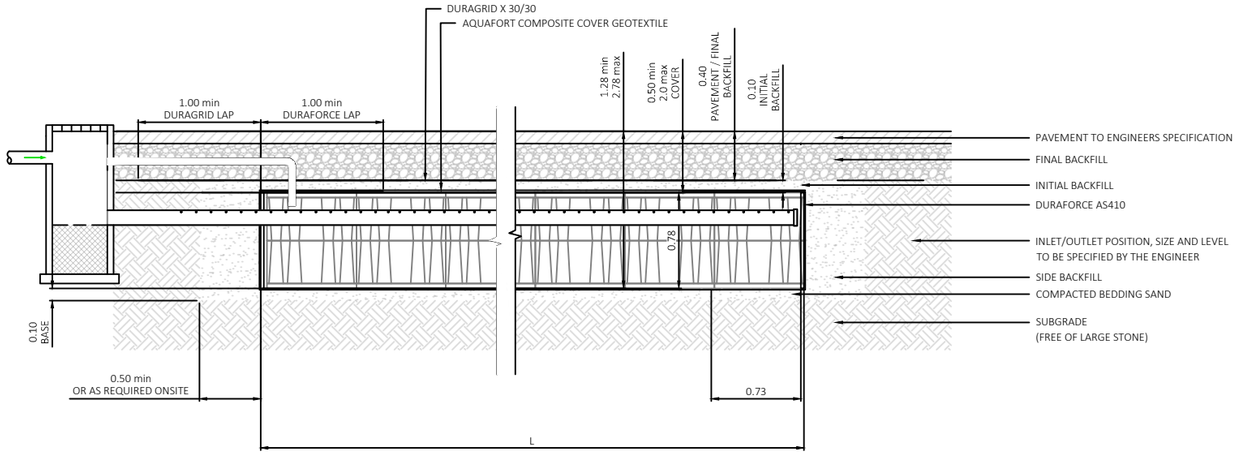
RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

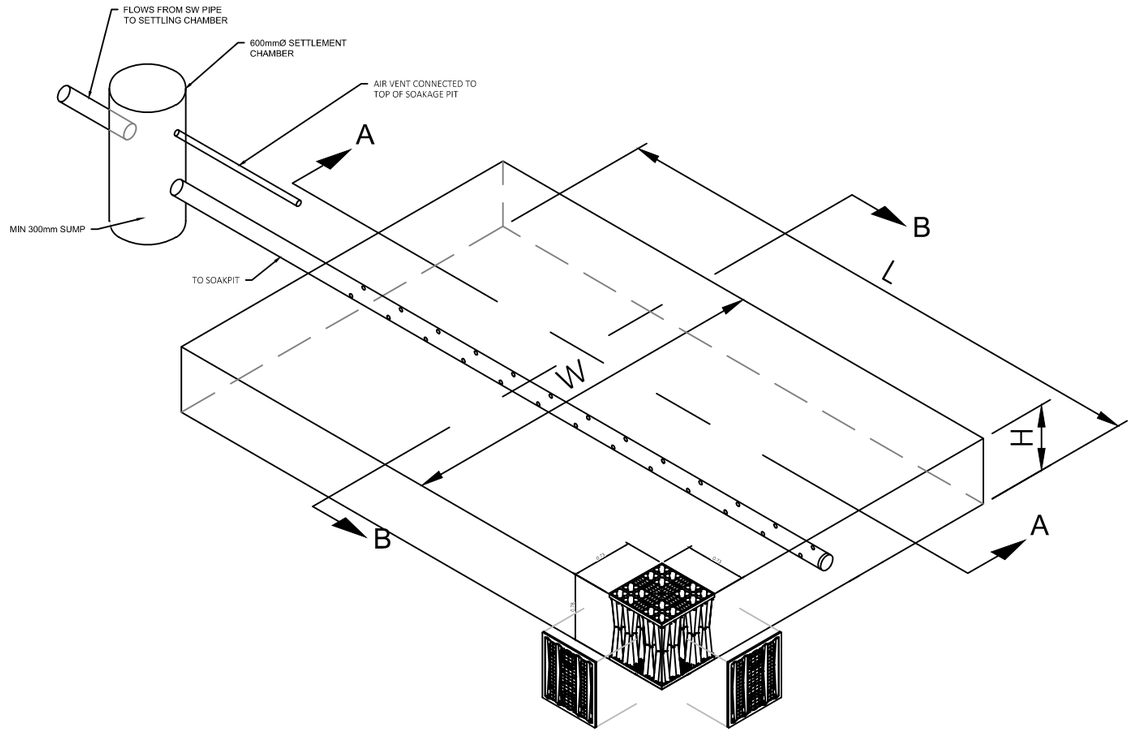
DRAWING TITLE: **ROCK-FILLED SOAKPIT DETAIL**

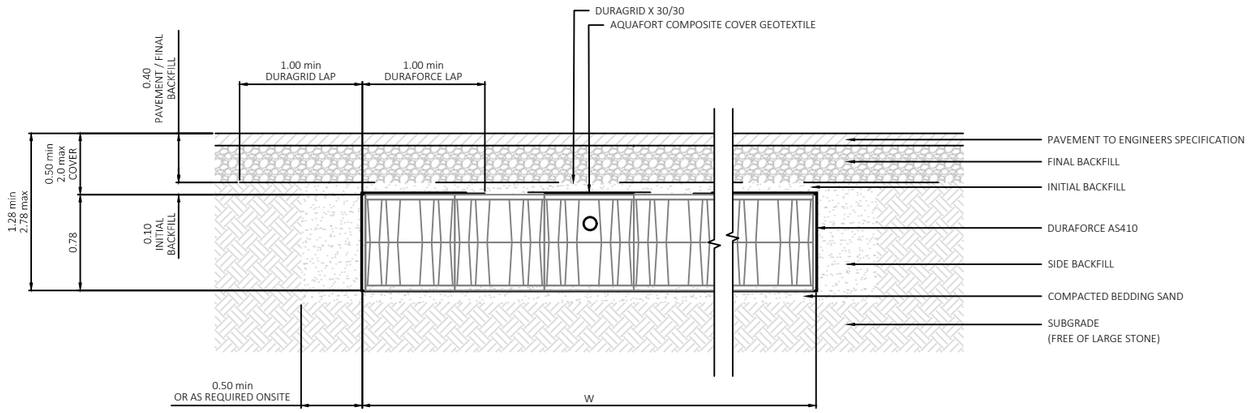
PROJECT DESCRIPTION: **CIVIL SUITABILITY REPORT**

PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **N.T.S**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **144124-C211**
ISSUE: **01**







SEE C200 FOR SOAKPIT SIZE INDICATION
DETAIL NOT FOR CONSTRUCTION

03
C001
CRATE SYSTEM SOAKPIT DETAIL
N.T.S

NOTES:

1. INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
2. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION.
3. AQUAFORT SYSTEM ASSUMED. REFER TO THE AQUAFORT DOCUMENTATION FOR DETAILED INSTALLATION METHODOLOGY.
4. THIS DETAIL IS **NOT FOR CONSTRUCTION**. SPECIFIC DESIGN REQUIRED AT BUILDING CONSENT.

WILTON JOUBERT
Consulting Engineers
Northland: 09 945 4188
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Christchurch: 021 824 063
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ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
01	JAN '26	PM	CIVIL SUITABILITY REPORT

DESIGNED BY: PM
DRAWN BY: PM
CHECKED BY: BGS
SURVEYED BY: OTHER

SERVICES NOTE
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **CRATE SYSTEM SOAKPIT DETAIL**

PROJECT DESCRIPTION: **CIVIL SUITABILITY REPORT**

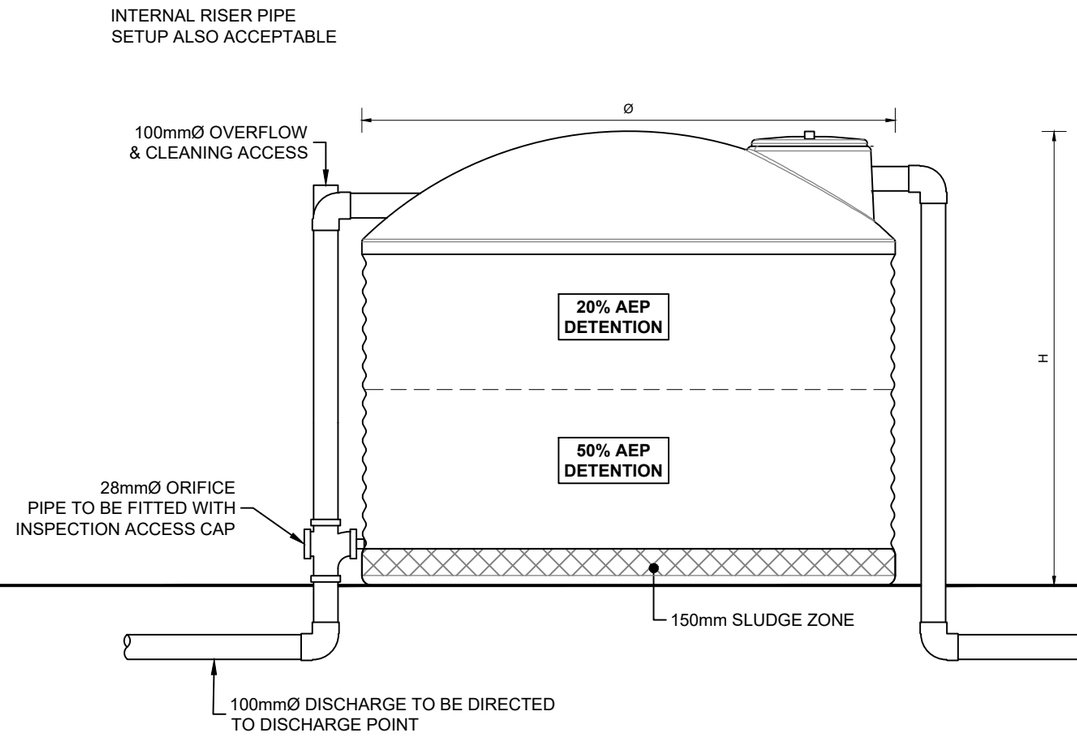
PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

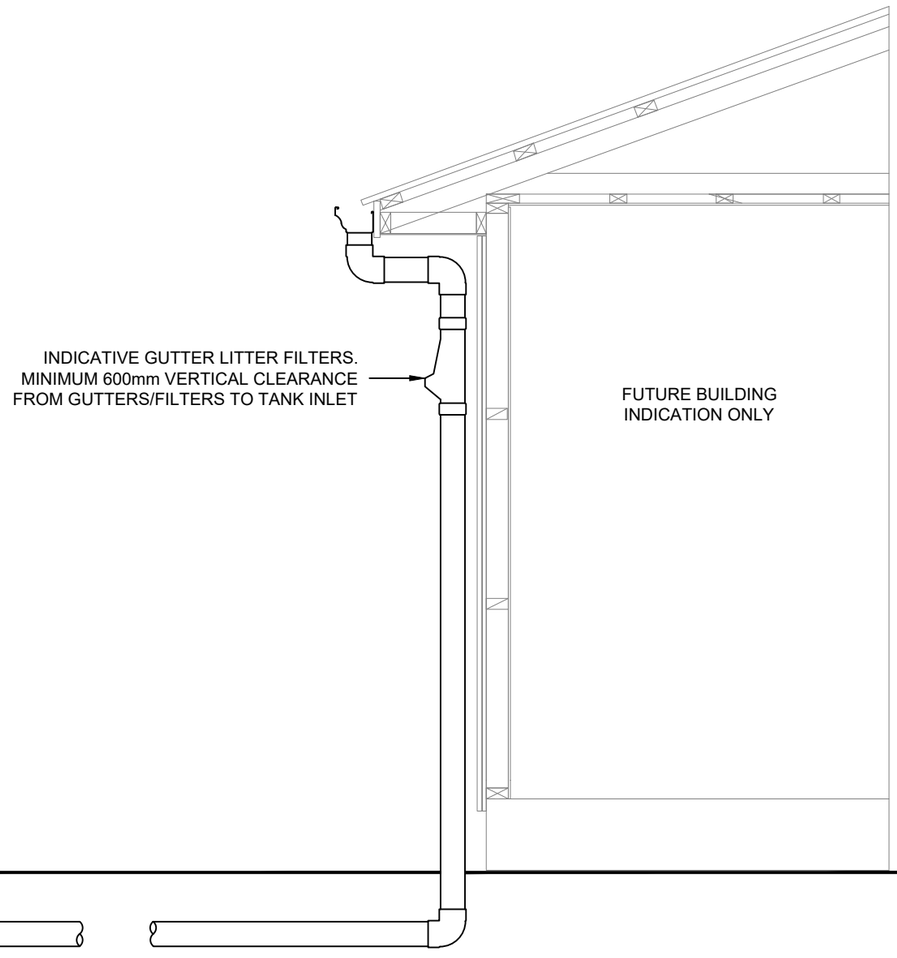
ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **N.T.S**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **144124-C212**
ISSUE: **01**

NOTES:

1. NOT TO SCALE. DRAWN INDICATIVELY ONLY.
2. ALL LEVELS & DIMENSIONS TO BE CONFIRMED ON SITE & ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. TANK TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS & RELEVANT COUNCIL STANDARDS.
4. REGULAR INSPECTION & CLEANING IS REQUIRED TO ENSURE THE EFFECTIVE OPERATION OF THE SYSTEM.
5. MINIMUM SLUDGE ZONE OF 150mm TO BE KEPT.
6. ORIFICE TO BE COVERED WITH STAINLESS STEEL OR NYLON MESH

IMPERMEABLE COVERAGE EXCEEDING PERMITTED	TANK Ø	50% AEP DETENTION VOLUME	20% AEP DETENTION VOLUME
50m²	1.6mØ	1.4m³	2.2m³
100m²	2.2mØ	2.7m³	4.0m³





04 / C001 **DETENTION TANK DETAIL**
N.T.S

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ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
01	JAN '26	PM	CIVIL SUITABILITY REPORT

DESIGNED BY: PM
DRAWN BY: PM
CHECKED BY: BGS
SURVEYED BY: OTHER

SERVICES NOTE
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **DETENTION TANK DETAIL**

PROJECT DESCRIPTION: **CIVIL SUITABILITY REPORT**

PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **N.T.S**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **144124-C213**
ISSUE: **01**

WILTON JOUBERT
Consulting Engineers

WASTEWATER PIPE SIZING

Project:	Proposed Subdivision	**Job No:**	144124
Address:	124 & 126 Kerikeri Road	**Date:**	30.01.2026
		Cals By:	PM

Calculations in accordance with FNDC Engineering Standards 2023

Occupants	5	*per lot (assumed)*	1000
Design flow	200	l/d/p *Reticulated Supply*	
Peak Factor	5.0		

Peak Wet Weather Flow 0.06 l/s

POTABLE WATER DEMAND

Project:	Proposed Subdivision	**Job No:**	144124
Address:	124 & 126 Kerikeri Road	**Date:**	30.01.2026
		Cals By:	PM

Occupants	30	*6 lots of 5 persons each (assumed)*
Design flow	300	l/d/p
Peak Factor	5.0	

Peak Water Demand 0.521 l/s

Environment One Corporation

Pressure Sewer Preliminary Cost and Design Analysis For 124&126 Kerikeri Road

Prepared For:
WJL

Tel:
Fax:
Prepared By: PM
January 29, 2026

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
PM

124&126 Kerikeri Road

January 29, 2026

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Liters/Day per Pump	Max Flow Per Pump (lps)	Max Sim Ops	Max Flow (LPS)	Pipe Size (inches)	Max Velocity (MPS)	Length of Main this Zone	Friction Loss Factor (m/100m)	Friction Loss This Zone	Accum Fric Loss (meters)	Max Main Elevation	Minimum Pump Elevation	Static Head (meters)	Total Dynamic Head (m)
This spreadsheet was calculated using pipe diameters for: SCH40PVC											Friction loss calculations were based on a Constant for inside roughness "C" of: 150						
1.00	1.00	1	1	1000	.70	1	.70	1.25	0.73	40.00	1.77	0.71	0.71	70.00	69.00	1.00	1.71

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

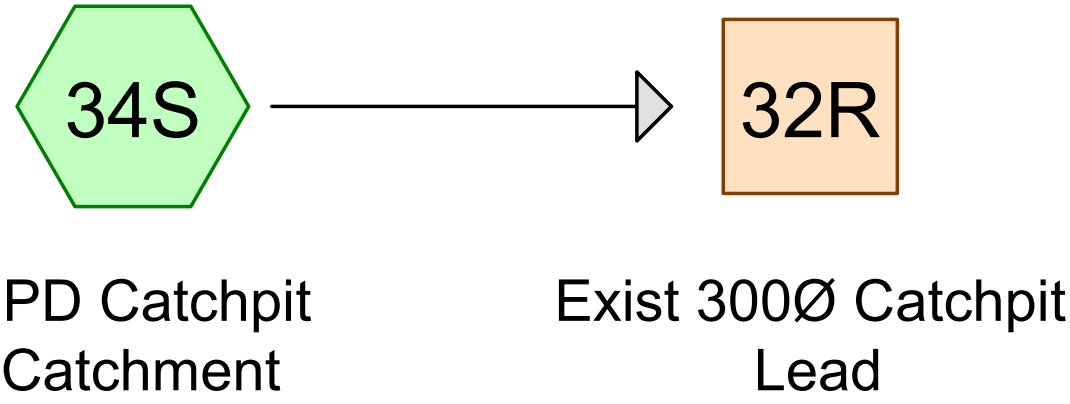
Prepared By:
PM

124&126 Kerikeri Road

January 29, 2026

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Liters per 100 lineal meters	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SCH40PVC								Liters per Day per Dwelling		757
1.00	1.00	1	1.25	96.50	40.00	38.60	1,000	25.91	0.93	0.93

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One



Subcat Reach Pond Link

Routing Diagram for 144124 - SW Network

Prepared by {enter your company name here}, Printed 30/01/2026

Summary for Subcatchment 34S: MPD Catchpit Catchment

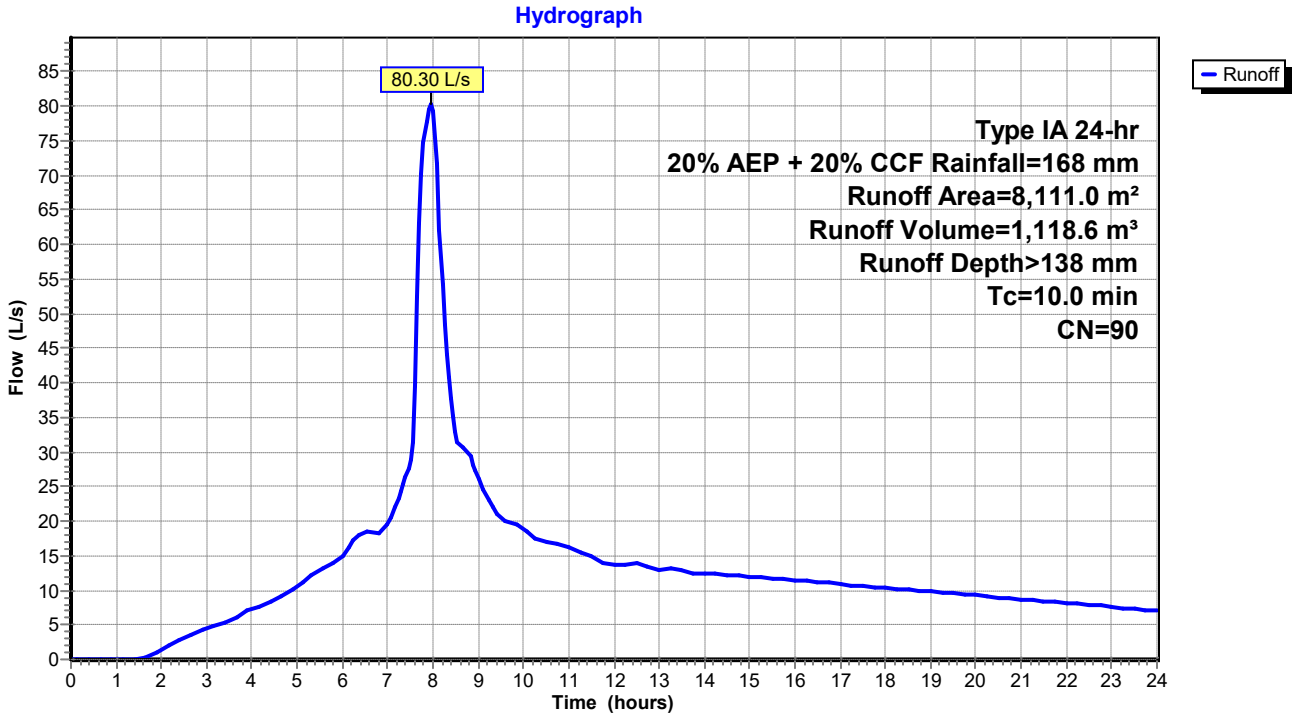
Runoff = 80.30 L/s @ 7.96 hrs, Volume= 1,118.6 m³, Depth> 138 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	8,111.0	90	
	8,111.0		100.00% Pervious Area

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

Subcatchment 34S: MPD Catchpit Catchment



Summary for Subcatchment 36S: Subject Site MPD Flow

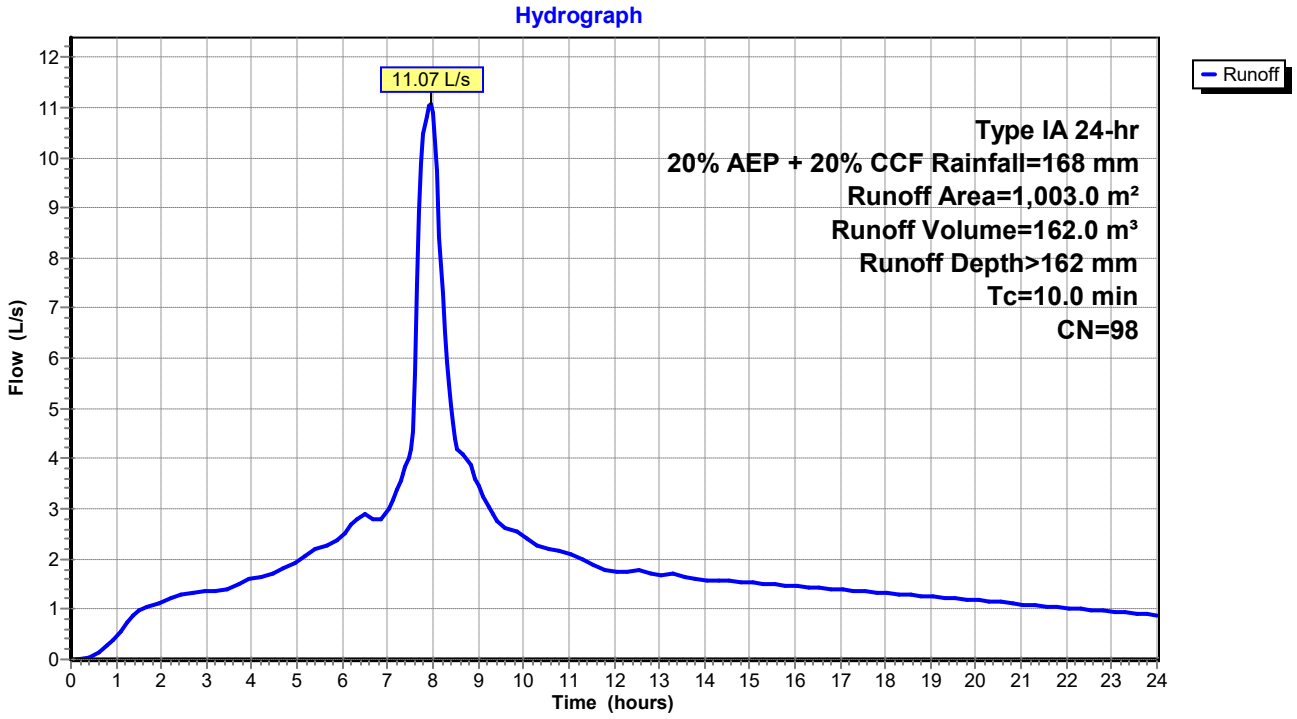
Runoff = 11.07 L/s @ 7.94 hrs, Volume= 162.0 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	1,003.0	98	
	1,003.0		100.00% Impervious Area

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

Subcatchment 36S: Subject Site MPD Flow



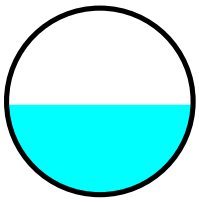
Summary for Reach 32R: Exist 300Ø Catchpit Lead

Inflow Area = 8,111.0 m², 0.00% Impervious, Inflow Depth > 138 mm for 20% AEP + 20% CCF event
Inflow = 80.30 L/s @ 7.96 hrs, Volume= 1,118.6 m³
Outflow = 80.30 L/s @ 7.96 hrs, Volume= 1,118.5 m³, Atten= 0%, Lag= 0.1 min

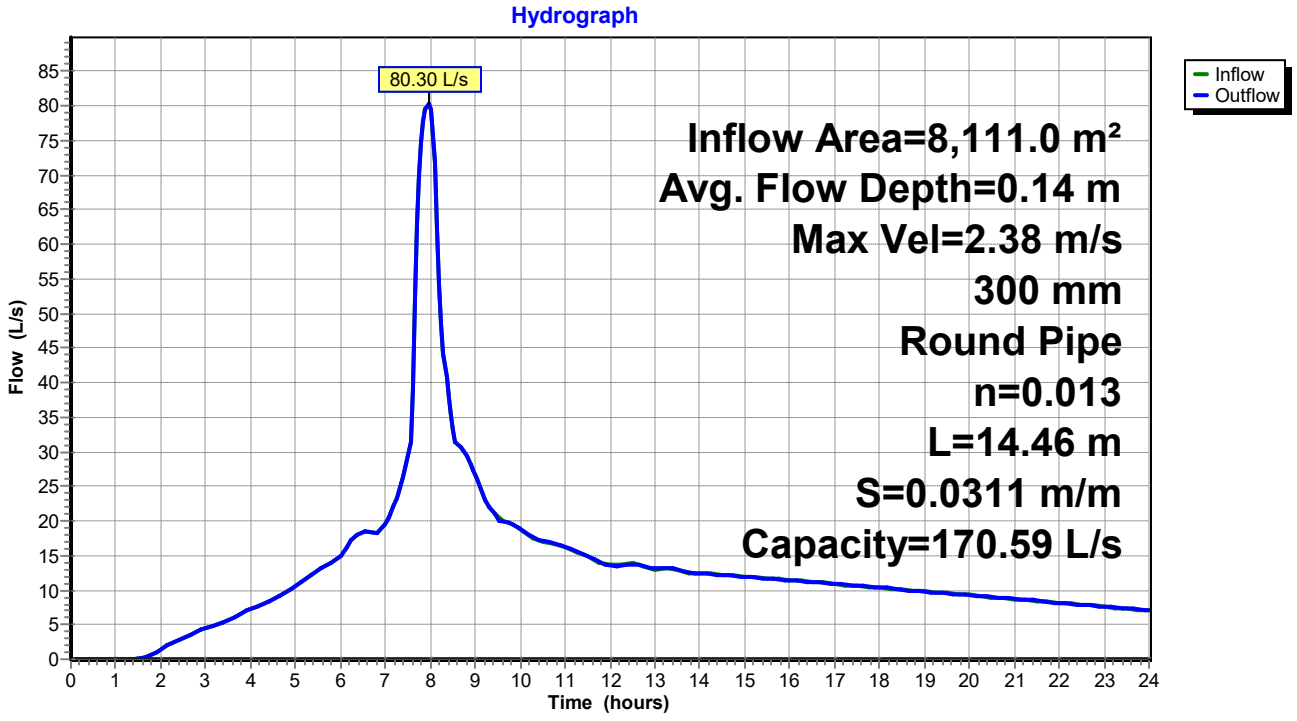
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.38 m/s, Min. Travel Time= 0.1 min
Avg. Velocity = 1.38 m/s, Avg. Travel Time= 0.2 min

Peak Storage= 0.5 m³ @ 7.96 hrs
Average Depth at Peak Storage= 0.14 m
Bank-Full Depth= 0.30 m Flow Area= 0.07 m², Capacity= 170.59 L/s

300 mm Round Pipe
n= 0.013
Length= 14.46 m Slope= 0.0311 m/m
Inlet Invert= 68.840 m, Outlet Invert= 68.390 m



Reach 32R: Exist 300Ø Catchpit Lead



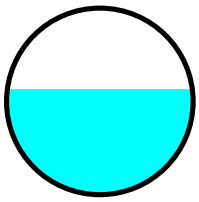
Summary for Reach 38R: 150Ø @ 1%

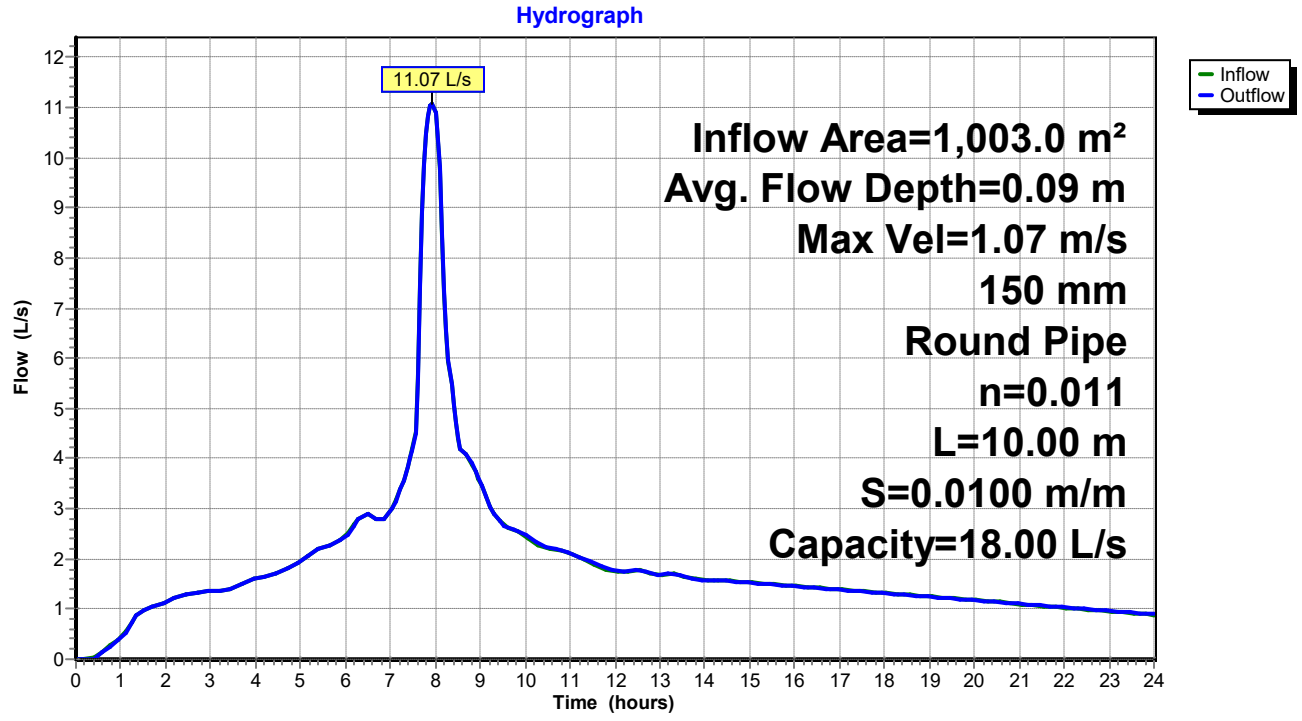
Inflow Area = 1,003.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 11.07 L/s @ 7.94 hrs, Volume= 162.0 m³
Outflow = 11.07 L/s @ 7.94 hrs, Volume= 162.0 m³, Atten= 0%, Lag= 0.1 min

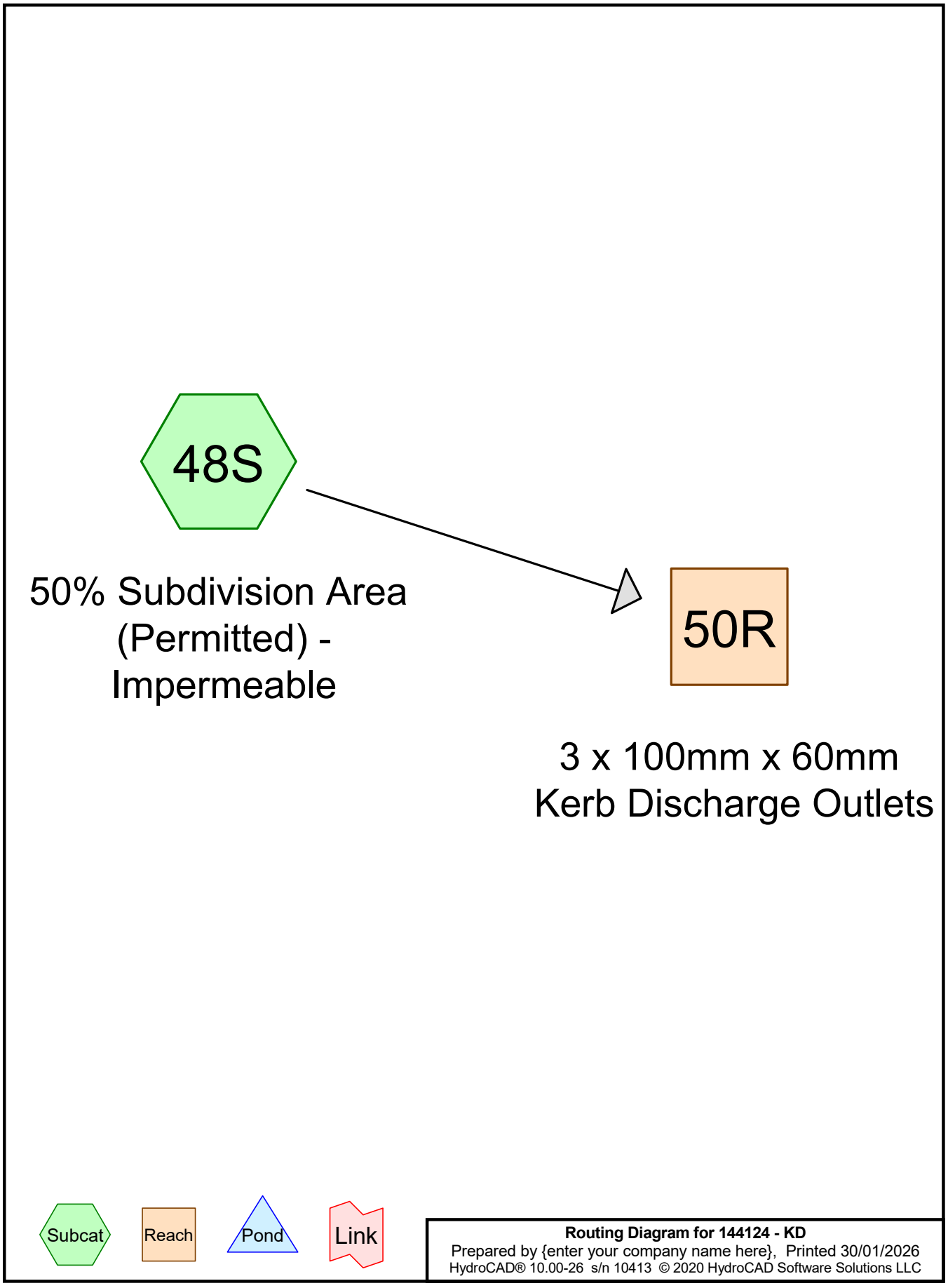
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.07 m/s, Min. Travel Time= 0.2 min
Avg. Velocity = 0.64 m/s, Avg. Travel Time= 0.3 min

Peak Storage= 0.1 m³ @ 7.94 hrs
Average Depth at Peak Storage= 0.09 m
Bank-Full Depth= 0.15 m Flow Area= 0.02 m², Capacity= 18.00 L/s

150 mm Round Pipe
n= 0.011
Length= 10.00 m Slope= 0.0100 m/m
Inlet Invert= 10.000 m, Outlet Invert= 9.900 m







Routing Diagram for 144124 - KD
Prepared by {enter your company name here}, Printed 30/01/2026

Summary for Subcatchment 48S: 50% Subdivision Area (Permitted) - Impermeable

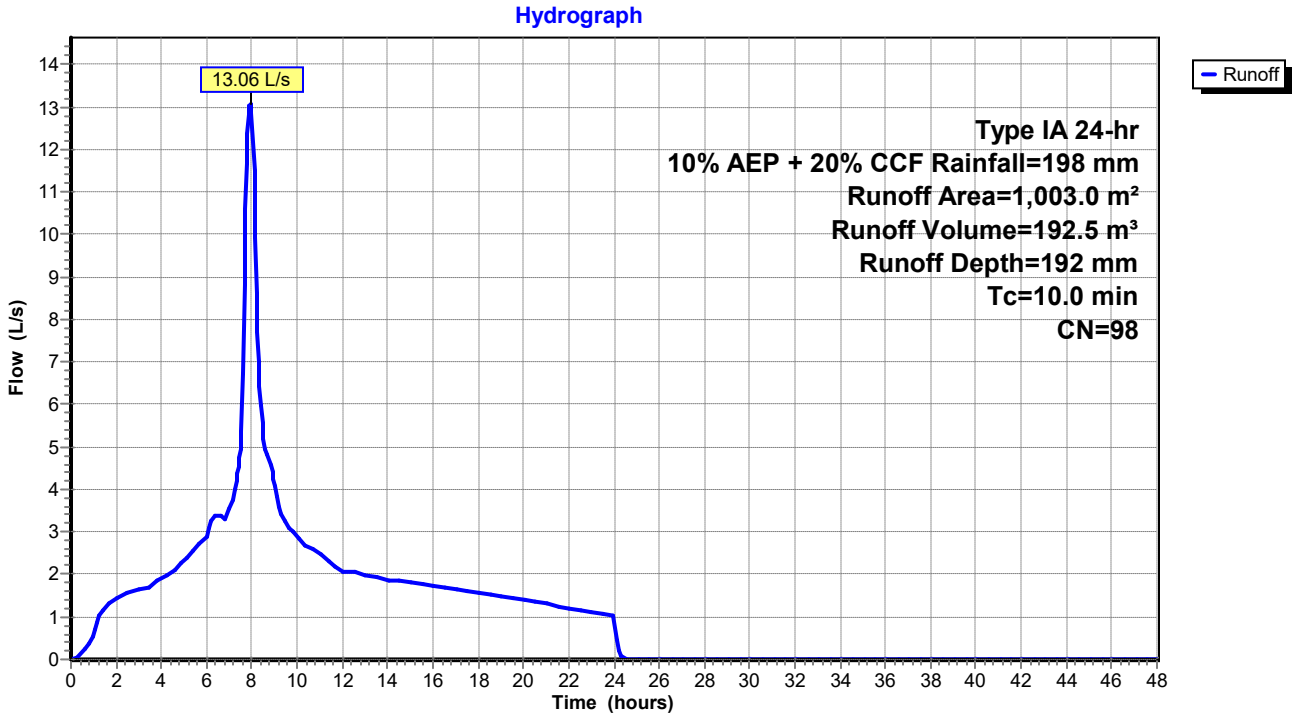
Runoff = 13.06 L/s @ 7.94 hrs, Volume= 192.5 m³, Depth= 192 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10% AEP + 20% CCF Rainfall=198 mm

	Area (m²)	CN	Description
*	1,003.0	98	
	1,003.0		100.00% Impervious Area

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

Subcatchment 48S: 50% Subdivision Area (Permitted) - Impermeable



Summary for Reach 50R: 3 x 100mm x 60mm Kerb Discharge Outlets

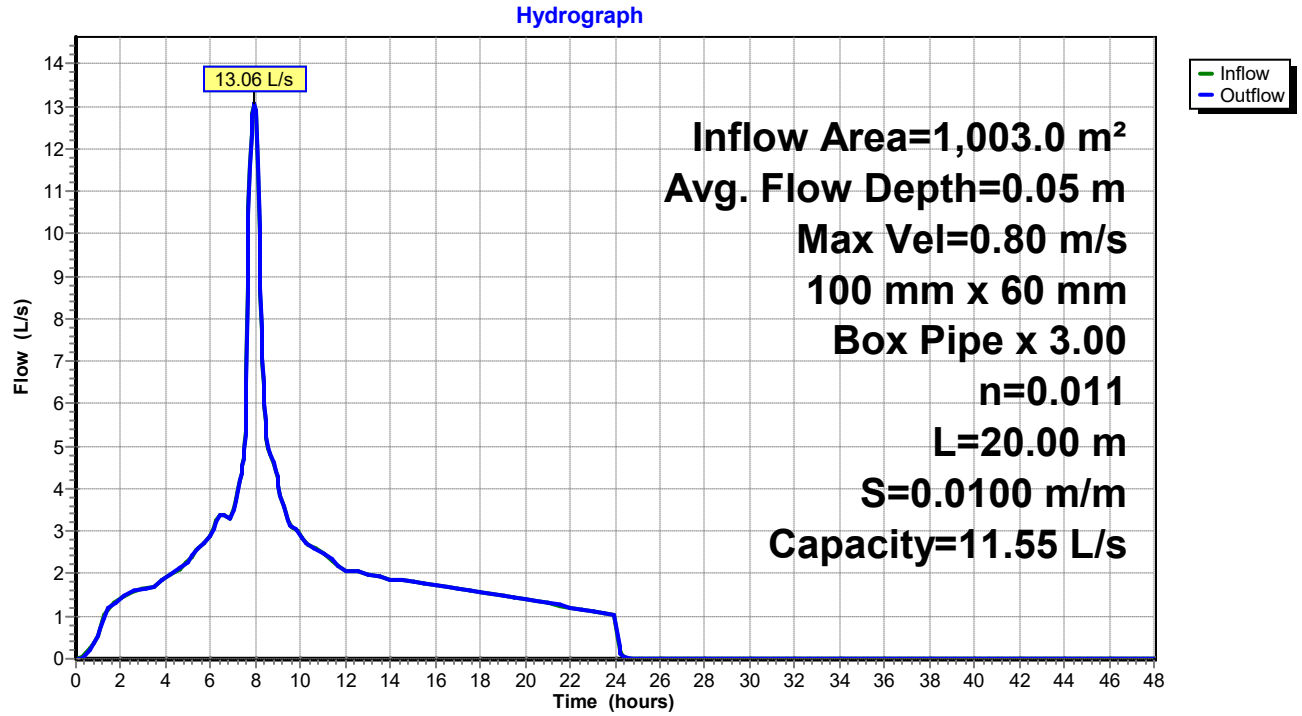
Inflow Area = 1,003.0 m²,100.00% Impervious, Inflow Depth = 192 mm for 10% AEP + 20% CCF event
Inflow = 13.06 L/s @ 7.94 hrs, Volume= 192.5 m³
Outflow = 13.06 L/s @ 7.94 hrs, Volume= 192.5 m³, Atten= 0%, Lag= 0.3 min

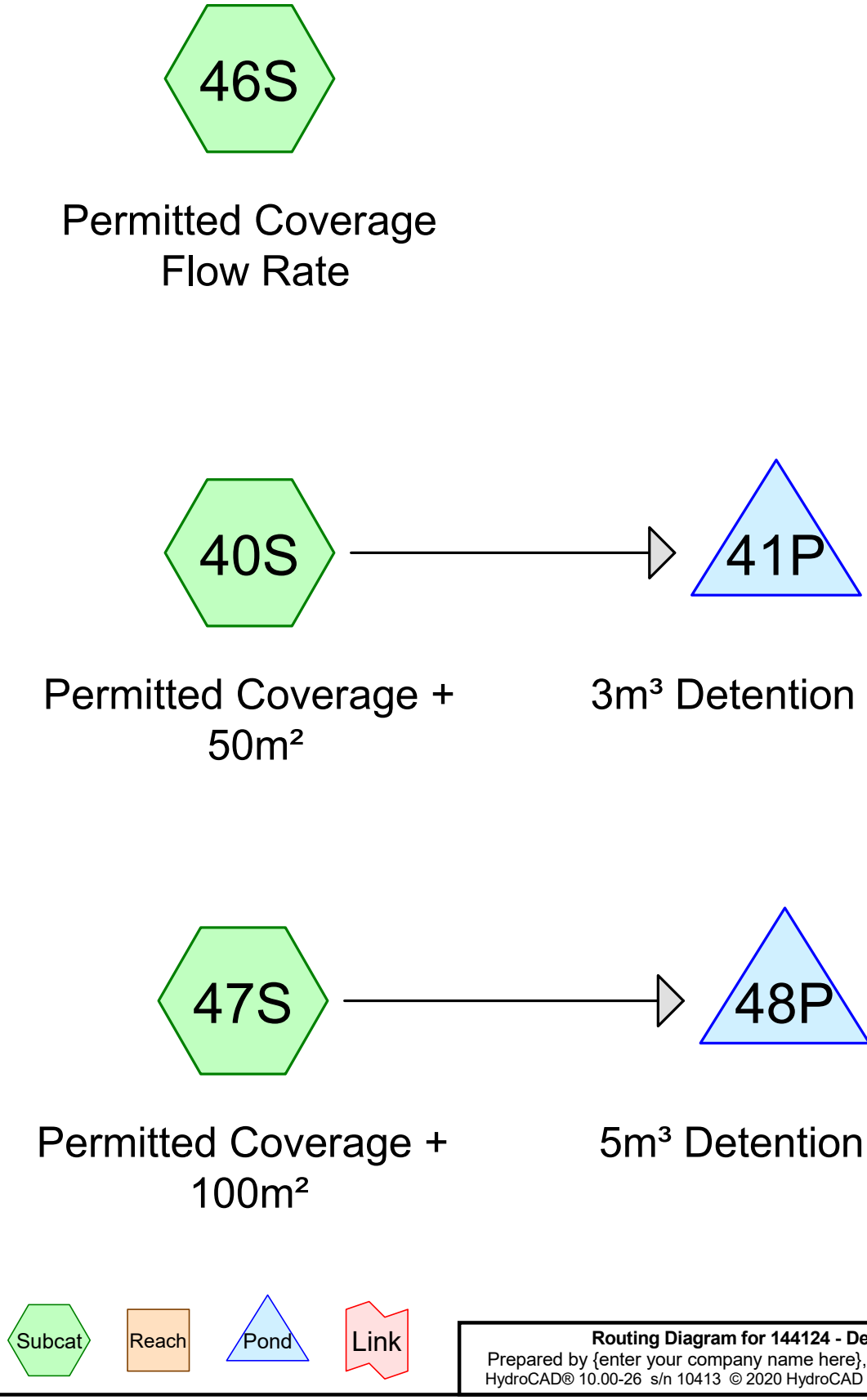
Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.80 m/s, Min. Travel Time= 0.4 min
Avg. Velocity = 0.45 m/s, Avg. Travel Time= 0.7 min

Peak Storage= 0.3 m³ @ 7.94 hrs
Average Depth at Peak Storage= 0.05 m
Bank-Full Depth= 0.06 m Flow Area= 0.02 m², Capacity= 11.55 L/s

A factor of 3.00 has been applied to the storage and discharge capacity
100 mm W x 60 mm H Box Pipe
n= 0.011
Length= 20.00 m Slope= 0.0100 m/m
Inlet Invert= 0.200 m, Outlet Invert= 0.000 m

Reach 50R: 3 x 100mm x 60mm Kerb Discharge Outlets





Routing Diagram for 144124 - Detention

Prepared by {enter your company name here}, Printed 29/01/2026

Summary for Subcatchment 40S: Permitted Coverage + 50m²

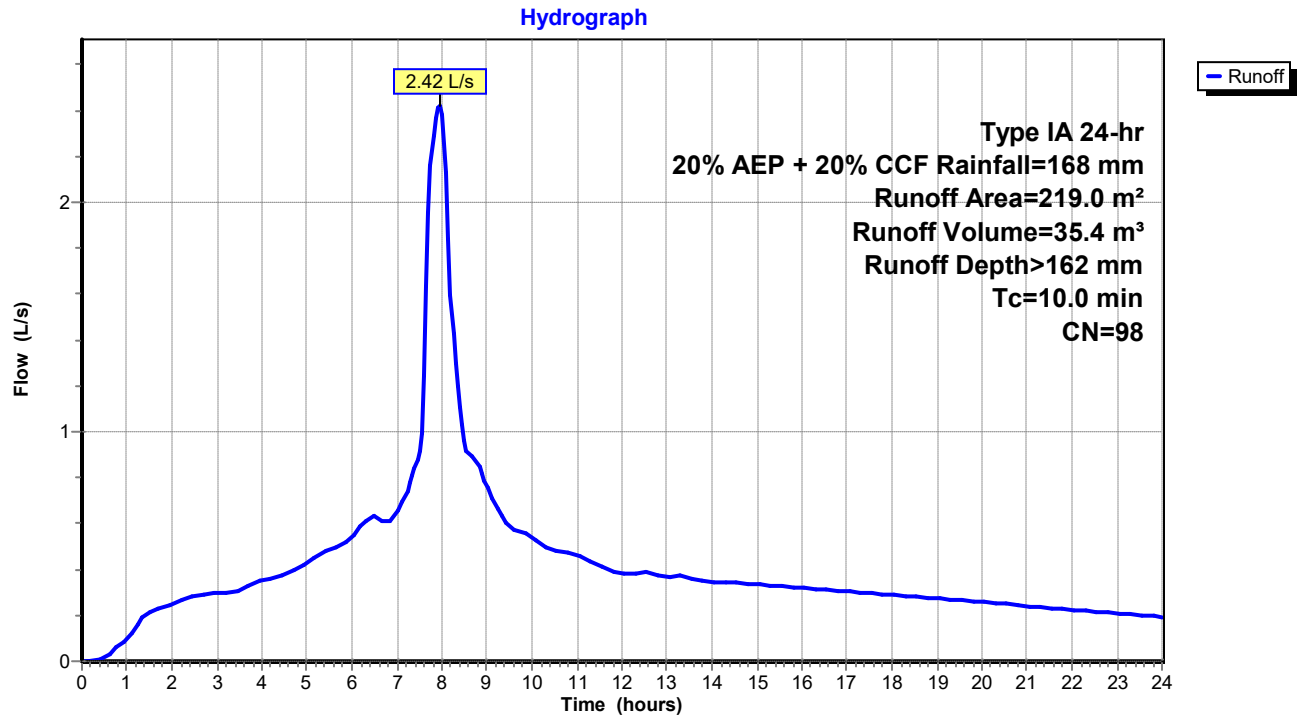
Runoff = 2.42 L/s @ 7.94 hrs, Volume= 35.4 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	169.0	98	
*	50.0	98	
	219.0	98	Weighted Average
	219.0		100.00% Impervious Area

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

Subcatchment 40S: Permitted Coverage + 50m²



Summary for Subcatchment 46S: Permitted Coverage Flow Rate

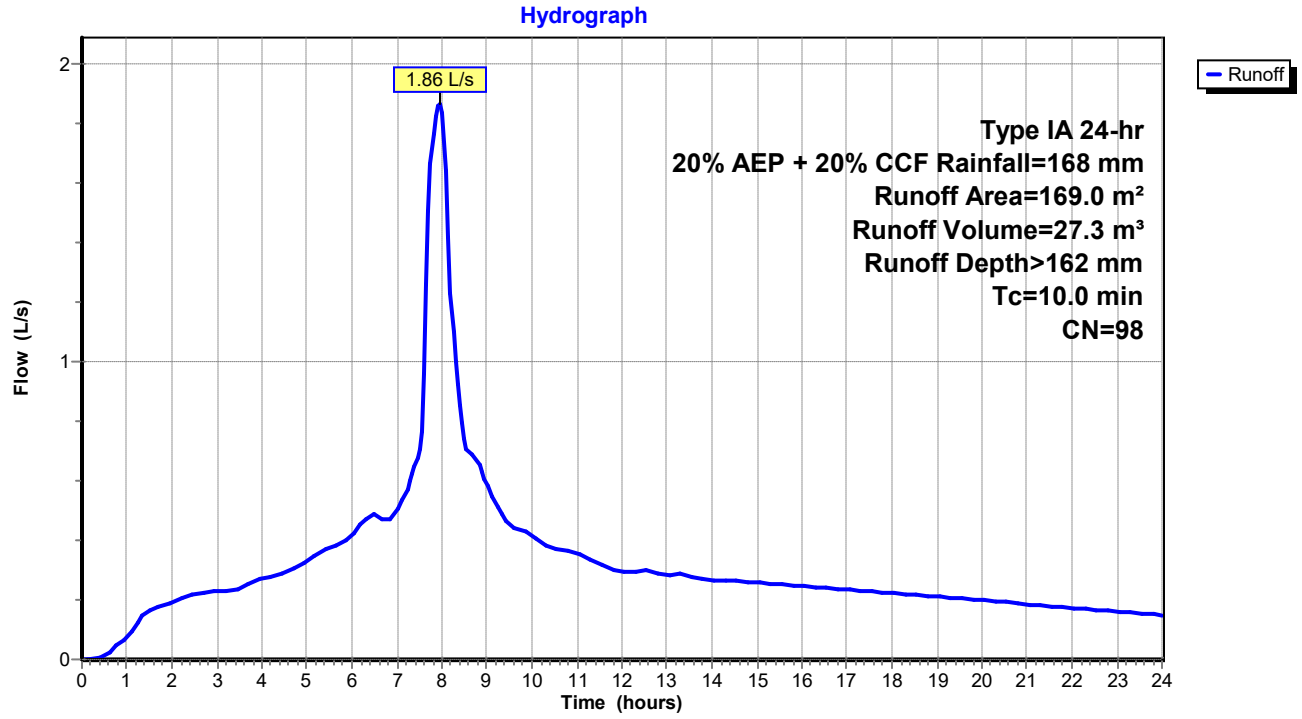
Runoff = 1.86 L/s @ 7.94 hrs, Volume= 27.3 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	169.0	98	
	169.0		100.00% Impervious Area

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

Subcatchment 46S: Permitted Coverage Flow Rate



Summary for Subcatchment 47S: Permitted Coverage + 100m²

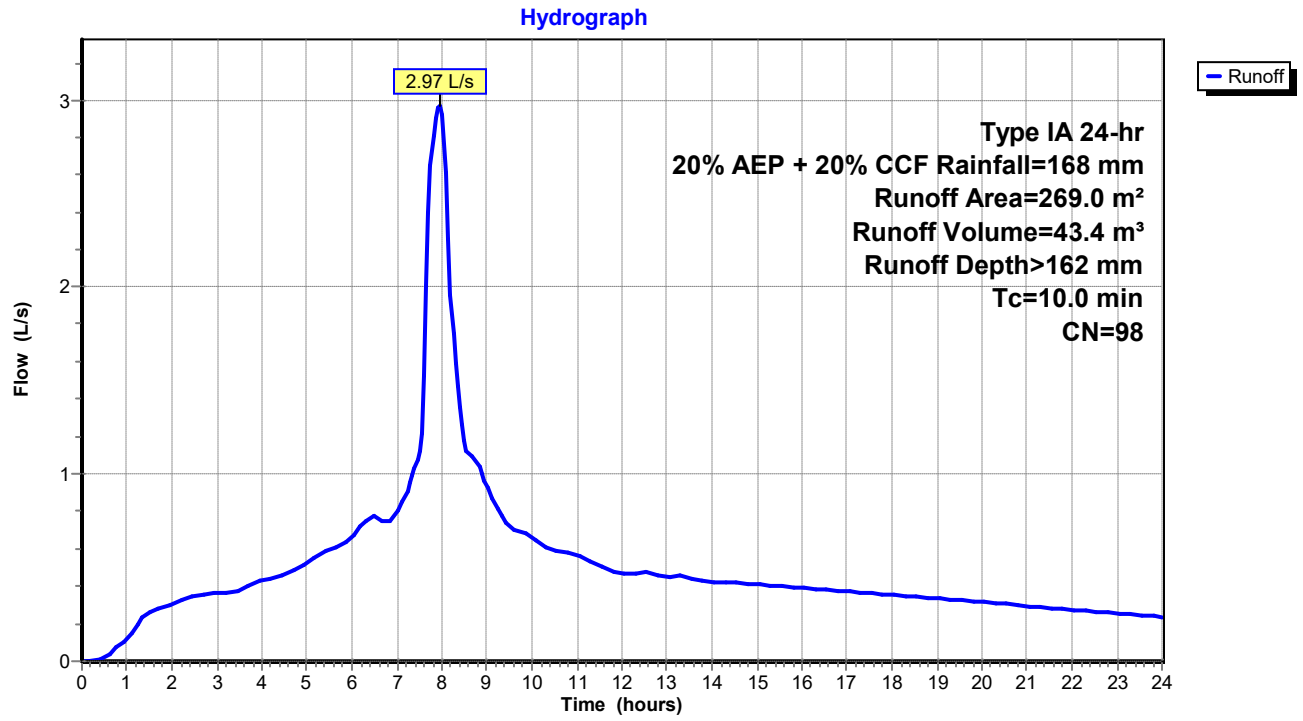
Runoff = 2.97 L/s @ 7.94 hrs, Volume= 43.4 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	169.0	98	
*	100.0	98	
	269.0	98	Weighted Average
	269.0		100.00% Impervious Area

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

Subcatchment 47S: Permitted Coverage + 100m²



Summary for Pond 41P: 3m³ Detention Tank

Inflow Area = 219.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 2.42 L/s @ 7.94 hrs, Volume= 35.4 m³
Outflow = 1.69 L/s @ 8.18 hrs, Volume= 35.3 m³, Atten= 30%, Lag= 14.6 min
Primary = 1.69 L/s @ 8.18 hrs, Volume= 35.3 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.081 m @ 8.18 hrs Surf.Area= 2.0 m² Storage= 2.2 m³

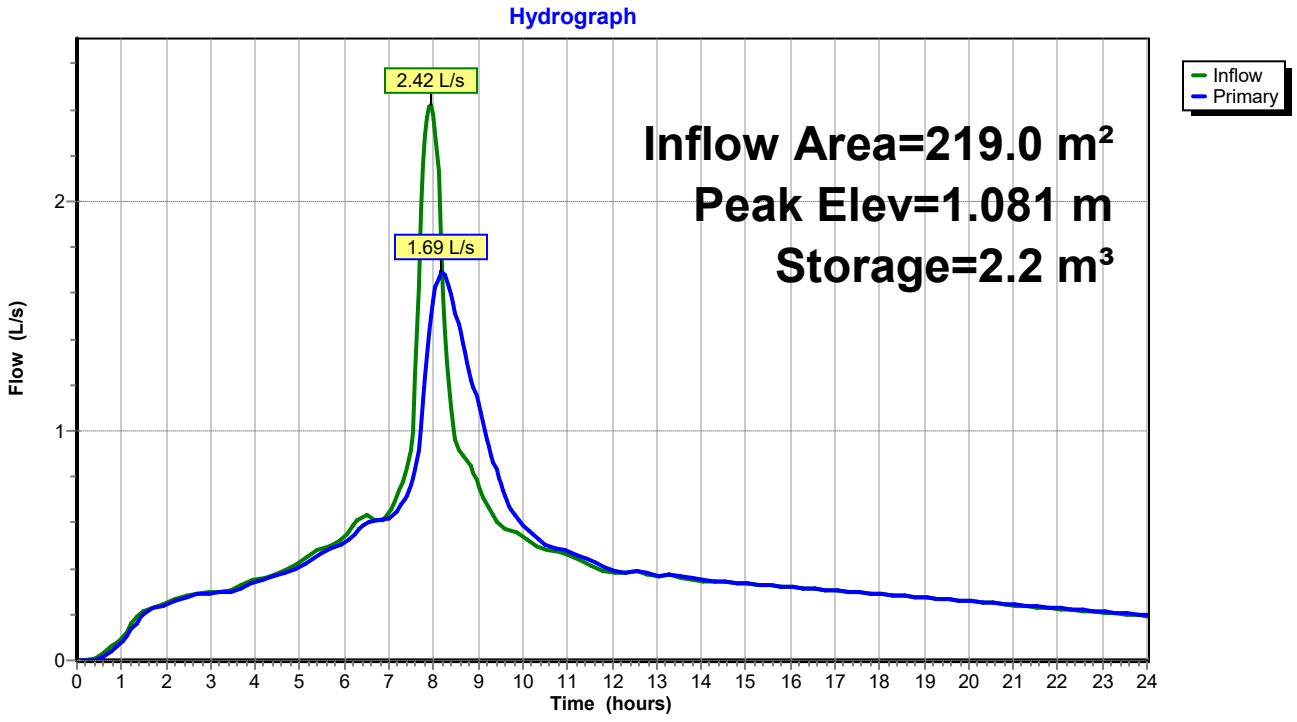
Plug-Flow detention time= 9.0 min calculated for 35.2 m³ (100% of inflow)
Center-of-Mass det. time= 7.7 min (659.3 - 651.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	3.6 m³	**1.60 mD x 1.80 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**28 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.69 L/s @ 8.18 hrs HW=1.079 m (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.69 L/s @ 2.74 m/s)

Pond 41P: 3m³ Detention Tank



Summary for Pond 48P: 5m³ Detention Tank

Inflow Area = 269.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 2.97 L/s @ 7.94 hrs, Volume= 43.4 m³
Outflow = 1.66 L/s @ 8.28 hrs, Volume= 43.3 m³, Atten= 44%, Lag= 20.4 min
Primary = 1.66 L/s @ 8.28 hrs, Volume= 43.3 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.047 m @ 8.28 hrs Surf.Area= 3.8 m² Storage= 4.0 m³

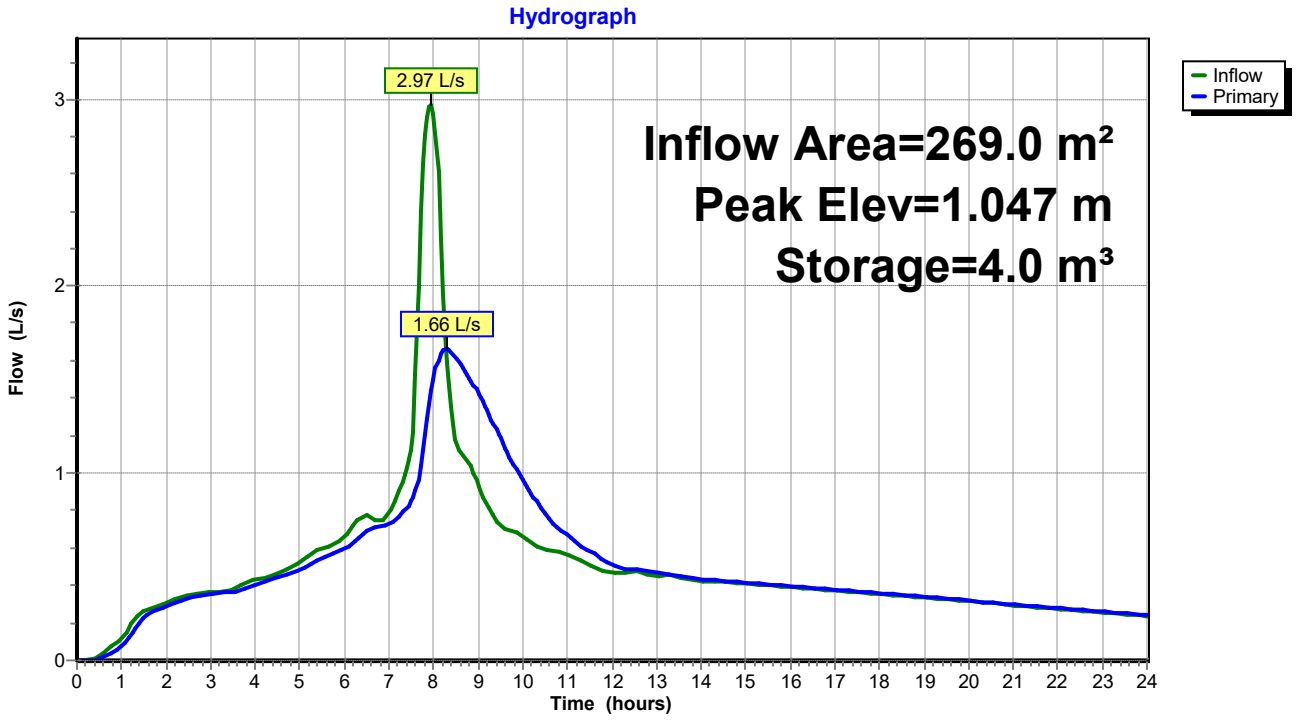
Plug-Flow detention time= 18.9 min calculated for 43.3 m³ (100% of inflow)
Center-of-Mass det. time= 16.5 min (668.1 - 651.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	6.8 m³	**2.20 mD x 1.80 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**28 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.66 L/s @ 8.28 hrs HW=1.047 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.66 L/s @ 2.70 m/s)

Pond 48P: 5m³ Detention Tank



Summary for Subcatchment 40S: Permitted Coverage + 50m²

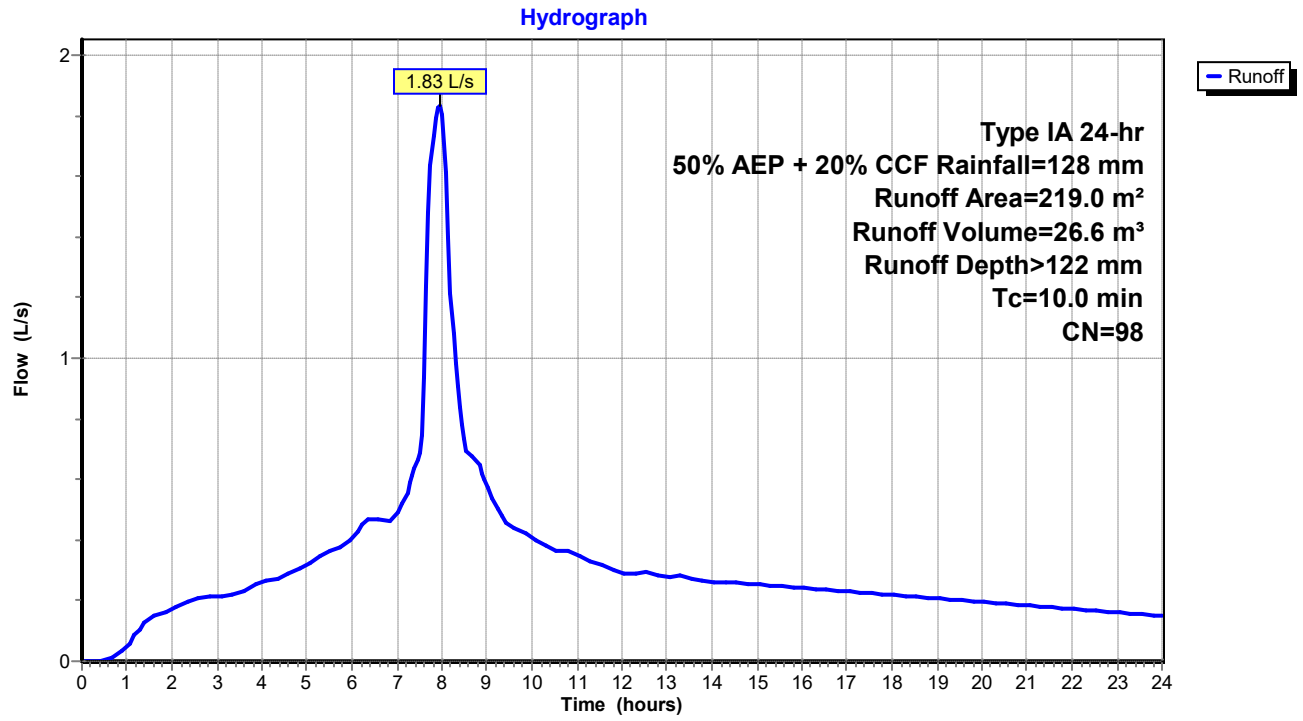
Runoff = 1.83 L/s @ 7.94 hrs, Volume= 26.6 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	169.0	98	
*	50.0	98	
	219.0	98	Weighted Average
	219.0		100.00% Impervious Area

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

Subcatchment 40S: Permitted Coverage + 50m²



Summary for Subcatchment 46S: Permitted Coverage Flow Rate

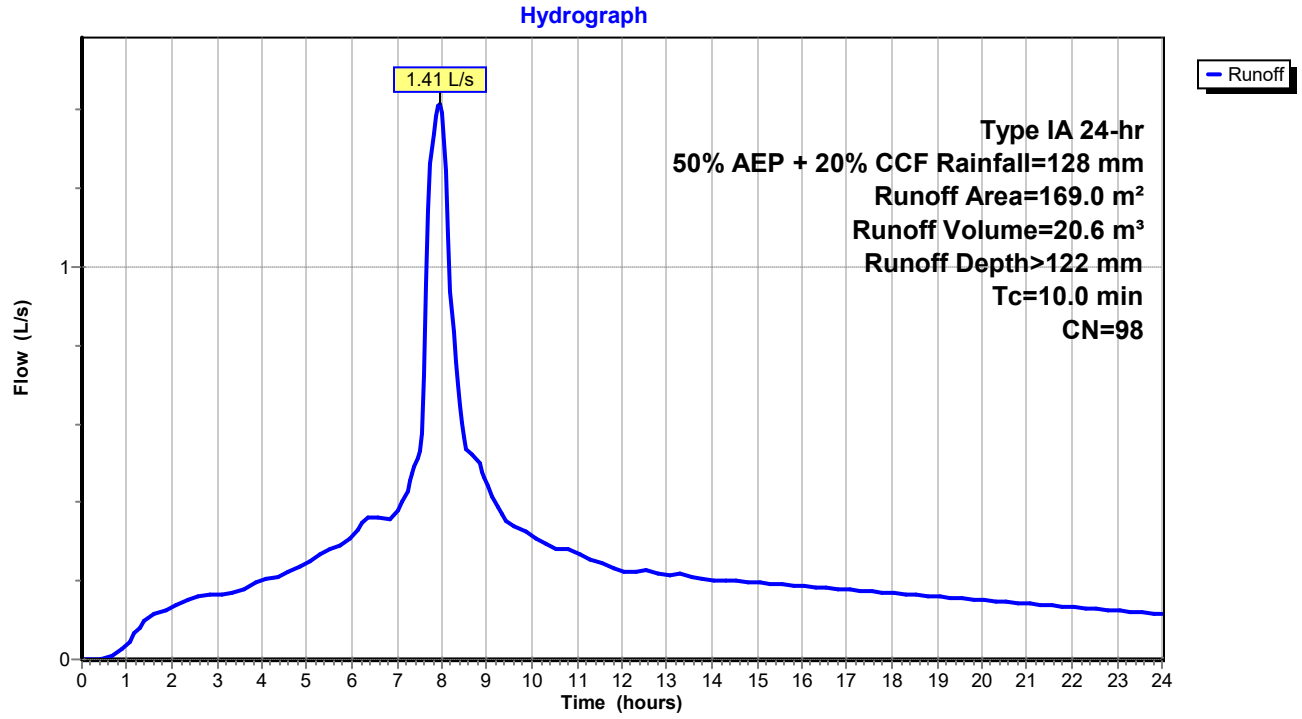
Runoff = 1.41 L/s @ 7.94 hrs, Volume= 20.6 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	169.0	98	
	169.0		100.00% Impervious Area

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

Subcatchment 46S: Permitted Coverage Flow Rate



Summary for Subcatchment 47S: Permitted Coverage + 100m²

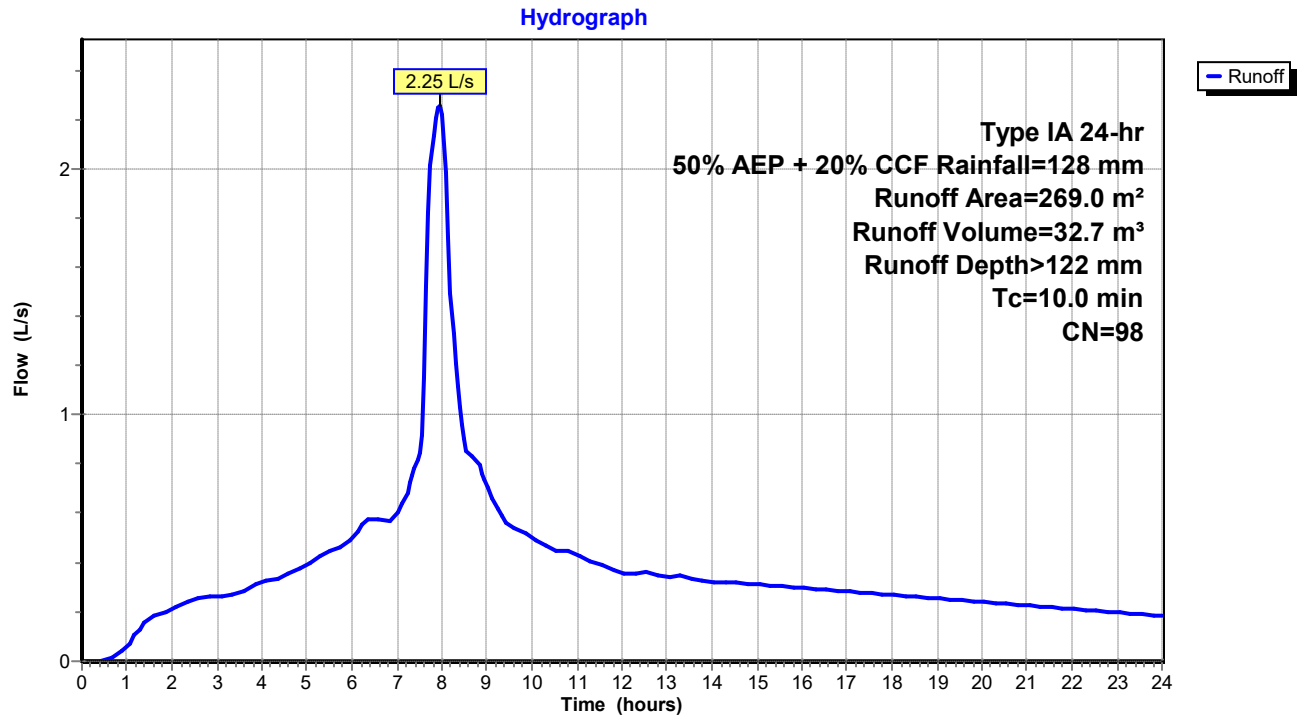
Runoff = 2.25 L/s @ 7.94 hrs, Volume= 32.7 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	169.0	98	
*	100.0	98	
	269.0	98	Weighted Average
	269.0		100.00% Impervious Area

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

Subcatchment 47S: Permitted Coverage + 100m²



Summary for Pond 41P: 3m³ Detention Tank

Inflow Area = 219.0 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.83 L/s @ 7.94 hrs, Volume= 26.6 m³
Outflow = 1.37 L/s @ 8.16 hrs, Volume= 26.6 m³, Atten= 25%, Lag= 13.2 min
Primary = 1.37 L/s @ 8.16 hrs, Volume= 26.6 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.713 m @ 8.16 hrs Surf.Area= 2.0 m² Storage= 1.4 m³

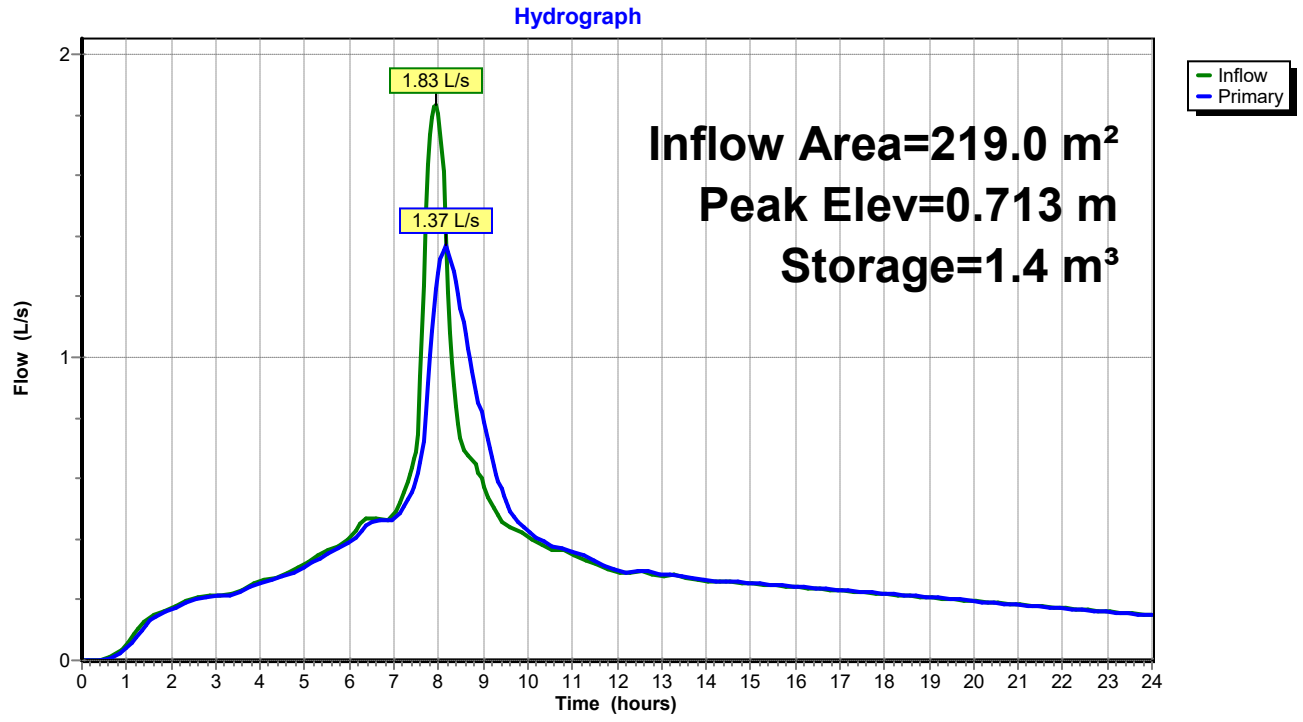
Plug-Flow detention time= 7.6 min calculated for 26.5 m³ (100% of inflow)
Center-of-Mass det. time= 6.2 min (662.7 - 656.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	3.6 m³	**1.60 mD x 1.80 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**28 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.37 L/s @ 8.16 hrs HW=0.712 m (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.37 L/s @ 2.22 m/s)

Pond 41P: 3m³ Detention Tank



Summary for Pond 48P: 5m³ Detention Tank

Inflow Area = 269.0 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 2.25 L/s @ 7.94 hrs, Volume= 32.7 m³
Outflow = 1.36 L/s @ 8.24 hrs, Volume= 32.6 m³, Atten= 40%, Lag= 18.2 min
Primary = 1.36 L/s @ 8.24 hrs, Volume= 32.6 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.706 m @ 8.24 hrs Surf.Area= 3.8 m² Storage= 2.7 m³

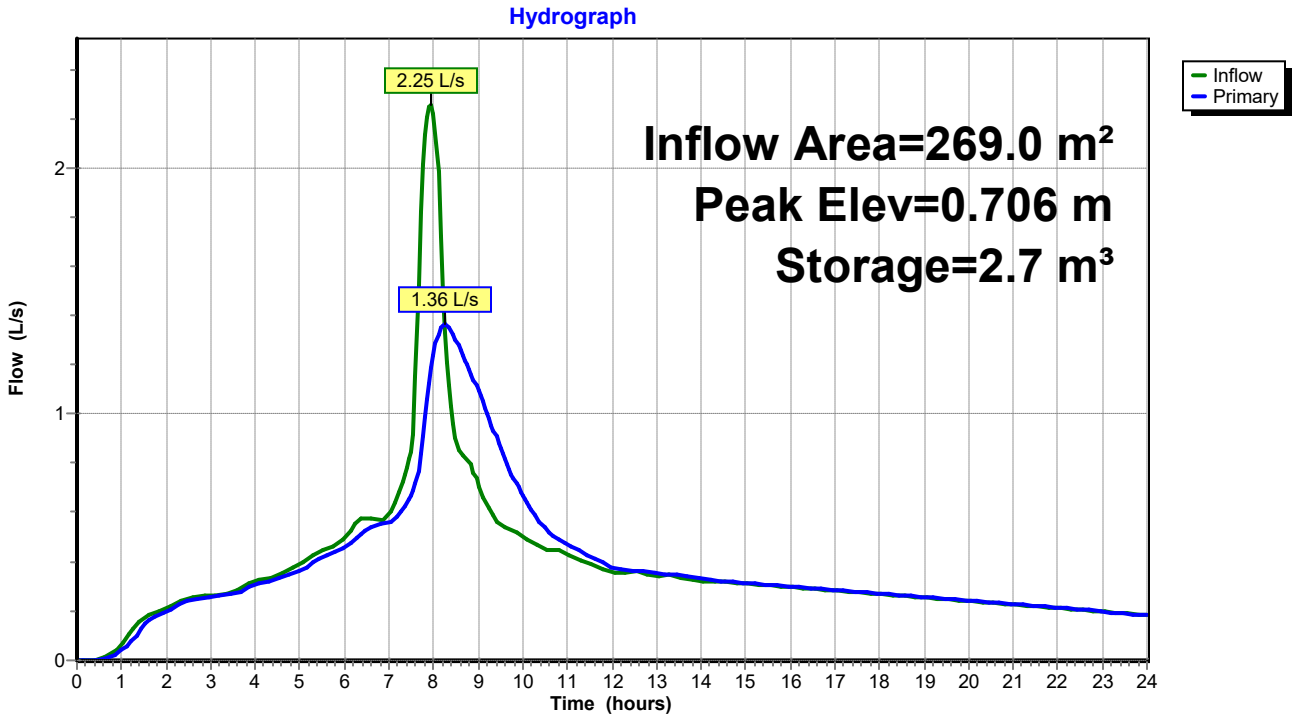
Plug-Flow detention time= 15.7 min calculated for 32.6 m³ (99% of inflow)
Center-of-Mass det. time= 13.1 min (669.6 - 656.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	6.8 m³	**2.20 mD x 1.80 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**28 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.36 L/s @ 8.24 hrs HW=0.705 m (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.36 L/s @ 2.21 m/s)

Pond 48P: 5m³ Detention Tank



Stormwater Soakage Assessment Per E1/VM1
Job No: 144124
124 & 126 Kerikeri Road

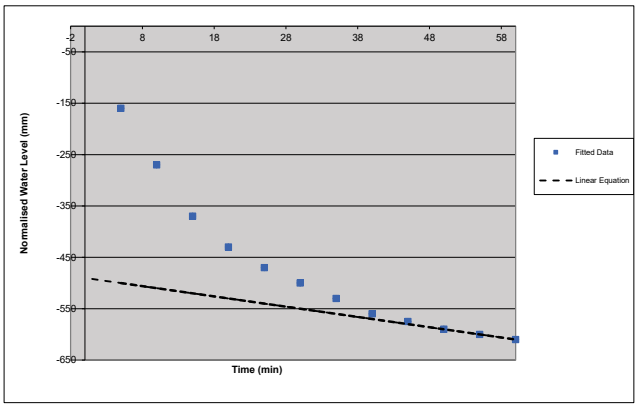
Percolation Test 1

Water Level (mm)			
Time (min)	Measured	Normalised	Difference
0	**-1200**	0	-
5	-1040	-160	160
10	-930	-270	110
15	-830	-370	100
20	-770	-430	60
25	-730	-470	40
30	-700	-500	30
35	-670	-530	30
40	-640	-560	30
45	-625	-575	15
50	-610	-590	15
55	-600	-600	10
60	-590	-610	10

Point from linear fit equation	
0	-490
5	-500
10	-510
15	-520
20	-530
25	-540
30	-550
35	-560
40	-570
45	-580
50	-590
55	-600
60	-610

The linear equation between 50 min and 55min
y= -2x -490

Calculated Percolation Rate: 120mm/hr



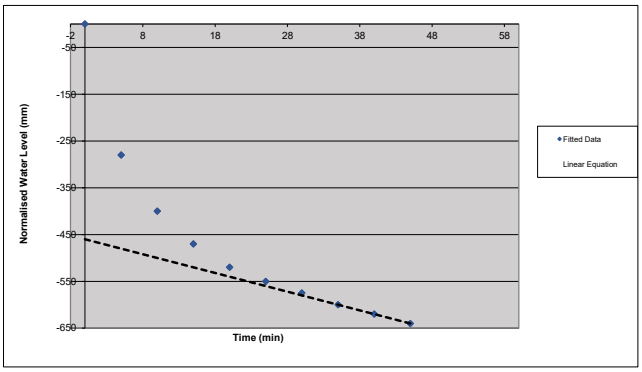
Percolation Test 2

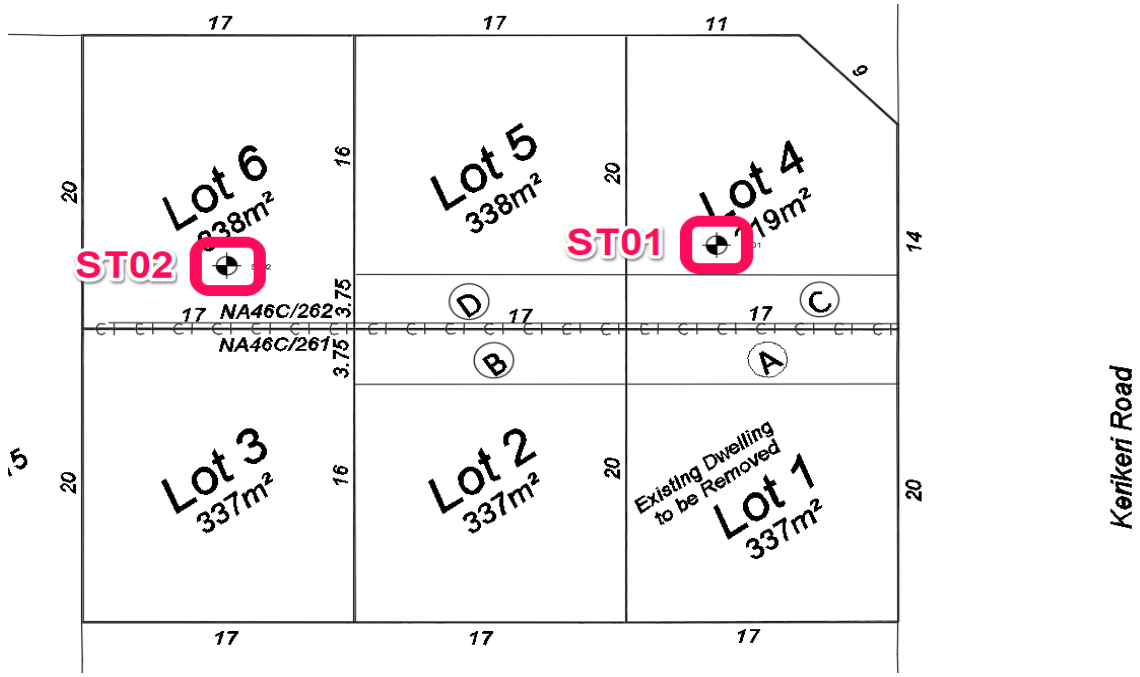
Water Level (mm)			
Time (min)	Measured	Normalised	Difference
0	-1200	0	-
5	-920	-280	280
10	-800	-400	120
15	-730	-470	70
20	-680	-520	50
25	-650	-550	30
30	-625	-575	25
35	-600	-600	25
40	-580	-620	20
45	-560	-640	20

Point from linear fit equation	
0	-460
5	-480
10	-500
15	-520
20	-540
25	-560
30	-580
35	-600
40	-620
45	-640

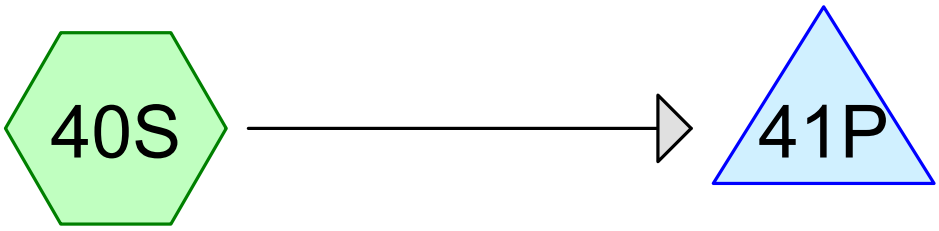
The linear equation between 25min and 30min
y= -4x -460

Calculated Percolation Rate: 240mm/hr



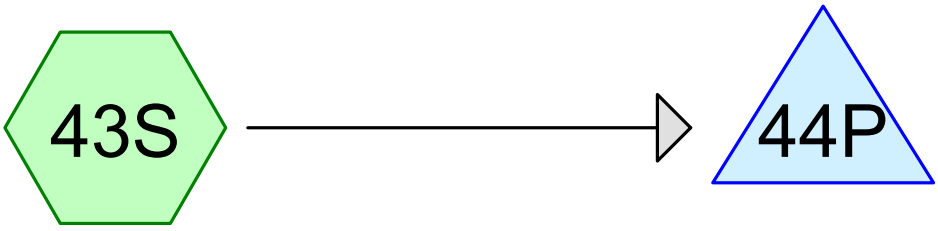


SOAKPIT SIZE PER 100m² LOT COVERAGE



100m² Coverage

12.5m² x 1.0mD Rock-Filled Soakpit



100m² Coverage

9.3m² x 0.73mD Crate System Soakpit

Subcat Reach Pond Link

Routing Diagram for 144124 - Soakage
Prepared by {enter your company name here}, Printed 29/01/2026
HydroCAD® 10.00-26 s/n 10413 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 40S: 100m² Coverage

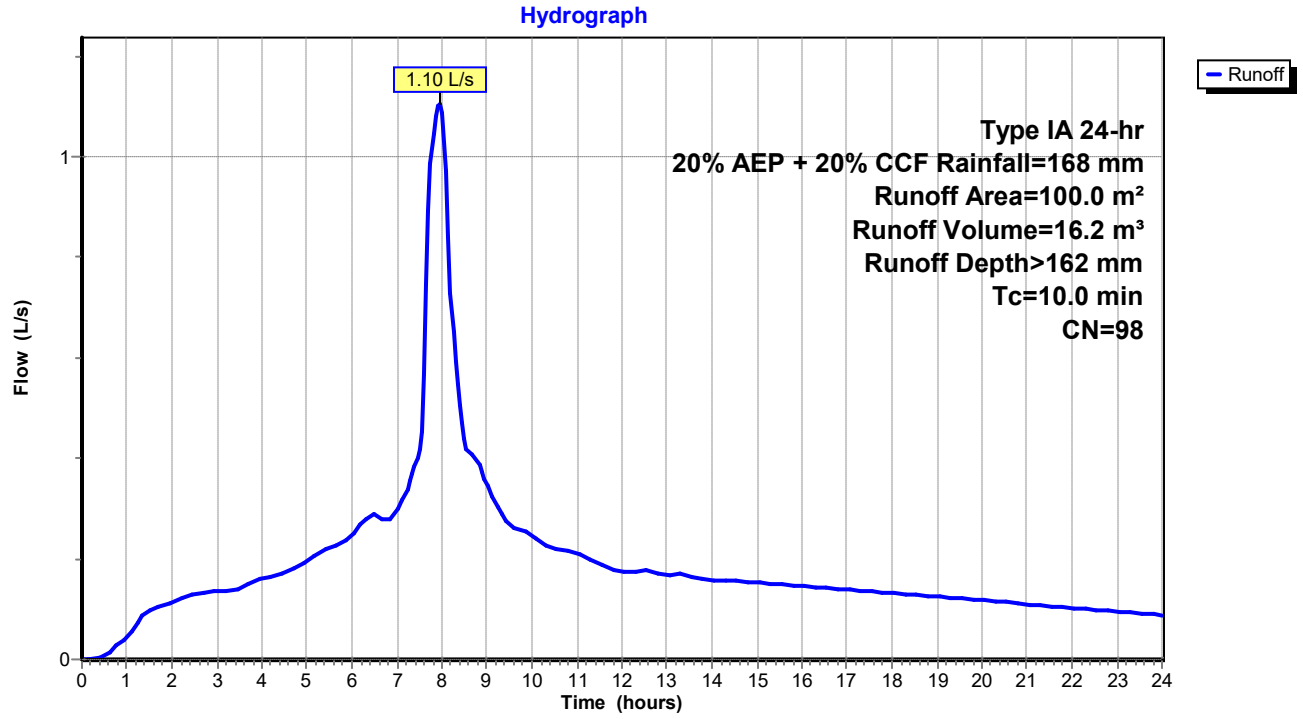
Runoff = 1.10 L/s @ 7.94 hrs, Volume= 16.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	100.0	98	
	100.0		100.00% Impervious Area

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

Subcatchment 40S: 100m² Coverage



Summary for Subcatchment 43S: 100m² Coverage

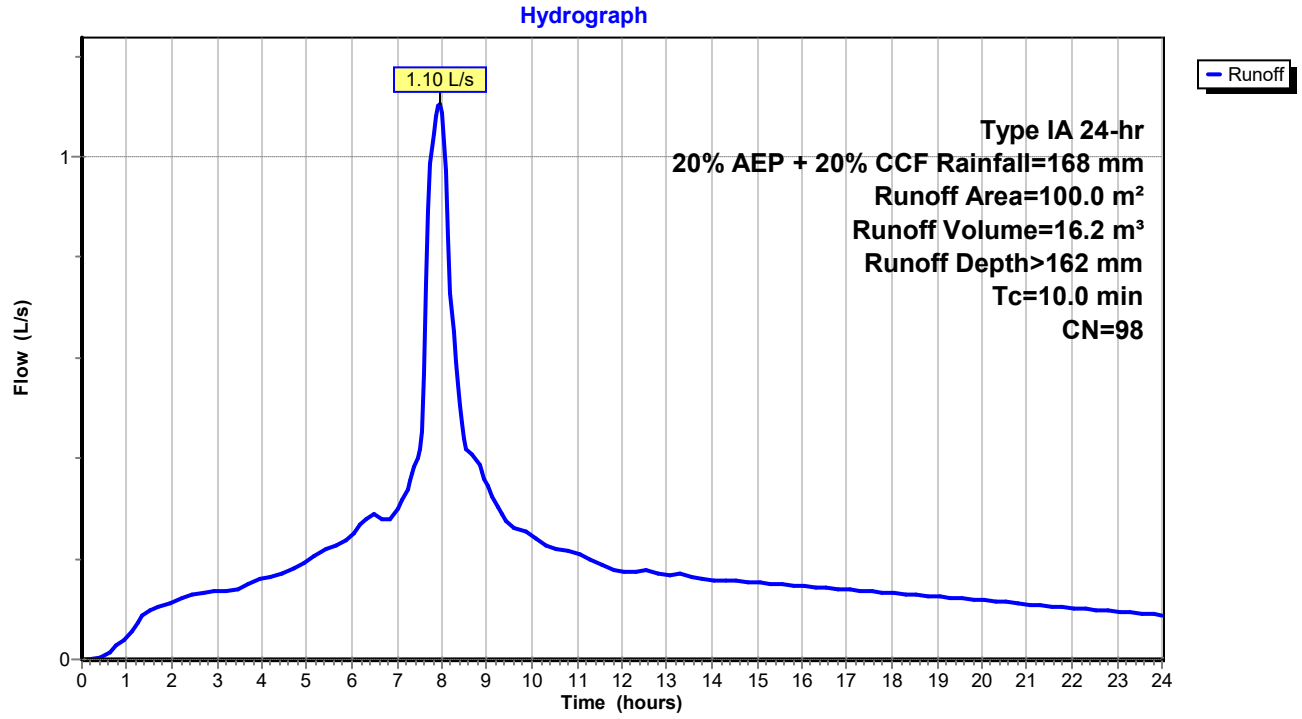
Runoff = 1.10 L/s @ 7.94 hrs, Volume= 16.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	100.0	98	
	100.0		100.00% Impervious Area

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

Subcatchment 43S: 100m² Coverage



Summary for Pond 41P: 12.5m² x 1.0mD Rock-Filled Soakpit

Inflow Area = 100.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.10 L/s @ 7.94 hrs, Volume= 16.2 m³
Outflow = 0.22 L/s @ 10.43 hrs, Volume= 14.3 m³, Atten= 80%, Lag= 149.3 min
Discarded = 0.22 L/s @ 10.43 hrs, Volume= 14.3 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.944 m @ 10.43 hrs Surf.Area= 12.5 m² Storage= 4.5 m³

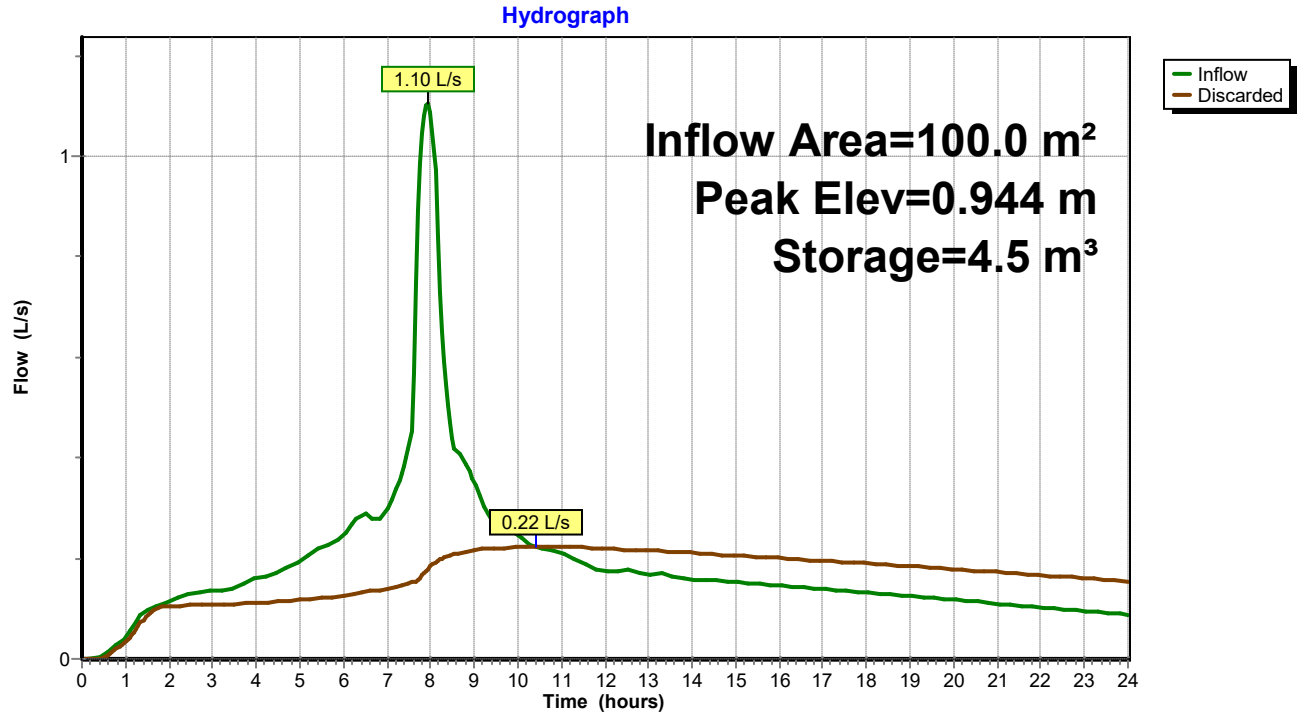
Plug-Flow detention time= 231.6 min calculated for 14.3 m³ (88% of inflow)
Center-of-Mass det. time= 147.4 min (799.1 - 651.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	4.8 m³	**2.50 mW x 5.00 mL x 1.00 mH Prismatoid** 12.5 m³ Overall x 38.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.000 m	**120.00 mm/hr Exfiltration X 0.25 over Wetted area**

Discarded OutFlow Max=0.22 L/s @ 10.43 hrs HW=0.944 m (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.22 L/s)

Pond 41P: 12.5m² x 1.0mD Rock-Filled Soakpit



Summary for Pond 44P: 9.3m² x 0.73mD Crate System Soakpit

Inflow Area = 100.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.10 L/s @ 7.94 hrs, Volume= 16.2 m³
Outflow = 0.15 L/s @ 14.72 hrs, Volume= 10.8 m³, Atten= 86%, Lag= 407.0 min
Discarded = 0.15 L/s @ 14.72 hrs, Volume= 10.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.714 m @ 14.72 hrs Surf.Area= 9.2 m² Storage= 6.3 m³

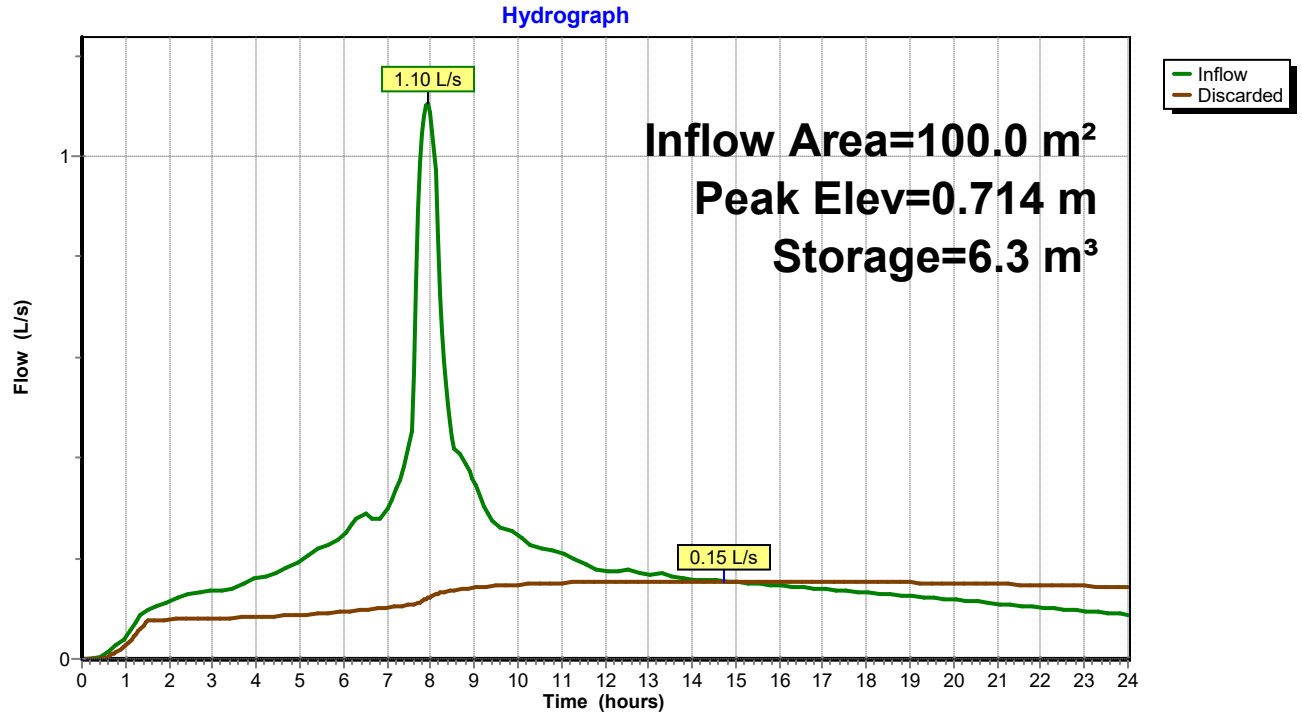
Plug-Flow detention time= 373.7 min calculated for 10.8 m³ (67% of inflow)
Center-of-Mass det. time= 172.4 min (824.1 - 651.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	6.4 m³	**2.10 mW x 4.40 mL x 0.73 mH Prismatoid** 6.7 m³ Overall x 95.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.000 m	**120.00 mm/hr Exfiltration X 0.25 over Wetted area**

Discarded OutFlow Max=0.15 L/s @ 14.72 hrs HW=0.714 m (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.15 L/s)

Pond 44P: 9.3m² x 0.73mD Crate System Soakpit



Appendix 6

Stormwater Memorandum

Wilton Joubert Limited
09 527 0196
PO BOX 11-381
Ellerslie
Auckland 1524

SITE	124 & 126 Kerikeri Road, Kerikeri
LEGAL DESCRIPTION	Lots 14 & 15 DP 41378
PROJECT	Proposed 6-Lot Subdivision
CLIENT	OC1 HoldCo Limited
REFERENCE NO.	147144 – Addendum to WJL #144124
DOCUMENT	Stormwater Memorandum
STATUS/REVISION No.	A01
DATE OF ISSUE	4 June 2026

Report Prepared For	Email
OC1 HoldCo Limited	jalodge@live.com

Authored By	**P. McSweeney** *(BE(Hons) Civil)*	Civil Engineer	Patrick@wjl.co.nz	
Reviewed & Approved by	**B. Steenkamp** *(CPEng, BEng Civil, CMEngNZ, BSc (Geology))*	Senior Civil Engineer	BenS@wjl.co.nz	

1. EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

	Lot	Site Area	Post-Development Impermeable Area	Permitted Coverage Exceedance
Lot Areas & Proposed Impermeable Coverage:	1	337.3 m^2	198.9 m^2	30.25 m^2
	2	337.2 m^2	199.1 m^2	30.5 m^2
	3	336.7 m^2	179.6 m^2	11.25 m^2
	4	318.5 m^2	188.5 m^2	29.25 m^2
	5	337.6 m^2	198.6 m^2	29.8 m^2
	6	337.6 m^2	180 m^2	11.2 m^2

1 x Slimline Tank per Lot. See appended Tank Detail C210.

- 100mmØ overflow at top of tank
- Orifice outlet installed @ 100mm above tank base

	Lot	Minimum Tank Size	Orifice Outlet Size
Detention Tanks:	1	2 m^3	22mmØ
	2	2 m^3	22mmØ
	3	1 m^3	24mmØ
	4	2 m^3	22mmØ
	5	2 m^3	22mmØ
	6	1 m^3	24mmØ

2. SCOPE OF WORK

Wilton Joubert Ltd. (WJL) was engaged by the client to produce a stormwater addendum to the previously issued Site Suitability Report (WJL #144124) for a proposed 6-lot subdivision at 124 & 126 Kerikeri Road, Kerikeri.

This addendum is intended to provide specific detention tank designs for each proposed lot in accordance with the design requirements outlined in the aforementioned Site Suitability Report, which is to be read in conjunction with this addendum.

At the time of report writing, the following documents were referred to for background data and details of the proposed development:

- Proposed Plan Set titled "Lodge Development" Ref. 2025-0694 G, dated 06.05.2026.

Any revision of these drawings and/or development proposals with stormwater management implications should be referred back to us for review.

3. DEVELOPMENT PROPOSALS

The supplied plan set depicts the proposed dwellings for each lot in the subdivision and corresponding post-development impermeable coverage for each lot.

Section 6.1 of the WJL Site Suitability Report #144124 states the following:

"A site-specific district plan assessment in accordance with Section 7.6.5.2.1 of the FNDC District Plan will be required for any lot that exceeds 50% impermeable area coverage or Section 11.3 for any lot that exceeds 60% impermeable area coverage."

"For future developments exceeding the Permitted Activity coverage rules, on-lot attenuation to Permitted flow rates should be implemented … "

The proposed impermeable coverage for each lot and the corresponding exceedance of the Permitted Activity impermeable coverage threshold is summarized in Table 1 below. The proposed impermeable coverage for all lots is between 50% and 60% of the associated site area; therefore, Controlled Activity status is triggered.

Table 1: Impermeable Coverage

Lot	Site Area	Post-Development Impermeable Area	Permitted Coverage Exceedance
1	337.3 m^2	198.9 m^2	30.25 m^2
2	337.2 m^2	199.1 m^2	30.5 m^2
3	336.7 m^2	179.6 m^2	11.25 m^2
4	318.5 m^2	188.5 m^2	29.25 m^2
5	337.6 m^2	198.6 m^2	29.8 m^2
6	337.6 m^2	180 m^2	11.2 m^2

4. DESIGN REQUIREMENTS

In accordance with the design requirements outlined in the Site Suitability Report, runoff attenuation is to be provided such that the post-development flow rate from the new impermeable areas will be equivalent to flows that would result from a development falling within Permitted Activity status for the 50% AEP and 20% AEP storm events adjusted for climate change factors. The SCS TR-20 runoff method has been utilised with a Type 1A storm curve.

Provided that the recommendations within this report are adhered to, the effects of stormwater runoff resulting from the proposed impermeable surfaces are considered to have less than minor effects on the receiving environment, less than or equivalent to conditions that would result from development proposals with unattenuated impermeable coverage at the Permitted Activity coverage threshold. An assessment of environmental effects, addressing matters of discretion listed in the District Plan Section 7.6.5.2.1, is provided in Section 6 below.

5. STORMWATER MITIGATION ASSESSMENT

It is recommended that a single above-ground slimline detention tank be installed on each lot to provide a detention volume for the attenuation of runoff flows.

Roof runoff collected via proprietary guttering systems on each lot is to be directed to each lot's respective detention tank via sealed pipes.

Each tank is to be fitted with a 100mmØ overflow outlet at the top of the tank, directing flows to the lot's discharge point. An orifice tee, providing flow attenuation, fitted at 100mm above the tank base is to be plumbed to the overflow outlet riser. The minimum tank size and orifice outlet size corresponding to each lot is given in Table 2 below and in the appended Tank Detail C210. See the appended calculation set for further detail.

Table 2: Detention Tank Specifications

Lot	Minimum Tank Size	Orifice Outlet Size
1	2 m^3	22mmØ
2	2 m^3	22mmØ
3	1 m^3	24mmØ
4	2 m^3	22mmØ
5	2 m^3	22mmØ
6	1 m^3	24mmØ

All other applicable recommendations regarding stormwater management given in the WJL Site Suitability Report #144124 are to be adhered to.

To demonstrate that hydrologic mitigation to permitted levels will be achieved via the specified tank setups, the Permitted flow rates and post-development flow rates detailed in the appended Calculation Set have been summarized in the Table 3 below.

Table 3: Permitted vs Post-Development Flow Rates

	Permitted Coverage (50% Site Area) Flow Rate		Attenuated Post-Development Flow Rate	
Lot	50% AEP + CC	20% AEP + CC	50% AEP + CC	20% AEP + CC
1	1.41 ℓ/s	1.86 ℓ/s	1.33 ℓ/s	1.67 ℓ/s
2	1.41 ℓ/s	1.86 ℓ/s	1.31 ℓ/s	1.65 ℓ/s
3	1.41 ℓ/s	1.86 ℓ/s	1.37 ℓ/s	1.74 ℓ/s
4	1.33 ℓ/s	1.76 ℓ/s	1.26 ℓ/s	1.59 ℓ/s
5	1.41 ℓ/s	1.86 ℓ/s	1.31 ℓ/s	1.64 ℓ/s
6	1.41 ℓ/s	1.86 ℓ/s	1.37 ℓ/s	1.74 ℓ/s

6. DISTRICT PLAN ASSESSMENT

This report has been prepared to demonstrate the means of mitigating run-off to no more than the levels that would result from the permitted threshold under Stormwater Management Rule 7.6.5.1.6.

In assessing an application under this provision, the Council will exercise its discretion to review the following matters below, (a) through (i) of FNDCDP Cl 7.6.5.2.1.

In respect of matters (a) through (i), we provide the following comments:

(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;	Impermeable surfaces resulting from the development increase site impermeability. Through tank attenuation and low impact design principles employed in drainage plans, runoff is to be attenuated to permitted levels prior to entering the receiving environment.
(b) the extent to which Low Impact Design principles have been used to reduce site impermeability;	Guidance for design is to be taken from 'The Countryside Living Toolbox' design document, and where necessary, "Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual" Auckland Regional Council (2003). All roof runoff will be collected, directed to detention tanks, and conveyed to the discharge point via sealed pipes. Hardstand areas are to be shaped to shed runoff to catchpits for runoff conveyance to the discharge point without causing scour or erosion.
(c) any cumulative effects on total catchment impermeability;	Existing structures and hardstand areas at the parent lots (for removal prior to development) are estimated via GIS to amount to 160m² of impermeable coverage. The total proposed impermeable coverage across all 6 new lots, per the supplied plans, amounts to 1,144.7m². Therefore, catchment impermeability will increase by approximately 984.7m² as a result of the proposed development across 6 new lots.

(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;	Runoff from the proposed roof and hardstand areas is to be collected and directed to stormwater management devices via sealed pipes, mitigating the potential for runoff to pass over / saturate the surrounding soils. No significant changes to the existing ground contours are depicted in the supplied plan set. Ponding is not anticipated to occur provided the recommendations within this report are adhered to, mitigating interference with natural water absorption.
(e) the physical qualities of the soil type;	Kerikeri Volcanic Group. Moderate drainage.
(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;	N/A – site serviced by sewer reticulation.
(g) the extent to which paved, Impermeable Surfaces are necessary for the proposed activity;	The proposed ROW and driveways provide vehicle and pedestrian access to the dwelling. We do not deem the proposed paved areas to be excessive for the site.
(h) the extent to which land scaping and vegetation may reduce adverse effects of run-off;	Any plantings introduced by the homeowner will increase the site's permeability and aid in diminishing stormwater runoff from the site. To our knowledge, no specific planting regime is proposed.
i) the means and effectiveness of mitigating stormwater runoff to that expected by permitted activity threshold.	Runoff attenuation will be provided such that post-development flow rates will be equivalent to or less than a development falling under Permitted Activity status for the 50% AEP + CC and 20% AEP + CC storm events via detention tanks.

7. NOTES

If any of the design specifications mentioned in the previous sections are altered or found to be different than what is described in this report, Wilton Joubert Ltd will be required to review this report. Indicative system details have been provided in the appendices of this report (147144-C210). Care should be taken when constructing the discharge point to avoid any siphon or backflow effect within the stormwater system.

Subsequent to construction, a programme of regular inspection / maintenance of the system should be initiated by the Owner to ensure the continuance of effective function, and if necessary, the instigation of any maintenance required.

Wilton Joubert Ltd recommends that all contractors keep a photographic record of their work.

8. LIMITATIONS

The recommendations and opinions contained in this report are based on information received and available from the client at the time of report writing.

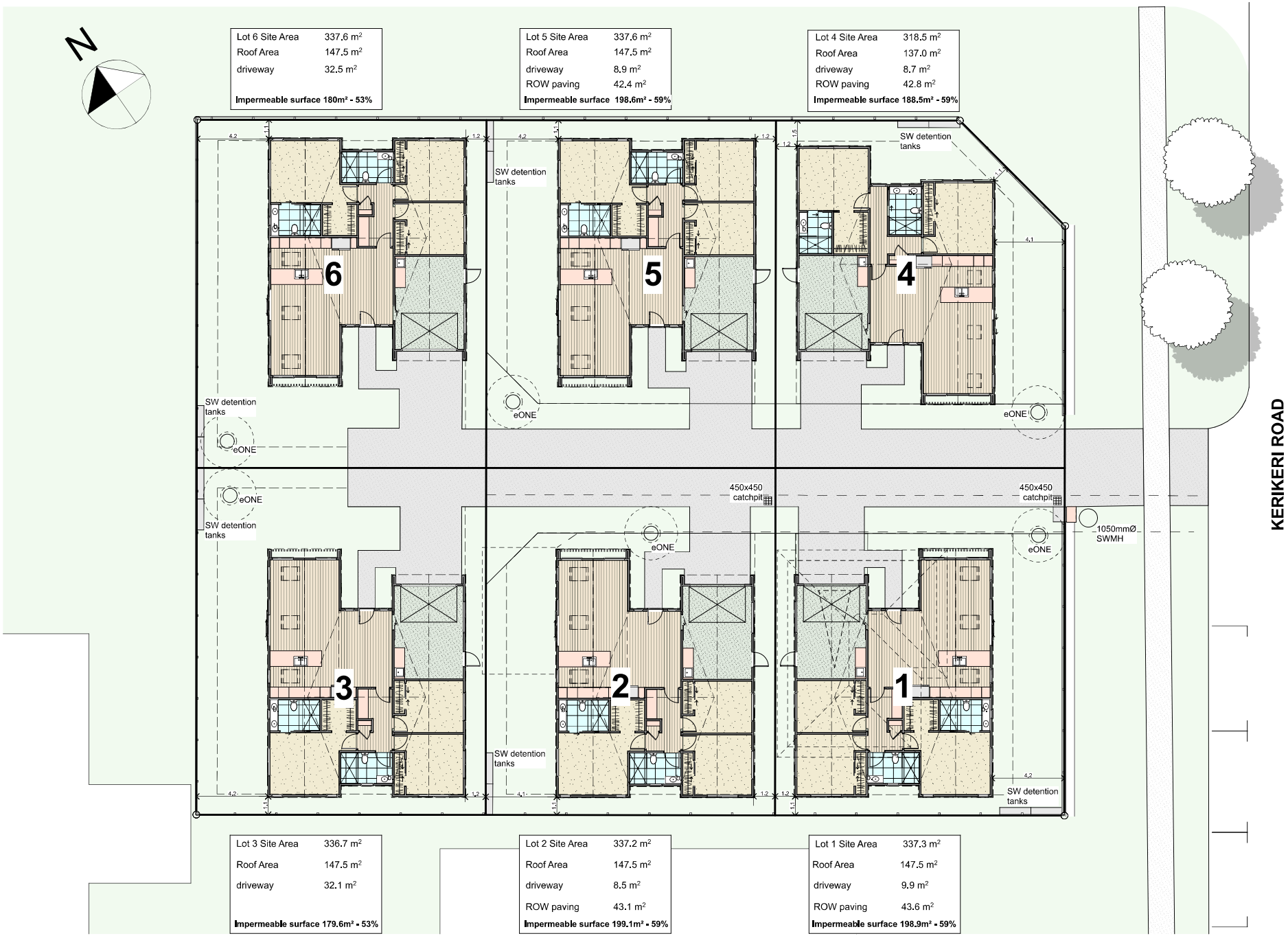
All drainage design is up to the connection point for each building face of any new structures/slabs; no internal building plumbing or layouts have been undertaken.

During construction, an engineer competent to judge whether the conditions are compatible with the assumptions made in this report should examine the site. In all circumstances, if variations occur which differ from that described or that are assumed to exist, then the matter should be referred to a suitably qualified and experienced engineer.

The performance behaviour outlined by this report is dependent on the construction activity and actions of the builder/contractor. Inappropriate actions during the construction phase may cause behaviour outside the limits given in this report.

This report has been prepared for the particular project described to us and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Wilton Joubert Ltd.



Site Plan Scale1:200

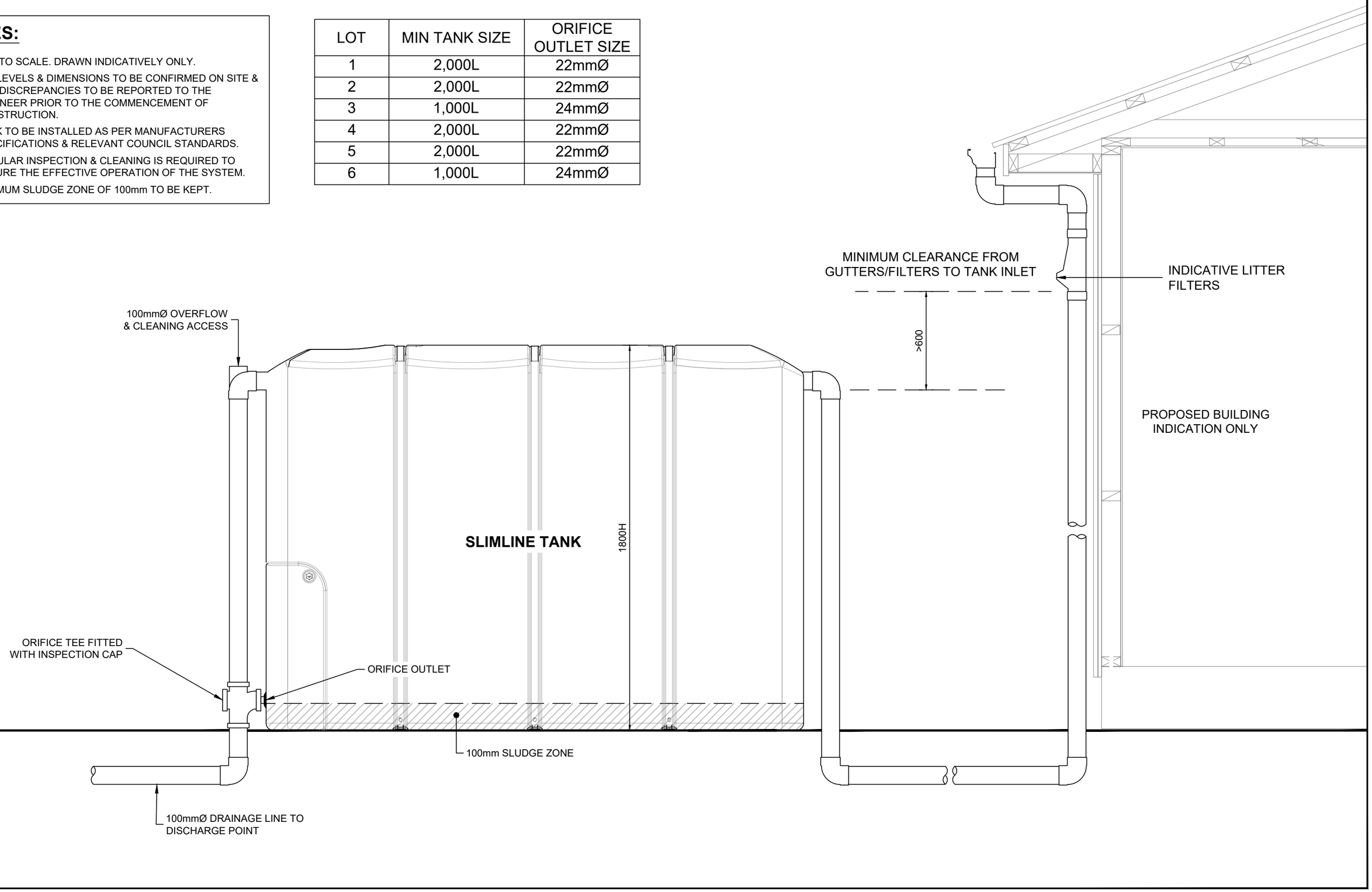
Site Plan
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

NOTES:

1. NOT TO SCALE. DRAWN INDICATIVELY ONLY.
2. ALL LEVELS & DIMENSIONS TO BE CONFIRMED ON SITE & ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. TANK TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS & RELEVANT COUNCIL STANDARDS.
4. REGULAR INSPECTION & CLEANING IS REQUIRED TO ENSURE THE EFFECTIVE OPERATION OF THE SYSTEM.
5. MINIMUM SLUDGE ZONE OF 100mm TO BE KEPT.

LOT	MIN TANK SIZE	ORIFICE OUTLET SIZE
1	2,000L	22mmØ
2	2,000L	22mmØ
3	1,000L	24mmØ
4	2,000L	22mmØ
5	2,000L	22mmØ
6	1,000L	24mmØ



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www.wiltonjoubert.co.nz

ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
01	JUN '26	PM	STORMWATER ADDENDUM

DESIGNED BY: PM
DRAWN BY: PM
CHECKED BY: BGS
SURVEYED BY:

SERVICES NOTE

WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

FOR INFORMATION

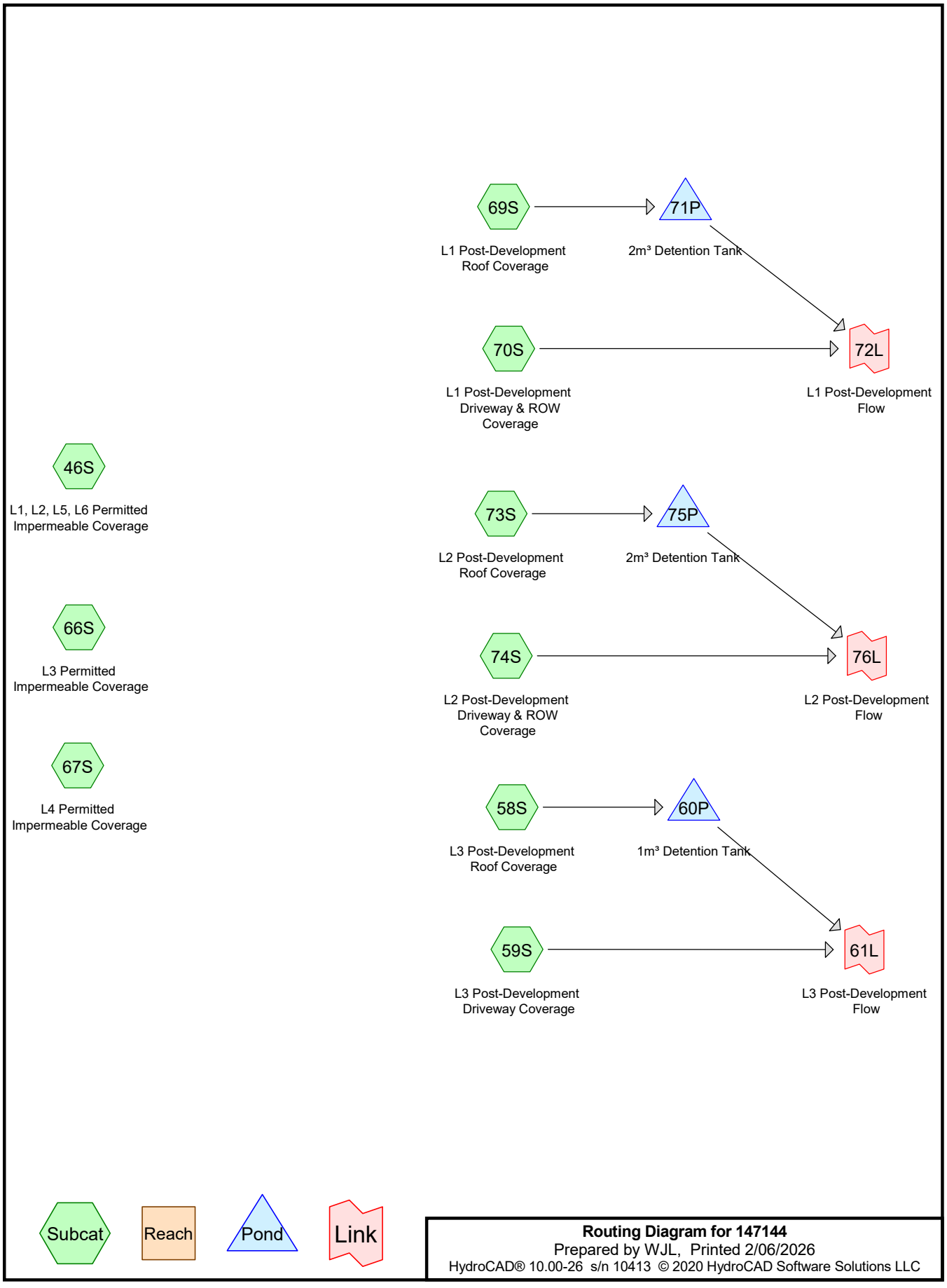
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **TANK DETAIL**

PROJECT DESCRIPTION: **STORMWATER ADDENDUM**

PROJECT TITLE: **SUBDIVISION OF LOTS 14 & 15 DP 41378 124 & 126 KERIKERI ROAD KERIKERI**

ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **N.T.S**
CO-ORDINATE SYSTEM:
DRAWING NUMBER: **147144-C210**
ISSUE: **A01**



Routing Diagram for 147144
Prepared by WJL, Printed 2/06/2026

Summary for Subcatchment 46S: L1, L2, L5, L6 Permitted Impermeable Coverage

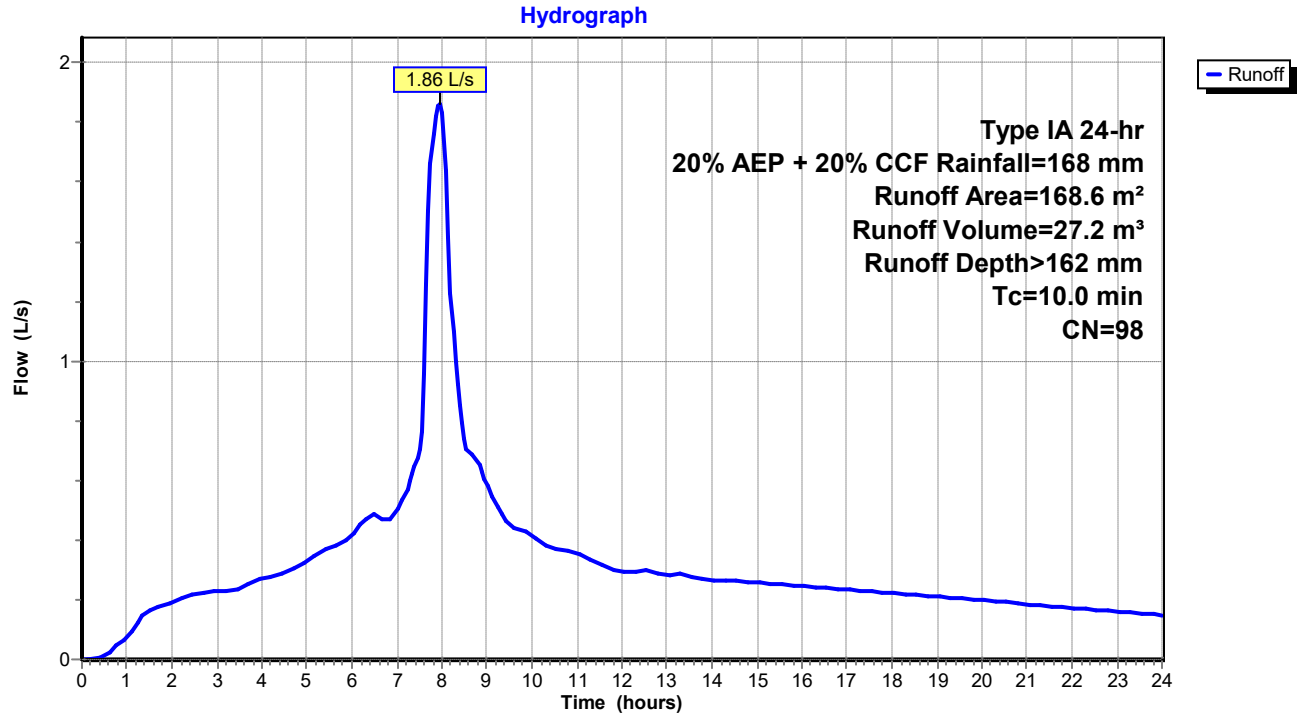
Runoff = 1.86 L/s @ 7.94 hrs, Volume= 27.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	168.6	98	
	168.6		100.00% Impervious Area

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

Subcatchment 46S: L1, L2, L5, L6 Permitted Impermeable Coverage



Summary for Subcatchment 58S: L3 Post-Development Roof Coverage

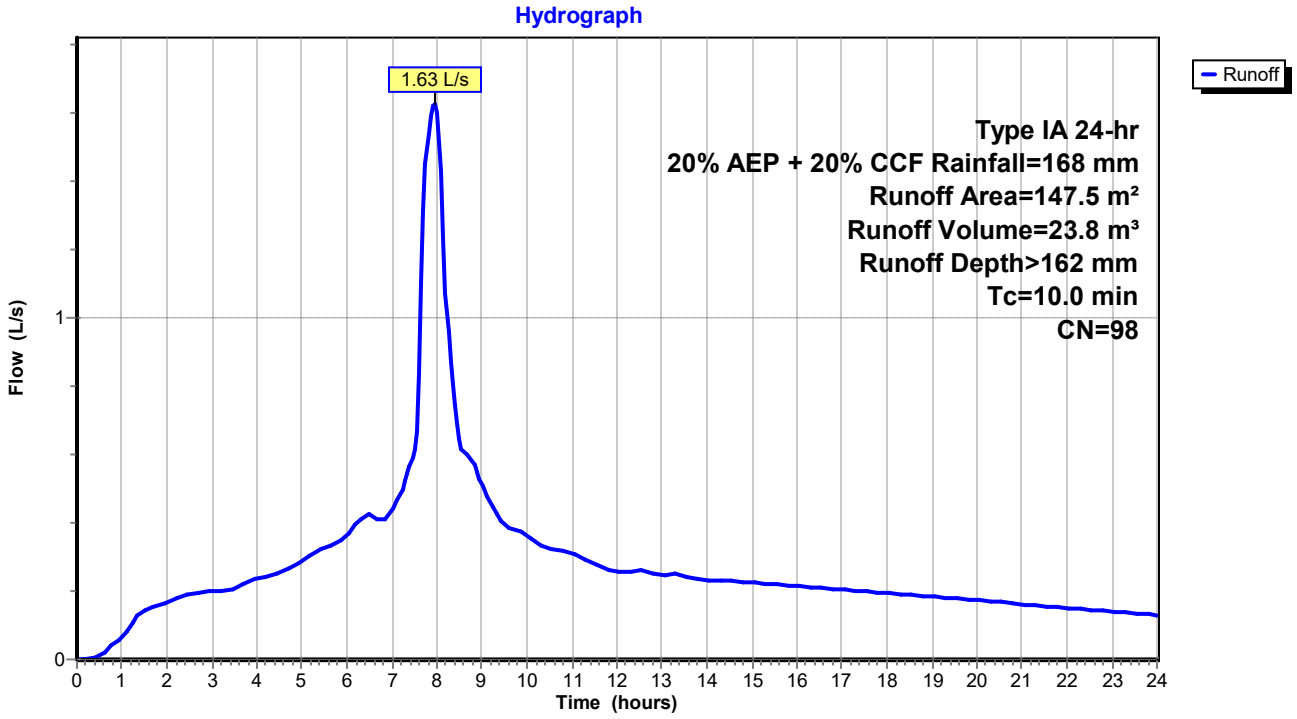
Runoff = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 58S: L3 Post-Development Roof Coverage



Summary for Subcatchment 59S: L3 Post-Development Driveway Coverage

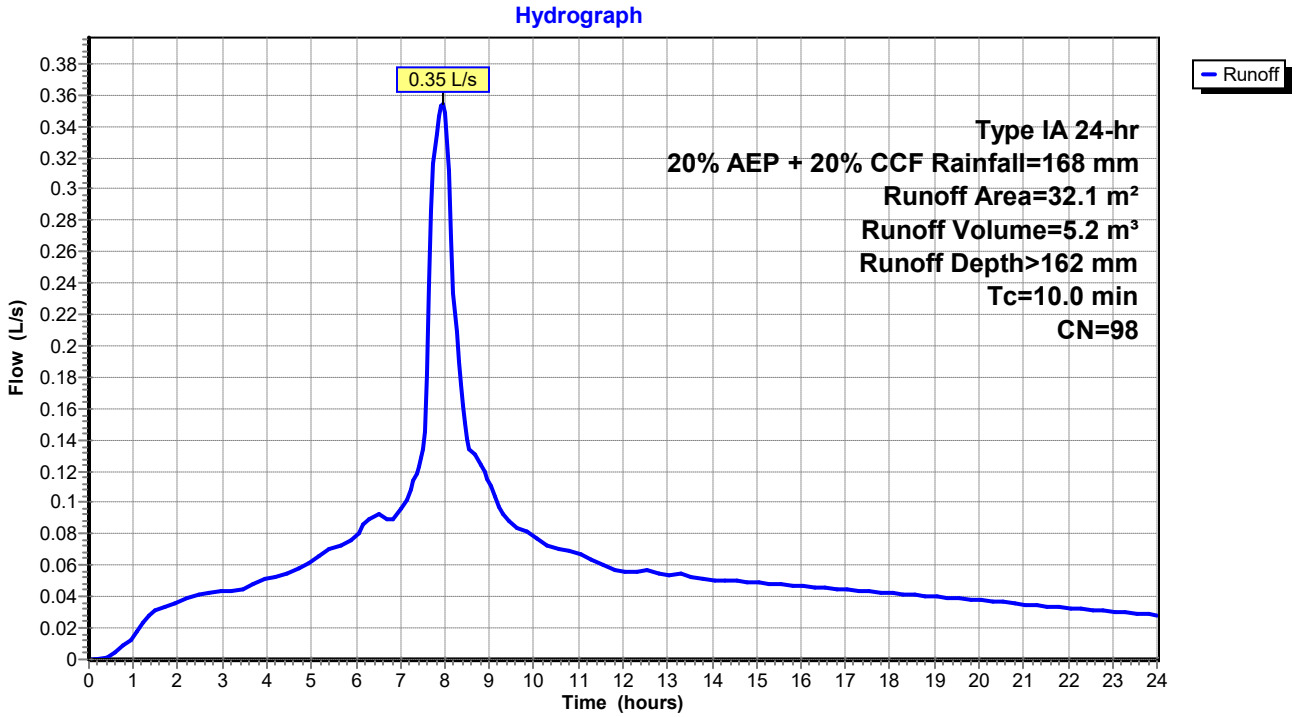
Runoff = 0.35 L/s @ 7.94 hrs, Volume= 5.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	32.1	98	
	32.1		100.00% Impervious Area

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

Subcatchment 59S: L3 Post-Development Driveway Coverage



Summary for Subcatchment 66S: L3 Permitted Impermeable Coverage

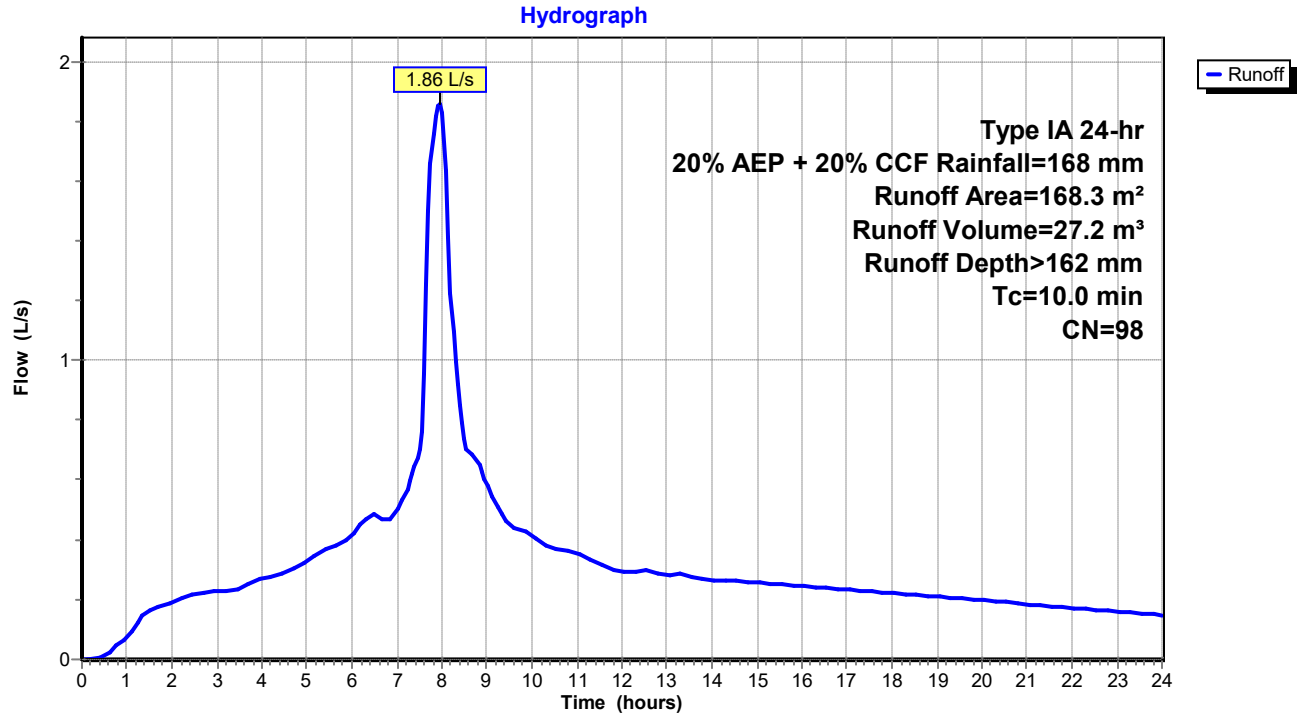
Runoff = 1.86 L/s @ 7.94 hrs, Volume= 27.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	168.3	98	
	168.3		100.00% Impervious Area

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

Subcatchment 66S: L3 Permitted Impermeable Coverage



Summary for Subcatchment 67S: L4 Permitted Impermeable Coverage

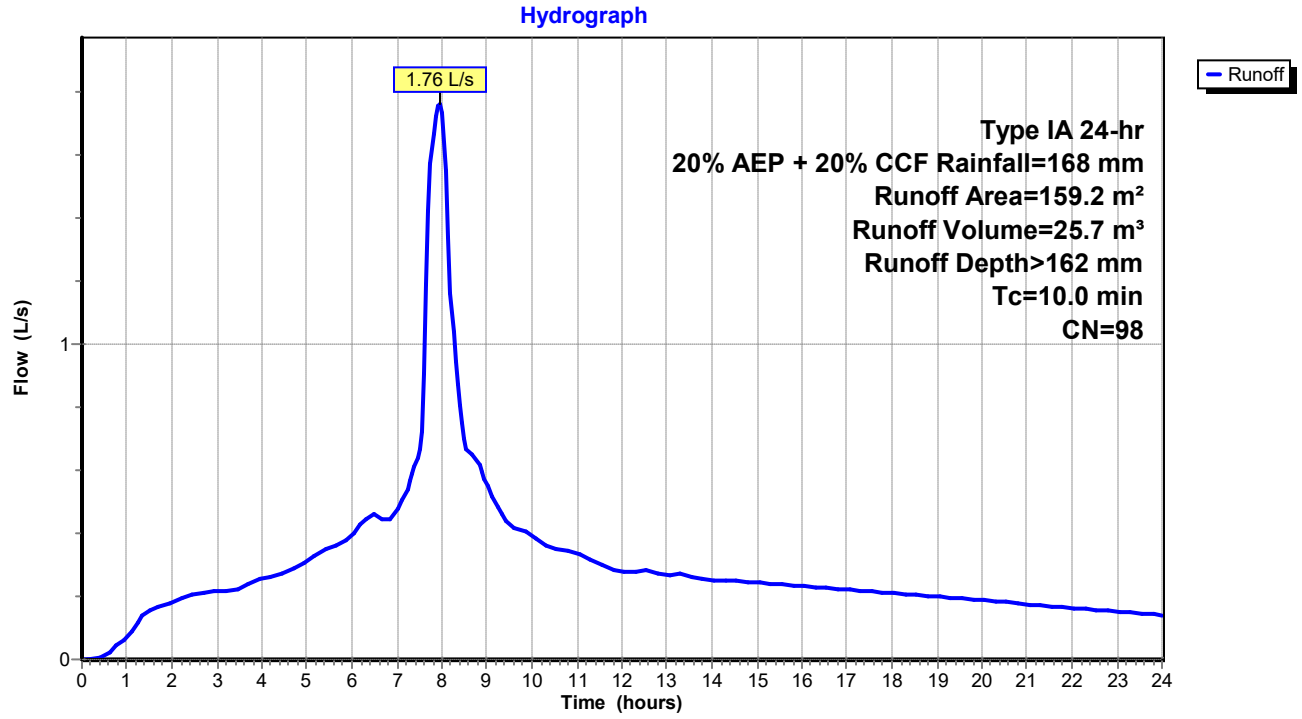
Runoff = 1.76 L/s @ 7.94 hrs, Volume= 25.7 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	159.2	98	
	159.2		100.00% Impervious Area

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

Subcatchment 67S: L4 Permitted Impermeable Coverage



Summary for Subcatchment 69S: L1 Post-Development Roof Coverage

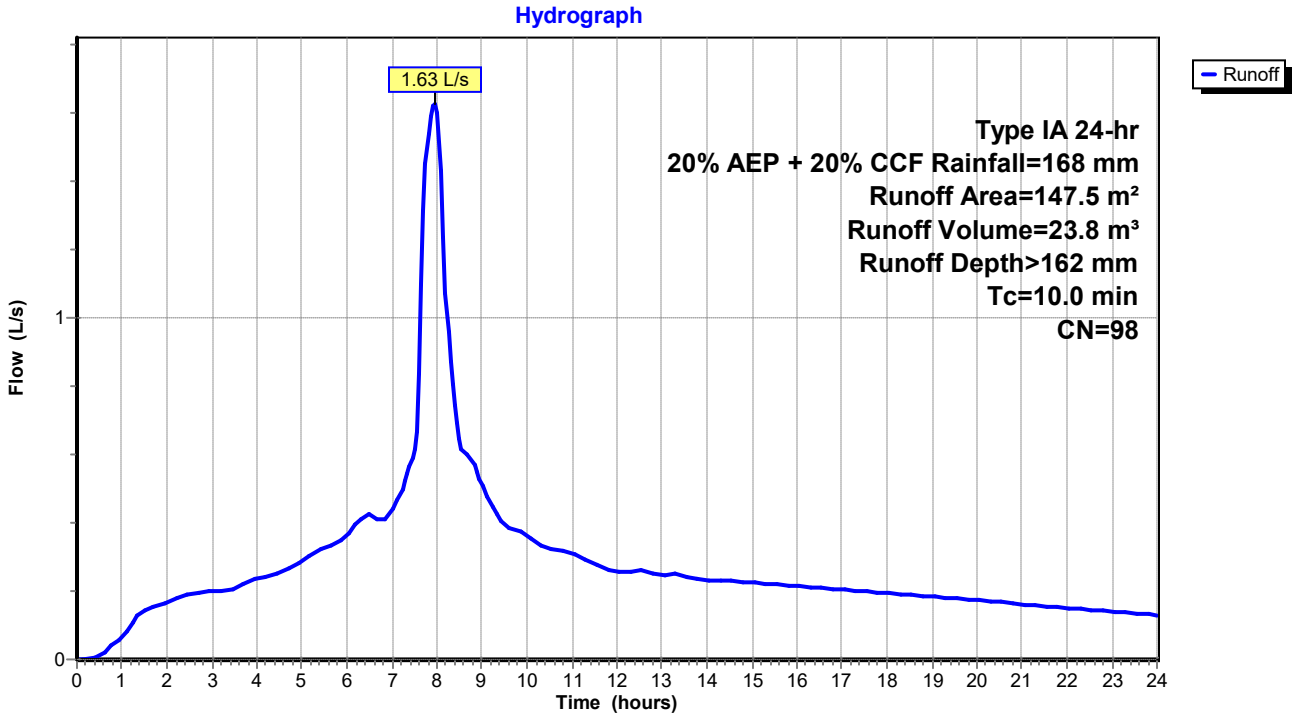
Runoff = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 69S: L1 Post-Development Roof Coverage



Summary for Subcatchment 70S: L1 Post-Development Driveway & ROW Coverage

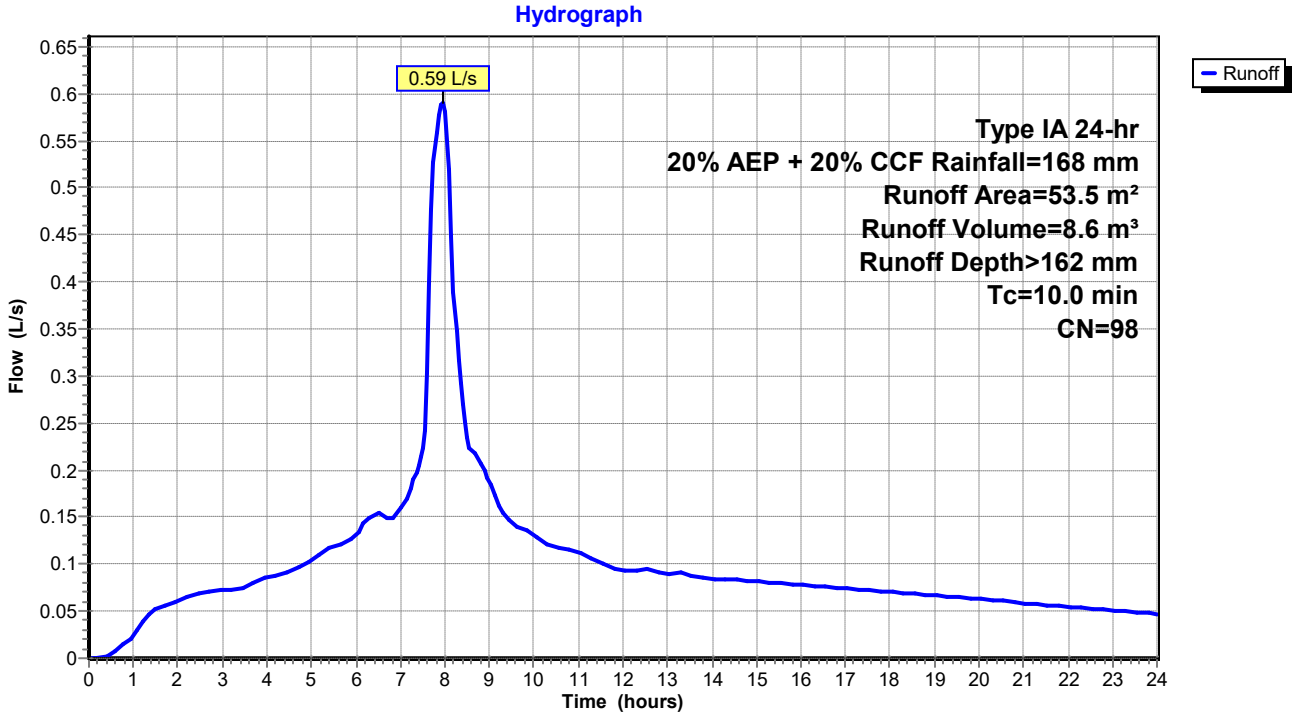
Runoff = 0.59 L/s @ 7.94 hrs, Volume= 8.6 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	9.9	98	Driveway
*	43.6	98	ROW
	53.5	98	Weighted Average
	53.5		100.00% Impervious Area

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

Subcatchment 70S: L1 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 73S: L2 Post-Development Roof Coverage

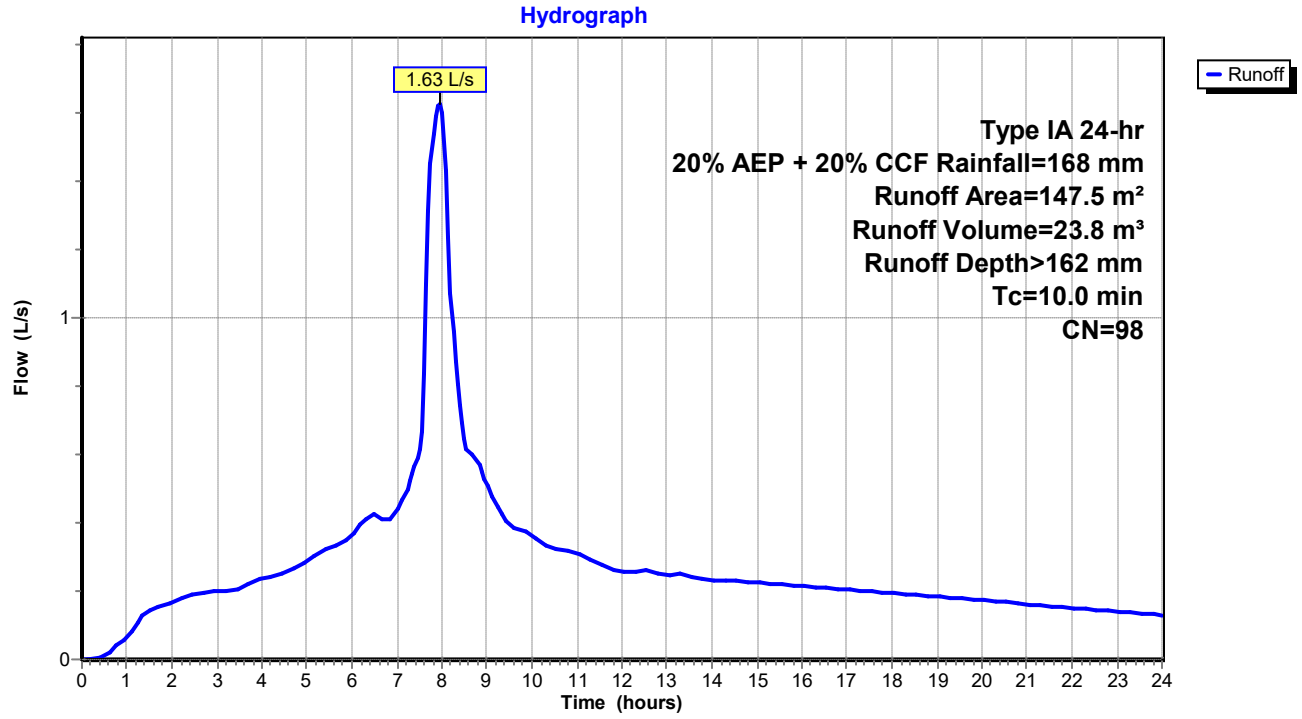
Runoff = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 73S: L2 Post-Development Roof Coverage



Summary for Subcatchment 74S: L2 Post-Development Driveway & ROW Coverage

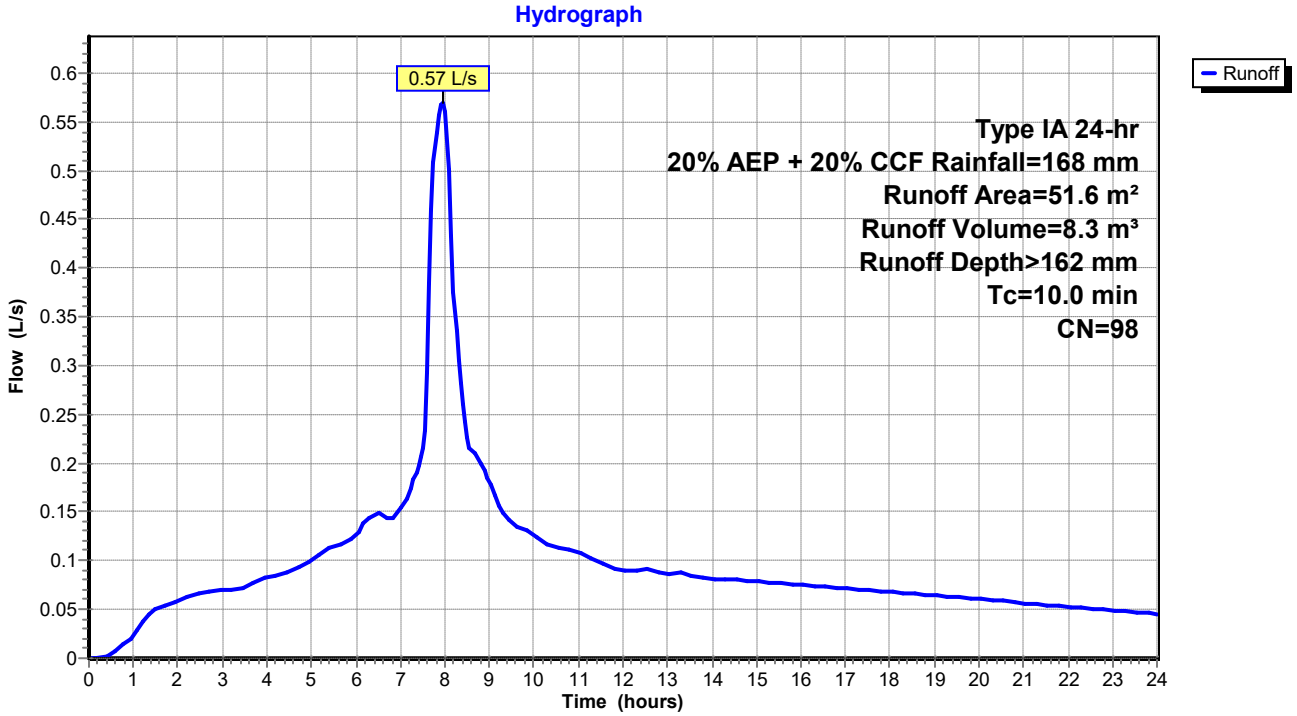
Runoff = 0.57 L/s @ 7.94 hrs, Volume= 8.3 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	8.5	98	Driveway
*	43.1	98	ROW
	51.6	98	Weighted Average
	51.6		100.00% Impervious Area

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

Subcatchment 74S: L2 Post-Development Driveway & ROW Coverage



Summary for Pond 60P: 1m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³
Outflow = 1.41 L/s @ 8.10 hrs, Volume= 23.8 m³, Atten= 13%, Lag= 9.9 min
Primary = 1.41 L/s @ 8.10 hrs, Volume= 23.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.394 m @ 8.10 hrs Surf.Area= 0.0 m² Storage= 0.8 m³

Plug-Flow detention time= 3.3 min calculated for 23.8 m³ (100% of inflow)
Center-of-Mass det. time= 2.8 min (654.4 - 651.6)

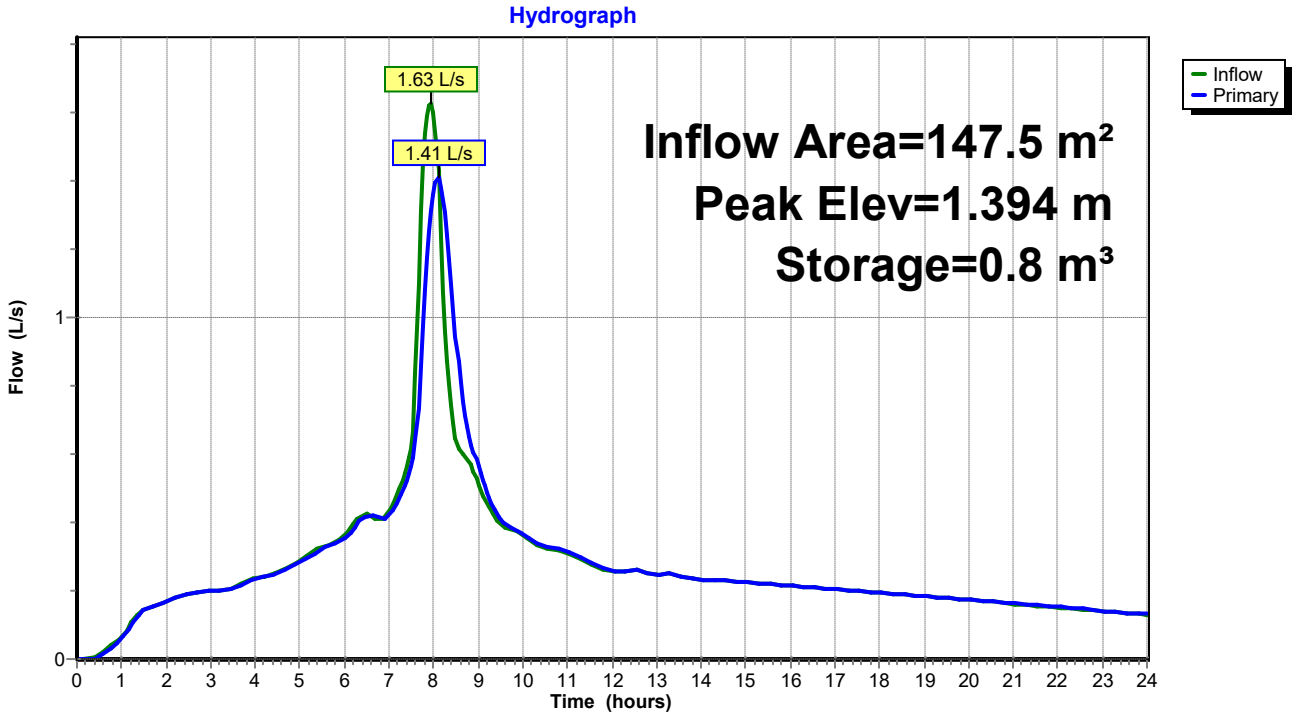
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	1.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	1.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.41 L/s @ 8.10 hrs HW=1.392 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.41 L/s @ 3.12 m/s)

Pond 60P: 1m³ Detention Tank



Summary for Pond 71P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³
Outflow = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³, Atten= 30%, Lag= 14.5 min
Primary = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.295 m @ 8.18 hrs Surf.Area= 0.0 m² Storage= 1.4 m³

Plug-Flow detention time= 8.4 min calculated for 23.8 m³ (100% of inflow)
Center-of-Mass det. time= 7.3 min (659.0 - 651.6)

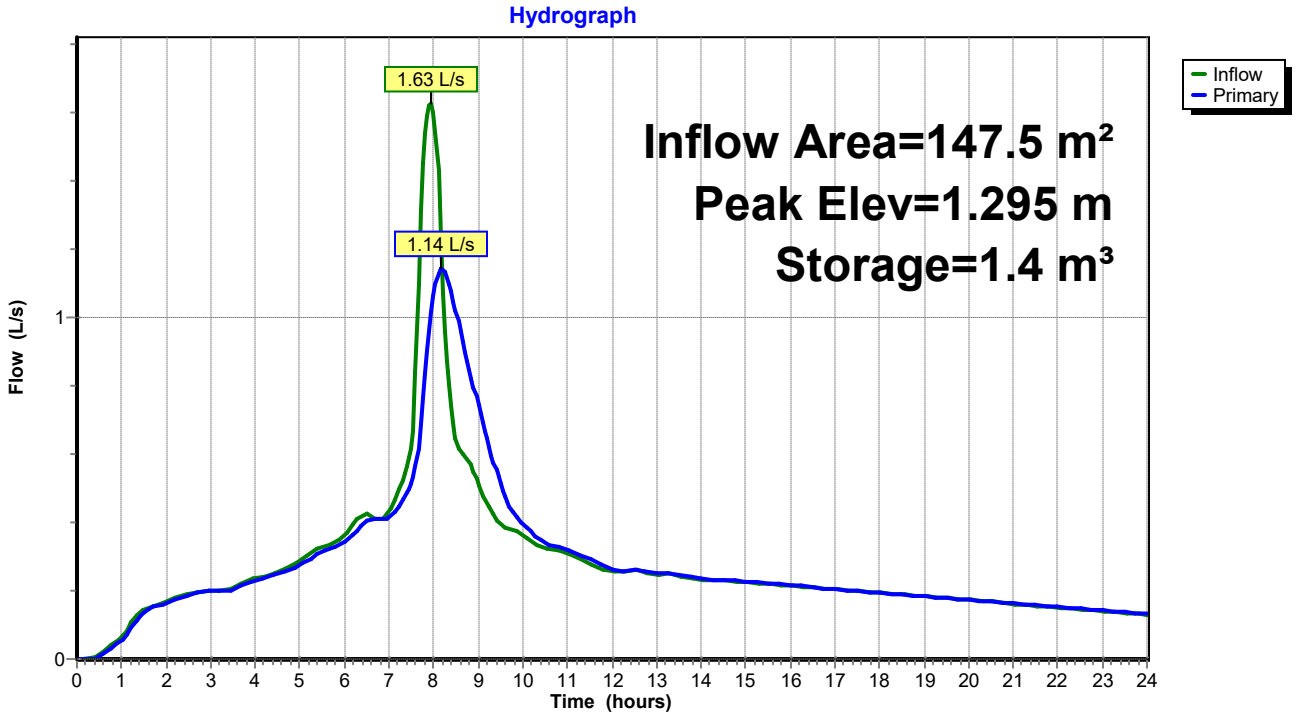
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.14 L/s @ 8.18 hrs HW=1.293 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.14 L/s @ 3.01 m/s)

Pond 71P: 2m³ Detention Tank



Summary for Pond 75P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³
Outflow = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³, Atten= 30%, Lag= 14.5 min
Primary = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.295 m @ 8.18 hrs Surf.Area= 0.0 m² Storage= 1.4 m³

Plug-Flow detention time= 8.4 min calculated for 23.8 m³ (100% of inflow)
Center-of-Mass det. time= 7.3 min (659.0 - 651.6)

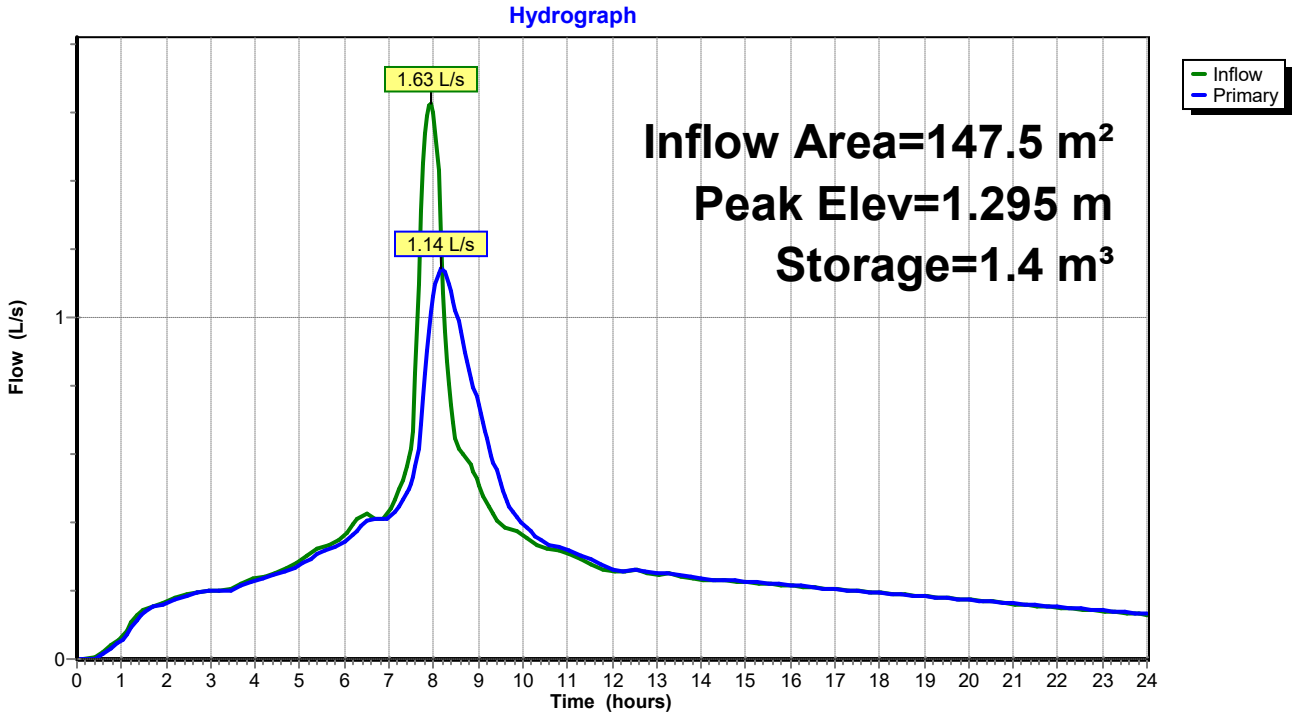
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.14 L/s @ 8.18 hrs HW=1.293 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.14 L/s @ 3.01 m/s)

Pond 75P: 2m³ Detention Tank

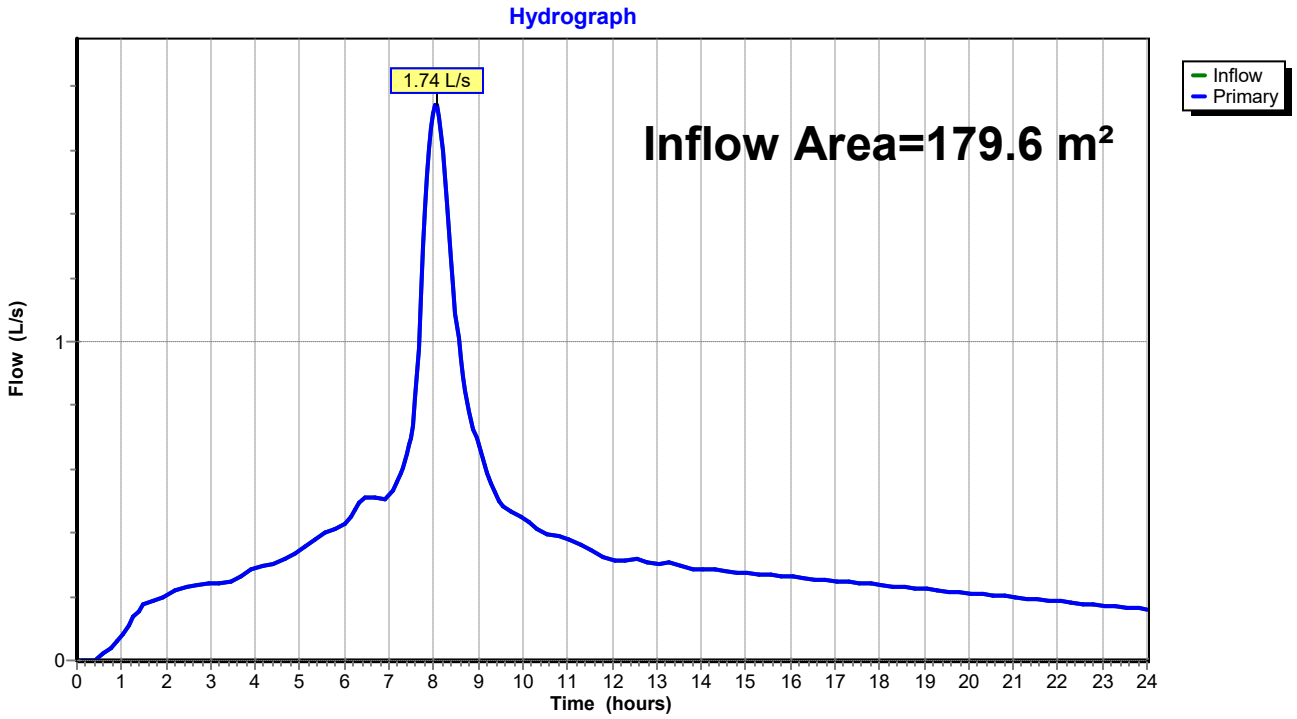


Summary for Link 61L: L3 Post-Development Flow

Inflow Area = 179.6 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.74 L/s @ 8.06 hrs, Volume= 29.0 m³
Primary = 1.74 L/s @ 8.06 hrs, Volume= 29.0 m³, Atten= 0%, Lag= 0.0 min

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

Link 61L: L3 Post-Development Flow

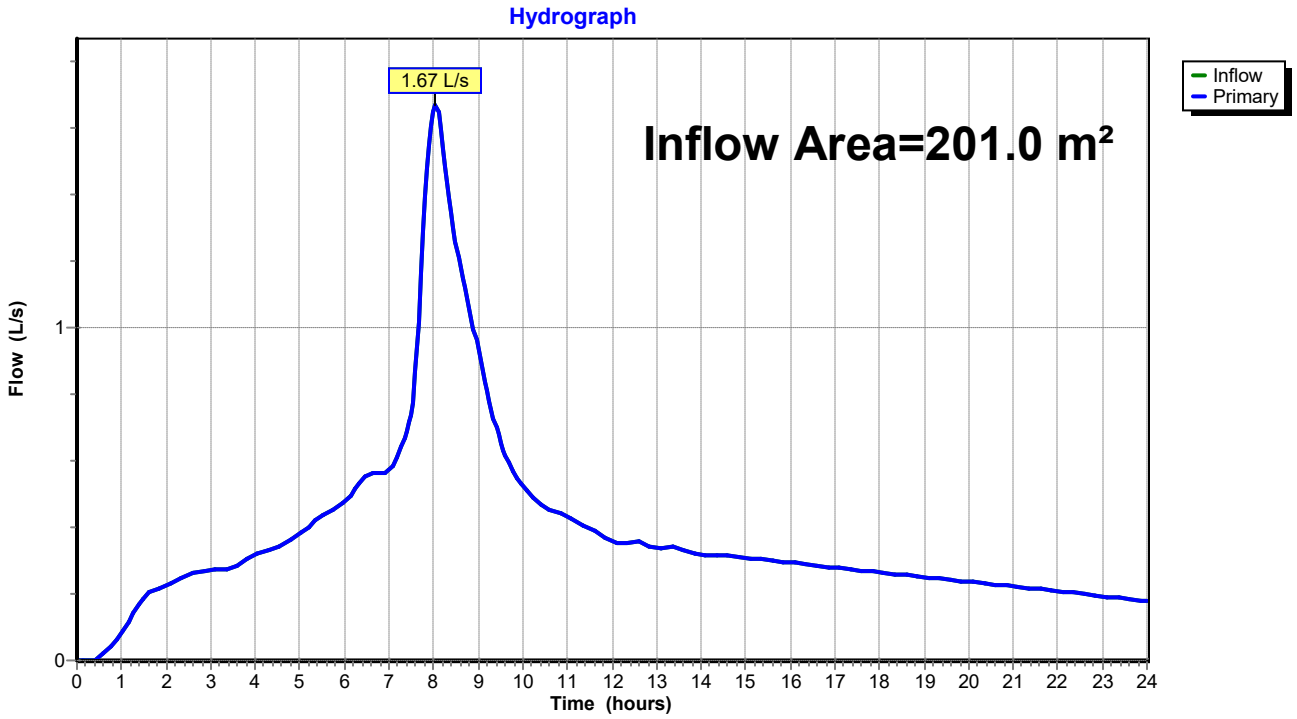


Summary for Link 72L: L1 Post-Development Flow

Inflow Area = 201.0 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.67 L/s @ 8.05 hrs, Volume= 32.4 m³
Primary = 1.67 L/s @ 8.05 hrs, Volume= 32.4 m³, Atten= 0%, Lag= 0.0 min

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

Link 72L: L1 Post-Development Flow

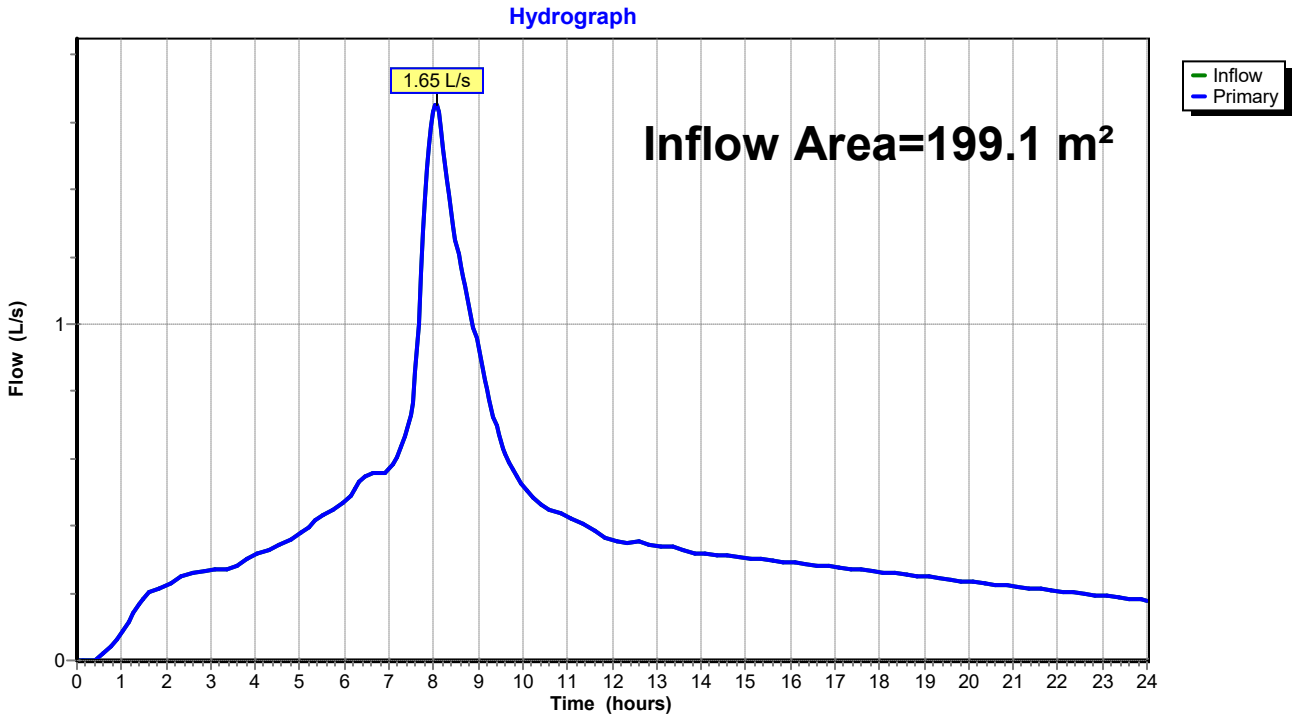


Summary for Link 76L: L2 Post-Development Flow

Inflow Area = 199.1 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.65 L/s @ 8.05 hrs, Volume= 32.1 m³
Primary = 1.65 L/s @ 8.05 hrs, Volume= 32.1 m³, Atten= 0%, Lag= 0.0 min

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

Link 76L: L2 Post-Development Flow



Summary for Subcatchment 46S: L1, L2, L5, L6 Permitted Impermeable Coverage

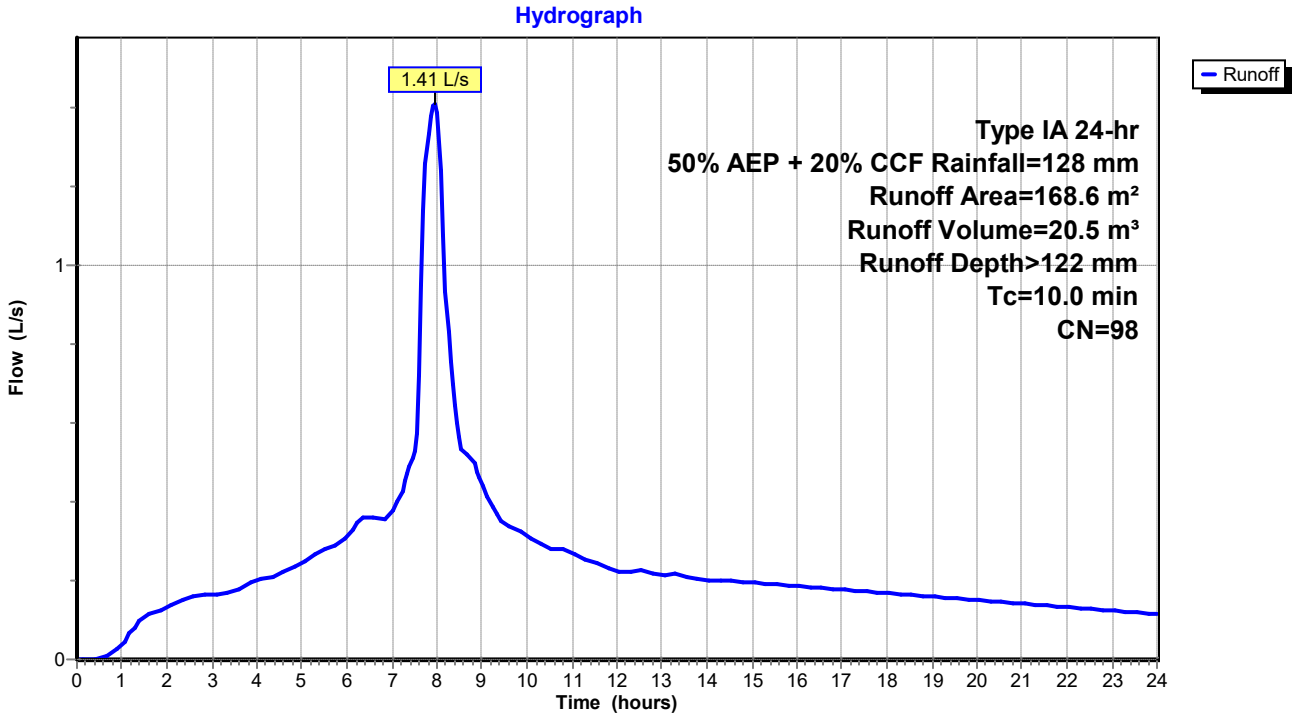
Runoff = 1.41 L/s @ 7.94 hrs, Volume= 20.5 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	168.6	98	
	168.6		100.00% Impervious Area

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

Subcatchment 46S: L1, L2, L5, L6 Permitted Impermeable Coverage



Summary for Subcatchment 58S: L3 Post-Development Roof Coverage

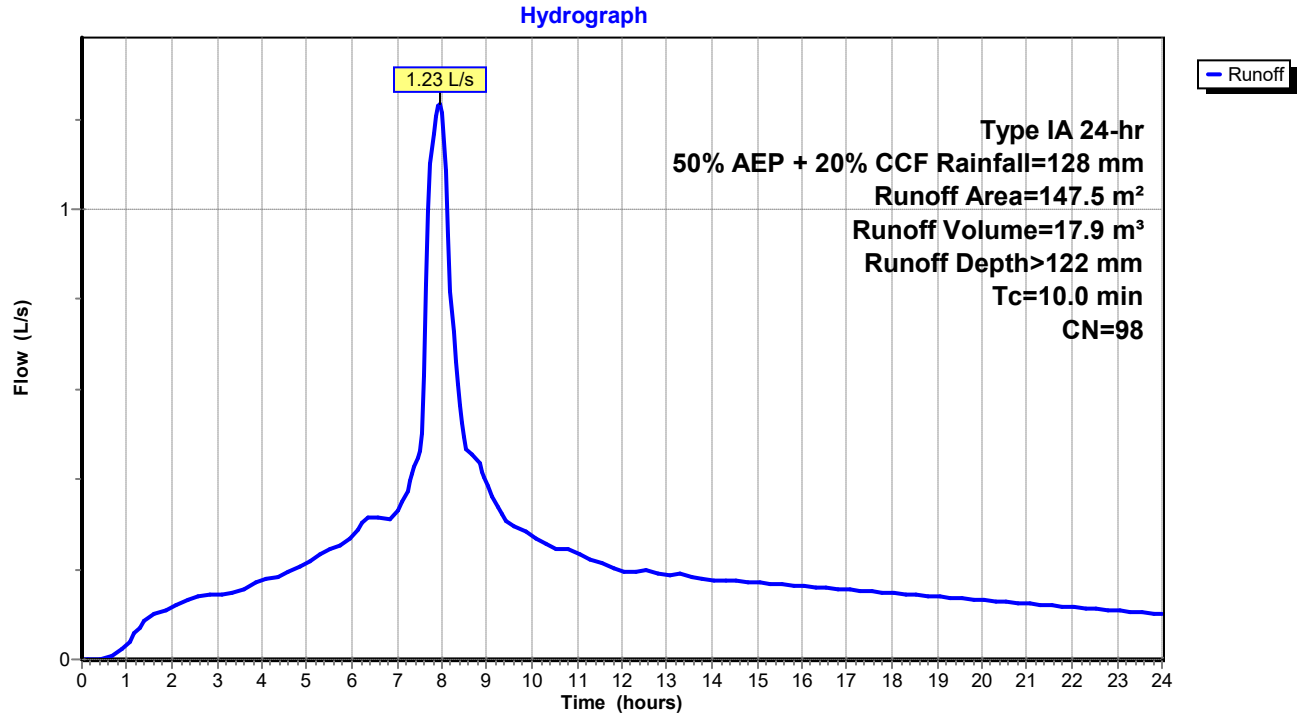
Runoff = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 58S: L3 Post-Development Roof Coverage



Summary for Subcatchment 59S: L3 Post-Development Driveway Coverage

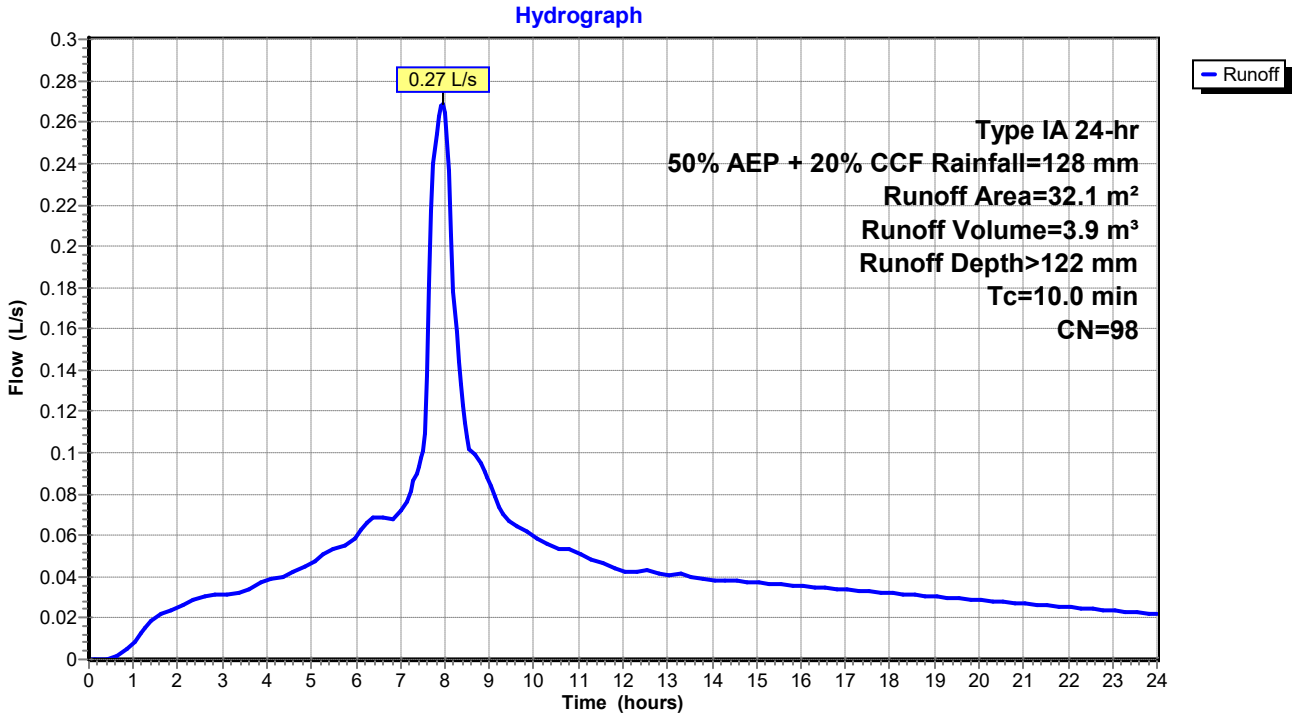
Runoff = 0.27 L/s @ 7.94 hrs, Volume= 3.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	32.1	98	
	32.1		100.00% Impervious Area

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

Subcatchment 59S: L3 Post-Development Driveway Coverage



Summary for Subcatchment 66S: L3 Permitted Impermeable Coverage

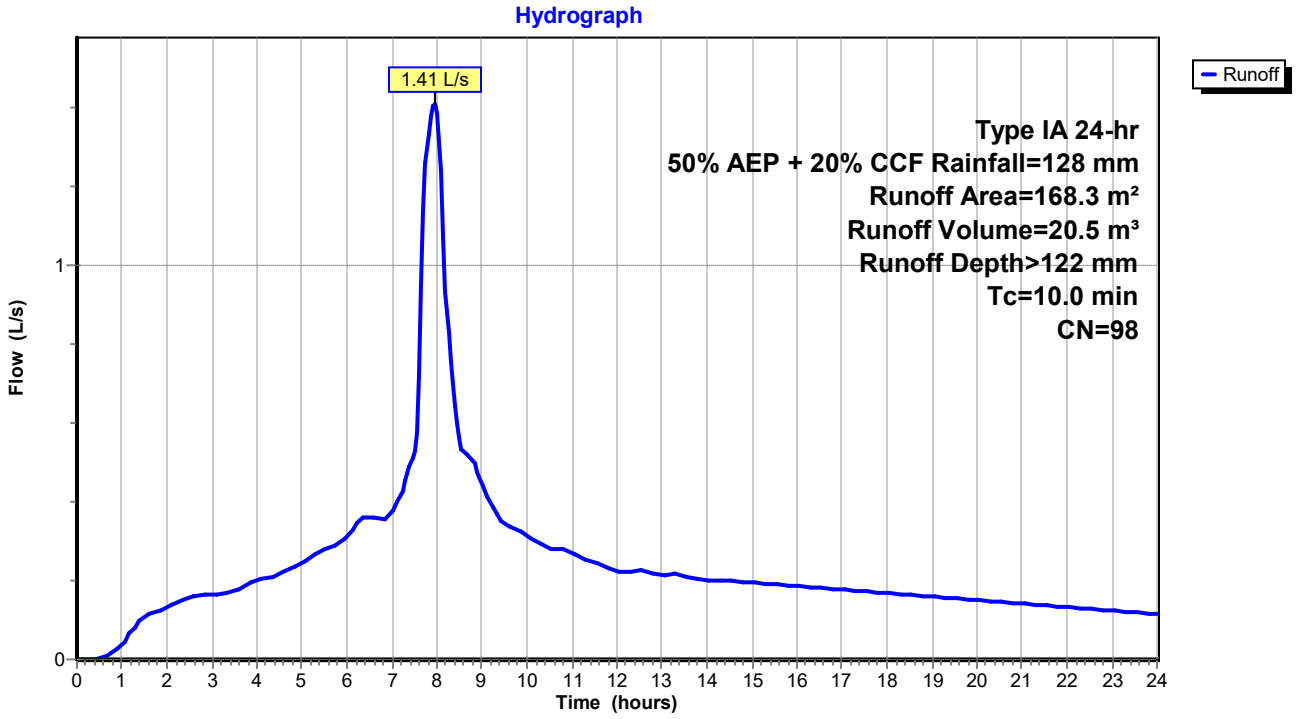
Runoff = 1.41 L/s @ 7.94 hrs, Volume= 20.5 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	168.3	98	
	168.3		100.00% Impervious Area

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

Subcatchment 66S: L3 Permitted Impermeable Coverage



Summary for Subcatchment 67S: L4 Permitted Impermeable Coverage

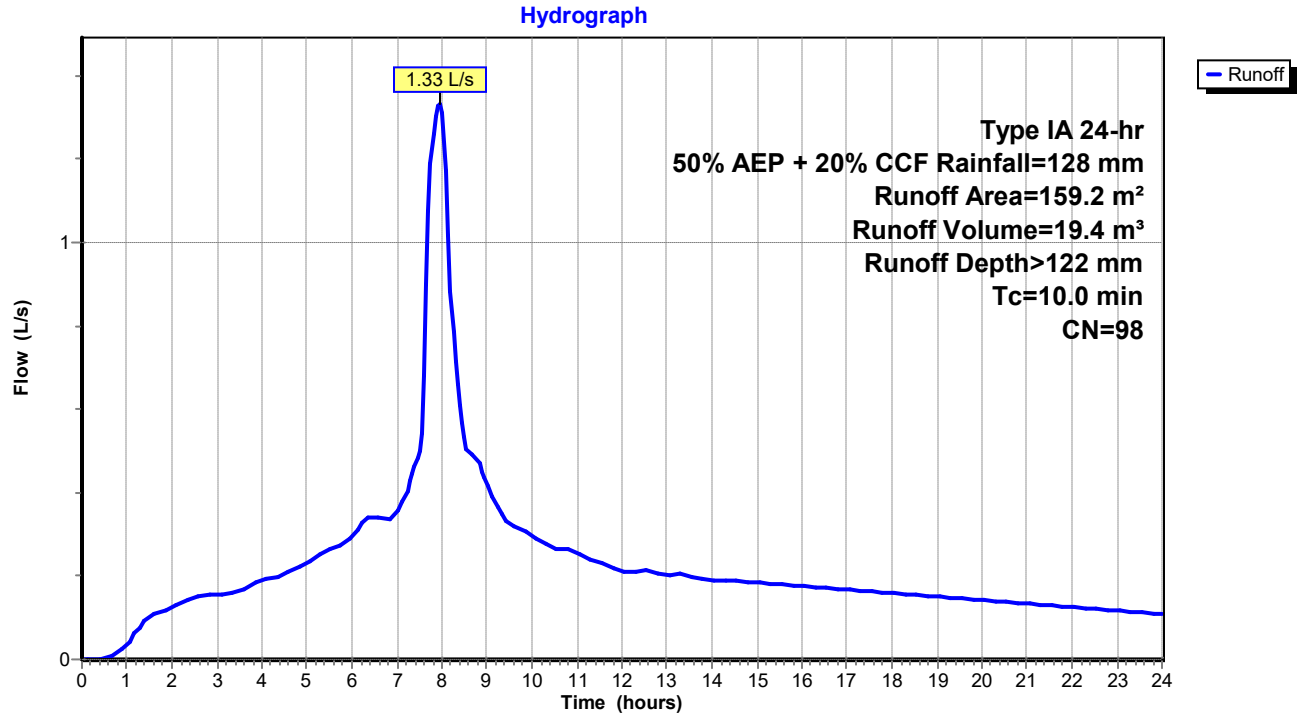
Runoff = 1.33 L/s @ 7.94 hrs, Volume= 19.4 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	159.2	98	
	159.2		100.00% Impervious Area

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

Subcatchment 67S: L4 Permitted Impermeable Coverage



Summary for Subcatchment 69S: L1 Post-Development Roof Coverage

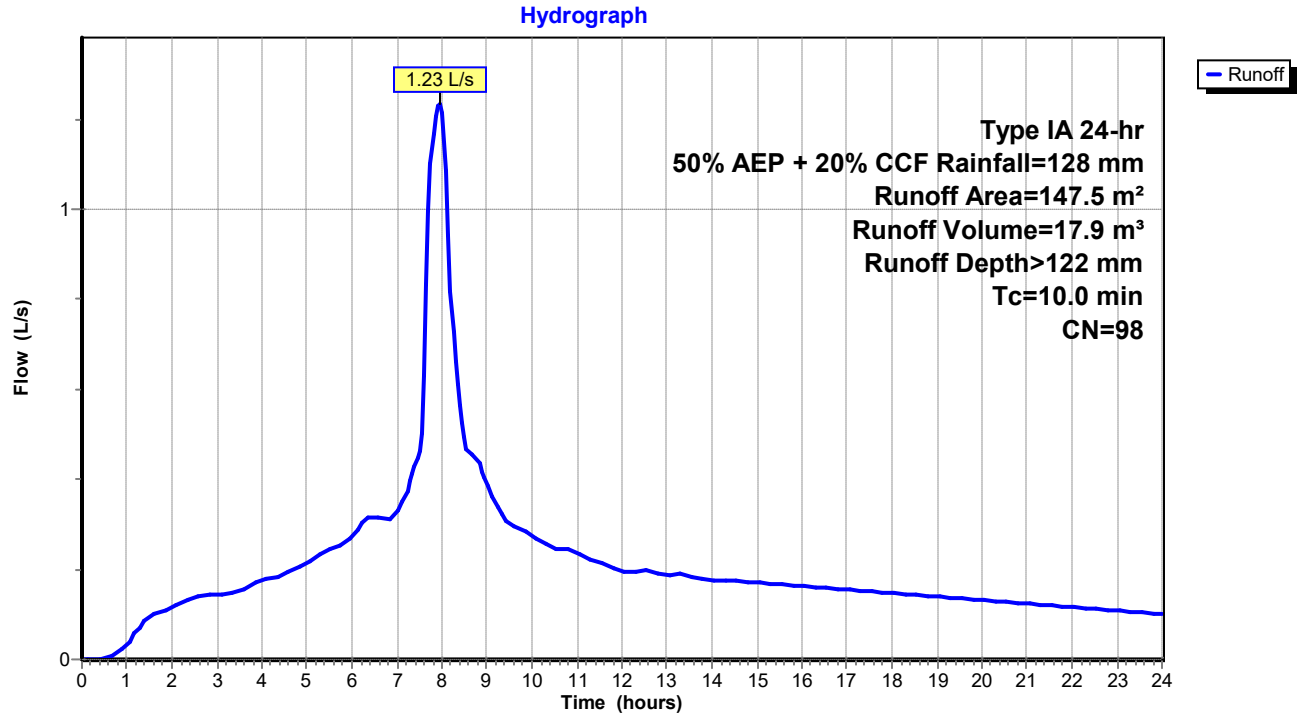
Runoff = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 69S: L1 Post-Development Roof Coverage



Summary for Subcatchment 70S: L1 Post-Development Driveway & ROW Coverage

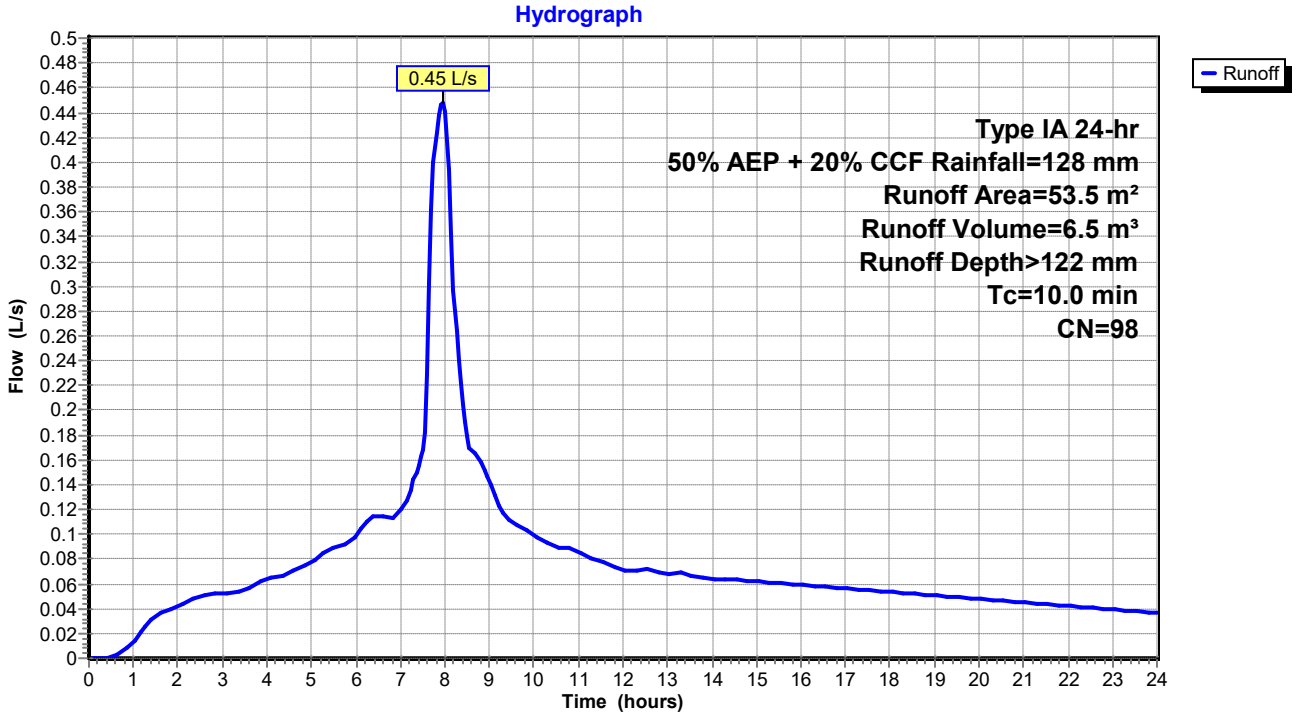
Runoff = 0.45 L/s @ 7.94 hrs, Volume= 6.5 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	9.9	98	Driveway
*	43.6	98	ROW
	53.5	98	Weighted Average
	53.5		100.00% Impervious Area

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

Subcatchment 70S: L1 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 73S: L2 Post-Development Roof Coverage

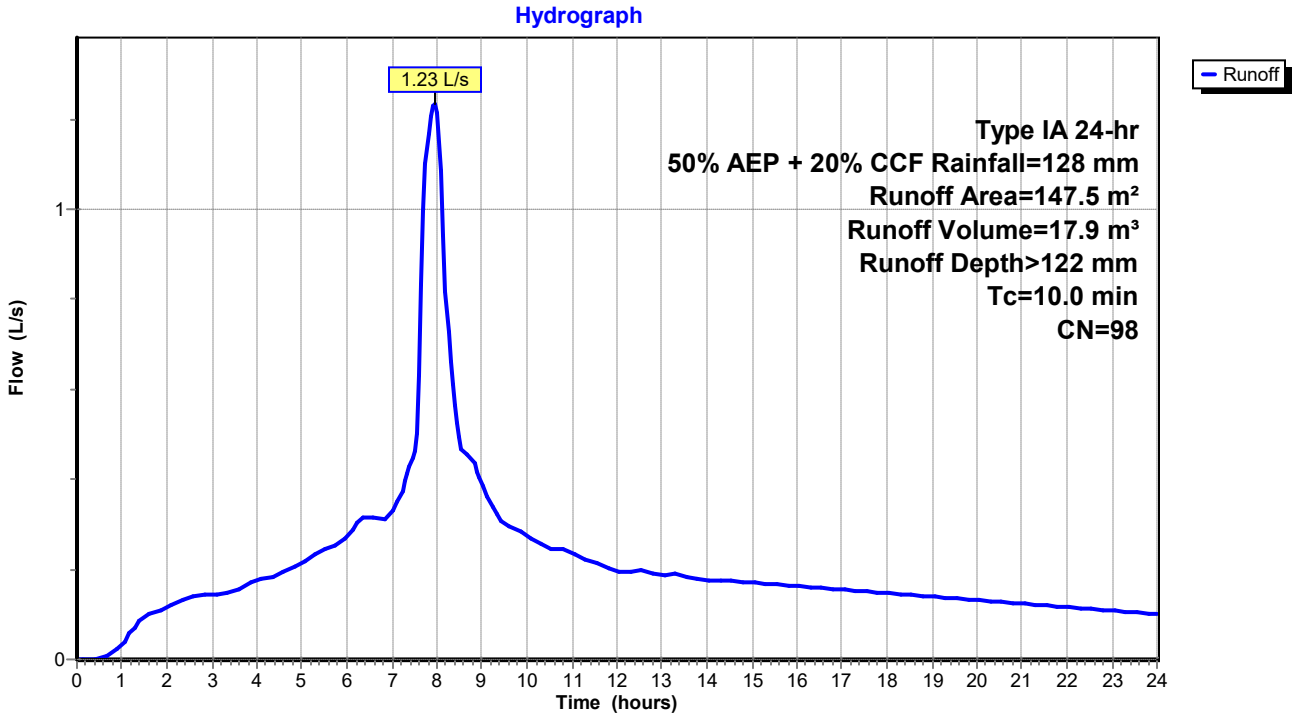
Runoff = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 73S: L2 Post-Development Roof Coverage



Summary for Subcatchment 74S: L2 Post-Development Driveway & ROW Coverage

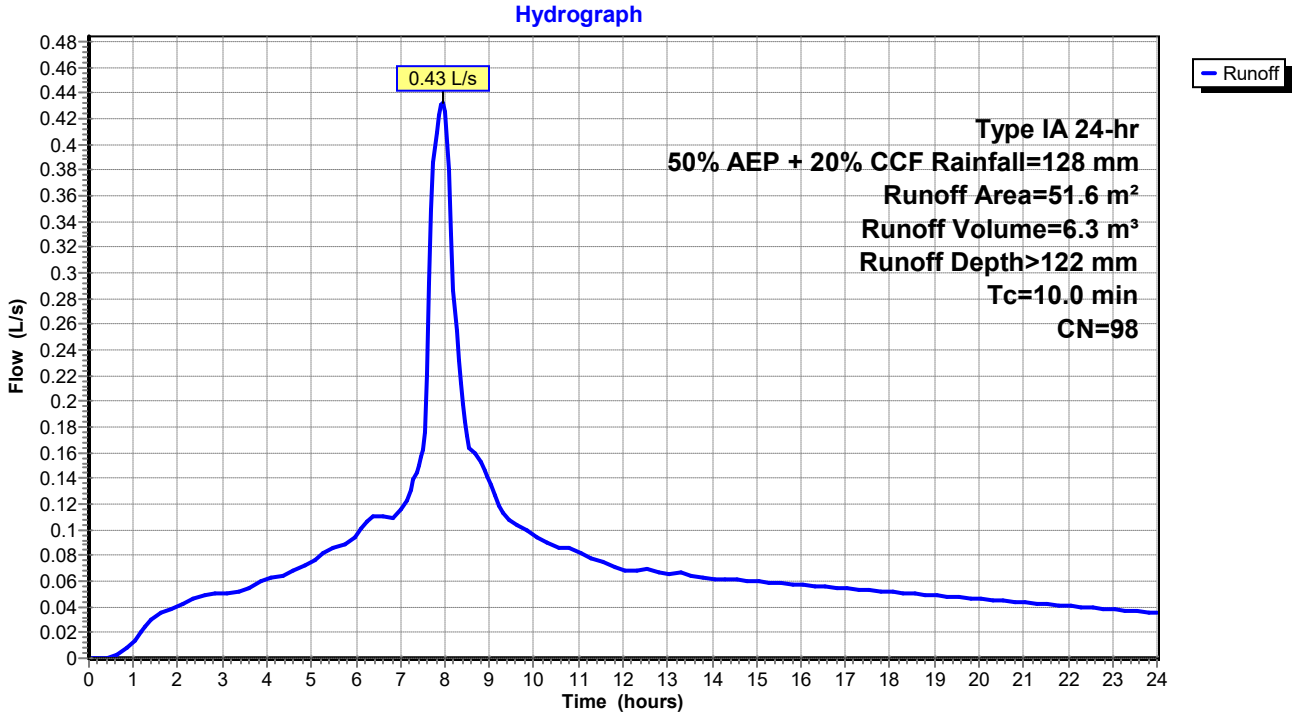
Runoff = 0.43 L/s @ 7.94 hrs, Volume= 6.3 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	8.5	98	Driveway
*	43.1	98	ROW
	51.6	98	Weighted Average
	51.6		100.00% Impervious Area

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

Subcatchment 74S: L2 Post-Development Driveway & ROW Coverage



Summary for Pond 60P: 1m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³
Outflow = 1.12 L/s @ 8.09 hrs, Volume= 17.9 m³, Atten= 10%, Lag= 8.8 min
Primary = 1.12 L/s @ 8.09 hrs, Volume= 17.9 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.873 m @ 8.09 hrs Surf.Area= 0.0 m² Storage= 0.5 m³

Plug-Flow detention time= 2.7 min calculated for 17.9 m³ (100% of inflow)
Center-of-Mass det. time= 2.3 min (658.8 - 656.5)

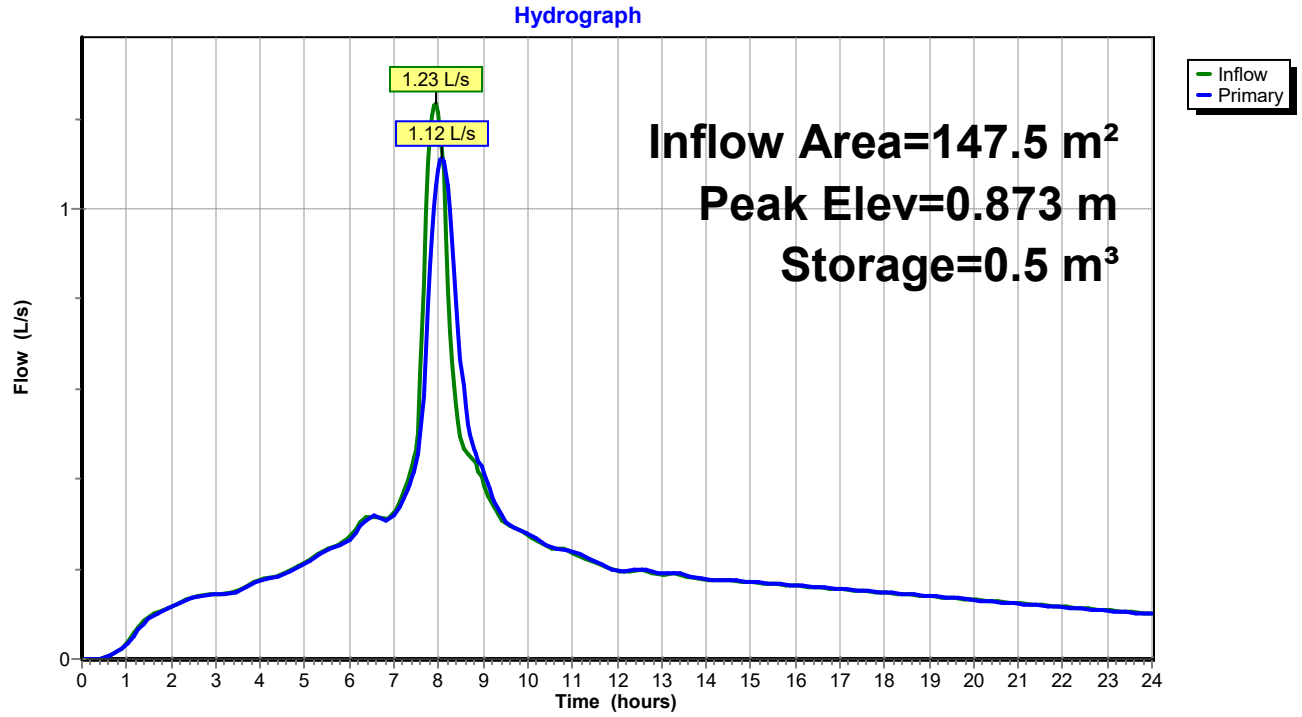
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	1.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	1.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.11 L/s @ 8.09 hrs HW=0.869 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.11 L/s @ 2.46 m/s)

Pond 60P: 1m³ Detention Tank



Summary for Pond 71P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³
Outflow = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³, Atten= 25%, Lag= 13.1 min
Primary = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.852 m @ 8.16 hrs Surf.Area= 0.0 m² Storage= 0.9 m³

Plug-Flow detention time= 6.9 min calculated for 17.9 m³ (100% of inflow)
Center-of-Mass det. time= 5.9 min (662.4 - 656.5)

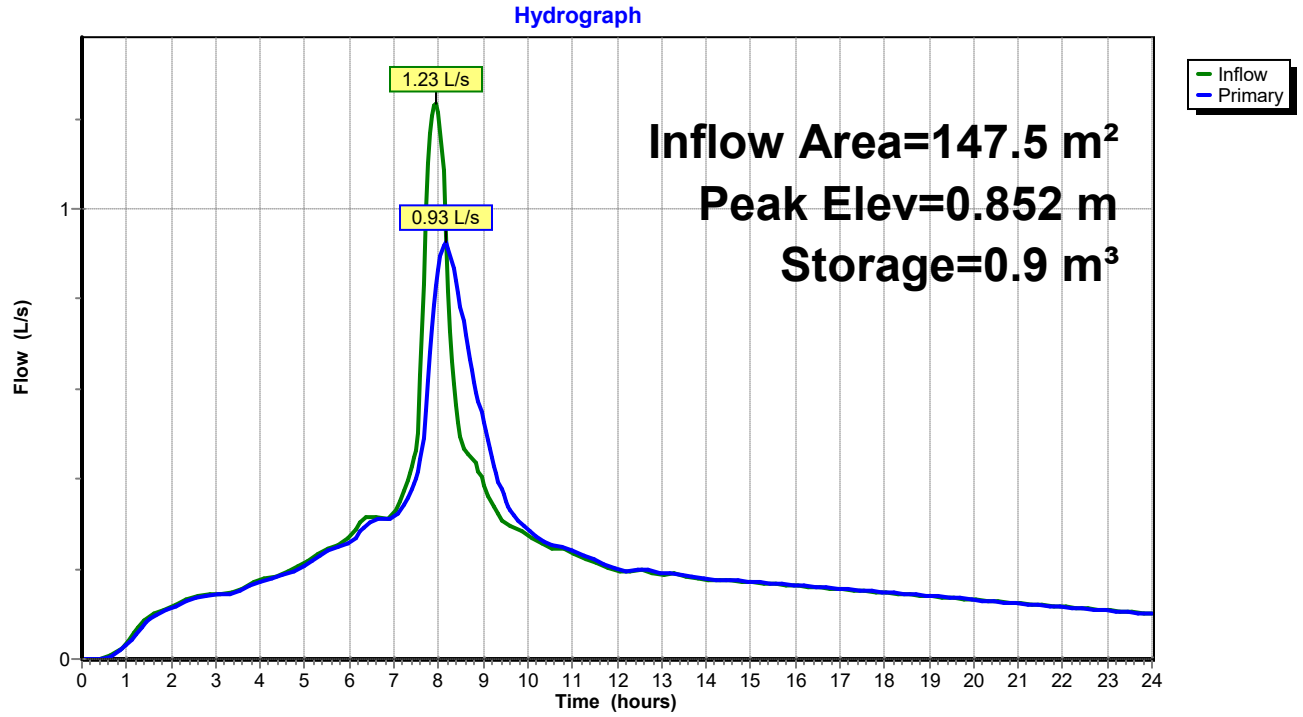
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.93 L/s @ 8.16 hrs HW=0.851 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.93 L/s @ 2.44 m/s)

Pond 71P: 2m³ Detention Tank



Summary for Pond 75P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³
Outflow = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³, Atten= 25%, Lag= 13.1 min
Primary = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.852 m @ 8.16 hrs Surf.Area= 0.0 m² Storage= 0.9 m³

Plug-Flow detention time= 6.9 min calculated for 17.9 m³ (100% of inflow)
Center-of-Mass det. time= 5.9 min (662.4 - 656.5)

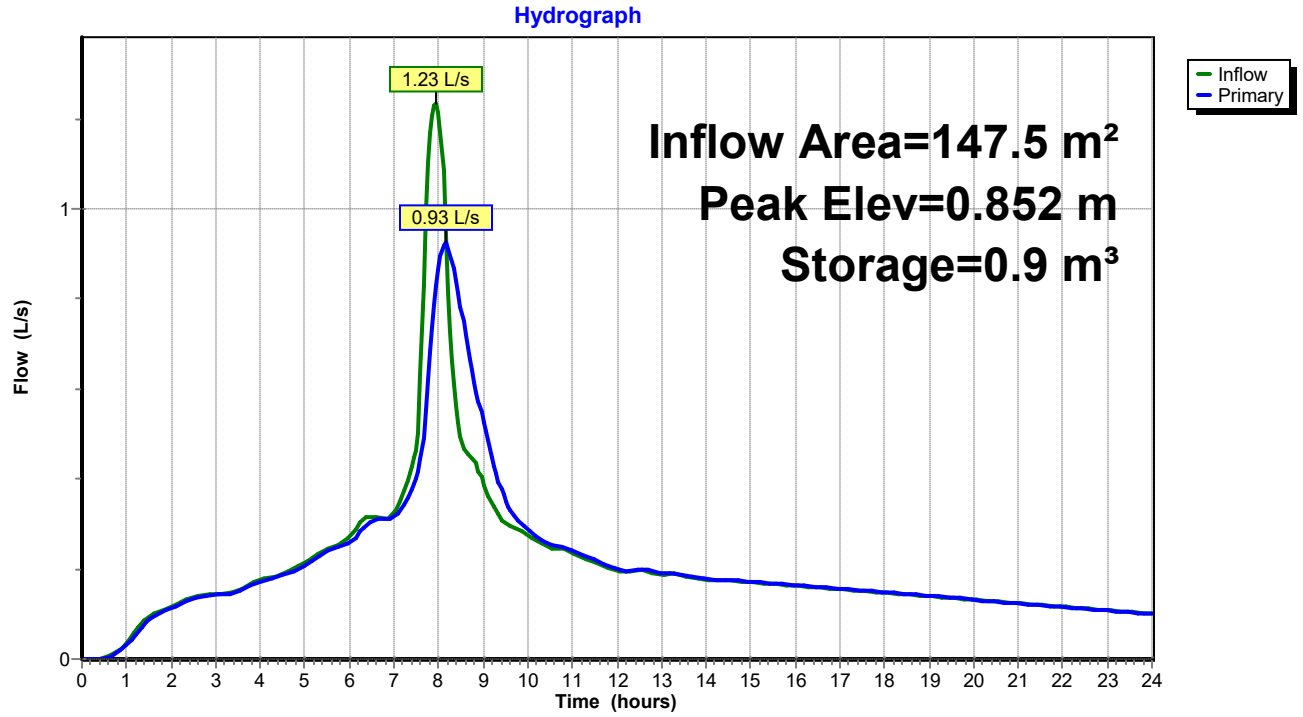
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.93 L/s @ 8.16 hrs HW=0.851 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.93 L/s @ 2.44 m/s)

Pond 75P: 2m³ Detention Tank

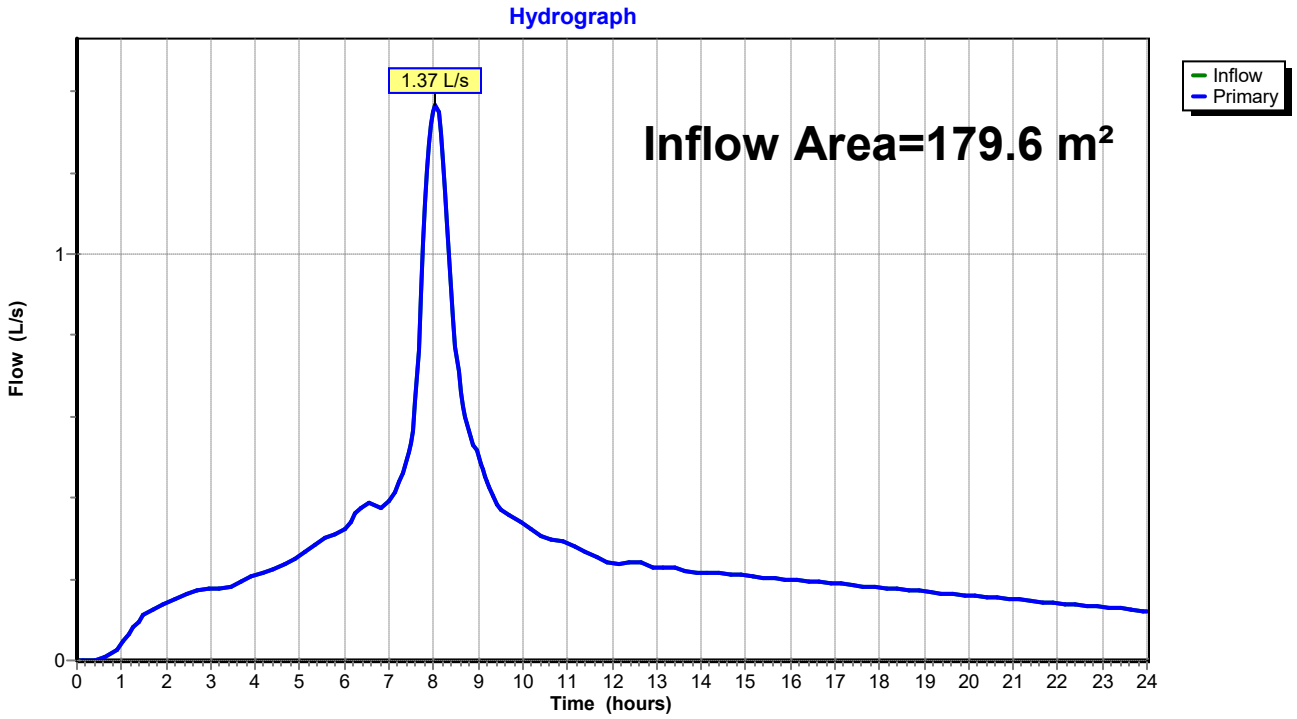


Summary for Link 61L: L3 Post-Development Flow

Inflow Area = 179.6 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.37 L/s @ 8.05 hrs, Volume= 21.8 m³
Primary = 1.37 L/s @ 8.05 hrs, Volume= 21.8 m³, Atten= 0%, Lag= 0.0 min

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

Link 61L: L3 Post-Development Flow

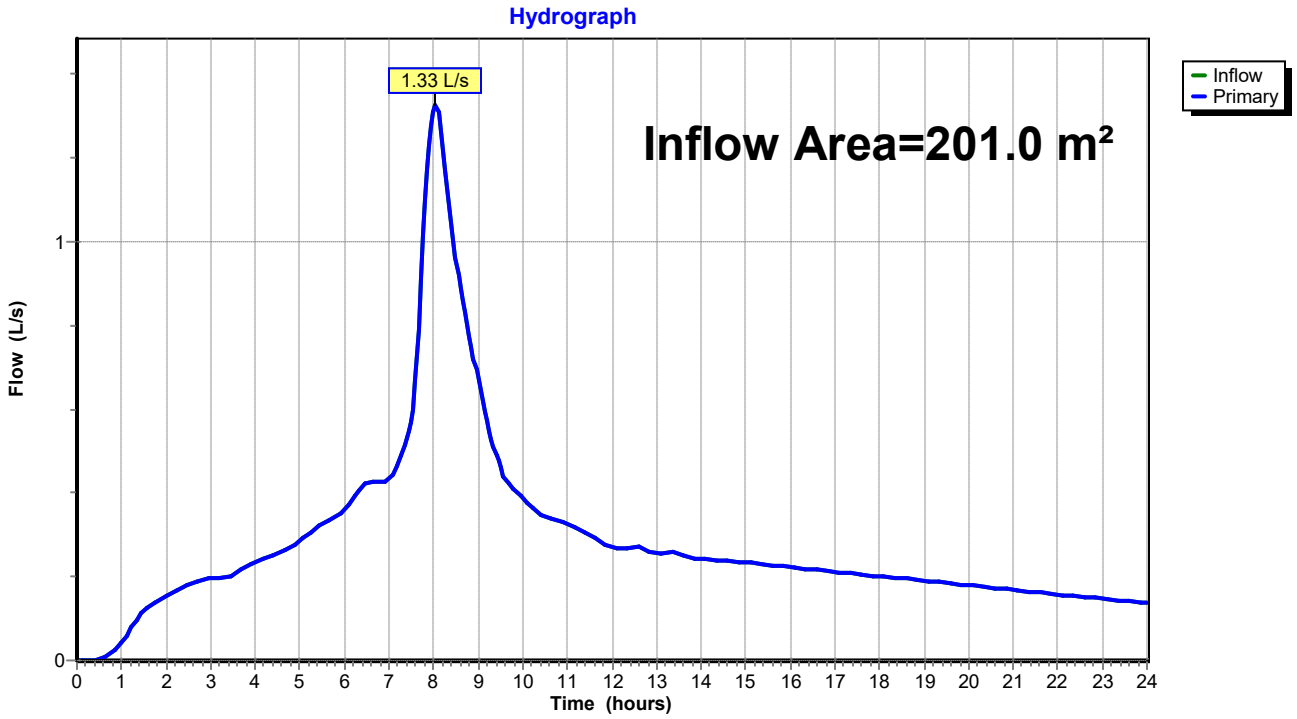


Summary for Link 72L: L1 Post-Development Flow

Inflow Area = 201.0 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.33 L/s @ 8.05 hrs, Volume= 24.4 m³
Primary = 1.33 L/s @ 8.05 hrs, Volume= 24.4 m³, Atten= 0%, Lag= 0.0 min

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

Link 72L: L1 Post-Development Flow

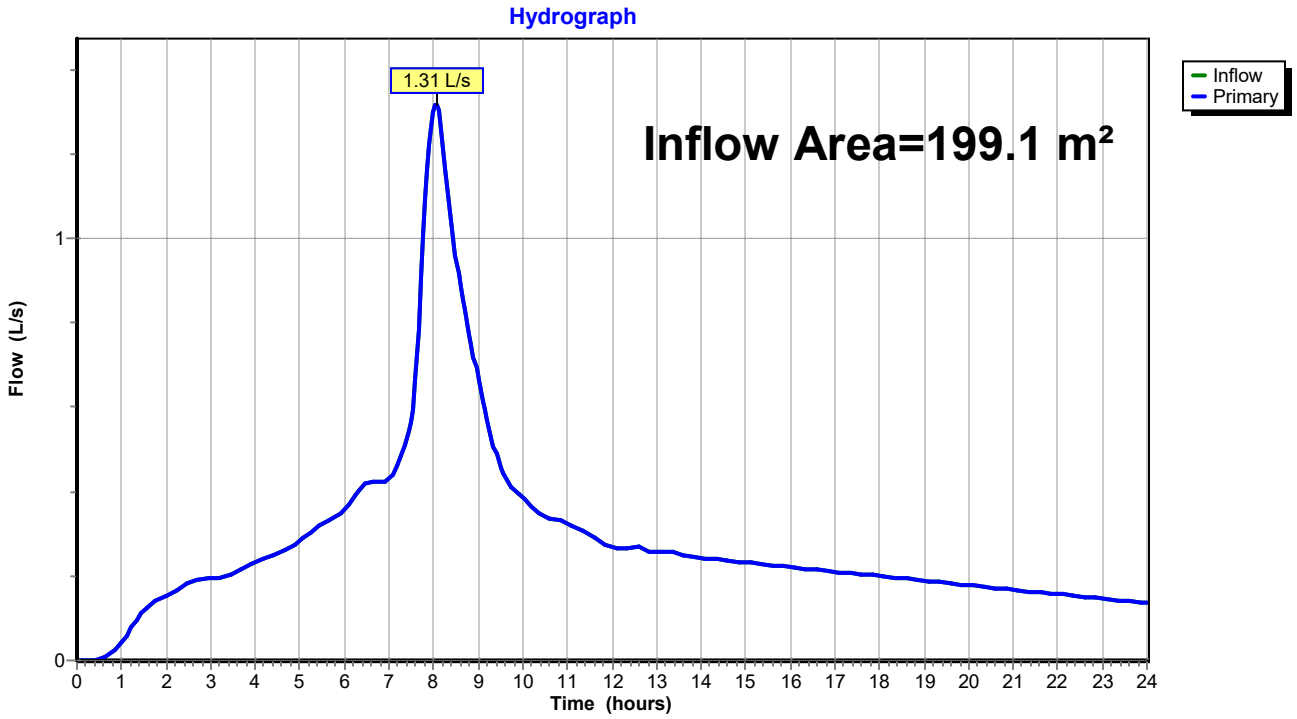


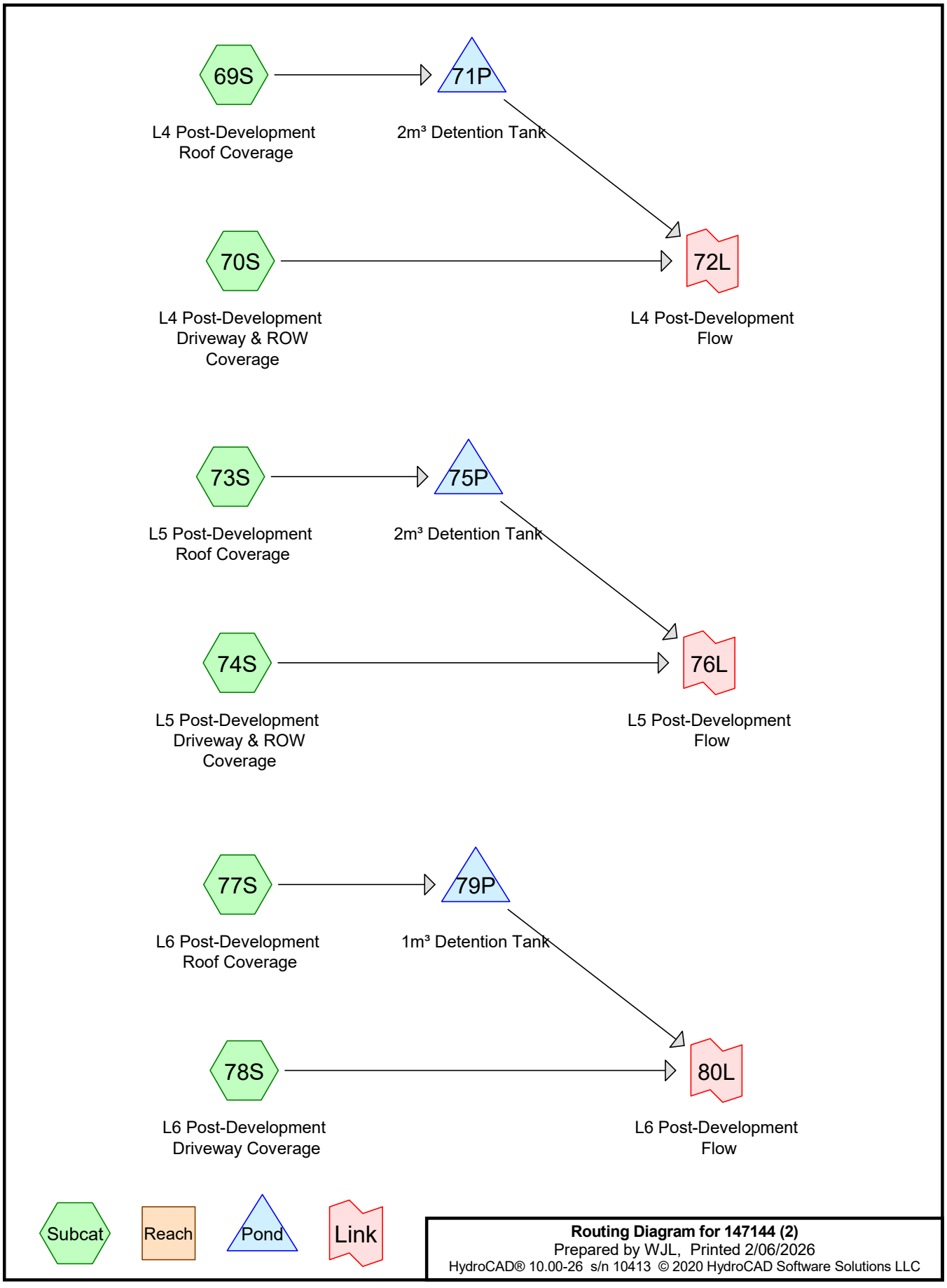
Summary for Link 76L: L2 Post-Development Flow

Inflow Area = 199.1 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.31 L/s @ 8.05 hrs, Volume= 24.2 m³
Primary = 1.31 L/s @ 8.05 hrs, Volume= 24.2 m³, Atten= 0%, Lag= 0.0 min

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

Link 76L: L2 Post-Development Flow





Routing Diagram for 147144 (2)
Prepared by WJL, Printed 2/06/2026

Summary for Subcatchment 69S: L4 Post-Development Roof Coverage

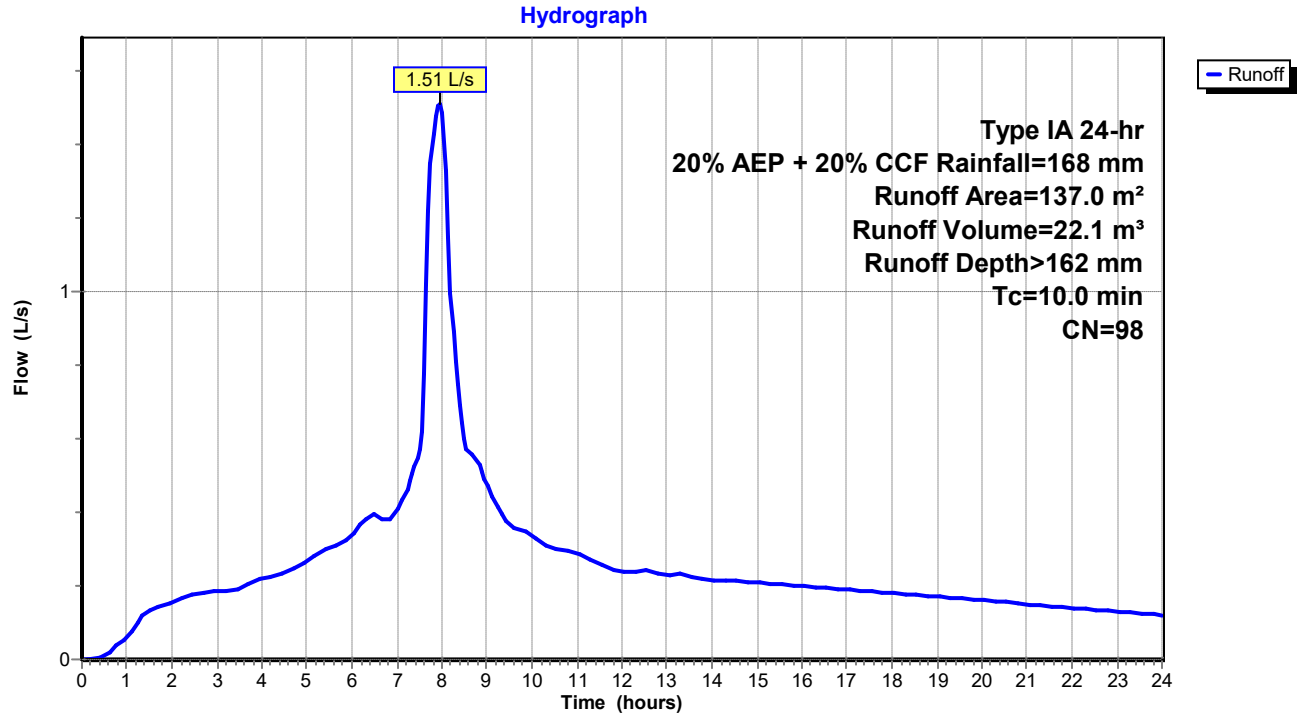
Runoff = 1.51 L/s @ 7.94 hrs, Volume= 22.1 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	137.0	98	
	137.0		100.00% Impervious Area

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

Subcatchment 69S: L4 Post-Development Roof Coverage



Summary for Subcatchment 70S: L4 Post-Development Driveway & ROW Coverage

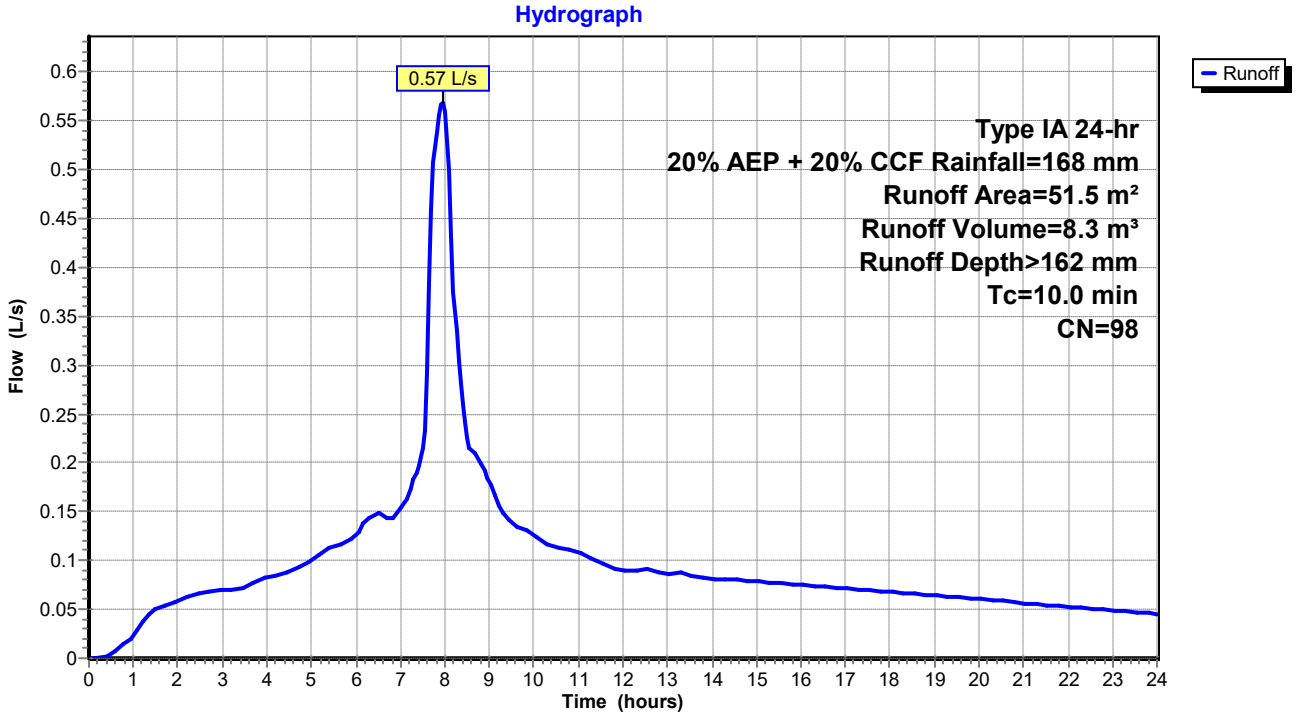
Runoff = 0.57 L/s @ 7.94 hrs, Volume= 8.3 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	8.7	98	Driveway
*	42.8	98	ROW
	51.5	98	Weighted Average
	51.5		100.00% Impervious Area

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

Subcatchment 70S: L4 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 73S: L5 Post-Development Roof Coverage

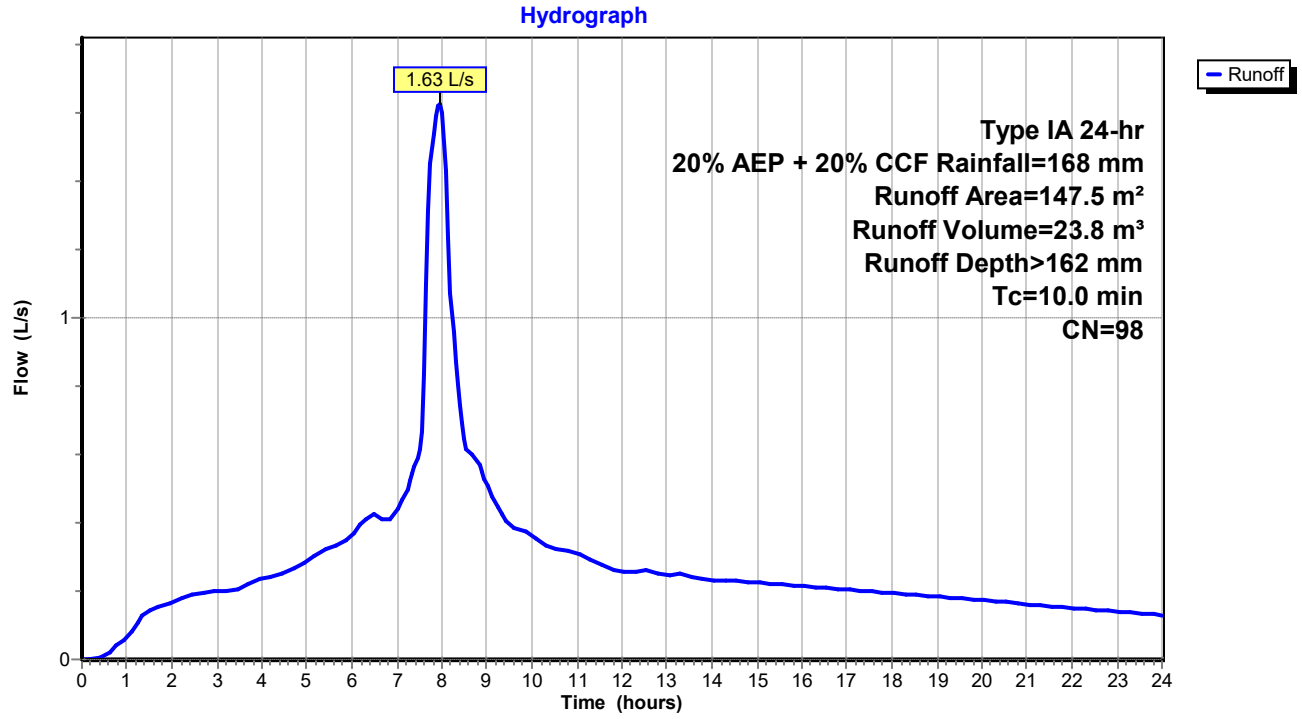
Runoff = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 73S: L5 Post-Development Roof Coverage



Summary for Subcatchment 74S: L5 Post-Development Driveway & ROW Coverage

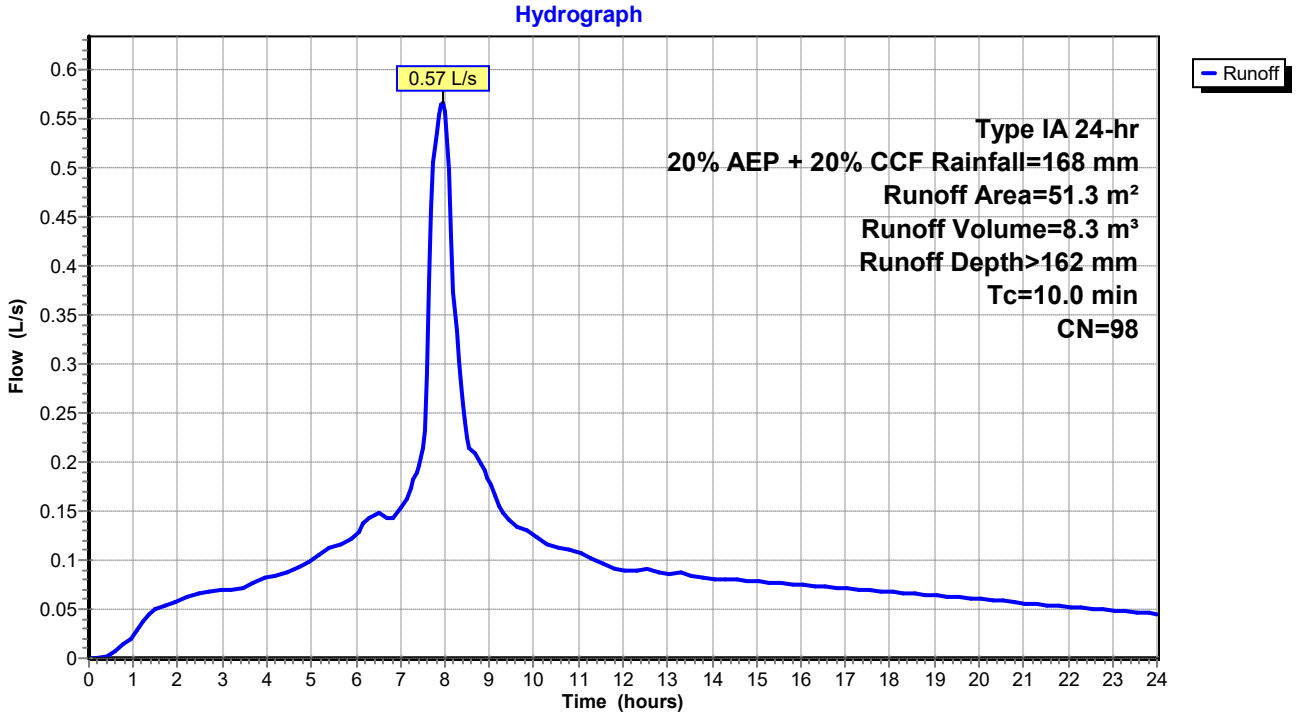
Runoff = 0.57 L/s @ 7.94 hrs, Volume= 8.3 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	8.9	98	Driveway
*	42.4	98	ROW
	51.3	98	Weighted Average
	51.3		100.00% Impervious Area

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

Subcatchment 74S: L5 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 77S: L6 Post-Development Roof Coverage

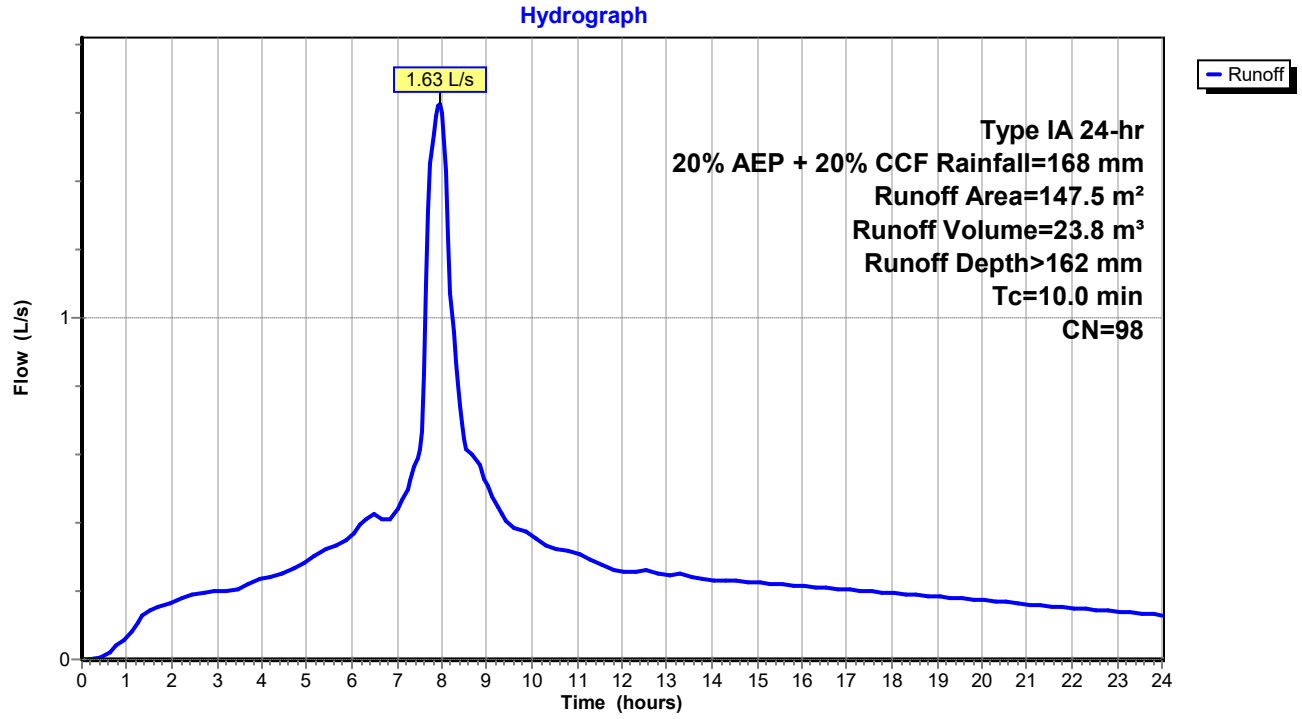
Runoff = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 77S: L6 Post-Development Roof Coverage



Summary for Subcatchment 78S: L6 Post-Development Driveway Coverage

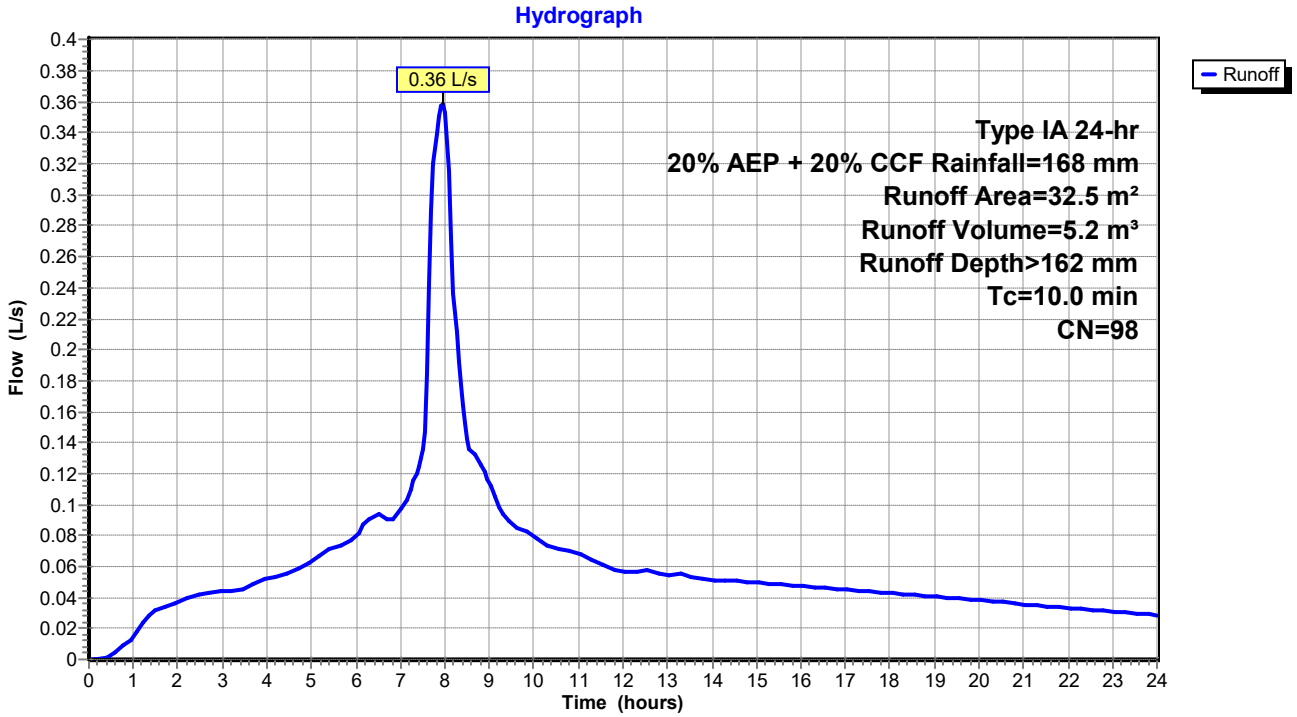
Runoff = 0.36 L/s @ 7.94 hrs, Volume= 5.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP + 20% CCF Rainfall=168 mm

	Area (m²)	CN	Description
*	32.5	98	
	32.5		100.00% Impervious Area

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

Subcatchment 78S: L6 Post-Development Driveway Coverage



Summary for Pond 71P: 2m³ Detention Tank

Inflow Area = 137.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.51 L/s @ 7.94 hrs, Volume= 22.1 m³
Outflow = 1.08 L/s @ 8.17 hrs, Volume= 22.1 m³, Atten= 28%, Lag= 14.1 min
Primary = 1.08 L/s @ 8.17 hrs, Volume= 22.1 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.160 m @ 8.17 hrs Surf.Area= 0.0 m² Storage= 1.3 m³

Plug-Flow detention time= 8.0 min calculated for 22.1 m³ (100% of inflow)
Center-of-Mass det. time= 6.9 min (658.5 - 651.6)

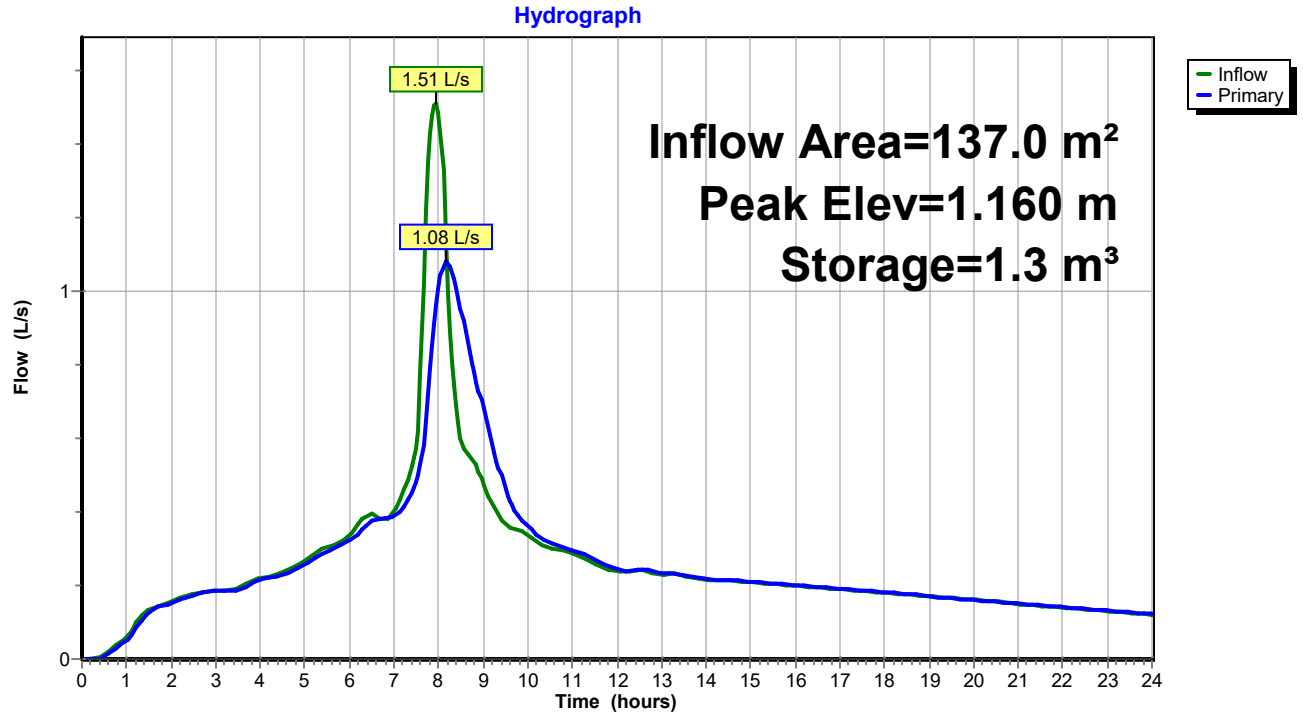
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.08 L/s @ 8.17 hrs HW=1.156 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.08 L/s @ 2.84 m/s)

Pond 71P: 2m³ Detention Tank



Summary for Pond 75P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³
Outflow = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³, Atten= 30%, Lag= 14.5 min
Primary = 1.14 L/s @ 8.18 hrs, Volume= 23.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.295 m @ 8.18 hrs Surf.Area= 0.0 m² Storage= 1.4 m³

Plug-Flow detention time= 8.4 min calculated for 23.8 m³ (100% of inflow)
Center-of-Mass det. time= 7.3 min (659.0 - 651.6)

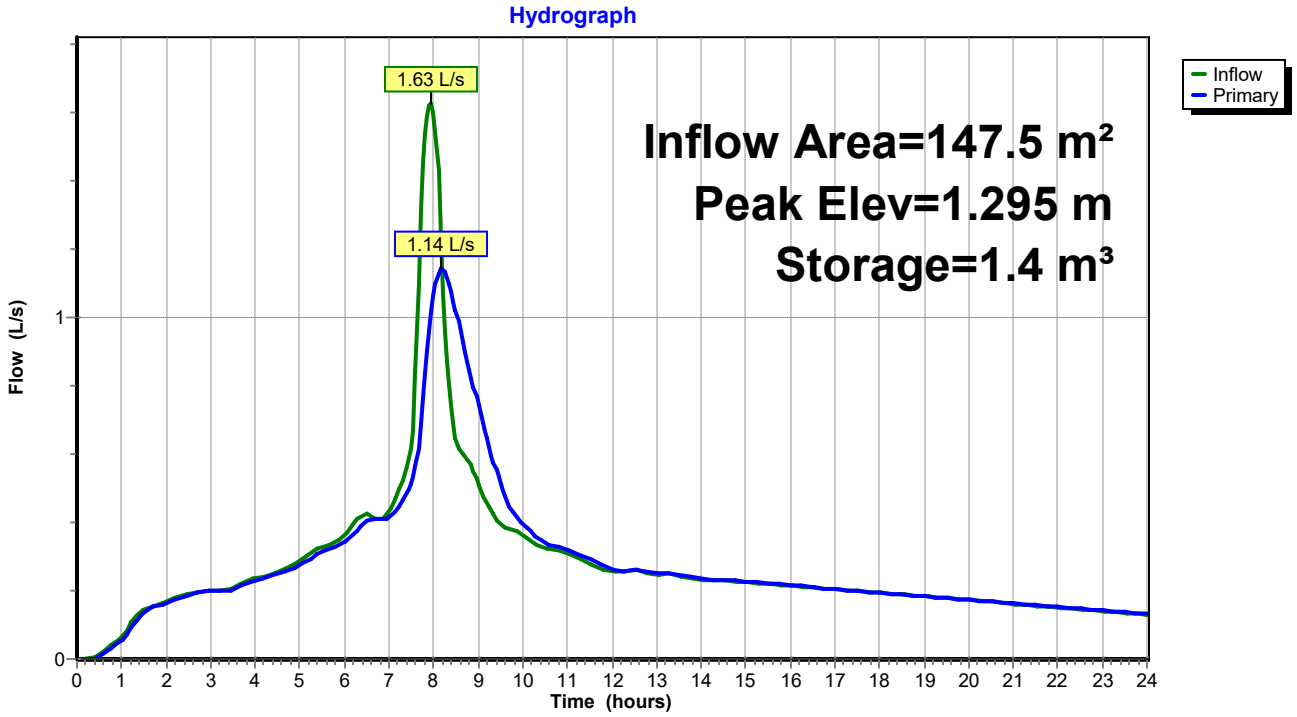
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.14 L/s @ 8.18 hrs HW=1.293 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.14 L/s @ 3.01 m/s)

Pond 75P: 2m³ Detention Tank



Summary for Pond 79P: 1m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP + 20% CCF event
Inflow = 1.63 L/s @ 7.94 hrs, Volume= 23.8 m³
Outflow = 1.41 L/s @ 8.10 hrs, Volume= 23.8 m³, Atten= 13%, Lag= 9.9 min
Primary = 1.41 L/s @ 8.10 hrs, Volume= 23.8 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.394 m @ 8.10 hrs Surf.Area= 0.0 m² Storage= 0.8 m³

Plug-Flow detention time= 3.3 min calculated for 23.8 m³ (100% of inflow)
Center-of-Mass det. time= 2.8 min (654.4 - 651.6)

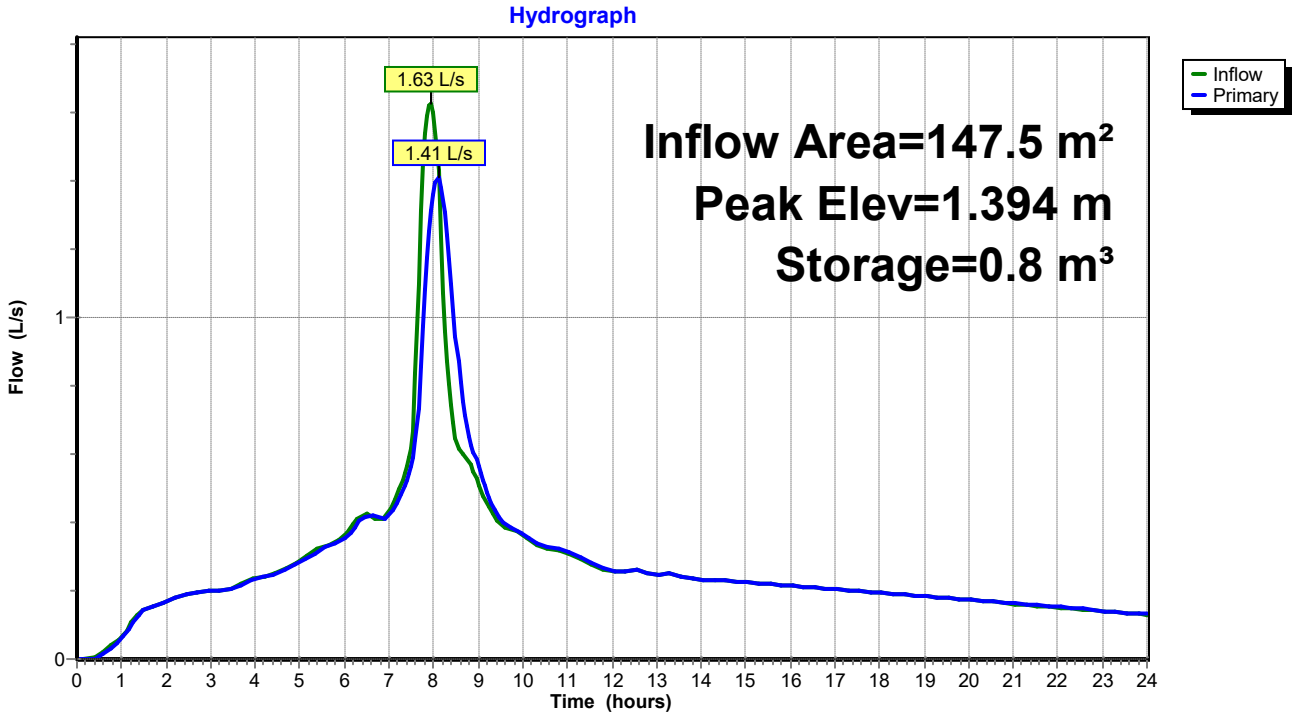
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	1.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	1.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.41 L/s @ 8.10 hrs HW=1.392 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.41 L/s @ 3.12 m/s)

Pond 79P: 1m³ Detention Tank

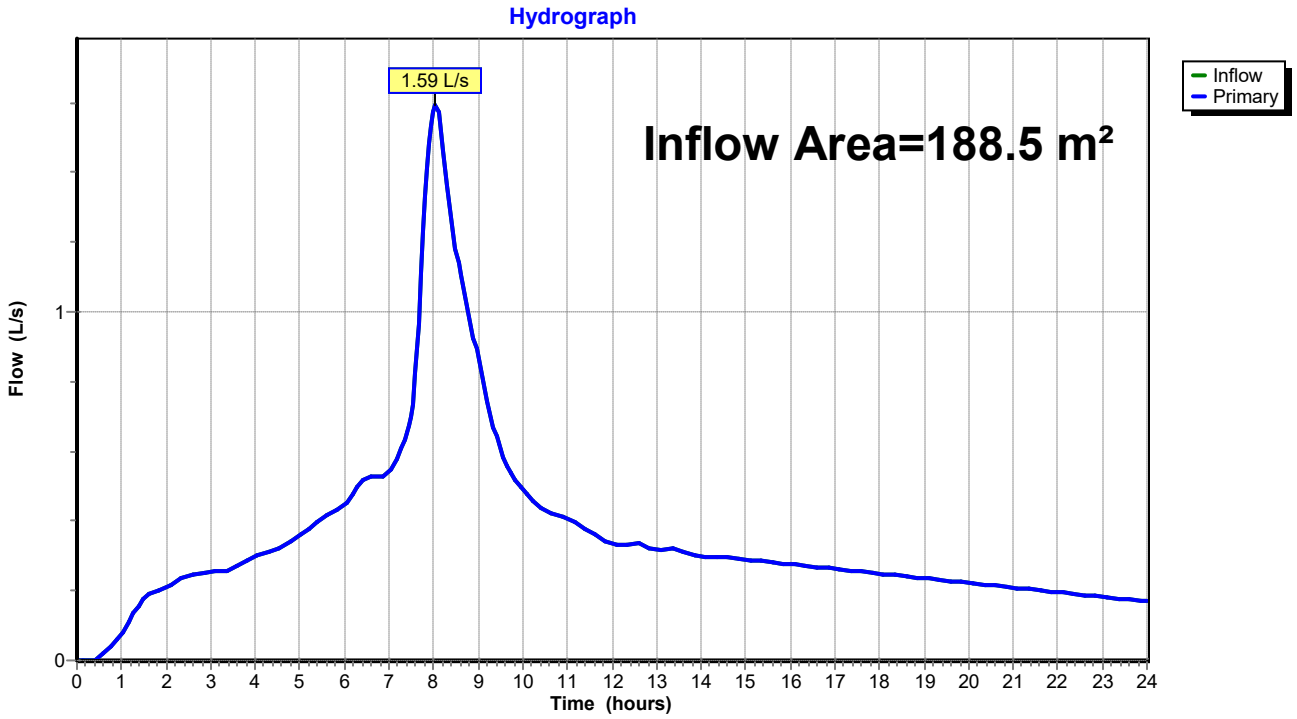


Summary for Link 72L: L4 Post-Development Flow

Inflow Area = 188.5 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.59 L/s @ 8.05 hrs, Volume= 30.4 m³
Primary = 1.59 L/s @ 8.05 hrs, Volume= 30.4 m³, Atten= 0%, Lag= 0.0 min

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

Link 72L: L4 Post-Development Flow

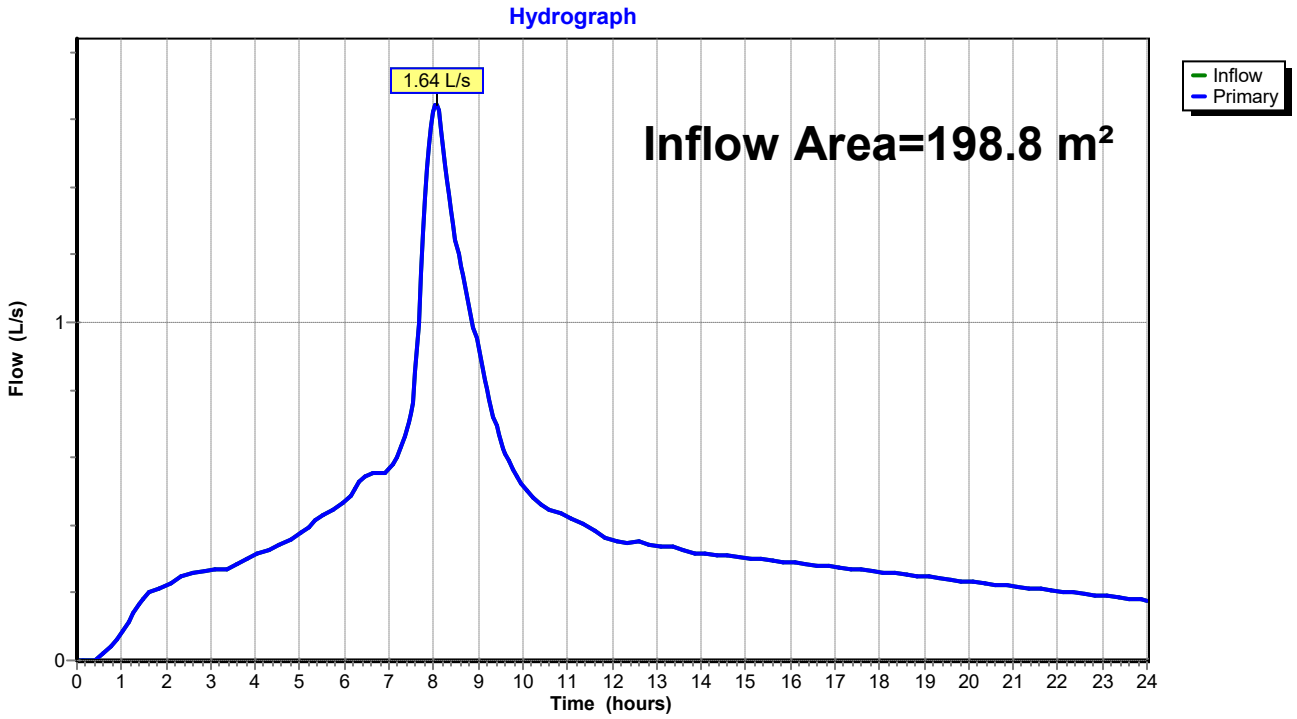


Summary for Link 76L: L5 Post-Development Flow

Inflow Area = 198.8 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.64 L/s @ 8.05 hrs, Volume= 32.1 m³
Primary = 1.64 L/s @ 8.05 hrs, Volume= 32.1 m³, Atten= 0%, Lag= 0.0 min

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

Link 76L: L5 Post-Development Flow

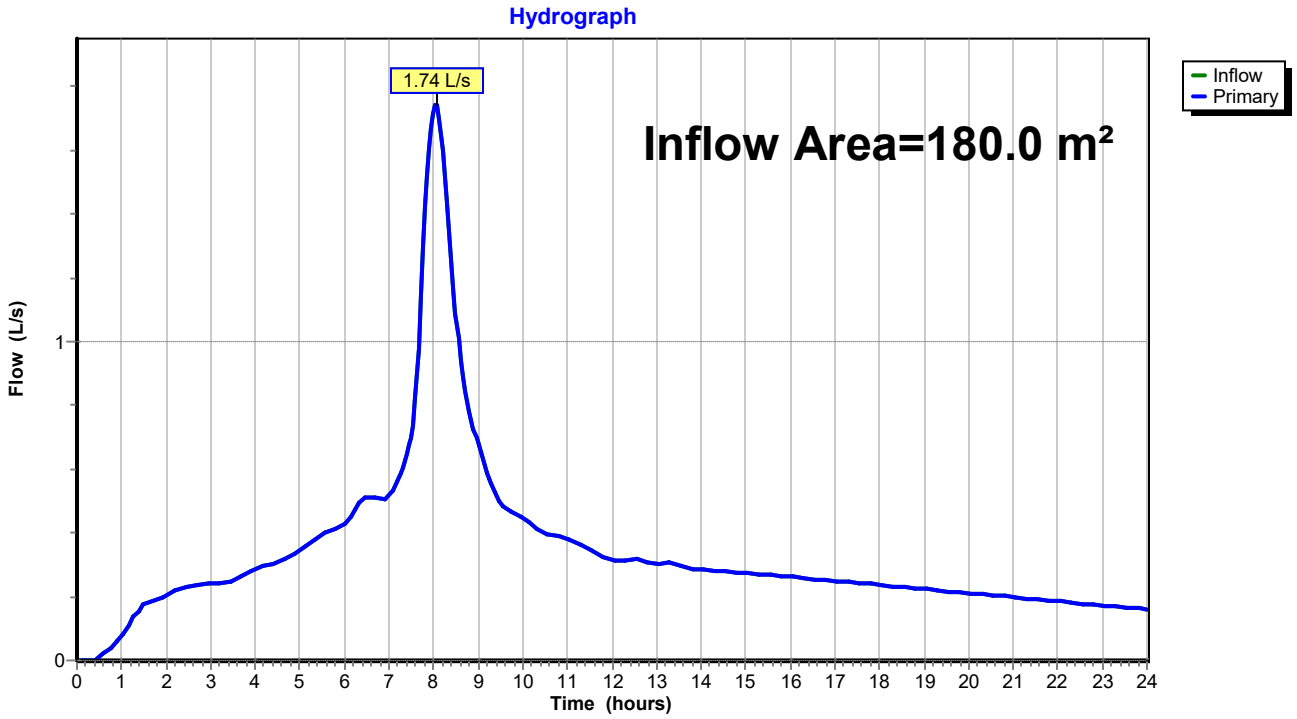


Summary for Link 80L: L6 Post-Development Flow

Inflow Area = 180.0 m²,100.00% Impervious, Inflow Depth > 161 mm for 20% AEP + 20% CCF event
Inflow = 1.74 L/s @ 8.06 hrs, Volume= 29.1 m³
Primary = 1.74 L/s @ 8.06 hrs, Volume= 29.1 m³, Atten= 0%, Lag= 0.0 min

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

Link 80L: L6 Post-Development Flow



Summary for Subcatchment 69S: L4 Post-Development Roof Coverage

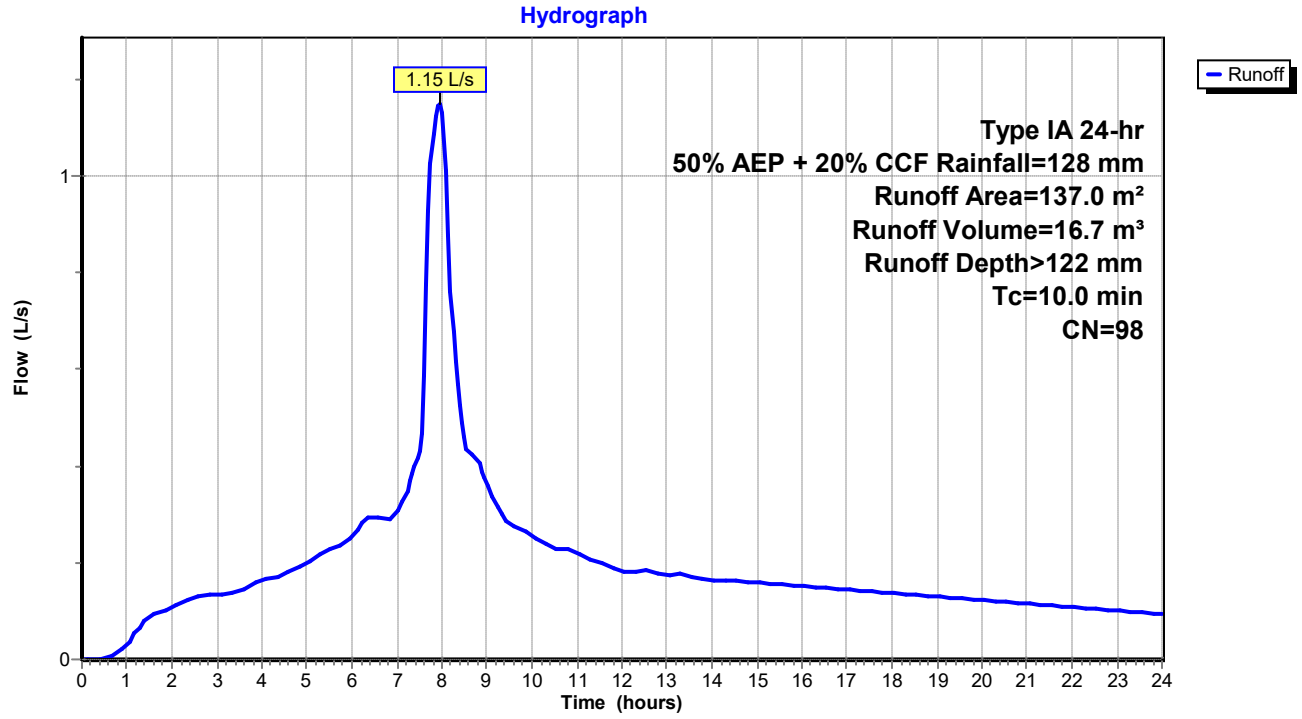
Runoff = 1.15 L/s @ 7.94 hrs, Volume= 16.7 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	137.0	98	
	137.0		100.00% Impervious Area

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

Subcatchment 69S: L4 Post-Development Roof Coverage



Summary for Subcatchment 70S: L4 Post-Development Driveway & ROW Coverage

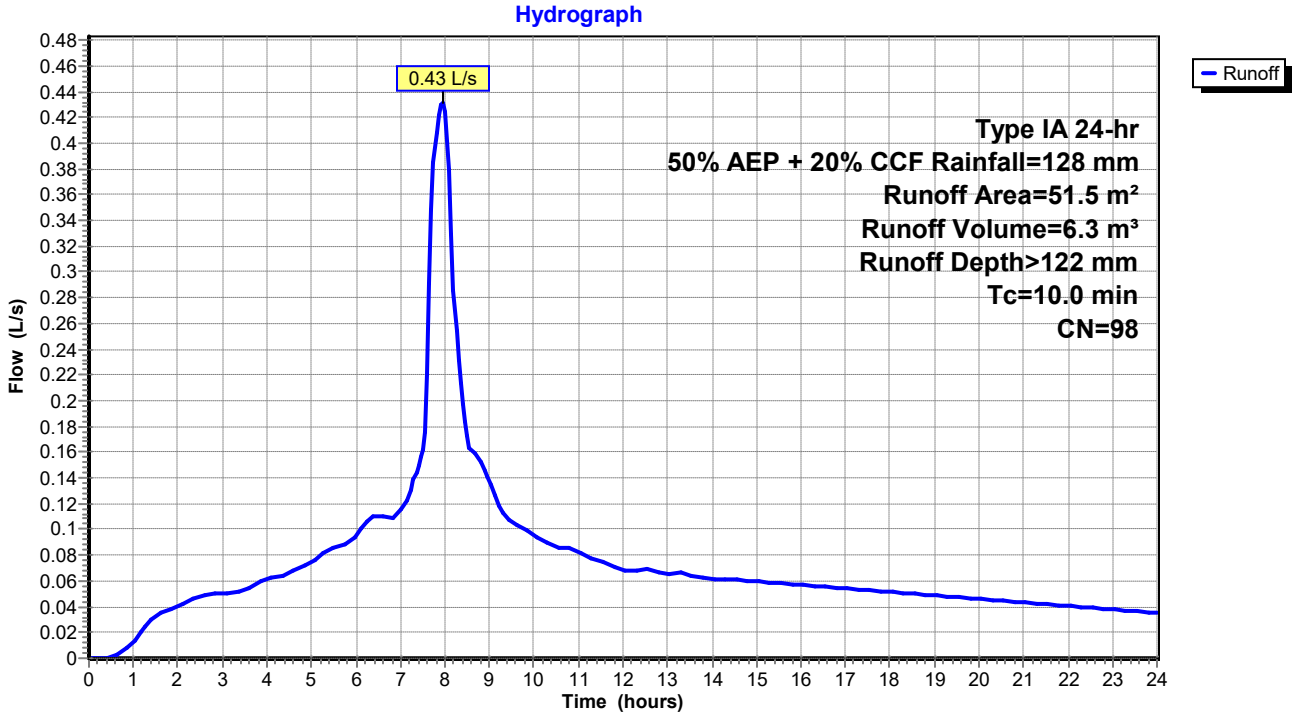
Runoff = 0.43 L/s @ 7.94 hrs, Volume= 6.3 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	8.7	98	Driveway
*	42.8	98	ROW
	51.5	98	Weighted Average
	51.5		100.00% Impervious Area

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

Subcatchment 70S: L4 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 73S: L5 Post-Development Roof Coverage

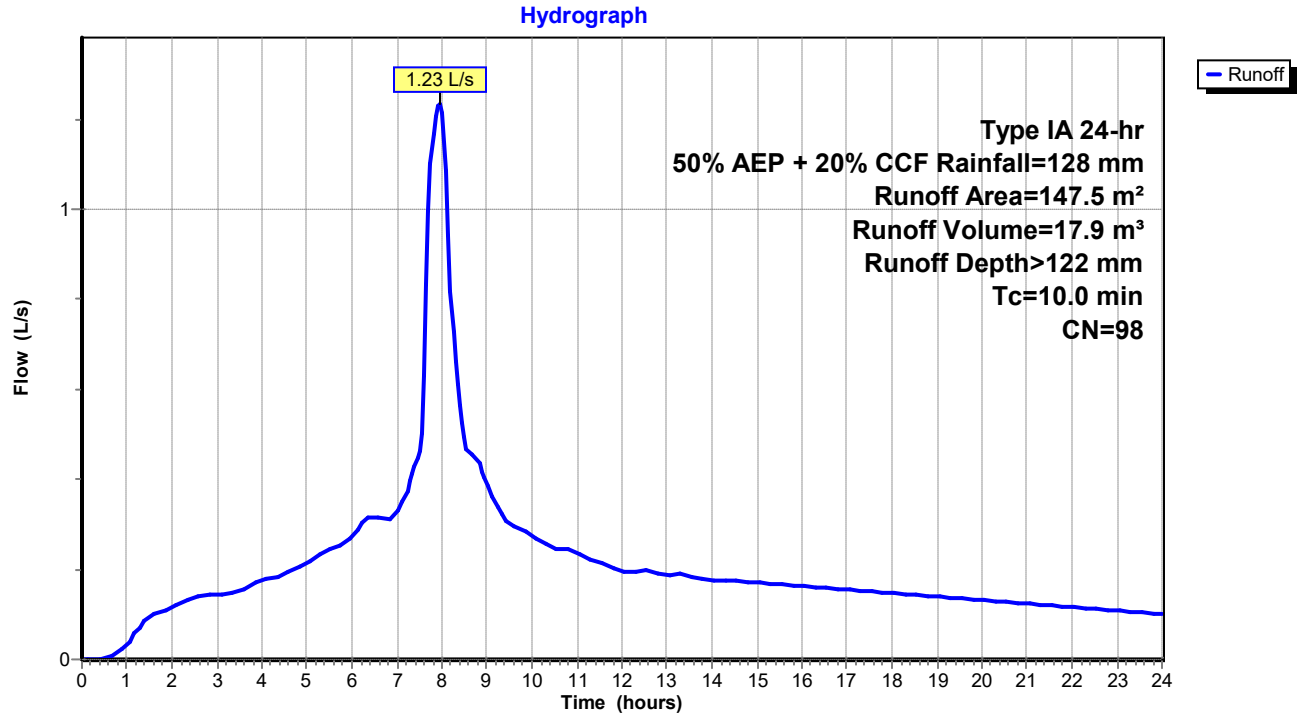
Runoff = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 73S: L5 Post-Development Roof Coverage



Summary for Subcatchment 74S: L5 Post-Development Driveway & ROW Coverage

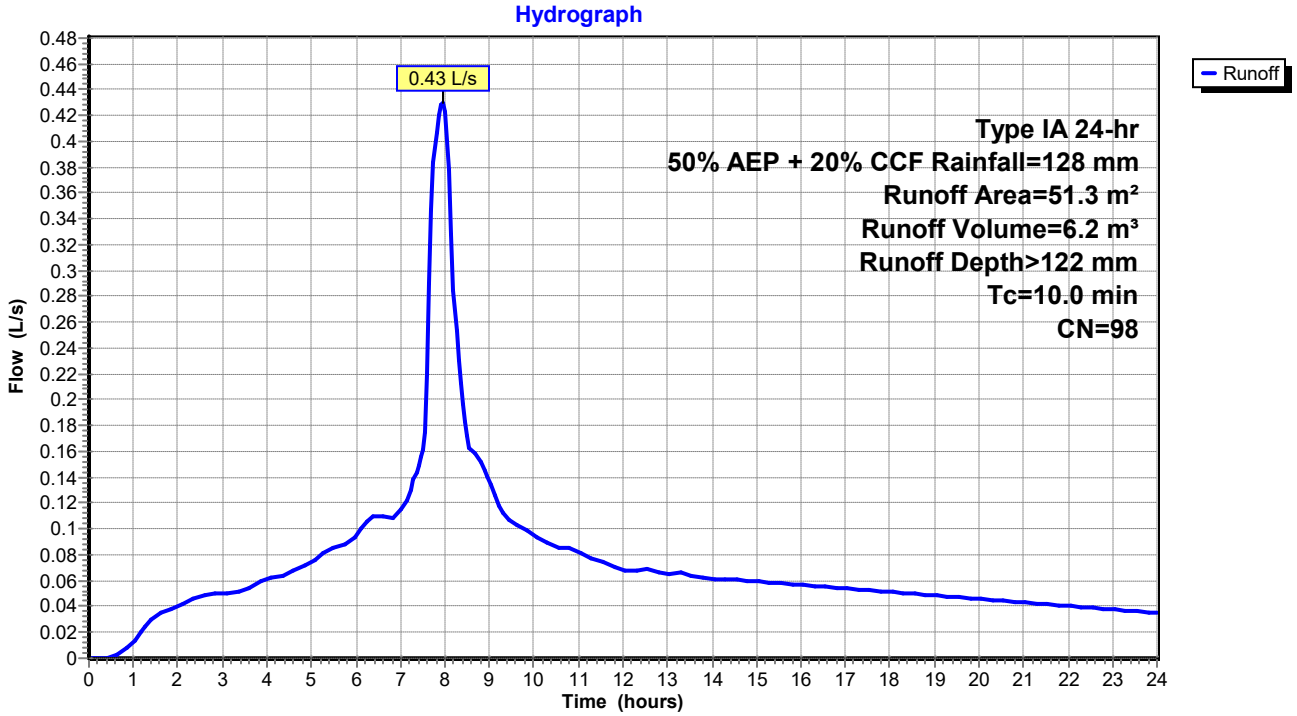
Runoff = 0.43 L/s @ 7.94 hrs, Volume= 6.2 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	8.9	98	Driveway
*	42.4	98	ROW
	51.3	98	Weighted Average
	51.3		100.00% Impervious Area

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

Subcatchment 74S: L5 Post-Development Driveway & ROW Coverage



Summary for Subcatchment 77S: L6 Post-Development Roof Coverage

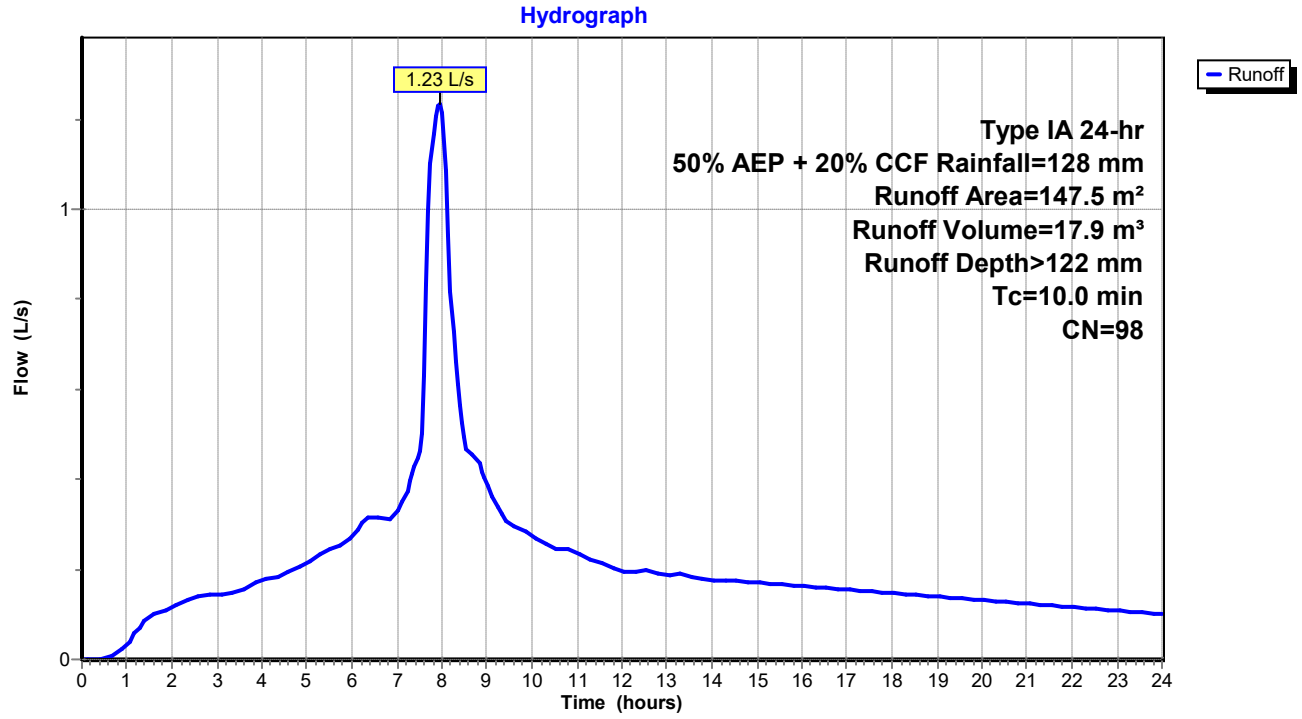
Runoff = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	147.5	98	
	147.5		100.00% Impervious Area

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

Subcatchment 77S: L6 Post-Development Roof Coverage



Summary for Subcatchment 78S: L6 Post-Development Driveway Coverage

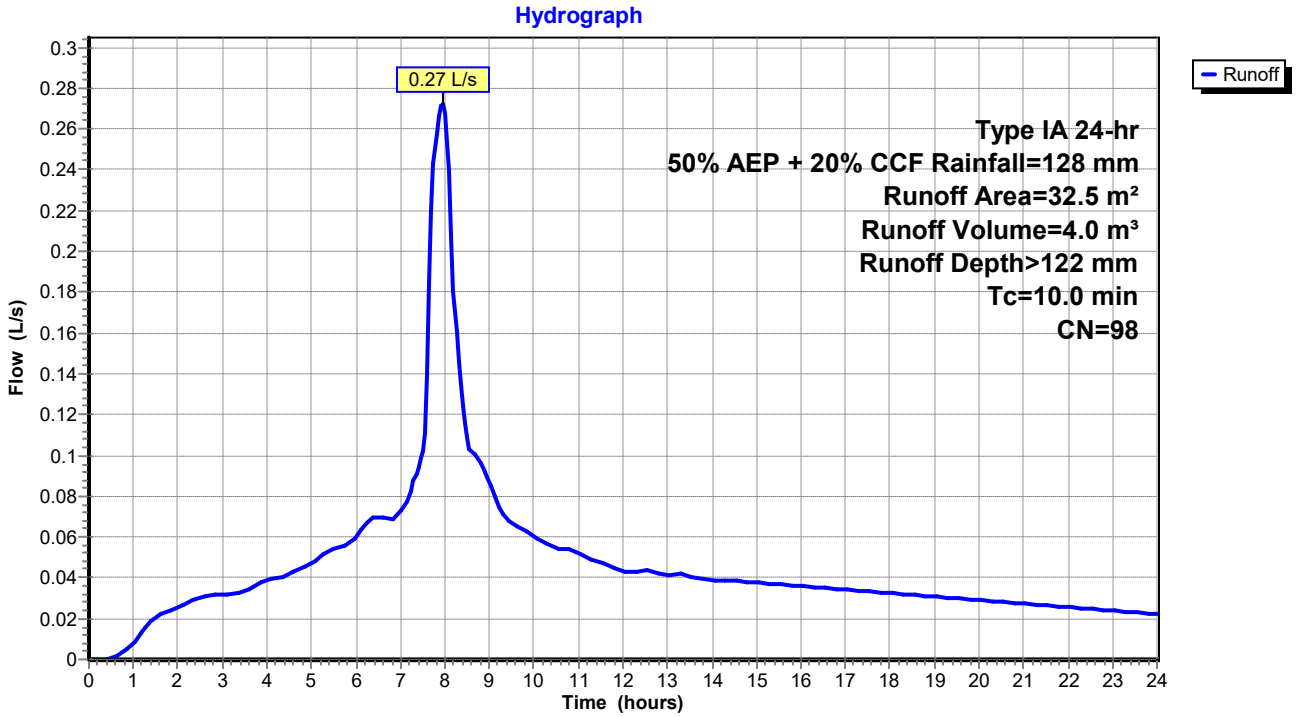
Runoff = 0.27 L/s @ 7.94 hrs, Volume= 4.0 m³, Depth> 122 mm

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 50% AEP + 20% CCF Rainfall=128 mm

	Area (m²)	CN	Description
*	32.5	98	
	32.5		100.00% Impervious Area

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

Subcatchment 78S: L6 Post-Development Driveway Coverage



Summary for Pond 71P: 2m³ Detention Tank

Inflow Area = 137.0 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.15 L/s @ 7.94 hrs, Volume= 16.7 m³
Outflow = 0.87 L/s @ 8.15 hrs, Volume= 16.6 m³, Atten= 24%, Lag= 12.8 min
Primary = 0.87 L/s @ 8.15 hrs, Volume= 16.6 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.761 m @ 8.15 hrs Surf.Area= 0.0 m² Storage= 0.8 m³

Plug-Flow detention time= 6.6 min calculated for 16.6 m³ (100% of inflow)
Center-of-Mass det. time= 5.6 min (662.1 - 656.5)

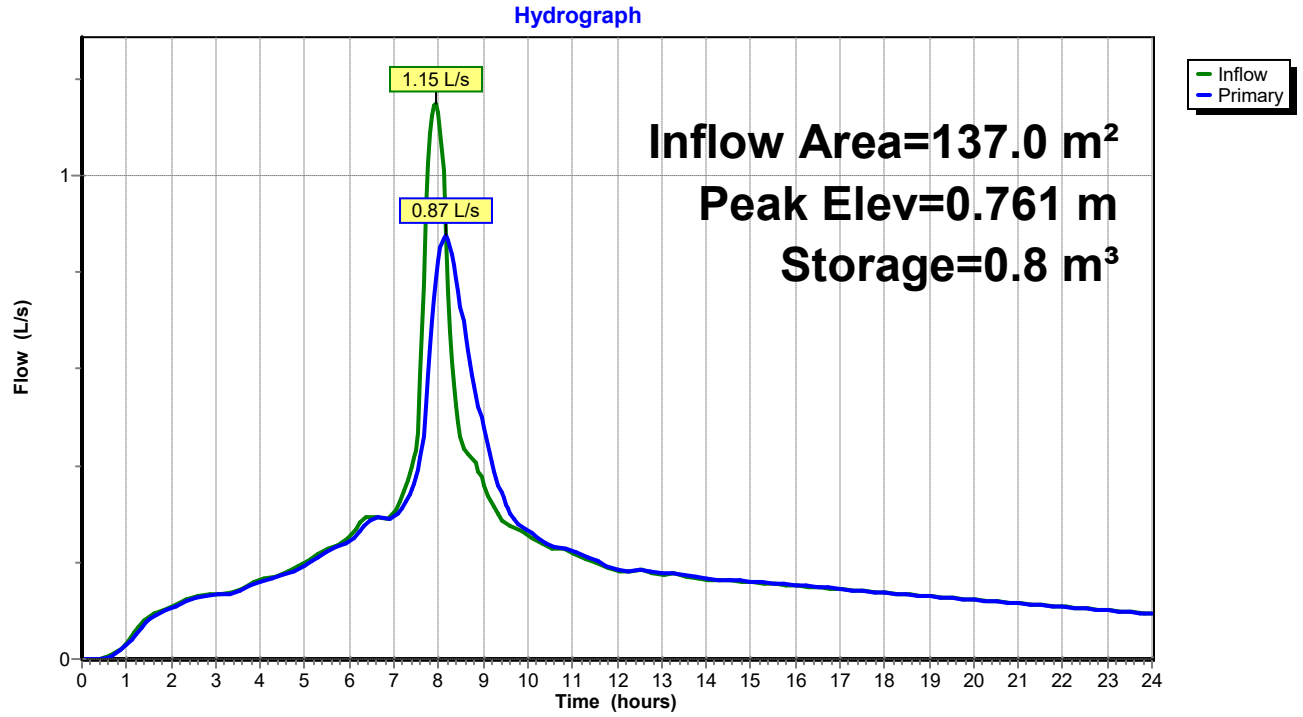
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.87 L/s @ 8.15 hrs HW=0.760 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.87 L/s @ 2.30 m/s)

Pond 71P: 2m³ Detention Tank



Summary for Pond 75P: 2m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³
Outflow = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³, Atten= 25%, Lag= 13.1 min
Primary = 0.93 L/s @ 8.16 hrs, Volume= 17.9 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.852 m @ 8.16 hrs Surf.Area= 0.0 m² Storage= 0.9 m³

Plug-Flow detention time= 6.9 min calculated for 17.9 m³ (100% of inflow)
Center-of-Mass det. time= 5.9 min (662.4 - 656.5)

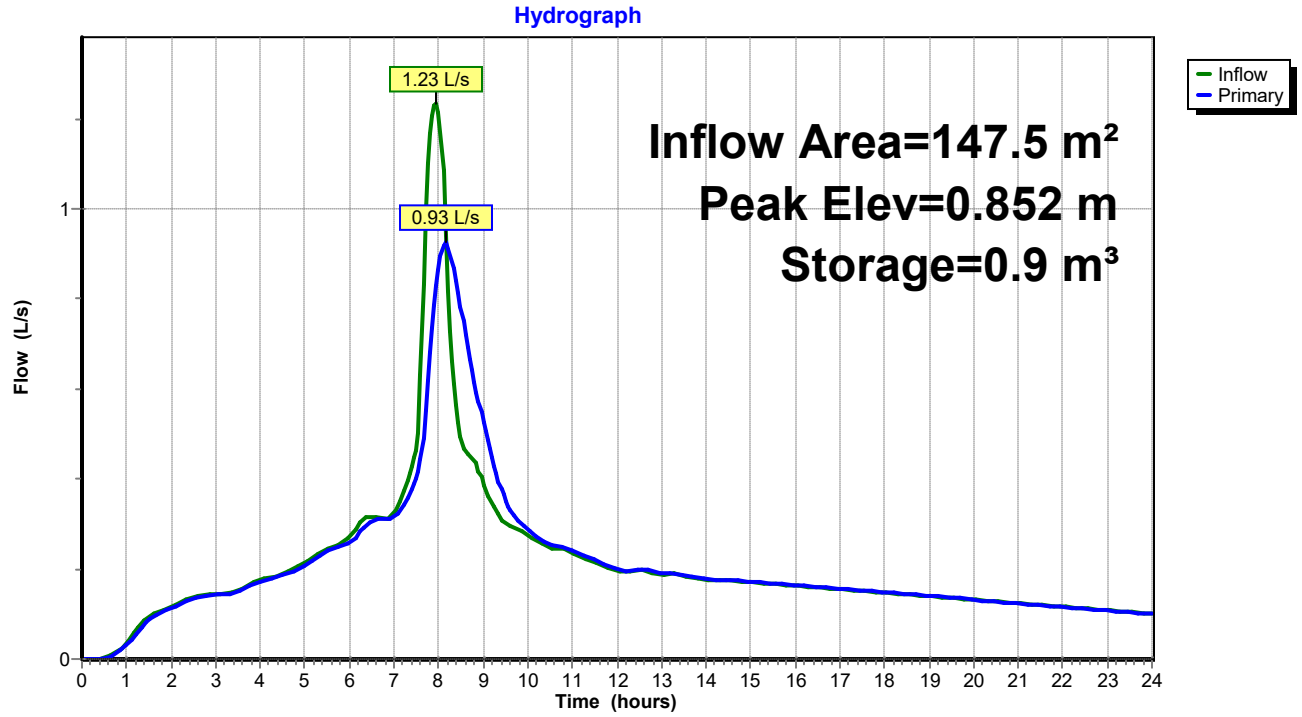
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	2.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**22 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.93 L/s @ 8.16 hrs HW=0.851 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.93 L/s @ 2.44 m/s)

Pond 75P: 2m³ Detention Tank



Summary for Pond 79P: 1m³ Detention Tank

Inflow Area = 147.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.23 L/s @ 7.94 hrs, Volume= 17.9 m³
Outflow = 1.12 L/s @ 8.09 hrs, Volume= 17.9 m³, Atten= 10%, Lag= 8.8 min
Primary = 1.12 L/s @ 8.09 hrs, Volume= 17.9 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.873 m @ 8.09 hrs Surf.Area= 0.0 m² Storage= 0.5 m³

Plug-Flow detention time= 2.7 min calculated for 17.9 m³ (100% of inflow)
Center-of-Mass det. time= 2.3 min (658.8 - 656.5)

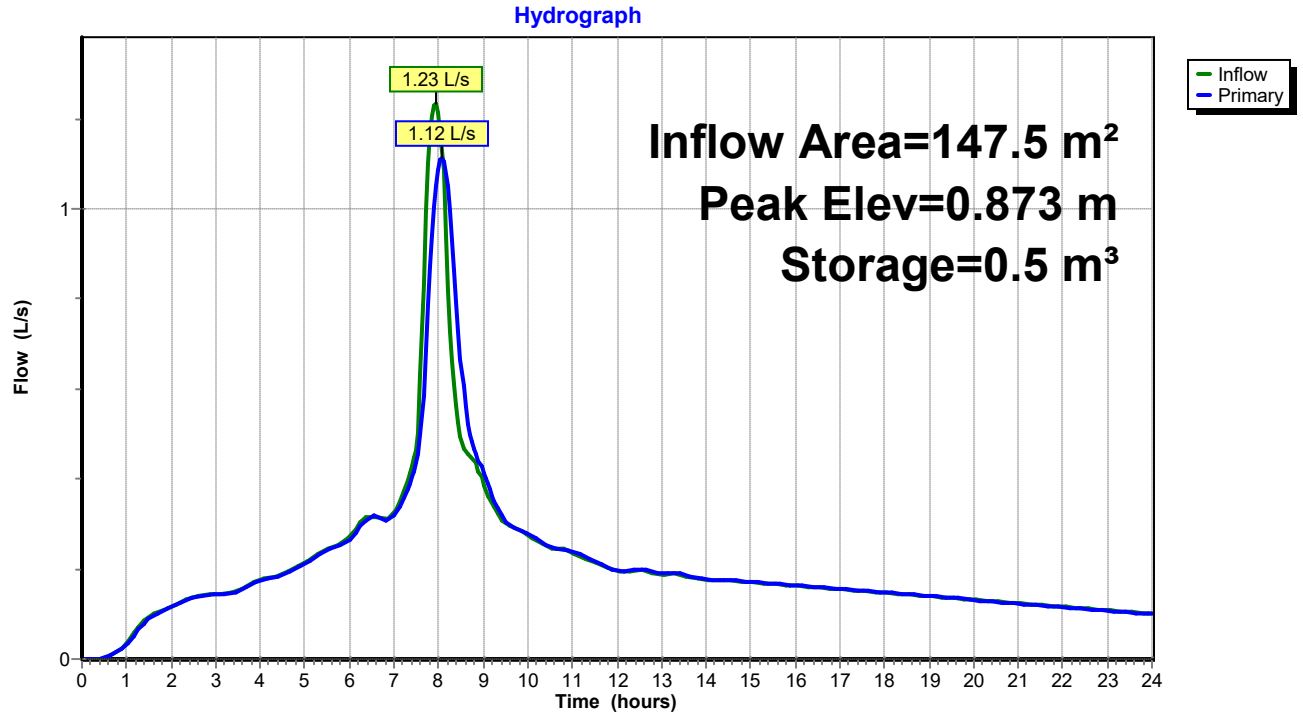
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	1.0 m³	**Custom Stage Data** Listed below

Elevation (meters)	Cum.Store (cubic-meters)
0.000	0.0
1.800	1.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**24 mm Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.11 L/s @ 8.09 hrs HW=0.869 m (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.11 L/s @ 2.46 m/s)

Pond 79P: 1m³ Detention Tank

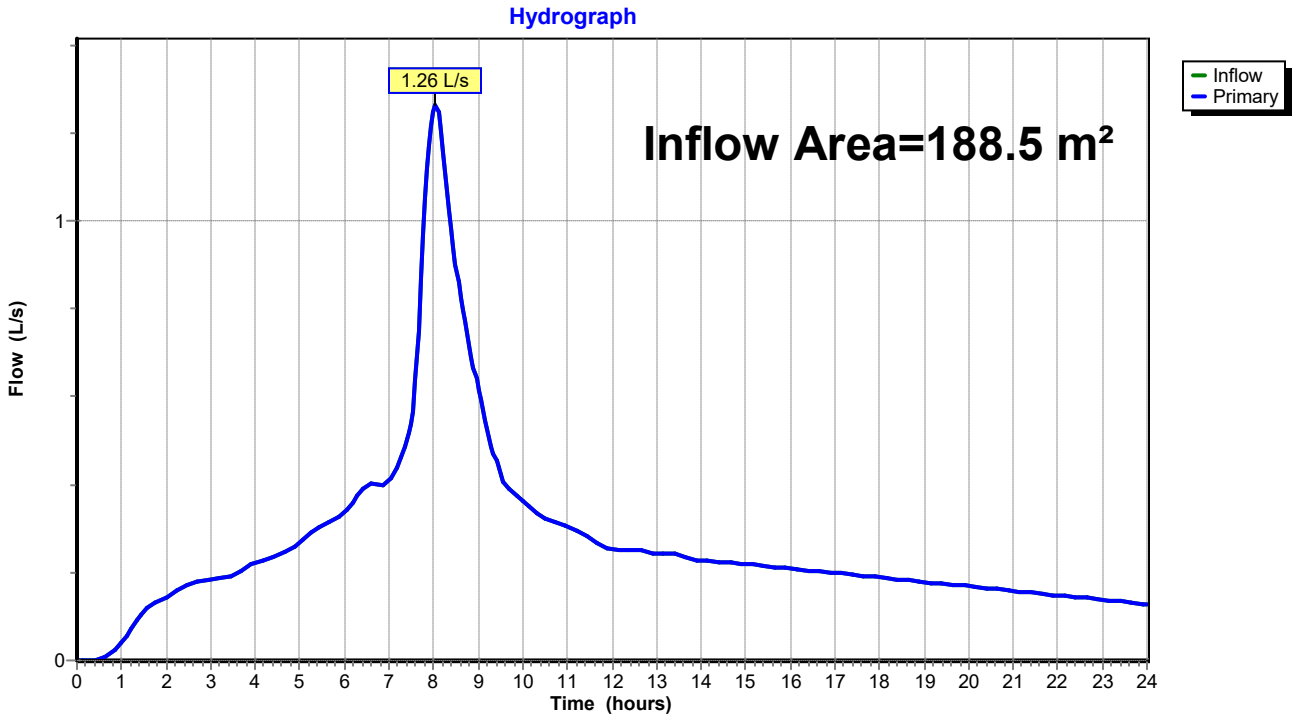


Summary for Link 72L: L4 Post-Development Flow

Inflow Area = 188.5 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.26 L/s @ 8.05 hrs, Volume= 22.9 m³
Primary = 1.26 L/s @ 8.05 hrs, Volume= 22.9 m³, Atten= 0%, Lag= 0.0 min

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

Link 72L: L4 Post-Development Flow

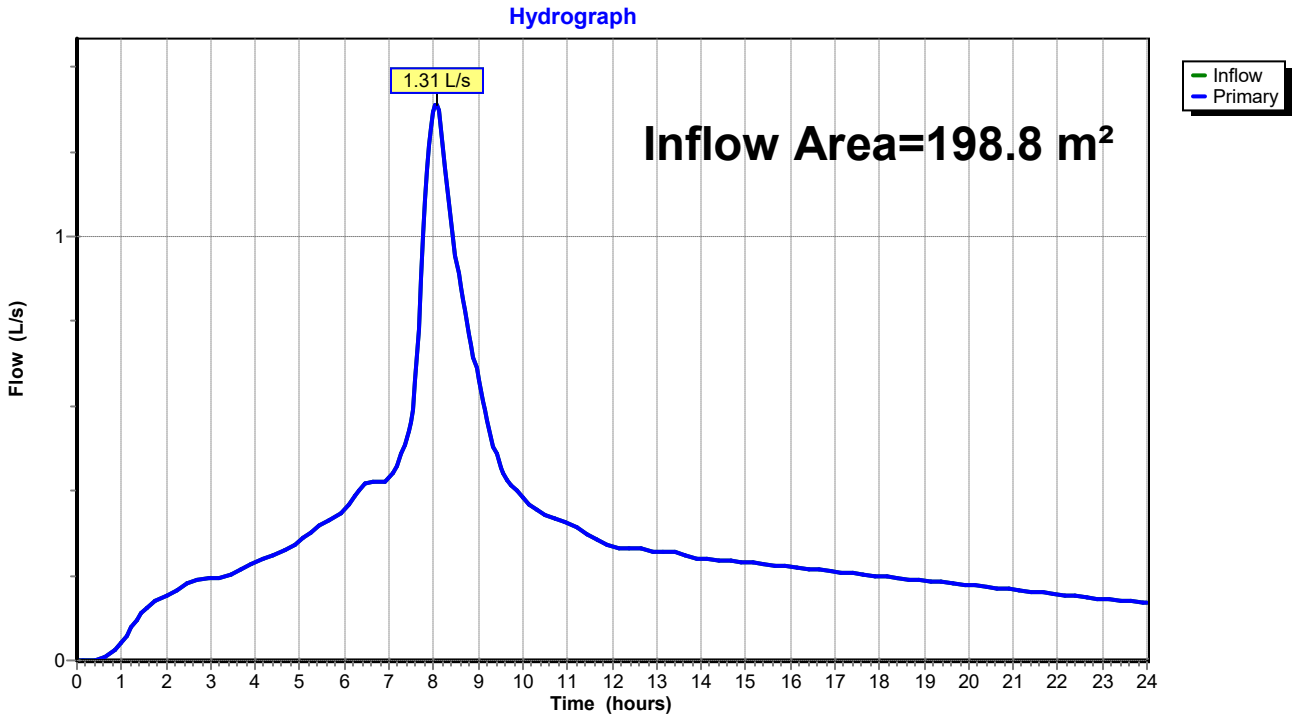


Summary for Link 76L: L5 Post-Development Flow

Inflow Area = 198.8 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.31 L/s @ 8.05 hrs, Volume= 24.2 m³
Primary = 1.31 L/s @ 8.05 hrs, Volume= 24.2 m³, Atten= 0%, Lag= 0.0 min

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

Link 76L: L5 Post-Development Flow

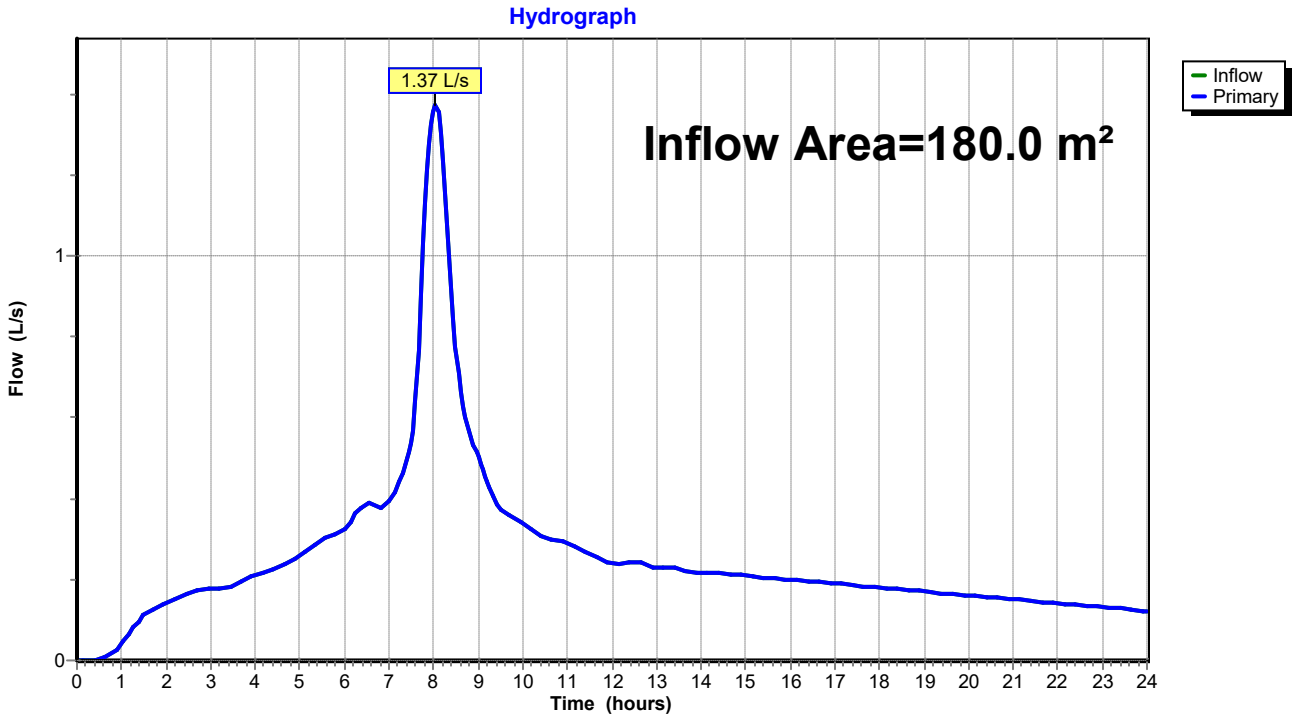


Summary for Link 80L: L6 Post-Development Flow

Inflow Area = 180.0 m²,100.00% Impervious, Inflow Depth > 122 mm for 50% AEP + 20% CCF event
Inflow = 1.37 L/s @ 8.05 hrs, Volume= 21.9 m³
Primary = 1.37 L/s @ 8.05 hrs, Volume= 21.9 m³, Atten= 0%, Lag= 0.0 min

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

Link 80L: L6 Post-Development Flow



Appendix 7

Preliminary Site Investigation

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PRELIMINARY SITE INVESTIGATION

124-126 KERIKERI ROAD, KERIKERI

OC1 HOLDCO LIMITED

C0733N-E-01
JANUARY 2026
REVISION 2

geologix
consulting engineers

DOCUMENT MANAGEMENT

Document Title	Preliminary Site Investigation
Site Reference	124-126 Kerikeri Road, Kerikeri
Client	OC1 HoldCo Limited
Geologix Reference	C0733N-E-01
Issue Date	13 January 2026
Revision	02
Prepared by	Ray Mayor Senior Environmental Consultant, BEng (Env), DipEnvTech
Approved by	Edward Collings Managing Director, CEnvP Reg. 0861, CPEng Reg. 1033153, CMEngNZ
File Reference	*Z:\Projects\C0700-C0799\C0733N - 124 & 126 Kerikeri Road, Kerikeri\06 - Reports\C0733N-E-01.docx*

REVISION HISTORY

Date	Issue	Prepared by	Approved by
December 2025	First Issue – For Consent	RM	EC
January 2026	Second Issue – For Consent	RM	EC

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FIGURES

TABLES

1 INTRODUCTION

This Preliminary Site Investigation (PSI) has been prepared by Geologix Consulting Engineers Ltd (Geologix) for Thomson Survey Limited on behalf of OC1 HoldCo Limited as our Client in accordance with our standard short form agreement and general terms and conditions of engagement.

This investigation was undertaken to support the proposed six-lot residential subdivision activities and associated resource consent application of the residential property located at 124-126 Kerikeri Road, Kerikeri (herein, referred to as the 'site', Figure 1).

1.1 Background and Objectives

At the time of writing this report, the 'site' is proposed for a six-lot residential subdivision. The existing dwelling is proposed to be removed, no change of use is proposed. Provided subdivision plan (compliance plan) by Thomson Survey Limited, dated 1 December 2025 is provided in Appendix A.

The Ministry for Environment's (MfE's) Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES:CS) (MfE ,2011a) applies to all site activities that trigger the NES:CS which are defined by Regulation 5 Subclauses (2) to (6). When one or more of these activities occur within a 'piece of land' for which an activity or industry described by the Hazardous Activities and Industries List (HAIL) is either being undertaken, has previously been undertaken or is more likely than not to have occurred on it the NES:CS is enacted.

Therefore, the objective of this investigation was to:

- Identify potentially contaminating (HAIL) activities or potential sources of contamination that might have occurred or exist at the site.
- Determine the applicability of the NES:CS to the site.
- Assess the likelihood of human health risk associated with the proposed change of use and soil disturbance.
- Assess the requirements for potential consents in relation to the NES:CS.

1.2 Scope of Works

The following scope of works was undertaken in accordance with the staged process defined by the MfE Contaminated Land Management Guidelines (CLMG) No. 1 - *Reporting on Contaminated Sites in New Zealand*. Ministry for the Environment, Wellington, New Zealand, Revised in 2021 (MfE 2011b).

- Desktop review of:
    - Provided Council property file information.

- The Northland Regional Council's (NRC's) Selected Land Use Register (SLUR).
- Historical aerial photography available on the Local Government Geospatial Alliance's (LGGA's) Retrolens webpage as well as Far North District Council's (FNDC's) Far North Maps service.

- Preparation of this report in general accordance with current contaminated land guideline documents by a Suitably Qualified and Experienced Practitioner (SQEP) as defined by the NES:CS.

2 SITE INFORMATION/ DESCRIPTION

2.1 Site Identification

The site is legally described as Lots 14 and 15 DP 41378 and is located on the north-western side of Kerikeri Road, approximately 147 m north of the Kerikeri Road and Clark Road intersection. The property is relatively flat, rectangular in shape and is bound by Kerikeri Road to the south-east, residential land to the south-west and north-west, and commercial land (i.e., Woodlands Motel site access) to the north-east.

The site setting is presented in Figure 1 below with the centre of the site approximately at geographical position NZTM: 1686571, 6101698.

Figure 1: Site setting.

Details of the site are listed in Table 1.

Table 1: Site details.

Address	Zone	Legal Description	Property Area
124-126 Kerikeri Road, Kerikeri	Residential	Lot 14 and 15 DP 41378	981 m^2

2.2 Current Land Use

The site is in use for residential purposes. The site is currently zoned as Residential under the FNDC Operative District Plan.

The future site use is not proposed to change following the proposed activities (i.e., residential subdivision).

2.3 Surrounding Land Uses

The site is predominantly surrounded by residential properties. The Woodlands Motel site access is adjacent to the north-east of the site, and Kerikeri Retirement Village is located across from the site, to the south-eastern side of Kerikeri Road.

2.4 Environmental Setting/ Ecological Receptors

To provide protection for natural resources, ecological receptors on or near a site should be considered. There are no ecological receptors in close proximity to the site (i.e., not within an influencing distance of 100 m), therefore, no relevant ecological receptor(s) in this instance.

2.5 Geology

Published geological records indicates that to be directly underlain by Kerikeri Volcanic Group Late Miocene basalt of Kaikohe - Bay of Islands Volcanic Field. These Neogene igneous rocks (basalt) can be expected to contain basalt lava material, volcanic plugs and minor tuff material. (GNS Science, 2022).

3 HISTORICAL SITE USE

A review of selected publicly available information was undertaken to gain an understanding of the history of the site, particularly the nature and location of potentially contaminating activities that may have occurred within the site. This included searches of:

- Publicly available historical aerial photographs from the Local Government Geospatial Alliance's (LGGAs) Retrolens and FNDC's Far North Maps service.
- Provided council property information, and
- NRC's SLUR.

3.1 Property Information

A summary of the relevant property information reviewed is provided below and selected property information is provided in Appendix B.

3.1.1 Property Files

The review of the site property information provided by the client contained consenting information, building applications, plans, etc. Relevant information from the review included:

- 1960: Building application/ plans for a residential dwelling (Lot 14).
- 1962: Building permit (Lot 14) for a workshop, garage, nursery room.
- 1989: Building permit/ plans(s) for greenhouse/ tunnel house(s) (Lot 15).

3.1.2 Selected Land Use Register

A review of the NRC's SLUR was undertaken in December 2025. The SLUR indicates that no HAIL activities have been identified within the property or adjacent properties in close proximity to the site.

3.2 Historical Aerial Photographs

Historical aerial photographs of the site and the surrounding area taken between 1953 and 2024 were sourced from the LGGAs Retrolens and FNDC's Far North Maps service. A summary of observations made from the review of these photographs is provided below. Historical aerial photographs are provided in Appendix C.

Our review comprises visually evident land-use activities within the site boundaries of the site which may pose a risk to human or environmental receptor health. Land-use history activities relevant to the site are summarised as follows:

- **1953**: The earliest available historical arial photographs indicates the site was a mix of undeveloped rural land (majority of Lot 15) and horticultural land use including all of Lot 14 and a small portion of Lot 15 (i.e., along the south-western boundary of Lot 15).

No aerials photographs from between 1953-1968 are available.

- **1968**: The resolution of the aerial photograph is poor, however, a residential dwelling and associated garage has now been constructed on the south-western portion of the site (i.e., Lot 14). Horticulture is no longer present. Lot 15 remains undeveloped.

  This is consistent with available property information indicating the construction of the residential dwelling and associated garage in the early 1960s on Lot 14.

- **1972-1981**: The resolution of the aerial photographs vary, however, with the exception of a small structure on the south-eastern portion of Lot 15 observed in the 1979 Aerial

photograph, no significant changes have occurred over this period. Noting that this structure was not observed in the available 1977 or 1980 aerial photographs.

No aerials photographs from between 1981-2000 are available.

- **2000:** The 2000 aerial photograph shows a long narrow structure on the north-western half of Lot 15. This is consistent with the size/ shape of one of the greenhouses/ tunnel houses indicated in the 1989 buildings permits.

  Note that due to the 19-year gap (i.e., no aerials photographs from between 1981-2000), it cannot be determined if the second greenhouse/ tunnel house indicated in the 1989 buildings permits was constructed, and subsequently removed prior to 2000.

- **2005-2006:** The 2005-2006 aerial photograph is of poor resolution, however, that half of the existing greenhouse/ tunnel house (south-eastern half) may have been removed.

No aerials photographs from between 2006-2014 are available.

2014-Present: The greenhouses/ tunnel houses are not present in the 2014-2016 aerial photograph. No significant changes are observed over this period.

In summary, prior to the construction of the residential dwelling within Lot 14 circa 1960, the property was a mix of undeveloped land (grassed) and horticultural land use (predominantly Lot 14). The majority of the site was then used for residential purposes from circa 1960 to date, with a portion of the site (i.e., north-western portion of Lot 15) for small scale horticultural use (i.e., greenhouse/ tunnel houses) from circa 1989 until the early 2000s.

3.3 Potential HAIL Activities

Based on the historical review of the property, it is considered that a portion of the site may have potentially been impacted by HAIL category A10; persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds. Due to the potential HAIL identified, a portion of the property can be determined as a 'piece of land' according to the definitions of the NES:CS.

The 'piece of land' has been conservatively estimated to be approximately 1,500 m^2 in area), refer to Figure 2 below.

Figure 2: Estimated 'piece of land' area as determined from potential HAIL activities.

Source: Basemap courtesy of NRC Local Maps.

To be noted, even though the second greenhouse/ tunnel house was not observed in the available aerial photographs (due to the 19-year gap of no available aerial photographs between 1981-2000), it has to be assumed the second greenhouse/ tunnel house was constructed as per the 1989 building permit and was removed prior to 2000. Therefore, the estimated 'piece of land' includes the estimated area (approximately 210 m^2) for both greenhouse/ tunnel house(s).

3.4 Potential Contaminants of Concern

Based on the above information and from our experience, it is expected that contaminants of concern (CoC) (if any) would typically be contained within the topsoil/ shallow site soils (within the potential HAIL area as indicated above, Figure 2) and may include heavy metals and organochlorine pesticides (OCPs).

4 RISK ASSESSMENT

Based on the information presented in this report and the residential subdivision proposed, a quantitative risk assessment of contamination potential to cause an effect upon human and/ or ecological receptors has been made. This is further developed into a regulatory assessment for Consent.

4.1 Conceptual Site Model

This Conceptual Site Model (CSM) has been developed based on the following assumptions:

- The desktop study has confirmed that part of the property is defined as a 'piece of land' under the NES:CS Regulations as follows:

- The 'piece of land' areas is approximately 1,500 m^2 in area comprising potential horticultural land use from prior to 1953 to the early 2000s). The estimated 'piece of land' area is shown on Figure 2 (Section 3.2).
    - Large scale horticulture on Lot 14 and small portion of Lot 15 (along southern boundary within Lot 15) prior to 1952 to circa 1960.
    - Small scale horticulture on a portion of Lot 15 (north-western portion) from circa 1989 to early 2000s.

- The site has been predominantly in use for residential purposes since circa 1960 to date, with small scale horticulture on a portion of Lot 15 (north-western portion) from circa 1989 to early 2000s.
- No analytical testing has been commissioned as part of this investigation.
- No soil disturbance proposed.

The following Conceptual Site Model (CSM) has been developed for the potentially complete contaminant pathways at the site.

Table 2: Conceptual site model.

Source	Pathway	Receptor	Risk Score
Metals and OCPs	• Incidental soil ingestion. • Inhalation of dusts. • Dermal absorption.	• Site users • Future site users.	Low to Medium – Mixed horticulture use; large scale pre 1953 to circa 1960 and small scale from circa 1989 to early 2000s. Additionally, majority of site has been in use for residential purposes since circa 1960 to date.
Metals and OCPs and PAHs in soil remaining on site.	• Migration	• Groundwater • Surface water	• Low to Medium.
Metals and OCPs in soil taken away from site	• Migration	• Groundwater • Surface water	• Low – provided taken to a suitable managed fill facility

For an exposure pathway to be complete and subsequently cause a risk, there must be a contamination source, a contaminant transport mechanism (pathway) and a receptor, typically human or ecological.

4.2 Quantification of Risk and Discussion

The potential HAIL activity (i.e., horticulture) undertaken (refer to Section 3.2) has been identified on the site potentially from heavy metals and OCPs in soils which has been determined from a desk top review.

Noting that following large scale horticultural site use (prior to 1953 to circa 1960), the site has been in use for residential purposes since circa 1960 to date with only small-scale horticulture occurring on a portion of site (i.e., within Lot 15) from circa 1989 to early 2000s. Therefore, the risk can be reduced in this instance (would typically be considered as high), however, a low to medium risk can be applied to long-term human health exposure to the continued use of the site for residential land purposes depending on the activity (i.e., low risk for subdivision, medium risk for soil disturbance).

5 REGULATORY CONSIDERATIONS (CONTAMINATED LAND)

5.1 NES:CS

The NES:CS regulation applies to activities of subdivision where HAIL activity is being / has been / more likely than not to have been undertaken. The results of the historical review indicated that, under subclause (7) the NES:CS applies to a large portion of the site (approximately 1,500 m^2) due to a potential HAIL category A10; persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds, therefore, the NES:CS applies.

Provided the assumptions of this report remain relevant and due to the potential HAIL identified and no detailed site investigation (DSI) has yet to be undertaken, NES:CS regulation 11 is applicable, the activity of subdivision is considered as a discretionary activity.

To meet the requirements of either a controlled or restricted discretionary activity (dependant on the results of the DSI) further investigation in the form of a DSI would be required to be undertaken.

In relation to soil disturbance, no soil disturbance is proposed as part of the subdivision at this time, however, the NES:CS allows (per year) a soil disturbance volume of 25 m^3 per 500 m^2 of `piece of land` area and soil disposal volume of 5 m^3 per 500 m^2 of piece of 'land' area. Calculated on a 'piece of land' basis (approximately 1,500 m^2), allowable soil disturbance volumes are 75 m^3 for soil disturbance and/ or 15 m^3 for off-site disposal per year to be able to comply with permitted activity status.

5.2 Northland Regional Plan

In assessment of the proposed Northland Regional Plan Chapter C.6.8 and based on our investigation, the site will be considered as 'contaminated land' based on the existing HAIL (specifically within the 'piece of land 'area only). Noting that the current land use (i.e., residential) and future land use is not proposed to change at this time.

However, in assessment of the proposed Northland Regional Plan Chapter C.6.8.2 (discharges

from contaminated land), and due to the shallow nature of the potential CoCs expected (if any) and that chlorinated solvents and hydrocarbons (including non-aqueous liquids) are not associated with the identified HAIL activity and are highly unlikely to be present, and this site investigation has been certified by a SQEP, the activity is considered a permitted activity. In accordance with Rul C.6.8.2(9), the passive discharges from the activity are expected to comply with Conditions outlined by C.6.8.2(1) to (7).

6 SUMMARY AND RECOMMENDATIONS

This PSI has been prepared by Geologix Consulting Engineers Ltd (Geologix) for Thomson Survey Limited on behalf of OC1 HoldCo Limited (the 'Client'). This investigation was undertaken to support the proposed residential subdivision and associated resource consent application of a residential property located at 124-126 Kerikeri Road, Kerikeri.

The 'site' is proposed for a six-lot residential subdivision. No change of use is proposed.

A review of available background information confirms that prior to the construction of the residential dwelling within Lot 14 circa 1960, the property was a mix of undeveloped land (grassed) and horticultural land use (predominantly Lot 14). The majority of the site was then used for residential purposes from circa 1960 to date, with a portion of the site (i.e., north-western portion of Lot 15) for small scale horticultural use (i.e., greenhouse/ tunnel houses) from circa 1989 until the early 2000s.

Therefore, a large portion of the property ('piece of land', Figure 2) has potentially been subject to a HAIL activity, HAIL category A10; persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds, therefore, the NES:CS applies (i.e., to the 'piece of land' area only).

Based on the available information and the findings of the investigation, the NES:CS will apply for subdivision activities associated with the proposed residential subdivision regarding contaminated land, therefore, it is considered that consent will be required as a discretionary activity under the NES:CS and in addition, considered as a permitted activity under the proposed Northland Regional Plan. Noting this may be reduced to controlled or restricted discretionary activity with a DSI provided.

It should be noted that this investigation was undertaken to support the proposed residential subdivision only, therefore, any proposed future redevelopment (including soil disturbance) and/ or change of use may require further investigation.

Due to the potential HAIL activity identified on a large portion of the site (refer to Figure 2) and no soil analytical data available at this time, it is recommended that a DSI be undertaken (to confirm/ determine CoC concentrations within site soils) to support the consenting process and any future soil disturbance activities most likely to be required.

7 LIMITATIONS

This report has been prepared for OC1 HoldCo Limited as our Client. It may be relied upon by our Client and their appointed Consultants, Contractors and for the purpose of Consent as outlined by the specific objectives in this report. This report and associated recommendations, conclusions or intellectual property is not to be relied upon by any other party for any purpose unless agreed in writing by Geologix Consulting Engineers Ltd and our Client. In any case the reliance by any other party for any other purpose shall be at such parties' sole risk and no reliability is provide by Geologix Consulting Engineers Ltd.

The opinions and recommendations of this report are based on plans, specifications and reports provided to us at the time of writing, as referenced. Any changes, additions or amendments to the project scope and referenced documents may require an amendment to this report and Geologix Consulting Engineers should be consulted. Geologix Consulting Engineers Ltd reserve the right to review this plan.

8 REFERENCES

Far North District Council Maps, https://www.fndc.govt.nz/Our-services/Far-North-Maps. Accessed December 2025.

GNS Science, 2022. New Zealand Geology Webmap, Scale 1:250,000, http://data.gns.cri.nz/geology/. Accessed December 2025.

Ministry for the Environment, 2011a. Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Ministry for the Environment, 2011b. Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (revised 2021). Wellington, New Zealand.

Northland Regional Council Online Maps, https://www.nrc.govt.nz/your-council/online-services/online-maps. Accessed December 2025.

Retrolens Historical Image Resource. https://retrolens.co.nz/. Accessed December 2025.

Users' guide, 2012: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. April 2012.

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consulting engineers

APPENDIX A

Proposed Subdivision Plan

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	Ⓐ	LOT 1 HEREON	LOTS 2 - 6 HEREON
	Ⓑ	LOT 2 HEREON	LOTS 3, 5 & 6 HEREON
	Ⓒ	LOT 4 HEREON	LOTS 1 - 3, 5 & 6 HEREON
	Ⓓ	LOT 5 HEREON	LOTS 2, 3 & 6 HEREON

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA46C/261 & NA46C/262
Total Area: 2006m²
Zoning: Residential
Resource features: NIL

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360
www.tsurvey.co.nz
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOTS 14 & 15 DP 41378

124 & 126 KERIKERI ROAD, KERIKERI

PREPARED FOR: J. LODGE

	Name	Date
Survey		
Design		
Drawn	KY	26.11.25
Approved		
Rev	KY	01.12.25

ORIGINAL
SCALE 1:400
SHEET SIZE A3

10864 Scheme 20251201

Surveyors Ref. No: 10864

Sheet 1 of 1

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consulting engineers

APPENDIX B

Selected Property Information Photographs

BAY OF ISLANDS COUNTY COUNCIL

BUILDING APPLICATION - SITE PLAN

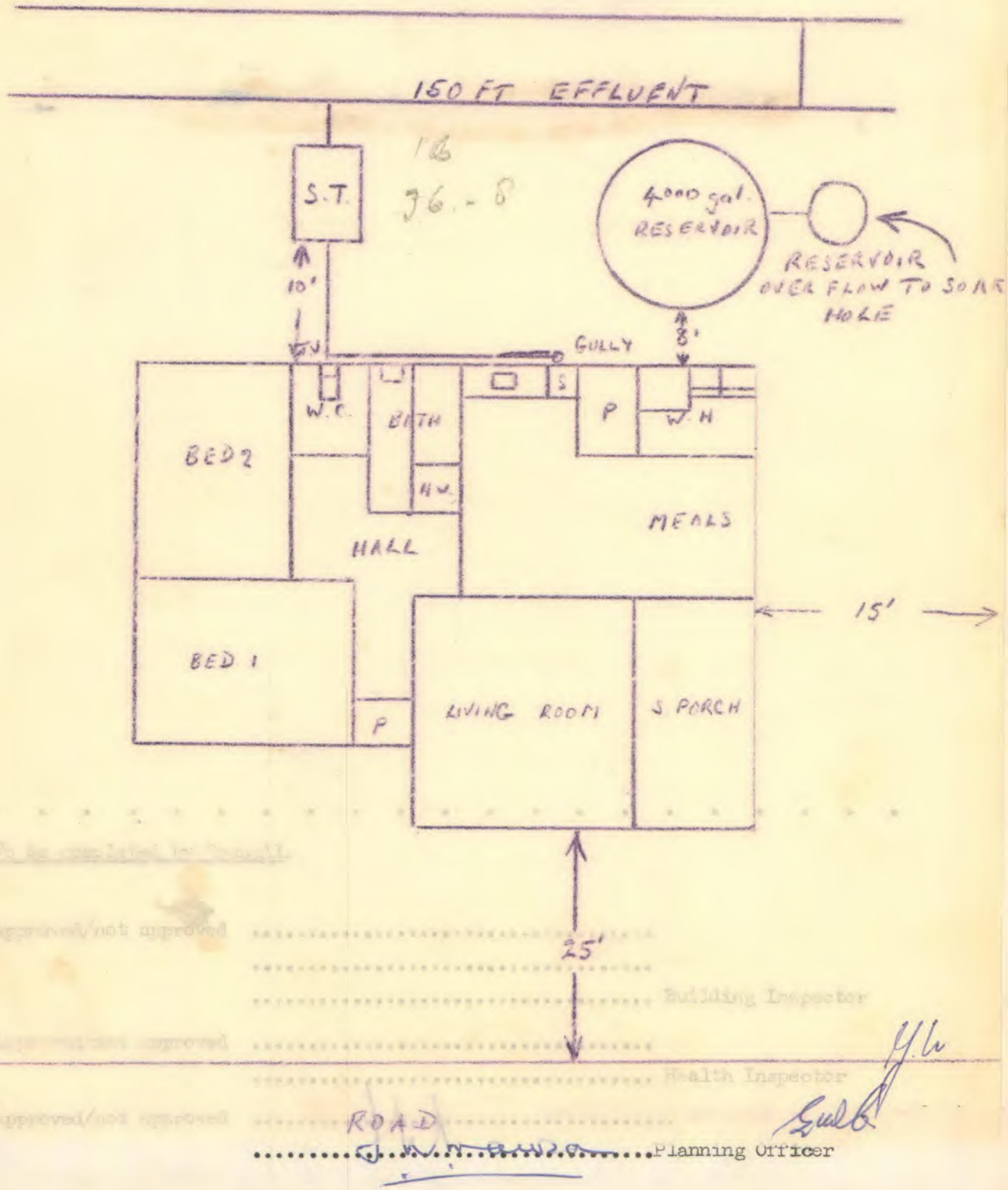
Under the provisions of section 204 (b) of the N.Z. Standard Code of Building Bylaws (N.Z.S.S. 95 Pt.11) building permits will not be issued until a site plan is submitted for approval.

This site plan shall be drawn to scale on this form and shall show the position of existing and adjoining structures if any, together with proposed buildings and drainage disposal.

Sub Dpt.

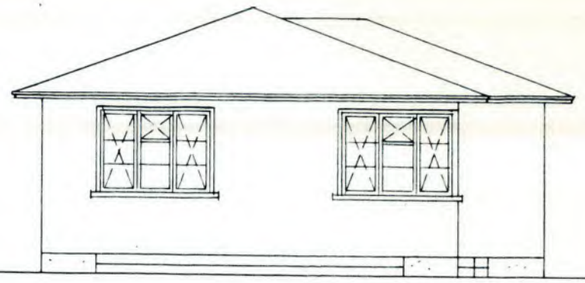
LOT 14

T. SHEPHERD KERI KERI 3/14 1960



Planning Officer

·1960·



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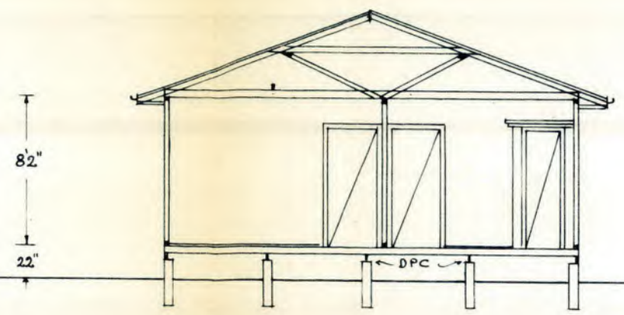
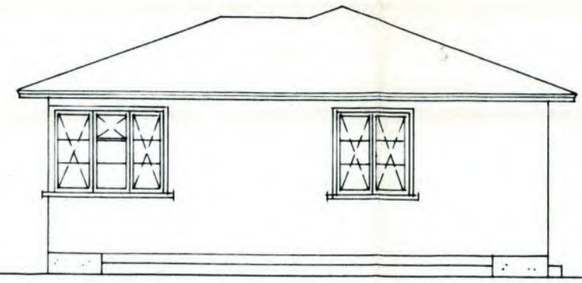
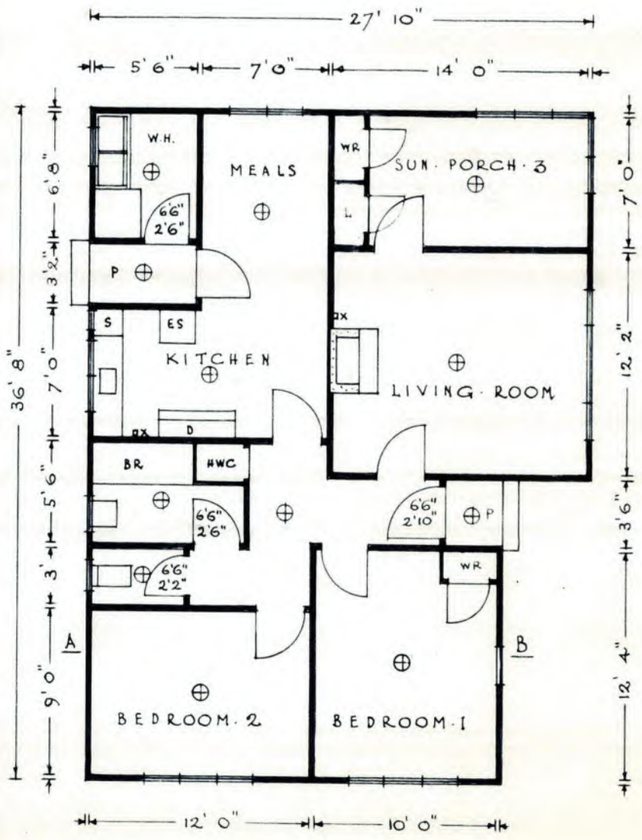
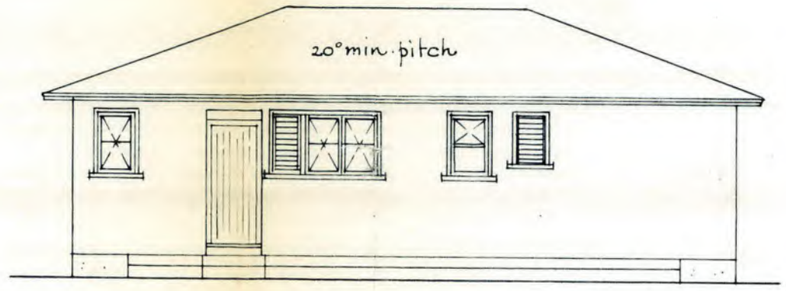


·S E C T I O N · A · B·

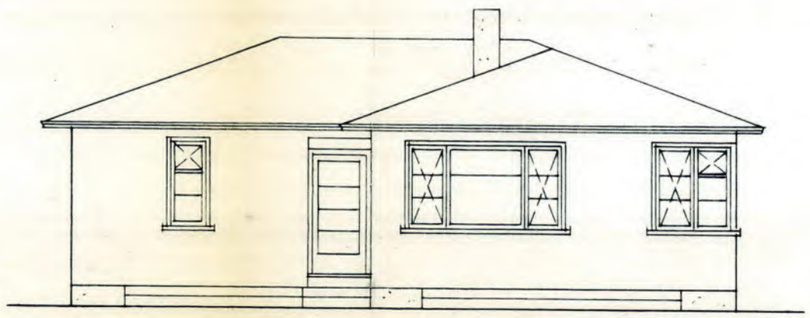


·B A C K · E L E V A T I O N·





·S I D E · E L E V A T I O N·



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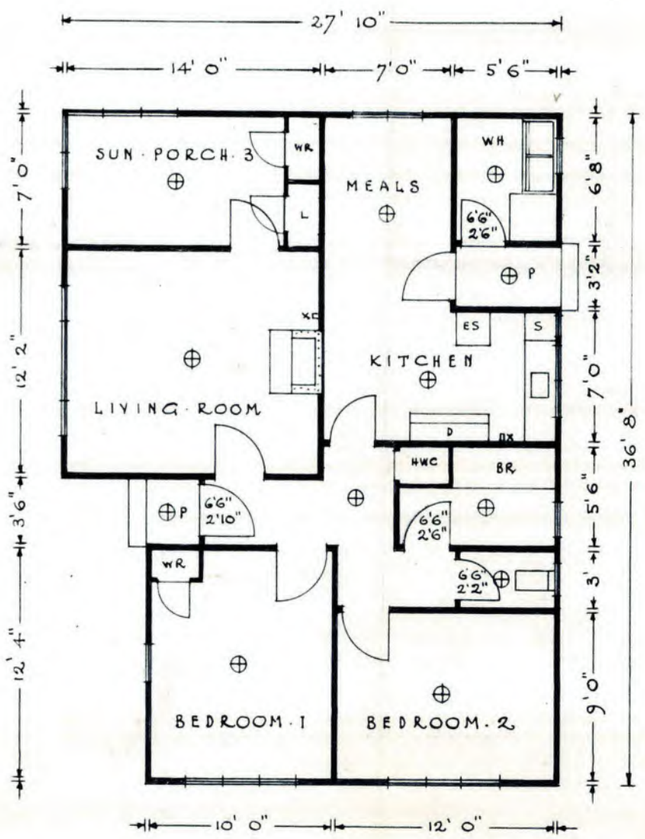


·P L A N · R E V E R S E D·

AREA	JOB·No. 47/58	·D E P A R T M E N T · O F · M A O R I · A F F A I R S·	3/14
941 ft²	DRAWN. RCH.	·S T A N D A R D · P L A N S·	

B&P 7843

QUADRUPLICATE

Copy of Building Permit for Retention by Local Authority

BCDEC

Permit No. 144914

Receipt No. 2362

Date: 14/ 9 /1962

Number on Valuation Roll: 43/2/14

Description of land on which building is to be erected:

Lot: 14 D.P. 41570 Section: O.L.C. 39

Block: XI S.D. Kerikeri Street.

Township. Riding.

Received from Thomas T. Shepherd the sum of

£ / 15 / 0 in payment of building fee, etc.

on 14/ 9 /62
Date

E. BLUHMDT.
Authorised Officer.

Name of local authority: BAY OF ISLANDS COUNTY COUNCIL

Name of owner: MR. THOMAS T. SHEPHERD.

Address of owner: BOX 100,
KERIKERI.

Name of builder: THOMAS T. SHEPHERD.

Address of builder: BOX 100,
KERIKERI.

Purpose for which building is to be used:
WORKSHOP, GARAGE, NURSERY ROOM.

Permission is hereby granted you to carry out the works as proposed in accordance with the drawings and other documents submitted; such work to be subject at any time during progress to inspection, and to be carried out in strict conformity with all the requirements of the Council bylaws, and subject to taking full responsibility for any damage done to any works such as telephone cables, power cables, water mains, sewers, pipes, footpaths, roads, or other services.

Issuing Officer.

Estimated value of proposed building work:

New houses £

New flats £

State number of flats in block:

Other new buildings £ 200.0.0.

Alterations and additions to houses and flats £

Alterations and additions to all other buildings £

If work valued at £10,000 or more:

Estimated date of commencement of work—Month: Year:

Estimated date of completion of work— Month: Year:

Stats.—B.P. 1A

FORM 4

BUILDING CONSENT NO : BC 961527

(Section 35, Building Act 1991)

Issued by : FAR NORTH DISTRICT COUNCIL

BCDEC

Refer to Project Information Memorandum No: PIM961527

APPLICANT

Name:	LESLIE, NIGEL & BERTHA	Telephone: 407 9181
Mailing Address:	124 KERIKERI ROAD, KERIKERI	
Builder:	MERV BURTON	Telephone: 407 6138
Address:	LANDING ROAD, KERIKERI	
Contact Person:	BERTHA LESLIE	Telephone: 405 0244
Address:	MAIN ROAD, KAEO	

PROJECT

[Y]	New building	Area :	36.00 m²
[N]	Relocated building	Area :	.00 m²
[N]	Alteration	Area :	.00 m²
[N]	Demolition	Area :	.00 m²
[N]	Plumbing/Drainage only		

Intended Use(s) : Single family
Description of work: NEW GARAGE
Intended life:
[Y] Indefinite but not less than 50 years
[ ] Specified as 0 years

PROJECT LOCATION

Street Address : 124 KERIKERI ROAD KERIKERI
Legal Description : LOTS 14 15 DP 41378

Area: .20050 H **Valuation No:** 00430-002-14 Ward: KERIKERI

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the Building Code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act. Please see reverse side for requirements of consents.

This building consent is issued subject to the conditions specified in the attached [illegible] pages headed "Conditions of Building Consent No 961527"

Footing to be 300mm into ground.

Signed by for and on behalf of the Council :

Name : _____

Position : Building/Plumbing Inspector Date : 17 / 4 / 96

FOR COUNCIL USE

The Council's total charges payable on the uplifting of this consent in accordance with the attached details, are : $ 150.00

Building Research Levy : $ _____

Building Industry Authority Levy : $ _____

TOTAL VALUE OF WORK: $ 3600.00

TOTAL : $ 150.00

Date Received: 10.4.96 Receipt No: 852778

BUILDING PERMIT
(Office Copy)

AUTHORITY BAY of ISLANDS COUNTY COUNCIL

Stats. No. F 071055

No. 7871

Receipt No. 56992

Date Permit Issued 6 / 7 / 89

OWNER
Name B. LESLIE

Mailing Address 124 KERIKERI ROAD
KERIKERI

BUILDER
Name M. ALLAN

Mailing Address R.D.
KAEO

BCDEC

PROPERTY ON WHICH BUILDING IS TO BE ERECTED/DEMOLISHED

SITE
Street No.

Street Name KERIKERI ROAD

Town/District KERIKERI

Riding KERIKERI CC

LEGAL DESCRIPTION
Valuation Roll No. 430/2/33

Lot 15 D.P. 41378

Section Block

Survey District

DESCRIPTION OF PROPOSED WORK AND MAIN PURPOSE OF USE
Tunnel House

FLOOR AREA
Whole Sq. Metres 94

DWELLING UNITS
Number Erected

ESTIMATED VALUES $

Building	2200
Plumbing	
Drainage	
G.S.T.	
TOTAL	2200

NATURE OF PERMIT (TICK BOX)
- [ ] NEW BUILDING – exclude domestic garages and domestic outbuildings
- [ ] FOUNDATIONS ONLY
- [ ] ALTERED, REPAIRED, EXTENDED, CONVERTED, RESITED – include installation of heating appliances
- [ ] NEW CONSTRUCTION OTHER THAN BUILDINGS – include demolitions
- [x] DOMESTIC GARAGES AND DOMESTIC OUTBUILDINGS

FEES APPLICABLE

Building Permit	80 –	Water Connection	
Street Damage Deposit			
Building Research Levy			
Plumbing			
Drainage			
Sewer Connection			
Vehicle Crossing Levy		G.S.T.	
M.S. Plumbing		TOTAL:	80 –

Receipt No. 56992

Date of Payment 5 / 7 / 89

Authorised Officer

Special Conditions: (In addition to those noted on reverse):

1. 24 HOURS NOTICE REQUIRED PRIOR TO ANY INSPECTION.

NOTICE TO APPLICANT

PERMISSION IS HEREBY GRANTED YOU to carry out the works as proposed in accordance with the drawings and other documents submitted, and with any conditions defined; such work to be subject to inspection at any time during progress and to be carried out in strict conformity with the requirements of the Council By-Laws.

IMPORTANT – YOU ARE FULLY RESPONSIBLE for any damage done to any works such as telephone cables, power cables, water mains, gas mains, sewers, pipes, footpaths, roads or other services.

BC/MP/01A

BUILDING INSPECTOR'S FIELD SHEET

AUTHORITY

Stats. No. F 071055

BAY OF ISLANDS COUNTY COUNCIL No. 7871.

Inspector: M_____ File No._____

Receipt No. 56992 Date Permit Issued 6/7/89

OWNER

Name B. LESLIE

Mailing Address 124 KERIKERI ROAD
KERIKERI

BUILDER

Name M. ALLAN

Mailing Address R.D.
KAEO

BCAPP

PROPERTY ON WHICH BUILDING IS TO BE ERECTED/DEMOLISHED

SITE

Street No. _____

Street Name KERIKERI ROAD

Town/District KERIKERI

Riding KERIKERI CC

LEGAL DESCRIPTION

Valuation Roll No. 430/2/33

Lot 15 D.P. 41378

Section _____ Block _____

Survey District _____

DESCRIPTION OF PROPOSED WORK AND MAIN PURPOSE OF USE

TUNNEL HOUSE

FLOOR AREA

Whole Sq. Metres 94

DWELLING UNITS

Number Erected _____

ESTIMATED VALUES $

Building	2200
Plumbing	
Drainage	
G.S.T.	
TOTAL	2200

NATURE OF PERMIT (TICK BOX)

- ☐ NEW BUILDING – exclude domestic garages and domestic outbuildings
- ☐ FOUNDATIONS ONLY
- ☐ ALTERED, REPAIRED, EXTENDED, CONVERTED, RESITED – include installation of heating appliances
- ☐ NEW CONSTRUCTION OTHER THAN BUILDINGS – include demolitions
- ☑ DOMESTIC GARAGES AND DOMESTIC OUTBUILDINGS

FEES APPLICABLE

Building Permit	$ 80-	Water Connection	$
Street Damage Deposit	$		$
Building Research Levy	$		$
Plumbing	$		$
Drainage	$		$
Sewer Connection	$		$
Vehicle Crossing Levy	$	G.S.T.	$
M.S. Plumbing	$	TOTAL:	$ 80-

Receipt No. 56992

Date of Payment 5/7/89

Authorised Officer _____

Special Conditions:

1. 24 HOURS NOTICE REQUIRED PRIOR TO ANY INSPECTION.

Date Inspected	REMARKS (e.g. stage reached with work)
5th Dec	Completed

(CONTINUED OVER)

20.12.

6mtr.

Lot 15 DP 41378.

50.29

44.20

14.02

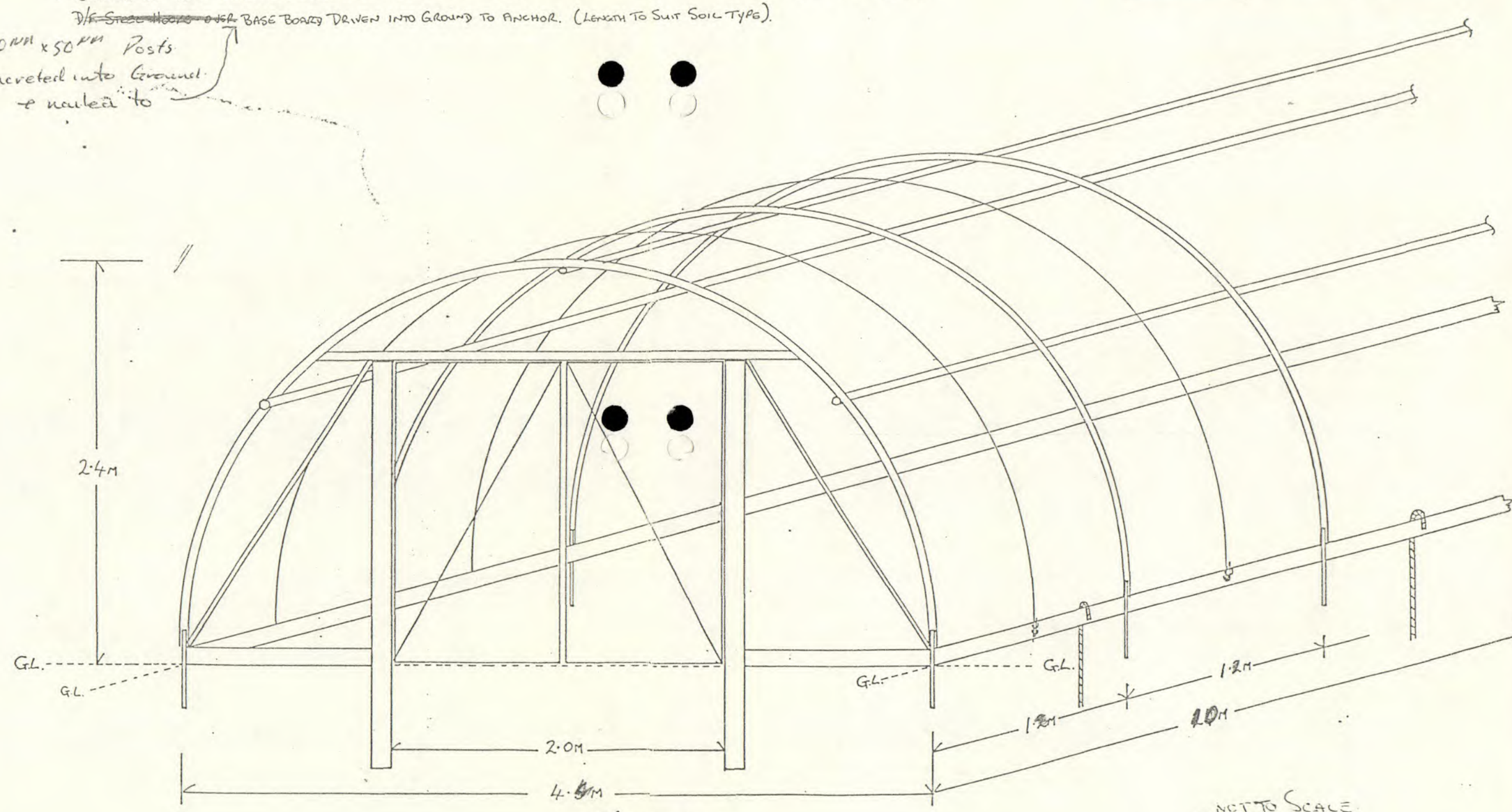
Keri Keri Road.

MATERIALS.

21 HOOPS EACH 7M OF 32MM CLASS D PVC PIPE, ~~FOR RIGIDITY TO~~:- Saddled to Base Board.
~~1.2 - 1.600MM 25MM EACH PIPE PROTRUDING 200MM FROM GROUND~~
3 x HORIZONTAL BRACES OF 32MM CLASS D PVC PIPE WIRED TO HOOPS
100MM x 25MM R/S TAN. BASE BOARD @ G.L. SADDLED TO GALV. PIPE
2 x 2.4M N°2. POSTS AT EACH END
100MM x 50MM R/S TAN. DOOR LINTEL EACH END.
WOODEN FRAMED DOOR AT EACH END.
200MM GREENHOUSE FILM 4M. WIDE CENTRAL OVER PIPE STRUCTURE, LAPPING OVER:- } BATTENED TO WOODEN END FRAMING.
200MM " " 2M " EACH SIDE
STRAPS OF 13MM LATERAL IRRIGATION TUBE CENTRAL BETWEEN PIPE HOOPS., OVER FILM STAPLED TO BASE BOARD
~~D/F STEEL HOOPS OVER~~ BASE BOARD DRIVEN INTO GROUND TO ANCHOR. (LENGTH TO SUIT SOIL TYPE).

APPROVED PERMIT
COUNTY ENGINEERS OFFICE
BAY OF ISLANDS C. COUNCIL

100MM x 50MM Posts
Concreted into Ground
& nailed to

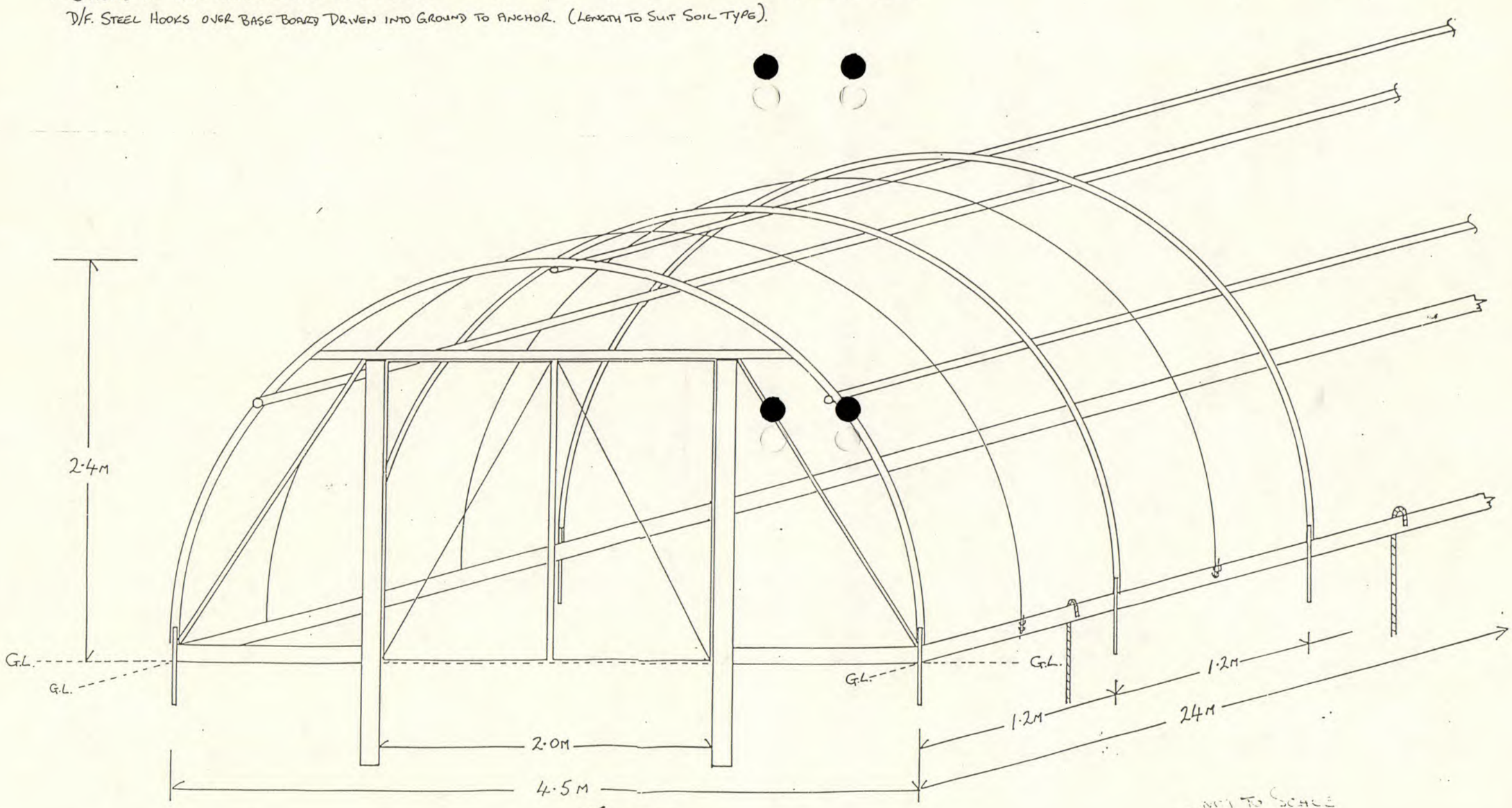


TUNNELHOUSE

NOT TO SCALE
SCALE. 1:20

MATERIALS.

21 HOOPS EACH 7M OF 32MM CLASS D PVC PIPE, POP RIVETTED TO:-
42 x 460MM 25MM GALV. PIPE PROTRUDING 200MM FROM GROUND
3 x HORIZONTAL BRACES OF 32MM CLASS D PVC PIPE WIRED TO HOOPS
100MM x 25MM R/S TAN. BASE BOARD @ G.L. SADDLED TO GALV. PIPE
2 x 2·4M N°2. POSTS AT EACH END
100MM x 50MM R/S TAN. DOOR LINTEL EACH END.
WOODEN FRAMED DOOR AT EACH END.
200MM GREENHOUSE FILM 4M. WIDE CENTRAL OVER PIPE STRUCTURE, LAPPING OVER:- } BATTENED TO WOODEN END FRAMING.
200MM " " 2M " EACH SIDE
STRAPS OF 13MM LATERAL IRRIGATION TUBE CENTRAL BETWEEN PIPE HOOPS., OVER FILM STAPLED TO BASE BOARD
D/F. STEEL HOOKS OVER BASE BOARD DRIVEN INTO GROUND TO ANCHOR. (LENGTH TO SUIT SOIL TYPE).



TUNNELHOUSE

NOT TO SCALE
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44 . 20 .

6 mts.

6 mts.

21 x 4.5 mts.

21 x 4.5 mts.

6 mts.

6 mts.

20 . 12 .

± 71 . 02

Kerikeri Road

N.B & B. Leslie
439/2/33

50 . 29

MAM:cmm bic 7871

Mr McDonald

8th March 1991

N B & B Leslie
124 Kerikeri Road
KERIKERI

Dear Sir,

Re: BP 7871, Tunnel House Application

I refer to the above. Under the Bay of Islands District Planning Scheme Second Review, Tunnel Houses in the Residential 1 Zone are allowed as predominant uses to a maximum coverage of 40m^2 (see enclosed Ordinances).

As your proposal (and existing tunnel house) is in excess of this, it is classified as a conditional use. This requires planning consent before a Building Permit can be issued.

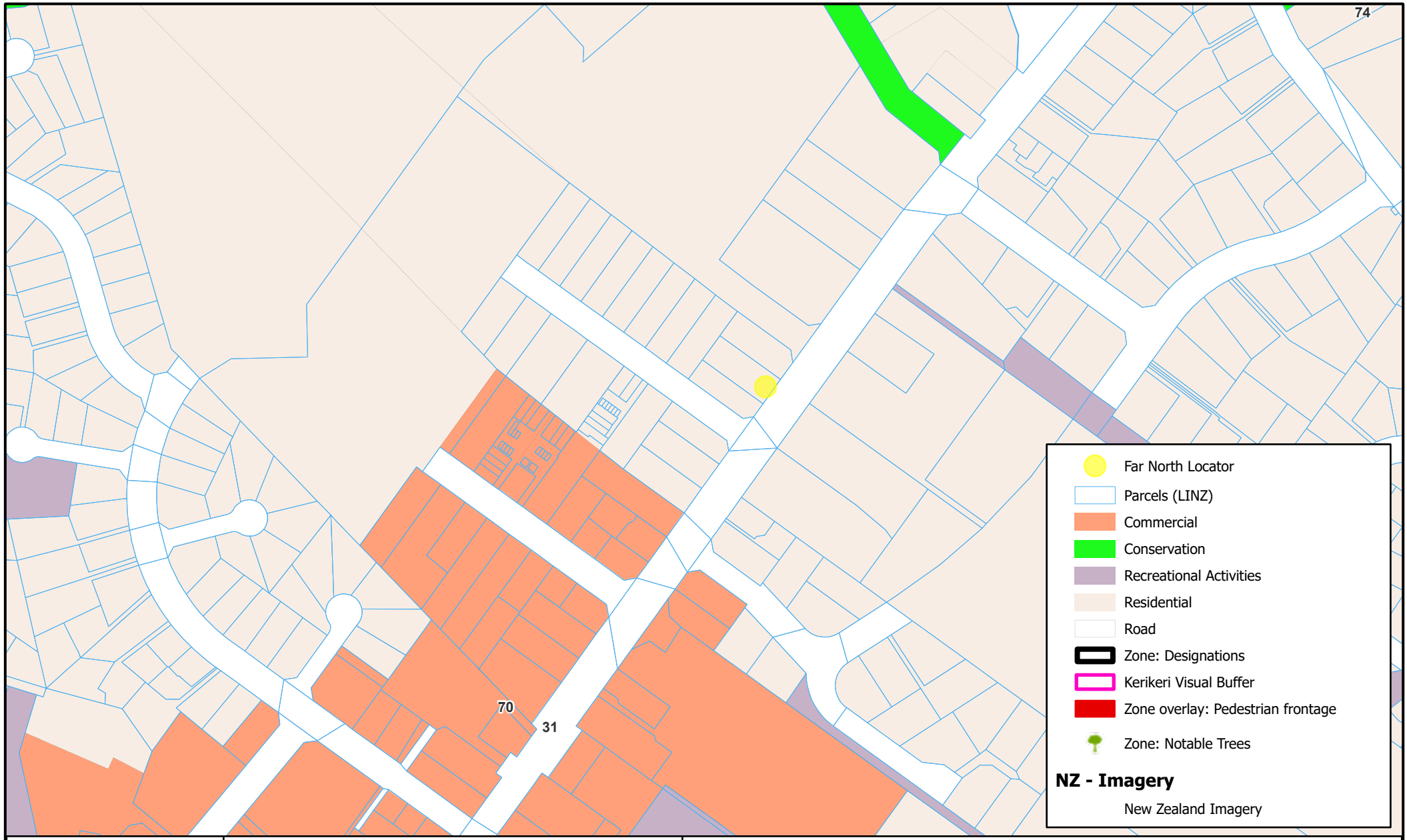
I have enclosed the necessary form and information sheet regarding conditional uses.

Please contact the writer if you need further assistance.

Yours faithfully,

M A McDonald
ASSISTANT PLANNER

MAM\3LESLIE.LET



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

Operative District Plan 2009

0 90 180 270 m

Projection NZTM2000. Datum NZGD2000. Scale:1:3,387

Created: 10/12/2025

Northland REGIONAL COUNCIL

NRC Maps

Projection NZTM. Datum NZTM2000.
DISCLAIMER:
The Northland Regional Council cannot guarantee that the information shown is accurate and should not be reused in any manner without proper consultation with its owner.

N

0 0.010.02 0.04 0.06 0.08 0.1
Kilometers

December 9 2025

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APPENDIX C

Aerial Photographs

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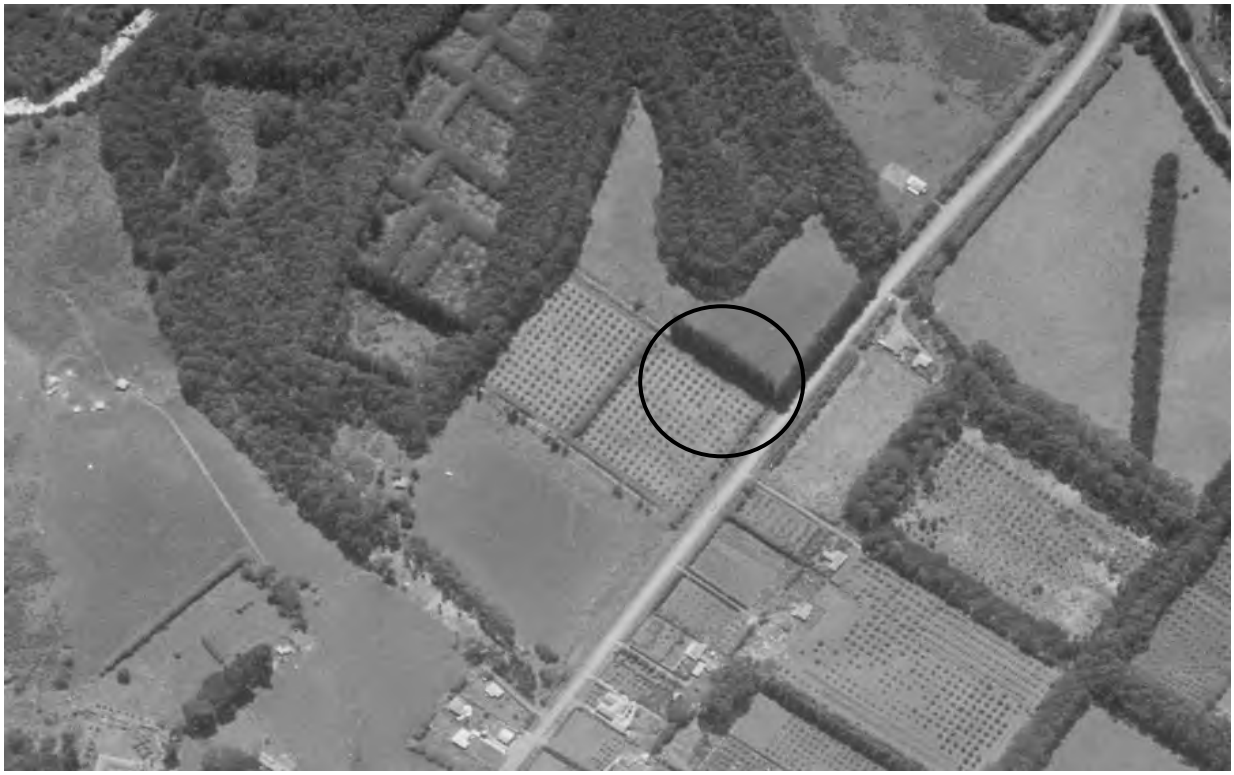
Historical Aerial Photographs

Project: 124-126 Kerikeri Road, Kerikeri
Project no.: C0733N
Figure no.: 1 of 6

1953: Retrolens



1968: Retrolens

geologix consulting engineers	**Historical Aerial Photographs**	**Project: 124-126 Kerikeri Road, Kerikeri** **Project no.: C0733N** **Figure no.: 2 of 6**

1972: Retrolens

1973: Retrolens

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Historical Aerial Photographs

Project: 124-126 Kerikeri Road, Kerikeri
Project no.: C0733N
Figure no.: 3 of 6

1977: Retrolens

1979: Retrolens

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Historical Aerial Photographs

Project: 124-126 Kerikeri Road, Kerikeri
Project no.: C0733N
Figure no.: 4 of 6

1980: Retrolens

1981: Retrolens

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Historical Aerial Photographs

Project: 124-126 Kerikeri Road, Kerikeri
Project no.: C0733N
Figure no.: 5 of 6

2000: FNDC Maps (LINZ Aerial Imagery)

2005-2006: FNDC Maps (LINZ Aerial Imagery)

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Historical Aerial Photographs

Project: 124-126 Kerikeri Road, Kerikeri
Project no.: C0733N
Figure no.: 6 of 6

2014-2016: FNDC Maps (LINZ Aerial Imagery)

2023-2025: FNDC Maps (LINZ Aerial Imagery)

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STATEMENT OF QUALIFICATION

I Edward John Collings of Geologix Consulting Engineers Ltd certify that:

1. This combined Preliminary and Detailed Site Investigation meets the requirements of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the NES:CS) because it has been:

    a. Prepared and certified by a suitably qualified and experienced practitioner registered under the Certified Environmental Practitioner Scheme (Registration Number 0861) and Engineering New Zealand Chartered Professional Engineer (Registration Number 1033153).

    b. The SQEP has over 17 years post graduate experiencing practicing as an environmental consultant with a tertiary education qualification equivalent to a Master of Science with supporting evidence from Engineering New Zealand that the Consultant has equivalent knowledge to Washington Accord equivalence.

    c. Reported on in accordance with the current edition of Contaminated Land Management Guidelines No. 1 – Reporting on contaminated sites in New Zealand, 2021.

This investigation concludes that the NES:CS regulation 11 is applicable and the activity of subdivision is considered as a discretionary activity.

Evidence of the qualification and experience of the suitably qualified and experienced practitioner is available upon request.

Signed: 

Dated: 13 January 2026

Role	Name	Relevant Experience
Project Manager	**Ray Mayor** Unitec New Zealand, 2010, Bachelor of Engineering (Environmental) Unitec New Zealand, 2007, Diploma in Environmental Technology	Ray is a Senior Environmental Consultant with more than 15 years' experience on contaminated sites. His project experience includes conducting site assessments, compliance monitoring, managing environmental risk and remediation across numerous sites including residential, industrial and commercial developments as well as New Zealand Defence Force sites.
Senior Technical Reviewer	**Edward Collings** MPhys (Hons) Physical Geography Certified Environmental Practitioner Chartered Professional Engineer	Edward is a Principal Engineer and Managing Director with more than 16 years' experience on geotechnical design and contaminated land remediation on a variety of residential, commercial and critical infrastructure projects in the UK and New Zealand. Edward attained recognition as a Certified Environmental Practitioner in 2016 in Australia and New Zealand with specialist knowledge in contaminated land and groundwater remediation and wastewater design. In recent years Edward has provided professional engineering assessments for prospective candidates to the scheme.

Appendix 8

Site Management Plan

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SITE MANAGEMENT PLAN

124-126 KERIKERI ROAD, KERIKERI

OC1 HOLDCO LIMITED

C0733N-E-02
JANUARY 2026
REVISION 1

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DOCUMENT MANAGEMENT

Document Title	Site Management Plan
Site Reference	124-126 Kerikeri Road, Kerikeri
Client	OC1 HoldCo Limited
Geologix Reference	C0733N-E-02
Issue Date	13 January 2026
Revision	01
Prepared by	Ray Mayor Senior Environmental Consultant, BEng (Env), DipEnvTech
Approved by	Edward Collings Managing Director, CEnvP, CPEng, CMEngNZ, MPhys (Hons)
File Reference	*Z:\Projects\C0700-C0799\C0733N - 124 & 126 Kerikeri Road, Kerikeri\06 - Reports\SMP\C0733N-E-02.docx*

REVISION HISTORY

Date	Issue	Prepared by	Approved by
January 2026	First Issue	RM	EC

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FIGURES

TABLES

1 INTRODUCTION

This Site Management Plan (SMP) has been prepared by Geologix Consulting Engineers Ltd (Geologix) for Thomson Survey Limited on behalf of OC1 HoldCo Limited (the 'Client'), in accordance with our standard short form agreement and general terms and conditions of engagement.

This SMP has been prepared based on the information from the Geologix Preliminary Site Investigation (PSI) (Geologix, January 2026), and in accordance with the requirements of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES:CS, 2011).

According to the requirements of the Health and Safety at Work Act (HSWA) (Ministry of Business, Innovation, and Employment, 2015), it is the responsibility of the persons conducting a business or undertaking (PCBU) and/ or designated representative to communicate to personnel undertaking work on the site, the nature and extent of the contamination (if any), associated hazards and recommended management practices. This SMP is intended to support this process, however, does not relieve the PCBU and/ or designated representative's responsibility for the health and safety of onsite personnel.

As specified by the NES:CS, this document has been completed and approved by suitably qualified and experienced practitioners (SQEPs).

This SMP should be read in conjunction with the sites PSI report.

1.1 Purpose of this plan

The purpose of this report is to assist with the proposed residential subdivision activities (i.e., six-lot subdivision) and associated resource consent application for the residential property located at 124-126 Kerikeri Road, Kerikeri (herein referred to as the 'site'). Specifically, this SMP provides site management procedures regarding soil disturbance activities occurring within the 'piece of land' area, in accordance with industry practices to control/ manage potential health, safety and environmental risks during the proposed works.

In lieu of undertaking a DSI, a discretionary activity is being applied for which requires the piece of land area to be deemed as potentially contaminated until proven otherwise. This document may be reviewed and/or revised if a DSI is undertaken prior to soil disturbance activities.

2 RESPONSIBILITIES AND DOCUMENT CONTROL INFORMATION

OC1 HoldCo Limited as the PCBU will be or will appoint a contractor responsible for implementation of all aspects of this SMP. OC1 HoldCo Limited will also appoint a SQEP to manage any site validation works (if any) and/ or reporting. OC1 HoldCo Limited shall advise the Far North District Council (FNDC) on any change of contractor and/ or SQEP.

OC1 HoldCo Limited appointed representative shall be authorised to enact emergency and contingency measures without delay. If an incident occurs onsite that may result in

discharges to the environment, the appointed representative shall take control of the incident and co-ordinate the efforts of all onsite personnel to minimise the impacts to the site and surrounding area. Should the incident have serious health and safety implications, this management role will be secondary to the procedures detailed within the project Health and Safety Plan (HSP) to be prepared by the contractor.

A summary of relevant organisations (to be updated) and their responsibilities where likely to be involved with soil disturbing activities, unexpected discoveries related to potential contamination and emergencies are provided in Table 1 below.

Table 1: Project Roles and Responsibilities

Organisation	Role	Responsibilities	Contacts
OC1 HoldCo Limited	Consent Holder and PCBU	• Implementation of SMP. • Compliance with Consent conditions. • Takes on role of Persons Conducting Business or Undertaking works (PCBU)[1].	Joshua Lodge +61 466 166 467
FNDC	Consent Authority	• Review of all documentation. • Issue consent and associated conditions. • Monitoring and compliance.	0800 920 029
TBC	Contractor/ Sub-contractor(s)	• Undertaking works in accordance with this SMP and other environmental documents. • Provision of a dedicated site manager. • Organisation of contaminated land pre-work testing and site monitoring with Geologix.	TBC
Geologix Consulting Engineers Ltd	SQEP/ Contaminated Land Specialist	• Providing updates to this live document. • Construction monitoring and validation work (if required). • Preparation of a Site Completion Report and any other contaminated land sign-off as required by consent conditions.	Ray Mayor 022 039 1656
New Zealand Fire and Ambulance Service			111
National Poisons and Hazardous Chemicals Information Hotline			0800 764 766
WorkSafe New Zealand			0800 030 040

1. *PCBU responsibilities may be assigned to the contractor/ sub-contractor(s) with prior written agreement by all parties.*

2.1 Document Control

A current copy of this SMP must be kept onsite at all times. It is the responsibility of the Client to distribute the SMP to all contractors carrying out any land disturbance activities on the site.

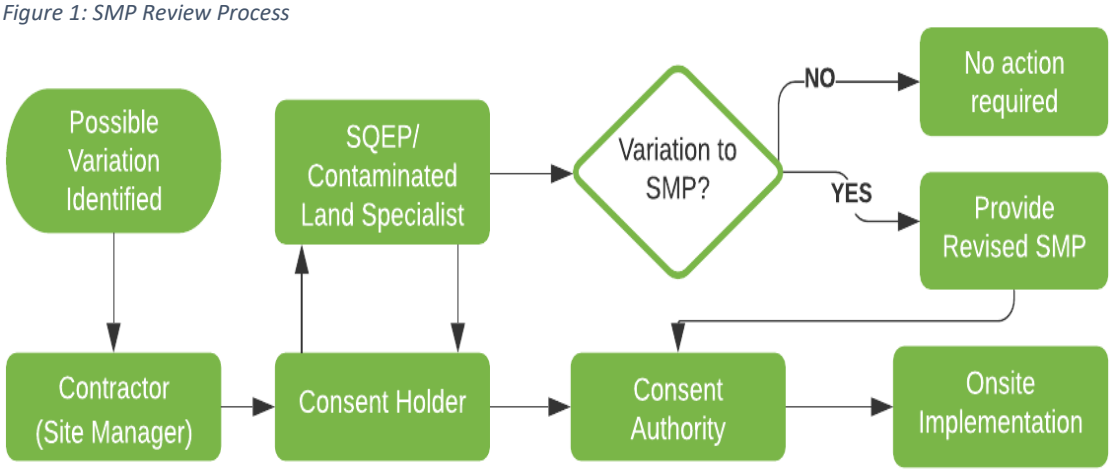
This document shall be treated as a 'live' document and be reviewed periodically when new or revised information comes available. Updates to this document shall be undertaken by the

SQEP and provided to Council for approval prior to continuing works. Variations to this document should be account for as good practice in project timescales. Variations are not limited to, but may be commonly triggered by the following:

- Discovery of unexpected contamination, i.e., visual, or olfactory evidence either during pre-work investigation or during mobilisation or enabling works.
- Contamination incidents occurring during works, i.e., unexpected asbestos or hazardous material discharge, hydrocarbon spillage etc.
- Changes in the architectural concept, drawings, specification, or general scope of works.

Outside of the above, Geologix should be consulted as to whether a variation to this document is required. The variation of this document will be through a notification and approval process as outlined in Figure 1.

Figure 1: SMP Review Process



3 SITE INFORMATION AND PROJECT DESCRIPTION

3.1 Site Identification

The site is located at 124-126 Kerikeri Road, Kerikeri, on the north-western side of Kerikeri Road, approximately 147 m north of the Kerikeri Road and Clark Road intersection. Details of the site are listed in Table 2 below.

Table 2: Site Details

Address	Zone	Legal Description	Area (m^2)
124-126 Kerikeri Road, Kerikeri	Residential	Lot 14 and 15 DP 41378	981 m^2

The site is relatively flat, rectangular in shape and is bound by Kerikeri Road to the south-east, residential land to the south-west and north-west, and commercial land (i.e., Woodlands Motel site access) to the north-east.

The site setting is presented in Figure 2 below with the centre of the site approximately at geographical position NZTM: 1686571, 6101698.

Figure 2: Site Setting

3.2 Summary of Proposed Works

At the time of writing this report, the site is proposed for a six-lot subdivision including the removal of the existing residential dwelling. Soil disturbance is proposed to construct a new Right of Way within the central portion of the site to provide access to the new lots, and earthworks (where required) to form building platforms. The proposed subdivision plan (Thomson Survey Limited, dated 1 December2025) can be found in Appendix A.

3.3 Previous Investigations

3.3.1 Preliminary Site investigation

An investigation (PSI) was completed by Geologix in January 2026 to support the proposed six lot residential subdivision activities and associated resource consent application of the residential property located at 124-126 Kerikeri Road, Kerikeri.

A review of available background information confirmed that prior to the construction of the residential dwelling within Lot 14 circa 1960, the property was a mix of undeveloped land (grassed) and horticultural land use (predominantly Lot 14). The majority of the site was then used for residential purposes from circa 1960 to date, with a portion of the site (i.e., north-

western portion of Lot 15) for small scale horticultural use (i.e., greenhouse/ tunnel houses) from circa 1989 until the early 2000s.

Therefore, a large portion of the property ('piece of land', Appendix B) has potentially been subject to a HAIL activity, HAIL category A10; persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds, therefore, the NES:CS applies (i.e., to the 'piece of land' area only).

Based on the available information and the findings of the investigation, the NES:CS will apply for subdivision activities associated with the proposed residential subdivision regarding contaminated land, therefore, it was considered that consent will be required as a discretionary activity under the NES:CS and in addition, considered as a permitted activity under the proposed Northland Regional Plan. Noting this may be reduced to controlled or restricted discretionary activity with a DSI provided.

The investigation was undertaken to support the proposed residential subdivision only, therefore, any proposed future redevelopment (including soil disturbance) and/ or change of use may require further investigation.

Due to the potential HAIL activity identified on a large portion of the site (refer to Appendix B) and no soil analytical data available at this time, it was recommended that a DSI be undertaken (to confirm/ determine CoC concentrations within site soils) to support the consenting process and any future soil disturbance activities most likely to be required.

3.4 Summary of Actual or Expected Contamination

Based on the previous investigation undertaken by Geologix, and from our experience, it is expected that contaminants of concern (CoC) (if any) would typically be contained within the topsoil/ shallow site soils within the potential HAIL area ('piece of land' as indicated in Appendix B) and may include heavy metals and organochlorine pesticides (OCPs).

No soil analytical data/ contaminant concentrations are yet available for the site, therefore, currently a low to medium risk can be applied to long-term human health exposure to the continued use of the site for residential land purposes depending on the activity (i.e., low risk for subdivision, medium risk for soil disturbance).

4 SITE CONTROL AND ENVIRONMENTAL MANAGMENT PROCEDURES

The procedures provided in this SMP must be implemented by the PCBU and abided by during all proposed soil disturbance activities. The proposed subdivision will involve soil disturbance and excavation during the development phase of works. Due to the existing HAIL activities identified within the site boundaries (i.e., horticulture), the following management procedures have been developed to assist with managing potential environmental and human health risks associated with soil disturbance activities at the site.

It should be noted that the site control procedures described below provides a foundation for managing potential contamination related effects at the site. These controls are not intended to relieve the PCBU or contractor(s) of the place of works of their responsibilities

for the health and safety of site personnel, subcontractors, or their responsibility to protect the public and the environment.

4.1 Prior to Soil Disturbing Activities.

Prior to any soil disturbing activities being undertaken on site, the client may choose to reduce project risks by undertaking a soil sampling investigation in accordance with CLMG No. 5 to confirm contaminant levels. This would assist in determining any additional management and disposal requirements (if any) during soil disturbing activities. Results of the investigation can either be provided in the works completion report (refer to Section 4.13) or can be used to produce a DSI report where/ if required.

Additionally, due to the 'piece of land' area identified (refer to Appendix B) and without available soil analytical data confirming contaminant levels, a notice may be placed on each new lot title by Council indicating potentially contaminated land. Should soil testing be undertaking confirming contaminant levels are below human health guidelines, then the need for this notice to be placed on the title of each new lot could be reviewed and/ or this information can be passed on to any future potential purchaser as part of their due diligence process.

4.2 Works Notifications

Relevant regional and territorial councils are usually required to be notified prior to soil disturbance activities commencing. Consent requirements should be confirmed with Council prior to works commencing.

4.3 Site Set-up

It is expected that soil disturbing activities will be required to create level building platforms and associated accessways and installation of services. The following procedures are recommended prior to works commencing:

- Preparation of additional documentation required such as the contractor's Health and Safety Plan.
- Establishment of security fencing to prevent unauthorised access to the site (where required).
- Signage, including site works information, health and safety requirements and site reporting requirements.
- Establishment of appropriate sediment and erosion control measures (where required).
- Establishment of stormwater and surface water runoff diversion and collection systems and silt control measures (where required).
- Establishment of dust control systems (if required).

- Establishment of appropriate stockpiling and loading areas (where required).
- Ensure all site personnel have and/ or issued with appropriate Personal Protective Equipment (PPE) (refer to Section 5.5).

4.4 Site Access and Signage

The most suitable method of preventing unauthorised access is a physical barrier between the site works area and third parties, therefore, prior to mobilisation of plant, temporary boundary fencing (or similar) will be established prior to the start of works to prevent third party access including any neighbouring land users.

Authorised personnel only shall be allowed to enter the site. All persons entering the site is required to sign in and out and will be briefed on all health and safety requirements including the applicable requirements of this SMP. The site shall be kept locked outside of working hours.

Construction access to the site shall be via a stabilised construction entrance and designated vehicle circulation areas (if any). This access shall be maintained in a clean manner for the duration of the works. Construction and service vehicles will be confined to sealed or aggregate – stabilised surfaces wherever possible.

Clear signage will be erected at the site entrance identifying contact details for the appointed contractor and site contacts.

4.5 Erosion and Sediment Control Measures

Erosion and sediment controls measures shall be put in place (where required) to ensure the generation of potentially contaminated sediment and stormwater is minimised and managed.

Sediment controls will be undertaken in accordance with industry best practice and the Auckland Regional Council Technical Publication, GD05 - Erosion and Sediment Control Guidelines for Land Disturbing Activities (used by the FNDC). GD05 is a document that provides technical guidance for the selection, design, and use of erosion and sediment control practices and measures for land disturbing activities.

Erosion and sediment controls will be adequate to ensure that contaminated soil and or stormwater does not travel offsite. Daily inspections of erosion and sediment controls and the overall stormwater system will be conducted. Additional inspections will also be conducted following each rainfall event. If the erosion and sediment control system has been breached, the offsite sediment will be immediately cleaned and managed as potentially contaminated soil.

Any sediment and/ or stormwater collected by erosion and sediment control devices shall be considered contaminated, to be disposed of at a suitable facility unless analytical testing proves otherwise.

4.6 Dust Control Measures

Dust must be managed during earthworks to ensure that it generally complies with the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions, MfE (2001). Dust generated from any proposed soil disturbing activities has the potential to contain contaminants that could migrate offsite during windy conditions. To manage/ control the potential generation of dust, the Contractor will ensure the following:

- Excavation of soils in windy conditions is avoided.
- Vehicle access onto the works area is limited.
- Stockpiled material is covered as outlined in Section 4.9.
- A water truck and/ or portable water sprays are available used in trafficked areas to dampen exposed soil during dry and windy conditions. When utilising water to control dust, the contractor will ensure that:

The volume of water used does not exceed soil field capacity of the wetted areas causing surface run-off that could discharge in stormwater systems or other waterways.

The application of water does not induce soil erosion and/ or soil pugging.

4.7 Noise Control Measures

All works shall be undertaken in accordance with the rules outlined in the Far North District Plan Chapter 7.6.5.1.15.

Construction noise shall meet the limits recommended in accordance with, NZS 6803P:1984 "The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work".

4.8 Earthworks/ Handling of Spoil

The Contractor shall apply the following general handling procedures when handling and disposing of all spoil materials during soil disturbing activities.

- Installation of a stabilised entrance (where required) to restrict transportation of soils to on site vehicles.
- Suitable measures shall be implemented to prevent the deposition of earth and other construction materials onto the surrounding roads by vehicles accessing the site. These measures will be in the form of a hose and cleaning pad, in a specified location within the site. If any material is deposited on the road, action shall be taken to clean the road immediately. All loading activities during soil disturbing activities will be confined to the subject site.
- Where possible, excavated materials shall be loaded/ placed directly onto trucks for off-

site disposal, located adjacent to excavation areas within the site where runoff and possible spills during loading will be controlled and contained. However, if direct loading is not possible and stockpiling is required, it will be managed by the Contractor as per Section 4.9.

- Where required, prior to trucks/ site vehicles exiting the site, the vehicle(s) shall have their wheels swept down before they leave site in accordance with site decontamination procedures (Section 5.7).

- Each truck will have a tracking document signed onsite and collected at the receiving facility to track each load of material. Written approval shall be obtained by the contractor from the disposal destination prior to transportation. The contractor is responsible for obtaining this approval.

- Trucks shall have their loads covered by tarpaulins (or similar) during the transport of material to the approved disposal site to avoid dust emissions.

4.9 Stockpiling of Excavated Soil

If excavated soils from site is required to be stockpiled onsite prior to offsite disposal/ reuse, the stockpiled material will be managed by the contractor as follows:

- Locate stockpile areas as far as practicable from nearby receptors (if any) and frequently populated areas on neighbouring sites.

- Temporarily stockpiled material shall be placed in an appropriate containment area, which includes a soil bund.

- The stockpile, when material is not being added or removed to prevent erosion and dust generation, shall be compacted with the back of an excavator bucket to minimise infiltration from rainwater and covered. Covers will comprise of HDPE (or similar) and be appropriately secured against the weather.

4.10 Disposal of Excavated Material

All excess soil requiring removal off site will be disposed offsite at a licensed landfill permitted to accept the level of contamination identified. If immediate disposal of excavated material from the site is not possible, the material may be stockpiled onsite in accordance with Section 4.9.

Suitable tracking documentation for all material taken offsite, including weighbridge tonnage, will be provided to the project manager for recording purposes and made available to Council upon request. Copies will also be made available to the SQEP for inclusion in a site completion report (SCR, refer to Section 4.13) within seven days of requesting such information.

As previously mentioned, prior to removal of any soil from the site, arrangements must be made with the landfill selected to accept the soil requiring offsite disposal and permission to

transport and dispose of the soil acquired. The disposal facility may request further analysis to be undertaken and or TCLP analysis to be performed. This is all dependant on the disposal facilities acceptance criteria, disposal requirements and/ or at the discretion of the disposal facility.

4.11 Importation of Fill

Any imported material must meet the definition of cleanfill as defined by AUP Chapter J1.4. Imported fill must be certified as free from contamination prior to being transported to the site. Certification and/ or analysis dockets from the clean-fill supplier must be obtained certifying that the fill meets the MfE's definition of clean-fill, as described in MfE, *A Guide to the Management of Cleanfills*, 2002.

If soil require testing prior to importation, it shall be sampled at a rate of one sample per 100 m^2 or for stockpiled material, one sample per 500 m^3 (using standard stockpile sampling techniques) and tested to confirm it complies with the background range for soils in the northland region sourced from the Land Resource Information Systems (LRIS) portal.

4.12 Unexpected Contamination Discovery Protocols

Not expected, however, during soil disturbance activities and if potential contamination is discovered such as general refuse, burnt material, soil discolouration and/ or staining, odours and/ or odorous material, fibrous material (potential asbestos containing material) and perched groundwater (which may indicate possible contamination), immediate steps will be undertaken in the first instance and the discovery reported to the SQEP and Consent Holder.

1. All works including ground disturbance and/ or interaction ceased within a 5 m radius of the suspected contamination.

2. Install temporary fencing and signs around the suspected contamination.

3. Notify the site manager, consent holder and SQEP.

4. Implement specific health and safety procedures commensurate to the suspected contamination type as outlined in this SMP.

5. SQEP to further investigate and advise suitable handling, management, disposal, or mitigation. If required, provide an update to this SMP to be issued to all parties.

6. Consent Authority to be notified of any unexpected contamination by the Consent Holder or appointed PCBU.

7. Implementation of the required protocols by the Contractor and validation by SQEP.

In general, works shall not commence within the designated radius unless authorised by the SQEP and with specific control measures in place. To prevent delays and for works to continue, with approval of the SQEP small areas of suspected contamination may be excavated and placed in a covered bin for further investigation.

In addition, where soil sampling is required, the following will be undertaken:

Sample numbers will be determined based on the size of the excavation and/ or site observations by the SQEP; however, the following sampling method is provided for guidance:

- Sample collection and laboratory analysis of one sample per 25 m^2 excavation base/ exposed surface and one sample per 10 linear meters of sidewall (excavations only) where possible. Noting that sampling of sidewalls is not required where excavation has been cut to the site boundary.

- For small soil management excavation areas, the minimum number of laboratory samples to be collected shall be two samples per excavation base and, one sample per sidewall (no greater than 10 linear meters).

- Samples shall be tested for contaminants of concern determined by the SQEP based onsite observations and/ or material type.

- Soil samples will be assessed against the relevant guidelines in accordance with the MfE's CLMG No. 2, for high-density residential land use.

Note that prior to the removal of any unexpected contamination offsite, soil testing will be required to determine disposal requirements. Material will require disposed offsite at a licensed landfill permitted to accept the level of contamination identified (refer to Section 4.10).

4.13 Works Completion Reporting

Following the completion of all soil disturbance activities and any remediation works completed to remove any unexpected contaminated soil from the site (if any), a SCR (or similar) will be prepared in general accordance with the MfE's CLMG No.1 and any relevant consent conditions. The SCR will be supplied to the consenting authority and will include but not limited to, a summary of the works undertaken, the results of any analysis undertaken (if any), any Contractor records as outlined below and the SCR will confirm that the methods outlined in the SMP were enforced for the period of the soil disturbance works, and that the measures were successful in ensuring any potential risks were adequately managed.

Typically, the SCR is required to be completed and issued to the consenting authority within three months following all soil disturbance activities.

4.13.1 Contractor Requirements

The Contractor shall retain all waste transfer notes, record of inspections, imported fill receipts and any contaminated land health and safety incidents. This information will be supplied to the SQEP (when requested) within 7 days from completion of all soil disturbance works.

5 HEALTH AND SAFETY PROTECTION MEASURES

Health and safety measures to protect workers and third parties which may interact with the site are the responsibility of the Consent Holder as PCBU unless responsibilities are passed to the Contractor with agreement in writing from both parties. Principally, health and safety in relation to anticipated contamination at the site is controlled by the Health and Safety at Work Act 2015.

Potential health and safety hazards associated with the potentially contaminated material onsite have been identified and mitigation measures identified in order to assist with the development of an appropriate Site-Specific Health and Safety Plan (SSSP). The actual risks have not been fully quantified. In the event of the discovery of unknown contamination, potential hazards along with their management and mitigation options will be revised. It is the responsibility of the contractor to implement these health and safety procedures.

5.1 Identification and Management of Hazards

During earthworks and based on our understanding of environmental ground conditions at the time of writing this document, risks in relation to contaminated land may be present to construction workers and with limited risk (if any) to adjacent land users or third parties. The following contaminated land related hazards may be encountered during the works if contaminated soil is encountered:

- Dermal skin contact with contaminated soil or groundwater.
- Inhalation of contaminated dust and fibres.
- Ingestion of contaminated soil or groundwater.

Additional undetermined hazards may be identified during works. The hazards identified above will be managed through the wearing of appropriate personal protective equipment (PPE) and the procedures outlined in Sections 5.2 and 5.5. The primary hazard management method is minimising the exposure to contaminated soils (if any) during works. Maintenance of earthworks controls (Section 4) is a key component of hazard management.

5.2 Hazard Minimisation Measures

The following measures to minimise hazards in relation to contaminated soils will be implemented by the contractor:

- It is expected that contact with potentially contaminated material will be minimal as the excavations are proposed to be undertaken using machinery. However, any worker that is required to manually handle any soils will be required to wear disposable gloves.
- Maintain good hygiene practices, including:
    - Avoid hand to mouth and hand to face contact during work with contaminated soils.

- No eating, drinking or smoking in soil disturbance works areas to prevent contaminated soil contacting food or being ingested directly through soiled hands.
- Protective gloves shall be used when directly handling contaminated soils and ensure disposing of the gloves that have contacted contaminated material.
- Washed hands and face before eating, drinking and smoking.
- Wash boots if contaminated soil has been contacted.

- Dust controls, according to the procedures set out in Section 4.6.

5.3 Site-Specific Safety Plan

Prior to mobilisation and for approval of the consent authority, the Contractor shall develop and issue a Site-Specific Health and Safety Plan (SSSP) for the proposed works. The SSSP will be documented and implemented by the contractor in accordance with the requirements of the Health and Safety at Work Act (2015), its amendments and any other applicable legislation, regulations, codes and guidelines. The SSSP will address all potential hazards associated with the proposed works, including those relating to potentially contaminated material. The health and safety procedures described in this section of the SMP shall be implemented by the contractor, in addition to those covered by their own SSSP.

A copy of the SSSP will be circulated to all parties outlined in Section 2 of this document. Key points of the SSSP will be relayed to all staff and visitors in the formal site induction. All site personnel will be required to review the SSSP and shall be made aware of the perceived health and safety risks as well as environmental management procedures.

Appropriate emergency procedures including routes to the nearest emergency department, emergency contact details, spill response measures and details of on-site first aid materials must be established prior to site mobilisation. The appointed contractor is responsible for detailing these procedures.

5.4 Training

The PCBU is responsible for ensuring all their contractors, sub-contractors or third parties interacting with the site are aware of the hazards presented by the site works, provide specific training according to the SSSP, be aware of the roles and responsibilities, decontamination procedures and the contents of this report.

Typically, a formal induction is required prior to anyone working on the site which shall be undertaken by the PCBU, or contractor(s) and a formal induction register will be held on site for inspection.

5.5 Personal Protective Equipment

There is a relatively low likelihood of encountering significant contamination during site development works that has the potential to impact on the health and safety of site

personnel. In general, health and safety practice hazard mitigation and elimination is preferred with PPE considered a last option.

If unexpected contamination is discovered, the PPE requirements will be reviewed accordingly. As a minimum, the following PPE will be mandatory for all personnel involved in ground disturbance activities where the potential for direct and/ or accidental contact with contaminated materials exists:

The following PPE measures outlined in Table 3 below are to remain applicable until the SQEP confirms the risk from contamination has been neutralised or controlled appropriately. Typically, this is when validation sample analysis confirms residual soils meet targets such as clean fill status.

Table 3: Minimum PPE Requirements

Activity/ Hazard	PPE Minimum Requirement
General site works	• Safety footwear. • Hard hat. • High visibility vest. • Safety glasses (where required). • Dust masks (where required). • Hearing protection (where required). • Disposable gloves – when directly handling soils only.

5.6 First Aid

First aid kits and a nominated first aider shall be in attendance throughout the proposed works. The location of first aid kits shall be clearly marked and advised to all staff and visitors during the site induction.

5.7 Decontamination Measures

If unexpected contamination is encountered, the following procedures may be required.

Where required, decontamination of personnel and portable equipment shall be carried out to reduce environmental, health and safety risks, and limit the migration of contaminants around the site and off-site.

All equipment that has come in direct contact with contaminated soils (including earthmoving equipment) shall be decontaminated prior to leaving the work area. This shall consist of removing any soil and dust by wiping and/ or washing down as appropriate. Following decontamination of equipment, all personnel will undergo personal decontamination comprising the following:

- Clean all PPE that has come in direct contact with contaminated soils to remove any dirt and dust residues.

- Removal of all PPE with disposable items such as gloves, Tyvek suits (if worn) and dust

masks (if worn).

- Disposable items shall be placed in a suitable container on-site for removal to an appropriate disposal facility.

- Thoroughly wash hands and face with soap and water.

Note that all personnel will be required to complete the personal decontamination procedures whenever they leave the work area. Should site personnel come in direct contact with any contaminated soil or groundwater (e.g., because of damaged PPE), decontamination should be undertaken immediately.

5.8 Complaint Management

Any complaints will be managed in an appropriate manner; immediate action should be taken to investigate and evaluate each complaint and where necessary mitigate and rectify the problem. A record of all complaints is to be kept on file and any copies to be included in the SCR (refer to Section 4.13).

6 LIMITATIONS

This report has been prepared for OC1 HoldCo Limited as our Client. It may be relied upon by our Client and their appointed Consultants, Contractors and for the purpose of Consent as outlined by the specific objectives in this report. This report and associated recommendations, conclusions or intellectual property is not to be relied upon by any other party for any purpose unless agreed in writing by Geologix Consulting Engineers Ltd and our Client. In any case the reliance by any other party for any other purpose shall be at such parties' sole risk and no reliability is provide by Geologix Consulting Engineers Ltd.

The opinions and recommendations of this report are based on plans, specifications and reports provided to us at the time of writing, as referenced. Any changes, additions or amendments to the project scope and referenced documents may require an amendment to this report and Geologix Consulting Engineers should be consulted. Geologix Consulting Engineers Ltd reserve the right to review this plan.

7 REFERENCES

Geologix (January 2026). Preliminary Site Investigation, 124-126 Kerikeri Road, Kerikeri. REF: C0733N-E-01.

Ministry for the Environment (2001). Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions.

Ministry for the Environment (revised 2021). Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand. Wellington, New Zealand.

Ministry for the Environment (revised 2011). Contaminated Land Management Guidelines No. 2: Hierarchy and Application in New Zealand of Environmental Guideline Values. Wellington, New Zealand.

Ministry for the Environment (revised 2021). Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils. Wellington, New Zealand

Ministry for the Environment (2011). National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Wellington, New Zealand.

Ministry for the Environment (2011). NES User's Guide, National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Wellington, New Zealand.

Ministry of Business, Innovation, and Employment (2015). Health and Safety at Work Act. Wellington, New Zealand.

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APPENDIX A

Proposed Subdivision Plans

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	Ⓐ	LOT 1 HEREON	LOTS 2 - 6 HEREON
	Ⓑ	LOT 2 HEREON	LOTS 3, 5 & 6 HEREON
	Ⓒ	LOT 4 HEREON	LOTS 1 - 3, 5 & 6 HEREON
	Ⓓ	LOT 5 HEREON	LOTS 2, 3 & 6 HEREON

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA46C/261 & NA46C/262
Total Area: 2006m²
Zoning: Residential
Resource features: NIL

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360
www.tsurvey.co.nz
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOTS 14 & 15 DP 41378

124 & 126 KERIKERI ROAD, KERIKERI

PREPARED FOR: J. LODGE

	Name	Date
Survey		
Design		
Drawn	KY	26.11.25
Approved		
Rev	KY	01.12.25

ORIGINAL
SCALE 1:400
SHEET SIZE A3

10864 Scheme 20251201

Surveyors Ref. No: 10864

Sheet 1 of 1

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APPENDIX B

Selected PSI Information

LEGEND

Estimated 'piece of land' area (approximately 1,500 m²)

Basemap source, courtesy of NRC Local Maps.

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DRAWN: RM	PROJECT: C0733N, 124-126 KERIKERI ROAD, KERIKERI						STATUS: FINAL	
VERIFIED: RM		0	05/01/26	FIRST ISSUE - RESOURCE CONSENT	RM	EC	DRAWING TITLE: ENVIRONMENTAL SITE PLAN	
APPROVED: EC	CLIENT: OC1 HOLDCO LIMITED	REV	DATE	REVISION DETAILS	BY	APP	DRAWING NUMBER: 700	SCALE: NTS

STATEMENT OF QUALIFICATION

I Edward John Collings of Geologix Consulting Engineers Ltd certify that:

1. This SMP meets the requirements of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the NES:CS) because it has been:

    a. Prepared and certified by a suitably qualified and experienced practitioner registered under the Certified Environmental Practitioner Scheme (Registration Number 0861) and Engineering New Zealand Chartered Professional Engineer (Registration Number 1033153).

    b. The SQEP has over 17 years post graduate experiencing practicing as an environmental consultant with a tertiary education qualification equivalent to a Master of Science with supporting evidence from Engineering New Zealand that the Consultant has equivalent knowledge to Washington Accord equivalence.

    c. Reported on in accordance with the current edition of Contaminated Land Management Guidelines No. 1 – Reporting on contaminated sites in New Zealand, 2021.

Evidence of the qualification and experience of the suitably qualified and experienced practitioner is available upon request.

Signed: 

Dated: 13 January 2026

Role	Name	Relevant Experience
Project Manager	**Ray Mayor** Unitec New Zealand, 2010, Bachelor of Engineering (Environmental) Unitec New Zealand, 2007, Diploma in Environmental Technology	Ray is a Senior Environmental Consultant with more than 16 years' experience on contaminated sites. His project experience includes conducting site assessments, compliance monitoring, managing environmental risk and remediation across numerous sites including residential, industrial and commercial developments as well as New Zealand Defence Force sites.
Senior Technical Reviewer	**Edward Collings** MPhys (Hons) Physical Geography Certified Environmental Practitioner Chartered Professional Engineer	Edward is a Principal Engineer and Managing Director with more than 16 years' experience on geotechnical design and contaminated land remediation on a variety of residential, commercial and critical infrastructure projects in the UK and New Zealand. Edward attained recognition as a Certified Environmental Practitioner in 2016 in Australia and New Zealand with specialist knowledge in contaminated land and groundwater remediation and wastewater design. In recent years Edward has provided professional engineering assessments for prospective candidates to the scheme.

Appendix 9

Technical Memorandum

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13/2181 East Coast Road, Silverdale

09 392 0007
www.geologix.co.nz

TECHNICAL MEMORANDUM

25 May 2026

SOIL CHARACTERISATION, 124-126 KERIKERI ROAD, KERIKERI

Thomson Survey Limited on behalf of OC1 HoldCo Limited.

Geologix Ref. C0733N-TM01

By email: lynley@tsurvey.co.nz

INTRODUCTION AND PURPOSE

This soil characteristic letter report has been prepared by Geologix Consulting Engineers Ltd (Geologix) for Thomson Survey Limited on behalf of OC1 HoldCo Limited as our Client in accordance with our standard short form agreement and general terms and conditions of engagement and consultancy services agreement.

The purpose of this soil assessment was to investigate/ determine the current contaminant concentrations present within a property located at 124-126 Kerikeri Road, Kerikeri (the `site` refer to Figure 1 below). Therefore, the information in this assessment provides the current contaminant concentrations of the site based on the sample analysis data result.

BACKGROUND

An investigation (PSI) was completed by Geologix in January 2026 to support the proposed six lot residential subdivision activities and associated resource consent application of the residential property located at 124-126 Kerikeri Road, Kerikeri.

A review of available background information confirmed that prior to the construction of the residential dwelling within Lot 14 circa 1960, the property was a mix of undeveloped land (grassed) and horticultural land use (predominantly Lot 14). The majority of the site was then used for residential purposes from circa 1960 to date, with a portion of the site (i.e., north-western portion of Lot 15) for small scale horticultural use (i.e., greenhouse/ tunnel houses) from circa 1989 until the early 2000s.

Therefore, a large portion of the property (‘piece of land’, Appendix B) has potentially been subject to a HAIL activity, HAIL category A10; persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds, therefore, the NES:CS applies (i.e., to the ‘piece of land’ area only).

Based on the available information and the findings of the investigation, the NES:CS will apply for subdivision activities associated with the proposed residential subdivision regarding contaminated land, therefore, it was considered that consent will be required as a discretionary activity under the NES:CS and

in addition, considered as a permitted activity under the proposed Northland Regional Plan. Noting this may be reduced to controlled or restricted discretionary activity with a DSI provided.

Additionally, to assist with the proposed residential subdivision activities (i.e., six-lot subdivision) and associated resource consent application, and due to a large portion of the property ('piece of land', Refer to attached Drawing 700) has potentially been subject to a HAIL activity, HAIL category A10, a Site Management Plan (SMP) was prepared. The SMP provides site management procedures regarding soil disturbance activities occurring within the 'piece of land' area, in accordance with industry practices to control/ manage potential health, safety and environmental risks during the proposed works.

This soil characteristic report should be read in conjunction with the following:

- Geologix report, Preliminary Site Investigation, 124-126 Kerikeri Road, Kerikeri. REF: C0733N-E-01.
- Geologix report, Site Management Plan, 124-126 Kerikeri Road, Kerikeri. REF: C0733N-E-02.

This document has been completed and approved by suitably qualified and experienced practitioners (SQEPs).

INVESTIGATION

Based on the potential HAIL activity identified and from our experience, it is expected that contaminants of concern (CoC) (if any) associated with horticultural activities would typically be contained within the topsoil/ shallow site soils and may include heavy metals and organochlorine pesticides (OCPs).

Based on this, the sampling investigation has targeted the surface horizon from within the site area comprising topsoil/ shallow site soils from up to 0.15 m below ground level (bgl) to target the CoCs and to quantify the nature and dispersion of any residual contamination in relation to the proposed subdivision and potential soil disturbance activities.

Soil sampling was undertaken in general accordance with the MfE CLMG No.5 - *Site Investigation and Analysis of Soils* (revised 2021) (MfE, 2011c). The MfE sampling guidelines for a site of this size (approximately 1,500 m^2) recommend up to seven sampling points. From our experience, the following sampling programme was undertaken:

- From within the site area, using a grid approach, from nine sample locations (designated C01a, C01b, C01c to C03a, C03b, C03c), nine shallow soil samples were collected from the surface horizon comprising topsoil from 0.0 - 0.15 m bgl and composited into four samples (three primary subsamples per one composite sample).

  Samples were composited within the laboratory environment.

  All samples were analysed for heavy metals (arsenic, cadmium, chromium copper, lead, nickel and zinc) and OCPs.

- As required by the NES:CS, a duplicate composite soil sample from one composite location (i.e., C03) were collected and labelled under a unique identification QC1.

  Duplicate composite soil sample was analysed for heavy metals.

Figure 1: Approximate Soil Sample Locations.

SAMPLING METHODOLOGY

The following sampling methodology was undertaken:

- Each soil sample was collected from hand tool equipment using a clean pair of nitrile gloves for each sample, then placed into laboratory supplied sample containers. Where required, prior to, the equipment was decontaminated by washing with potable water, followed by a decontamination solution, and rinsing with deionised water.
- All samples were placed into a chilled chilly bin and dropped off at RJ Hill Laboratories (Hills) in Auckland alongside Chain of Custody documentation.
- Sample results were compared against relevant guidelines (where available).

QUALITY ASSURANCE AND QUALITY CONTROL

The quality assurance/ quality control (QA / QC) procedures employed during the works included:

- Collection of samples by suitably qualified staff in accordance with Geologix standard operating procedures.
- Submission of all samples to the analytical laboratory within the acceptable holding times for the contaminants of concern.
- Submission of one duplicate soil sample from C03 locations. These duplicate samples were submitted under the unique identification as QC01. The duplicate samples were analysed for metals only.
- Sample analysis by Hill Laboratories who are accredited by International Accreditation New Zealand (IANZ) for the analyses performed.

ANALYTICAL RESULTS

Soil analytical results have been compared against residential land use criteria from the "Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health" Regulations (NES:CS).

For contaminants of potential concern that are not priority contaminants, the NESCS references the hierarchy defined in the MfE CLMG No.2 – Hierarchy and Application in New Zealand of Environmental Guideline Values (MfE, 2011d). In accordance with this hierarchy, the Australian National Environment Protection Council (NEPC) (1999 rev: 2013) National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) has been used for two metals (nickel and zinc).

The analytical results from the sampling works are summarised below and laboratory analytical reports are attached. Sample locations are shown on Figure 1 above and Drawing 700 attached.

- Heavy metals were detected in all samples analysed.
    - No heavy metals were detected over human health guidelines for residential land use.
- No samples analysed for OCPs were detected over the laboratory level of reporting.

The result of analytical testing indicates that contaminants concentrations of the contaminants of concern (i.e., heavy metals and OCPs) are below human health guidelines for a residential 10% produce land use scenario Based on the soil analytical results, surface soils across the site are considered suitable for residential purposes.

There are no background concentrations available for Northland region at the time, therefore, should soils require offsite disposal, soils will require disposal to an appropriate managed fill facility.

Confidence in Results

The analytical laboratory is required to conduct cross checking and routine duplicate sample analysis to maintain an IANZ accreditation. Discrete project specific duplicate analysis was undertaken to confirm the reliability of laboratory analysis. In accordance with CLMG, primary to secondary sample acceptable relative difference (RPD) is 50 % for soil samples.

The duplicate sample (QC01) analysed for metals to replicate the analysis of composite samples C03. The relative percentage difference (RPD) between the primary and duplicate samples were all below 50%, therefore, it is considered that the precision of the sampling and analysis is well within acceptable limits.

DISCISSION AND CONCLUSION

As mentioned above, this soil assessment is to provide confirmation of the current contaminant concentrations of soils on site. Based on the soil analytical results, contaminant concentrations (i.e., heavy metals and OCPs) did not exceed the NES:CS human health guidelines for residential land.

Therefore, Geologix considers that there is very low risk to long-term human health exposure in the proposed subdivision and soil disturbance activities (if undertaken) if these soils are to remain on site. Site soils, while suitable for onsite use (subject to geotechnical suitability), any soils proposed for removal from site (if any) shall be disposed of to an appropriate managed fill facility.

The recommendations and opinions in this report are based on site observations and laboratory reports from sample points at discrete locations. The nature and continuity of subsurface conditions, interpretation

of ground condition away from these specific sampling investigation locations are inferred. It must be appreciated that the actual conditions may vary.

This report and associated recommendations, conclusions or intellectual property is not to be relied upon by any other party for any other purpose (other than determining the current contaminant concentrations) unless agreed in writing by Geologix Consulting Engineers Ltd and our Client. In any case the reliance by any other party for any other purpose shall be at such parties' sole risk and no reliability is provide by Geologix Consulting Engineers Ltd.

CLOSURE

We trust this satisfies your requirements at this time. Please contact the undersigned if there are any questions.

Prepared by

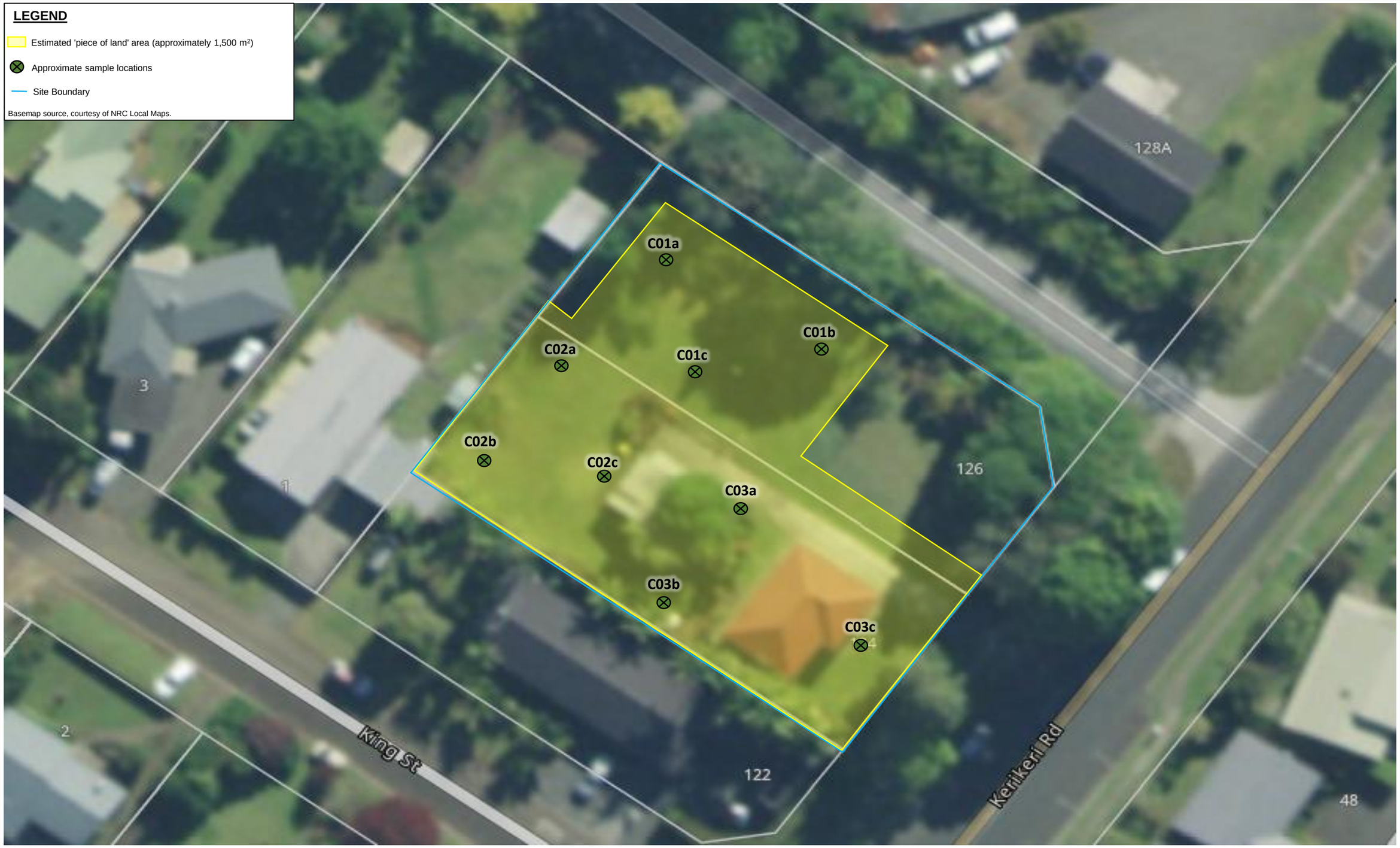
Ray Mayor, BEng (Env), DipEnvTech
GEOLOGIX CONSULTING ENGINEERS LTD

Approved by

Edward Collings, CPEng, CMEngNZ, CEnvP, MPhys

Attachments:

- Drawing 700
- Laboratory analytical reports



geologix consulting engineers	DRAWN: RM	PROJECT: C0733N, 124-126 KERIKERI ROAD, KERIKERI						STATUS: FINAL
	VERIFIED: RM	CLIENT: OC1 HOLDCO LIMITED	0	18/05/26	FIRST ISSUE - RESOURCE CONSENT	RM	EC	DRAWING TITLE: ENVIRONMENTAL SITE PLAN
	APPROVED: EC		REV	DATE	REVISION DETAILS	BY	APP	DRAWING NUMBER: 700 SCALE: NTS

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

0508 HILL LAB (44 555 22)
+64 7 858 2000
mail@hill-labs.co.nz
www.hill-labs.co.nz

Certificate of Analysis

Client:	Geologix Consulting Engineers Limited	**Lab No:**	4207354 SPv2
Contact:	Ray Mayor C/- Geologix Consulting Engineers Limited 13/2181 East Coast Road Stanmore Bay Silverdale 0932	**Date Received:**	08-May-2026
		Date Reported:	14-May-2026
		Quote No:	113810
		Order No:	
		Client Reference:	C0733 - Kerikeri Road
		Submitted By:	Ray Mayor

Sample Type: Soil

Sample Name:		Composite of C01a, C01b & C01c	Composite of C02a, C02b & C02c	Composite of C03a, C03b & C03c	Composite of QC1a, QC1b & QC1c
Lab Number:		4207354.13	4207354.14	4207354.15	4207354.16
Individual Tests					
Dry Matter	g/100g as rcvd	72	69	75	-
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	10	6	11	8
Total Recoverable Cadmium	mg/kg dry wt	0.13	0.18	0.22	0.22
Total Recoverable Chromium	mg/kg dry wt	47	58	52	51
Total Recoverable Copper	mg/kg dry wt	19	14	27	20
Total Recoverable Lead	mg/kg dry wt	43	18.2	29	28
Total Recoverable Nickel	mg/kg dry wt	5	5	5	5
Total Recoverable Zinc	mg/kg dry wt	39	27	99	88
Organochlorine Pesticides Screening in Soil					
Aldrin	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
alpha-BHC	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
beta-BHC	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
delta-BHC	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
cis-Chlordane	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
trans-Chlordane	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
2,4'-DDD	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
4,4'-DDD	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
2,4'-DDE	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
4,4'-DDE	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
2,4'-DDT	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
4,4'-DDT	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Total DDT Isomers	mg/kg dry wt	< 0.09	< 0.09	< 0.08	-
Dieldrin	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endosulfan I	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endosulfan II	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endosulfan sulphate	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endrin	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endrin aldehyde	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Endrin ketone	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Heptachlor	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Heptachlor epoxide	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Hexachlorobenzene	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-
Methoxychlor	mg/kg dry wt	< 0.014	< 0.014	< 0.014	-

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	13-16
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required. US EPA 200.2 (modified), APHA 3125 B: Online Edition.	0.10 - 4 mg/kg dry wt	13-16
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	13-15
Dry Matter	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	13-15
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	1-12

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 08-May-2026 and 14-May-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

Kim Harrison MSc
Client Services Manager - Environmental

Appendix 10

Record of Consultation

Far North District Council

NOTICE OF WRITTEN APPROVAL

Written Approval of Affected Parties in accordance with Section 95E of the Resource Management Act

PART A – To be completed by Applicant

Applicant/s Name:	OC1 Holdco Limited
Address of proposed activity:	124 126 Kerikeri Road, Kerikeri
Legal description:	Lots 14 and 15 DP 41378
Description of the proposal (including why you need resource consent):	Subdivision of two titles zoned Residential, into six lots (four additional), as a discretionary activity under the Operative District Plan; and land use consent for constructing residential dwellings on each lot, breaching several zone rules and excavation/filling rules. Refer to Summary of Proposal for more details. Consent is also required under the NES for Assessing and Managing Contaminants in Soil to Protect Human Health. Refer to summary.
Details of the application are given in the attached documents & plans (list what documents & plans have been provided to the party being asked to provide written approval):	1. Attached scheme plans dated 12.12.25 2. Architectural and site plans, dated 6/05/2026 3. Summary of Proposal 4. 5. 6.

Notes to Applicant:

1. Written approval must be obtained from all registered owners and occupiers.
2. The **original copy** of this signed form and **signed plans and accompanying documents** must be supplied to the Far North District Council.
3. The amount and type of information provided to the party from whom you seek written approval should be sufficient to give them a full understanding of your proposal, its effects and why resource consent is needed.

PART B – To be completed by Parties giving approval

Notes to the party giving written approval:

1. If the owner and the occupier of your property are different people then separate written approvals are required from each.
2. You should only sign in the place provided on this form and accompanying plans and documents if you **fully understand** the proposal and if you **support** or have **no opposition** to the proposal. Council will not accept conditional approvals. If you have conditions on your approval, these should be discussed and resolved with the applicant directly.
3. Please note that when you give your written approval to an application, council cannot take into consideration any actual or potential effects of the proposed activity on you unless you formally withdraw your written approval **before** a decision has been made as to whether the application is to be notified or not. After that time you can no longer withdraw your written approval.
4. Please sign and date all associated plans and documentation as referenced overleaf and return with this form.
5. If you have any concerns about giving your written approval or need help understanding this process, please feel free to contact the duty planner on 0800 920 029 or (09) 401 5200.

Full name/s of party giving approval:	ALEXANDER MARINUS DICK RENNES.
Address of affected property including legal description	1 KING ST. KERIKERI. 0230. LOT 16 DP 53915
Contact Phone Number/s and email address	Daytime: 027 4171596. email: alexander.rennes@gmail.com

I am/we are the OWNER(S) / OCCUPIER(S) of the property (circle which is applicable)

*Please note: in most instances the approval of **all** the legal owners and the occupiers of the affected property will be necessary.*

1. I/We have been provided with the details concerning the application submitted to Council and understand the proposal and aspects of non-compliance with the Operative District Plan.
2. I/We have signed each page of the plans and documentation in respect of this proposal (these need to accompany this form).
3. I/We understand and accept that once I/we give my/our approval the Consent Authority (Council) cannot take account of any actual or potential effect of the activity and/or proposal upon me/us when considering the application and the fact that any such effect may occur shall not be relevant grounds upon which the Consent Authority may refuse to grant the application.
4. I/We understand that at any time before the notification decision is made on the application, I/we may give notice in writing to Council that this approval is withdrawn.

Signature	A Rennes	Date	9 June 2026
Signature	Ellie Schoffelmeer	Date	9 June 2026
Signature		Date	
Signature		Date	

THE PROPOSAL – June 2026

The properties are zoned Residential in the Operative District Plan (ODP) and Mixed Use in the Proposed District Plan (PDP).

The applicant proposes to subdivide two adjacent titles at 124 & 126 Kerikeri Road to create a total of 6 residential lots, all in the range of 319m^2 to 337m^2 in area, as a discretionary activity under the Operative District Plan (ODP); and to build on all 6 lots. Because the buildings may precede the issue of title this application includes a land use consent component for breaches of residential intensity under the ODP, also as a discretionary activity.

In addition, the following breaches have been identified under the ODP:

Impermeable Surfaces (Stormwater Management):
In all cases the proposed impermeable surface associated with each dwelling will exceed the permitted activity threshold of 50%, but comply with the 60% threshold specified as a controlled activity.

Sunlight:
The proposed dwellings on Lots 1, 2 & 3 will breach the permitted activity Sunlight plan on their southern boundary; and Lots 4, 5 & 6 on their northern boundary.

Boundary Setback:
All buildings will comply with setback requirements from internal and road boundary except for a very minor infringement on Lot 4 where the corner of a building is 1.1m from boundary at its closest point rather than 1.2m.

Excavation/Filling:
On the basis that there is to be approximately 567m^2 impermeable surface coverage on each of the two existing titles, it is assumed that the earthworks associated with the development (land use component) will breach the zone's permitted threshold of 200m^3 per site,

Under the Proposed District Plan's Mixed Use zoning the following breaches would occur (should that document have legal effect prior to consent being issued for this application).

The Mixed Use has a minimum lot size of 250m^2 for sewered sites. The proposed subdivision would be a controlled activity under the PDP in terms of the subdivision component.

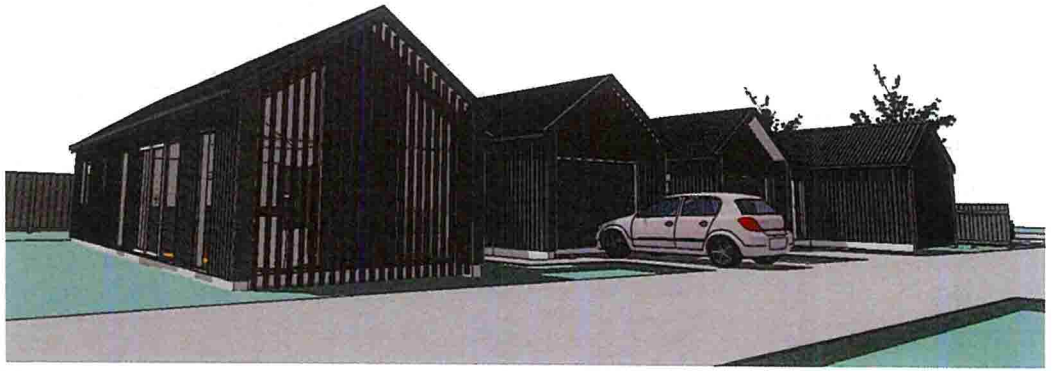
Residential activity is a permitted activity within the zone and can be at ground level where the site is not a site with a pedestrian frontage – which the application site is not. The units are bigger than the minimum size required by the zone for residential dwellings. The only Mixed Use zone rule breach that I have identified is the same Sunlight breach that exists pursuant to the ODP – resulting in restricted discretionary activity consent being required, should the PDP have legal effect. In regard to other rules, the PDP applies the same earthworks threshold as the ODP – 200m^3 per site. This will be breached, and also defaults to restricted discretionary status in the PDP.

A part of the site (primarily Lot 14 DP 41378) has historically been used for horticulture (circa 1953). Such use had ceased by 1968. Around 2019/2020 a tunnel house may have been erected on Lot 15 DP 41378. This was gone by 2005. Given these historic uses, the proposal is deemed to be subject to assessment under the NES for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS). A Preliminary Investigation Report (PSI) and subsequent Site Management Report (SMR), supplemented by a Technical Memorandum assessing the soil characteristics, supports this application. The proposed development is a discretionary activity under the NES-CS. Soil tests showed no samples exceeding human health standards specified in the NES-CS.

The units themselves are designed to be single storey. Whilst they are of modest size, with floor area of 140m^2 apiece, they are 3 bedroom. Each lot is sized and orientated so as to provide for private open space.

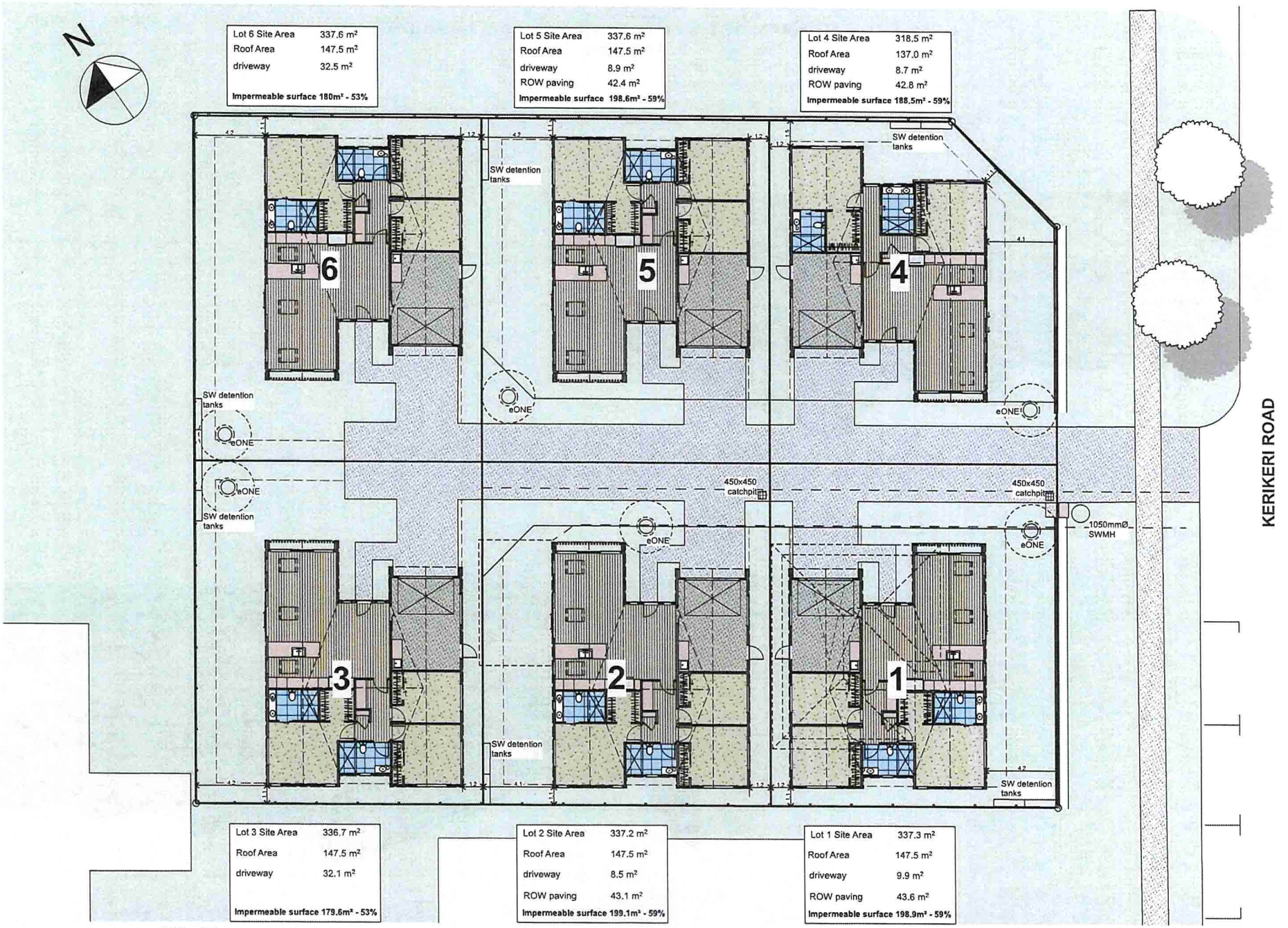
All access, parking and manouevring has been designed to comply with standards. It is proposed that all lots/dwellings have separate connections to services.

A scheme plan is attached as are architectural and site plans.



Cover
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

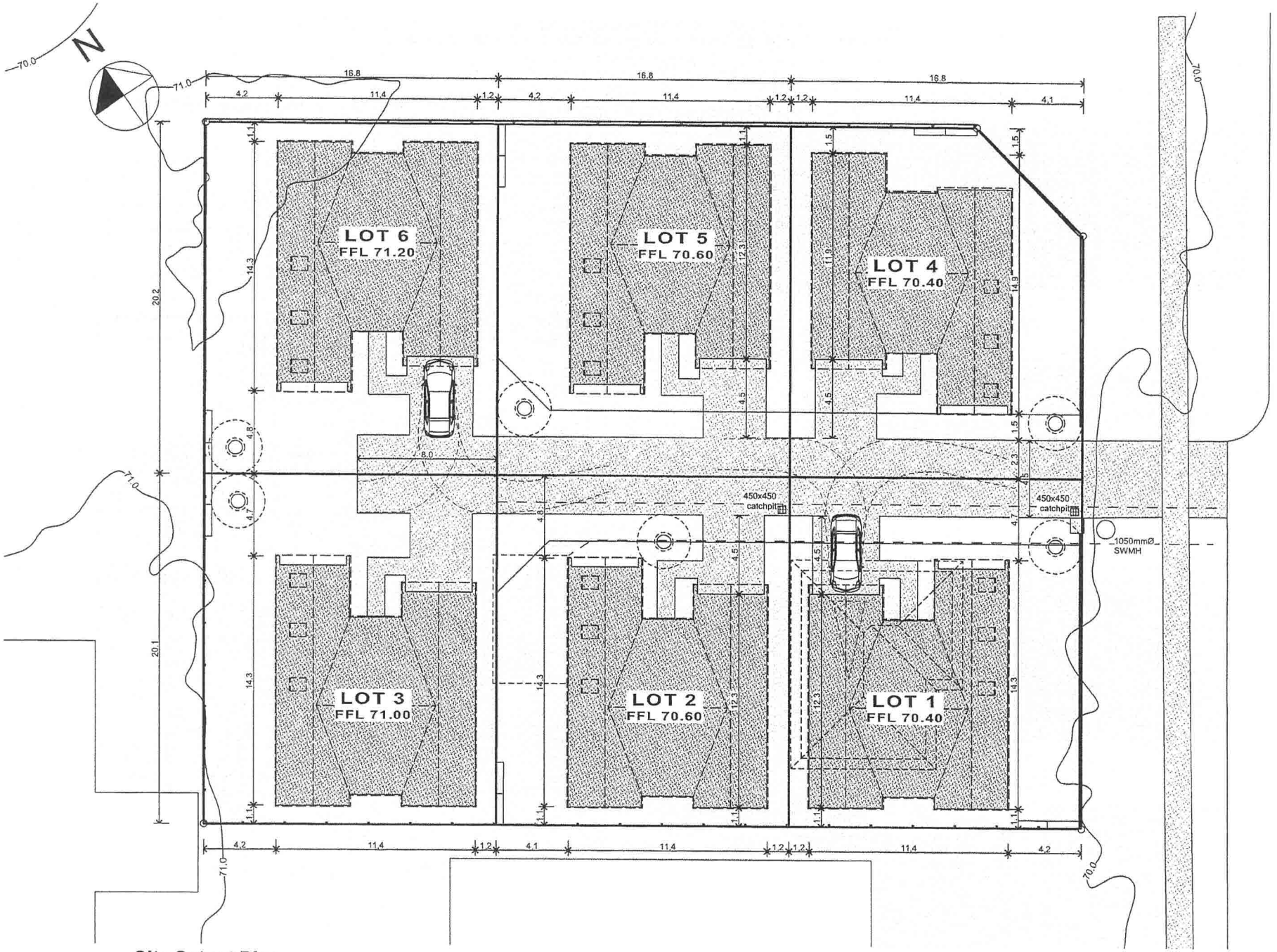


Site Plan

Scale1:200

Site Plan
Proposed Development at 124-126 Kerikeri Road
CONCEPT

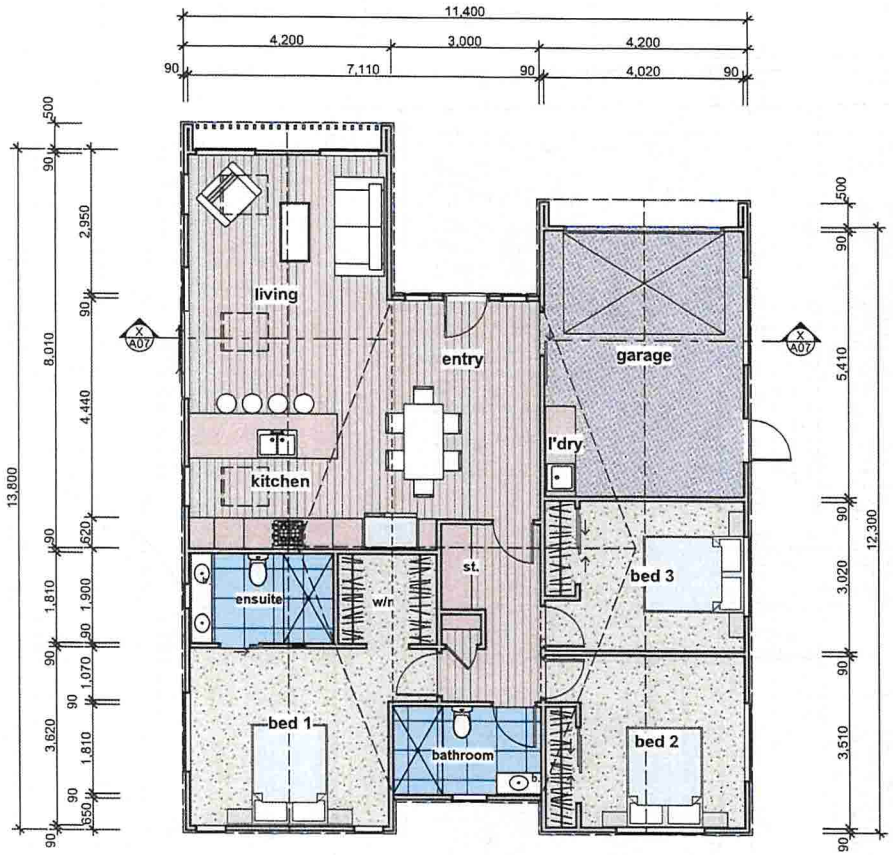
Lodge Development
cadl
6/05/2026
2025-0694 G

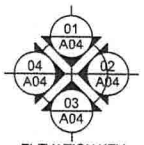


Site Setout Plan Scale1:200

Site Setout Plan
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G



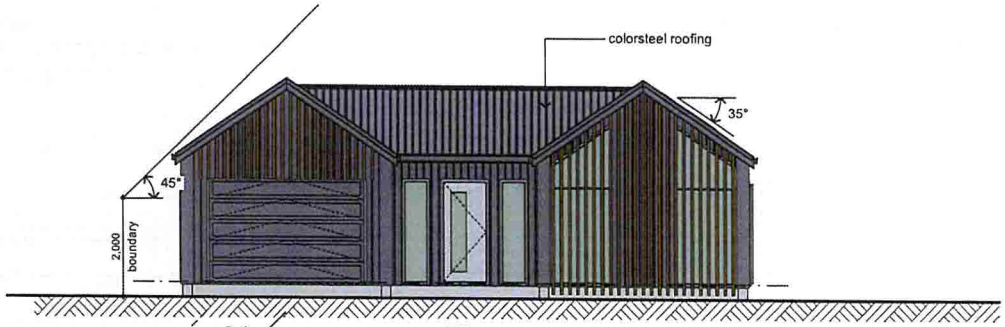


ELEVATION KEY

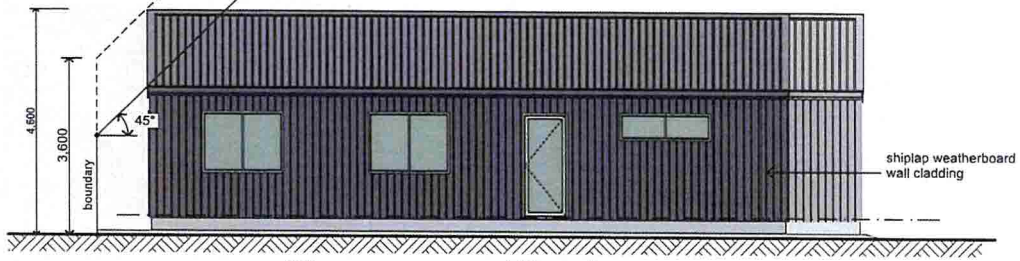
Floor Area -	140.22 m²
Roof Area -	147.50 m²

Floor Plan Lot 2,3

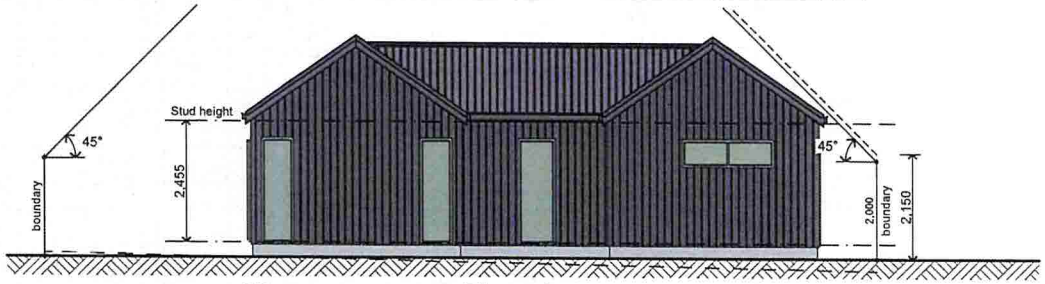
Scale1:100



01 Elevation Scale1:100



02 Elevation Scale1:100



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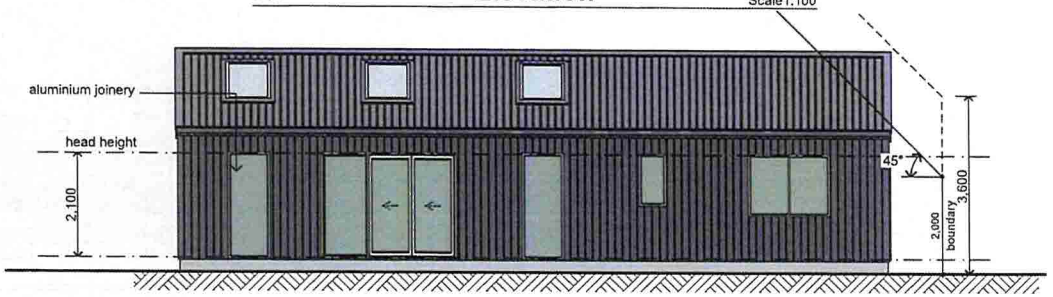
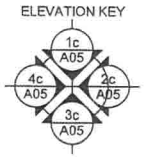


04 Elevation Scale1:100

Plan Lot 2 & 3
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

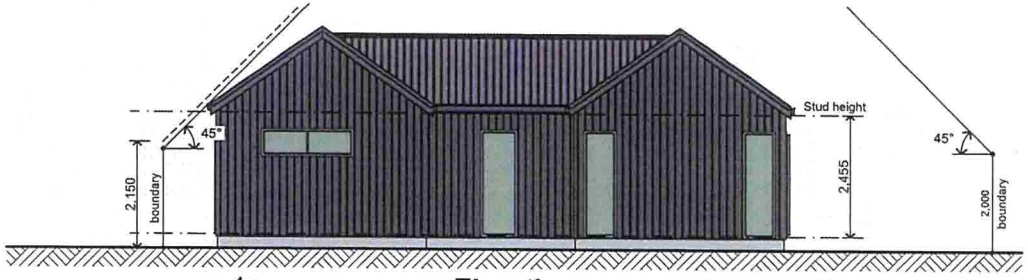
ELEVATION KEY



Roof Area -	147.50 m²
Floor Area -	140.22 m²

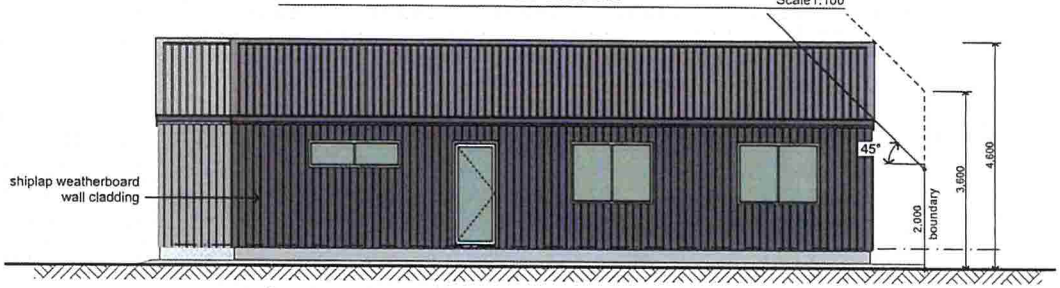
Floor Plan Lot 1,5,6

Scale1:100



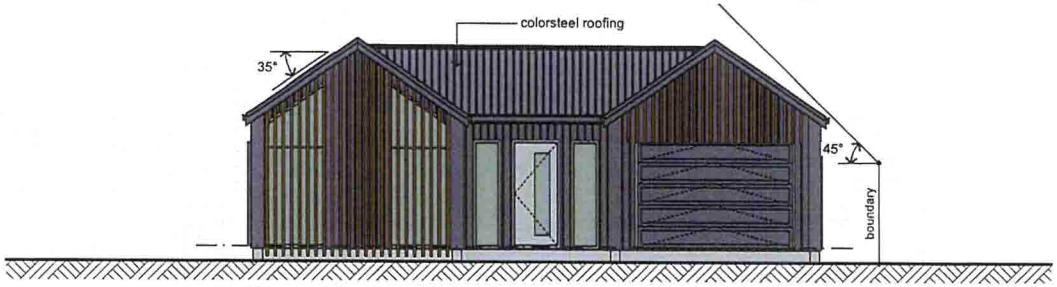
1c Elevation

Scale1:100



2c Elevation

Scale1:100



3c Elevation

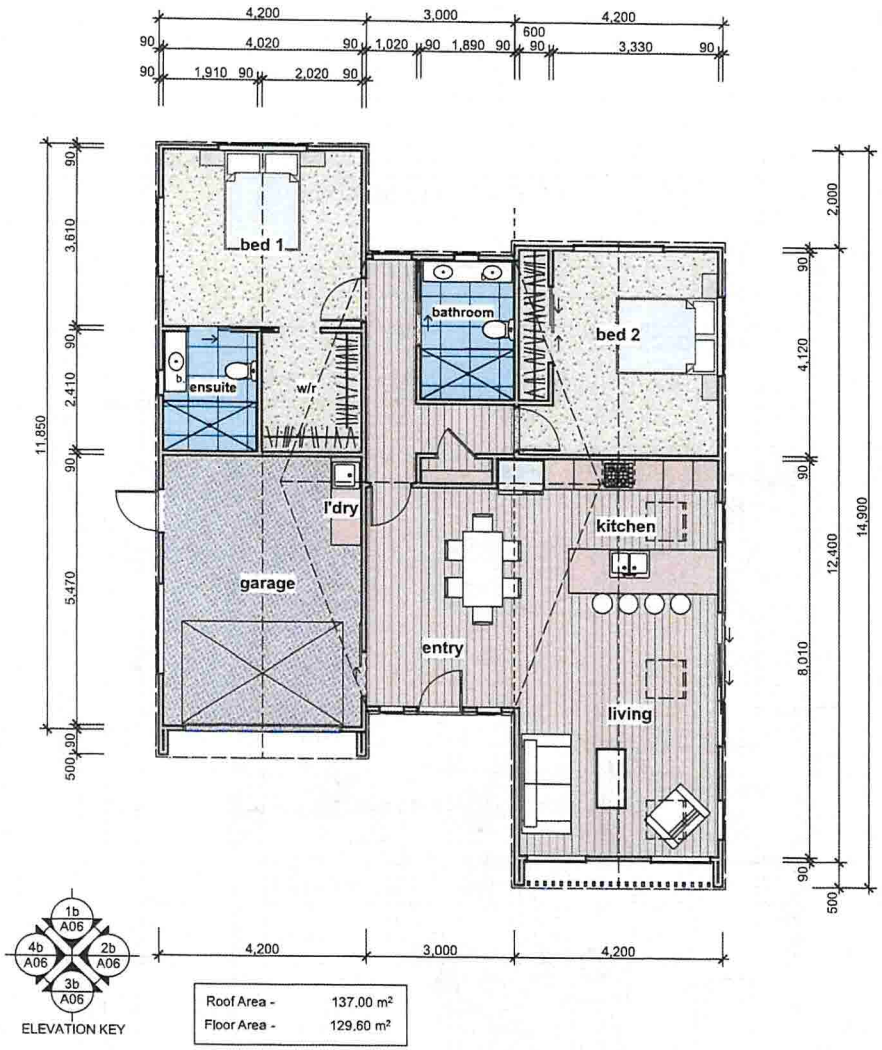
Scale1:100

4c Elevation

Scale1:100

Plan Lot 1 , 5 & 6
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

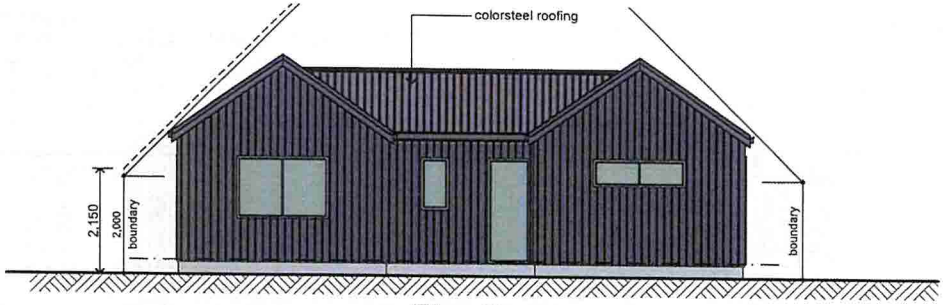


ELEVATION KEY

Roof Area -	137.00 m²
Floor Area -	129.60 m²

Floor Plan Lot 4

Scale1:100



Elevation

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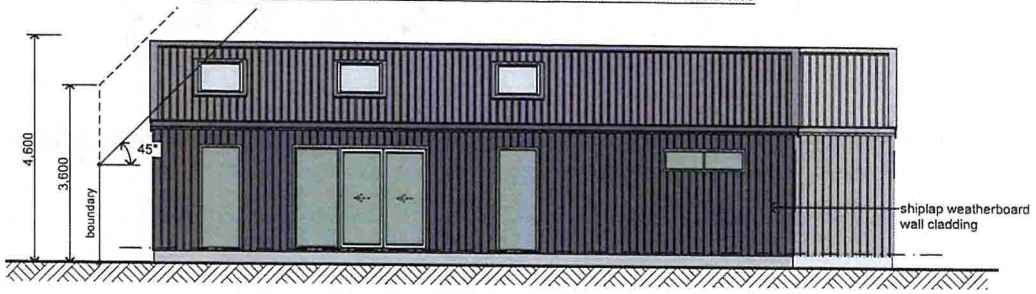

Elevation

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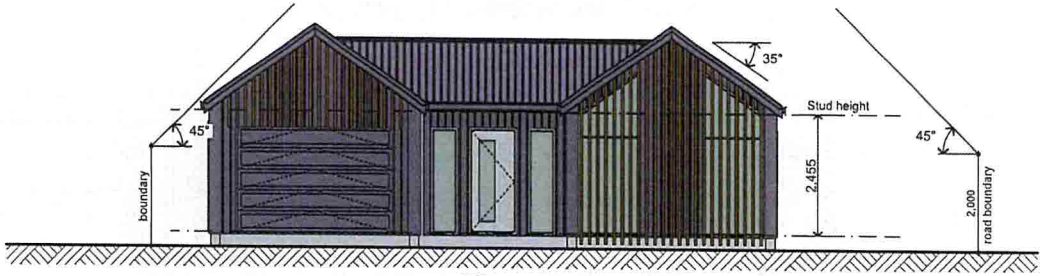
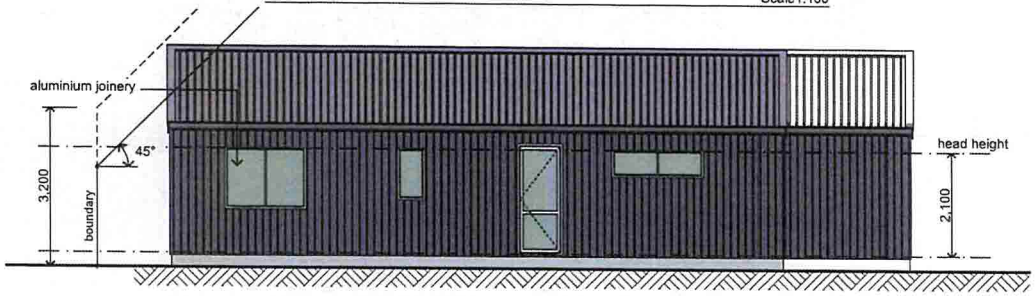


Elevation

Scale1:100

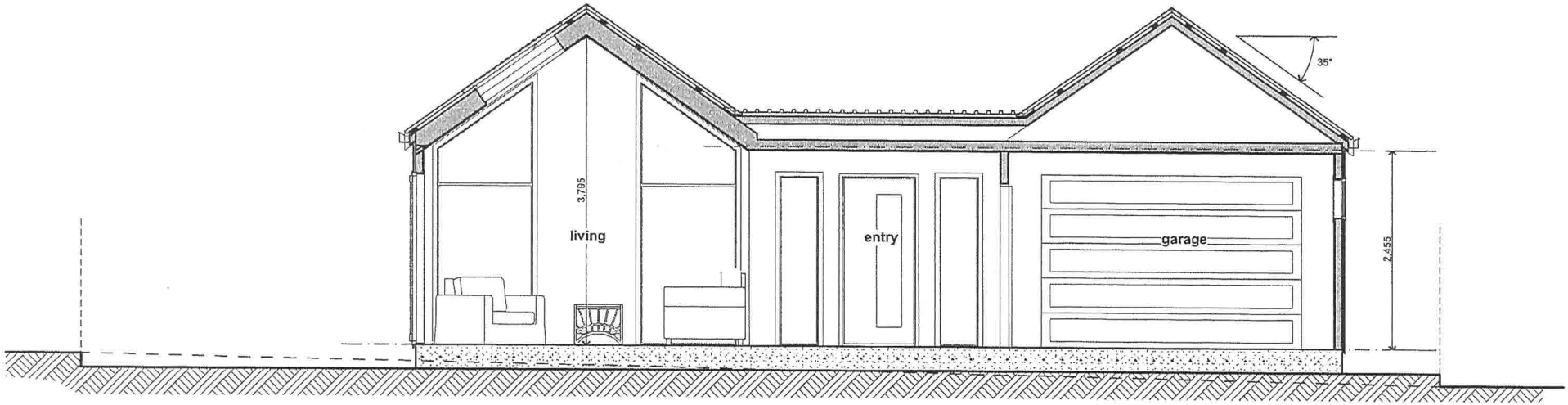


Elevation

Scale1:100

Plan Lot 4
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G



Section X-X Scale 1:50

Section
Proposed Development at 124-126 Kerikeri Road
CONCEPT

Lodge Development
cadl
6/05/2026
2025-0694 G

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNICATIONS, ELECTRICITY, WATER SUPPLY & RIGHT TO DRAIN SEWAGE & STORMWATER	Ⓐ	LOT 1 HEREON	LOTS 2 - 6 HEREON
	Ⓑ	LOT 2 HEREON	LOTS 3, 5 & 6 HEREON
	Ⓒ	LOT 4 HEREON	LOTS 1 - 3, 5 & 6 HEREON
	Ⓓ	LOT 5 HEREON	LOTS 2, 3 & 6 HEREON

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA46C/261 & NA46C/262
Total Area: 2006m²
Zoning: Residential
Resource features: NIL

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360
www.tsurvey.co.nz
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOTS 14 & 15 DP 41378

124 & 126 KERIKERI ROAD, KERIKERI

PREPARED FOR: J. LODGE

	Name	Date
Survey		
Design		
Drawn	KY	26.11.25
Approved		
Rev	KY	12.12.25

10864 Scheme 20251212

ORIGINAL
SCALE 1:400
SHEET SIZE A3

Surveyors Ref. No: 10864

Sheet 1 of 1