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

HE ARA TĀMATA
CREATING GREAT PLACES
Supporting our people

Private Bag 752, Kaikohe 0440, New Zealand
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0800 920 029
fndc.govt.nz

Application for 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 discussion

Have you met with a council Resource Consent representative to discuss this application prior to lodgement?
☐ **Yes** ☑ **No** ☑ **N/A**

Have you consulted Council's Infrastructure Officer regarding infrastructure capacity to service the development?
☐ **Yes** ☑ **No** ☑ **N/A**

Have you consulted the Roading Officer regarding any road to vest or departure from District Plan / Engineering standards?
☐ **Yes** ☑ **No** ☑ **N/A**

**Contact details of who and how to engage in pre lodgement discussions can be found on the Resource Consent pages of the FNDC website.*

2. Type of consent being applied for

(more than one circle can be ticked):

☑ **Land Use**
☐ **Fast Track (Land Use - Controlled Activity)**
☐ **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 3m³
☐ **Subdivision**
☐ **Existing Use Certificate (s.139A)**
☐ **Consent under National Environmental Standard**
(e.g. Assessing and Managing Contaminants in Soil)

☐ **Other (please specify)** _____

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

☐ **Yes** ☑ **No**

4. Consultation

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

If yes, which groups have you consulted with?

Who else have you consulted with?

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

5. Applicant details

Name/s: David and Tracey George

Email: [redacted]

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: Steven Sanson - Bay of Islands Planning

Email: [redacted]

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: See applicant

Property address/ location: 562 Kerikeri Road, Kerikeri

Postcode

8. Application site details

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

Name/s:

Site address/ location: 562 Kerikeri Road, Kerikeri

Postcode

Legal description: Lot 2 DP 176058 **Val Number:**

Certificate of title: NA108B/622

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.

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.

TotalSpan shed in the Rural Production Zone

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):

- [x] **Building Consent** EBC-2027-187/0
- [ ] **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)? [x] **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** [x] **No** [ ] **Don't know**

- [ ] **Subdividing land**
- [ ] **Changing the use of a piece of land**
- [x] **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** [x] **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 [x] **Yes**

15. Draft conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? [x] **Yes** [ ] **No**

If yes, please be advised that the timeframe will be suspended 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) See billing details attached.

Email:

Phone number: Work Home

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

Postcode

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)

Signature:
(signature of bill payer)

Date

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)

Signature

Date

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

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) DAVID AND TRACY GEORGE

Email: [redacted]

Phone number: [redacted]

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

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) DAVID ELLIS GEORGE

Signature: [redacted] Date 3-11-2026
(signature of bill payer)

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.

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A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

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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) DAVID ELLIS GEORGE

Signature [redacted] Date 3-11-2026

See overleaf for a checklist of your information...

4 November 2026

Far North District Council

Application seeking resource consent for construction of a Totalspan storage shed at 562 Kerikeri Road, Kerikeri.

Please find attached an application for resource consent for the construction of a Totalspan storage shed at 562 Kerikeri Road, Kerikeri. The site is legally described as Lot 2 DP 176058 (Record of Title NA108B/622).

The applicants, David Ellis George and Tracy Kristina George, seek consent to construct a shed, together with the associated stormwater attenuation. FNDC Project Information Memorandum and Form 4 (Building Consent EBC-2027-187/0, 9 September 2026) confirm that resource consent is required for breach of the setback and impermeable surface coverage standards of both the Operative and Proposed Far North District Plans.

The proposal is a Restricted Discretionary Activity under the Proposed District Plan. It is a Discretionary Activity under the Operative District Plan, because the site's impermeable surface coverage (28.2%) exceeds the Operative Plan's 20% Controlled Activity threshold (Rule 8.6.5.2.1).

The application is supported by the following information:

- **Appendix A** – Record of Title
- **Appendix B** – Development Plans (Site Survey and Approved Building Plans)
- **Appendix C** – FNDC PIM / Form 4 (Building Consent EBC-2027-187/0)
- **Appendix D** – Stormwater Management Report (Haigh Workman Limited, ref 26 202, Rev A, 30 October 2026)

Regards,

Steven Sanson
Consultant Planner

1. Applicant & Property Details

Applicant	David Ellis George and Tracy Kristina George
Address for Service	Bay of Islands Planning Limited Kerikeri House, Suite 3, 88 Kerikeri Road, Kerikeri C/O – Steven Sanson | steve@bayplan.co.nz | 021-160-6035
Legal Description	Lot 2 DP 176058
Record of Title	NA108B/622
Physical Address	562 Kerikeri Road, Kerikeri 0293
Site Area	0.9027ha (9,027m^2) per Record of Title
Owner of the Site	David Ellis George and Tracy Kristina George
District Plan Zone	Rural Production (Operative Plan) Rural Production Zone / Horticulture Precinct (Proposed Plan)
Overlays / Features	None identified
Natural Hazards	None identified. Not within a mapped NRC flood hazard or flood susceptible land zone (Appendix D)
Consent Notice	Nil
Archaeology	Nil known.
NRC Overlays	Not within a mapped NRC flood hazard or flood susceptible land zone (Appendix D). No other regional planning overlay identified in the vicinity of the proposed works; not independently confirmed with Northland Regional Council
Soils	LUC Class 2s1
Protected Natural Area	None identified
HAIL	Yes – Code A10 (historic horticultural use)

2. Summary of Proposal

Proposal	Construction of a Totalspan storage shed with associated stormwater attenuation.
Reason for Application	The shed does not comply with the setback standard (RPROZ-S3 / Rule 8.6.5.1.4), and the site's impermeable surface coverage following development (28.2%) does not comply with the impermeable surface coverage standard (RPROZ-R2 PER-1 / Rule 8.6.5.1.3), of either District Plan. The proposal is a Restricted Discretionary Activity under the Proposed District Plan (RPROZ-R1 PER-2 and RPROZ-R2 PER-1). Under the Operative District Plan, the setback breach alone would be Restricted Discretionary; however, because the site's impermeable surface coverage (28.2%) also exceeds the Operative Plan's Controlled Activity threshold of 20% (Rule 8.6.5.2.1), the application is a Discretionary Activity under that Plan.

Appendices	Appendix A – Record of Title Appendix B – Development Plans Appendix C – FNDC PIM / Form 4 Appendix D – Stormwater Management Report

3. Introduction

The applicants, David and Tracy George, seek resource consent to construct a storage shed at 562 Kerikeri Road, Kerikeri (Lot 2 DP 176058, RT NA108B/622).

Appendix C confirm that resource consent is required prior to any building work commencing. The application is supported by a Stormwater Management Report prepared by Haigh Workman Limited (Appendix D).

The site is zoned Rural Production under the Operative District Plan, and Rural Production Zone / Horticulture Precinct under the Proposed District Plan. The site is marked as being subject to a live Environment Court rezoning appeal.



Figure 1: Zoning and Appeals Context – 562 Kerikeri Road (Source: Far North Proposed District Plan – Appeals Version ePlan)

4. Description of the Site and Surrounds

The subject site is located at 562 Kerikeri Road, Kerikeri, fronting Kerikeri Road within an established horticultural and rural production area, in the vicinity of the Kerikeri Road / SH10 intersection.



Figure 2: Site Aerial – 562 Kerikeri Road (Source: Far North Proposed District Plan – Appeals Version ePlan)

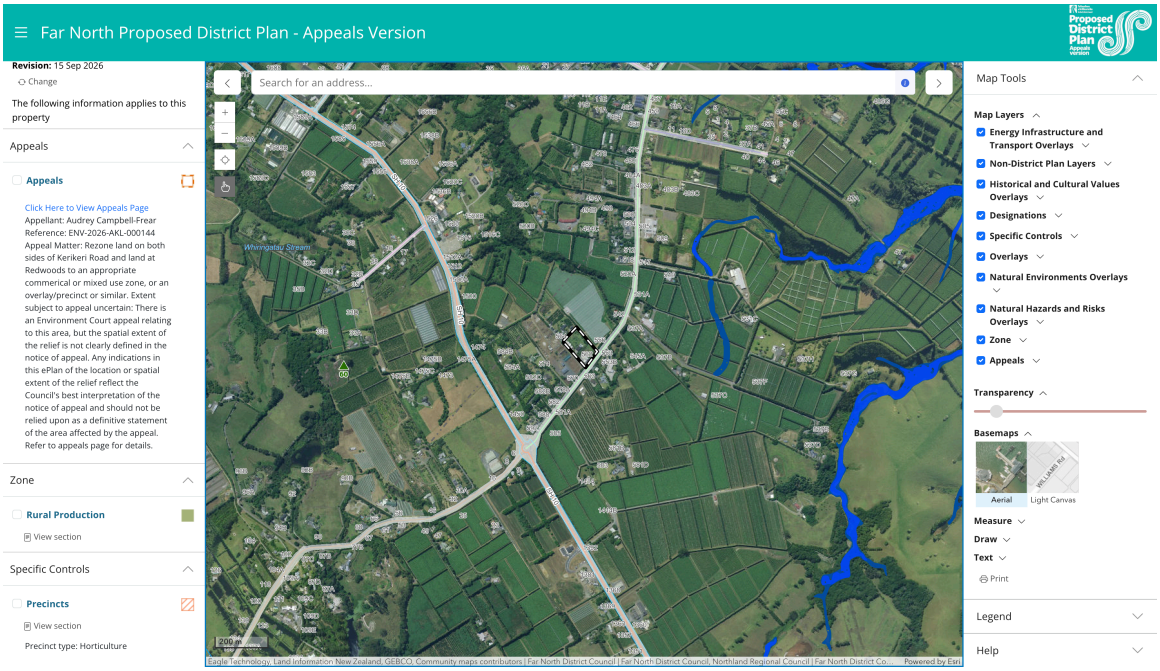


Figure 3: Locality Context (Source: Far North Proposed District Plan – Appeals Version ePlan)

Existing development, access and services

The site contains a single residential dwelling with a swimming pool, several accessory sheds (approximately 70m^2, 125m^2 and 275m^2, together with smaller sheds), and associated concrete, sealed and gravel hardstand and driveways. The balance of the site comprises lawns, fruit trees and boundary hedging. The 275m^2 shed nearest the Kerikeri Road frontage is used by an established plumbing business (Laser Plumbing), an existing, lawfully established activity that is not itself part of, or altered by, this application.

Vehicular access is taken via existing driveways off Kerikeri Road. The southwestern boundary of the site (shared with Lot 1 DP 310384) comprises a long, narrow access leg serving a rear site, as shown on the Williams & King site survey. This access leg is the boundary from which the setback non-compliance addressed in this application arises.

Surface runoff from the existing structures is piped to existing water tanks, one of which overflows to an existing soak-pit in the lawn area. The existing dwelling is served by an on-site wastewater system. Stormwater will be discharged well away from the disposal field.

Topography, hydrology and landform

The site is gently sloping, with recorded ground levels in the order of 126–127m.Excess runoff not absorbed by the soil leaves the site as sheet flow towards an unnamed watercourse approximately 95m to the east, a tributary of the Puketotara Stream. The site is not within a mapped NRC flood hazard or flood susceptible land zone, and no FNDC flood mapping applies.

Zoning, soils and notations

The site is zoned Rural Production under the ODP and Rural Production Zone / Horticulture Precinct under the PDP-AV. No heritage, outstanding landscape, natural feature, significant natural area, coastal or natural hazard overlay is identified on the site under either plan.

The site is identified as Land Use Capability (LUC) Class 2s1 (Figure 4) and is therefore Highly Productive Land for the purposes of the National Policy Statement for Highly Productive Land 2022.

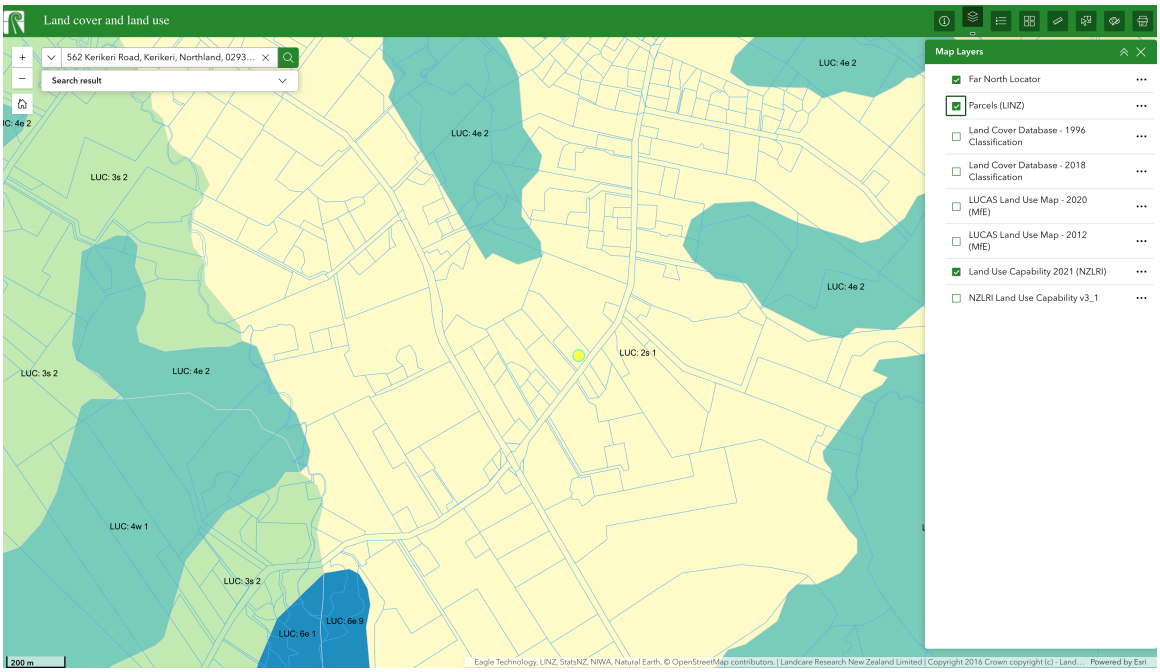


Figure 4: Land Use Capability (LUC 2s1) – 562 Kerikeri Road (Source: Manaaki Whenua Landcare Research, Our Environment)

5. Record of Title, Consent Notices and Land Covenants

The Record of Title (NA108B/622) is provided in Appendix A. There are no relevant instruments, consents notices or covenants that are applicable.

6. Description of Proposal

The proposal is for an 18.0m x 8.0m (144m^2) Totalspan "Mono Range" storage shed (Appendix B), with a low wall height of 3.10m and a high wall height of 3.64m under a mono-pitch roof, and four roller doors and a personnel door. The building is for storage use only, ancillary to the site's existing residential and business activities, with no habitable space or sanitary fixtures.

The shed is sited towards the front portion of the site, immediately adjacent to the existing 275m^2 shed used by Laser Plumbing and its concrete hardstand. Approximately 17.75m^2 of the shed footprint overlaps the existing concrete pad with the remaining 126.25m^2 proposed on currently grassed ground.

The shed is set back 6.17m from the southwestern boundary (shared with Lot 1 DP 310384, a long, narrow access leg serving a rear site), against a 10m requirement under both District Plans, and approximately 36.5m from the Kerikeri Road frontage.

Stormwater will be managed in accordance with the Stormwater Management Report prepared by Haigh Workman Limited (Appendix D). Roof runoff from the new shed and the existing 275m^2 shed will be directed to a new 15,000 litre cylindrical attenuation tank (3.0m diameter), fitted with a restricted outlet orifice and designed to limit post-development peak runoff in the 10% Annual Exceedance Probability (AEP) event to consented pre-development levels, as required by the FNDC Engineering Standards 2023.

The tank will take the overflow from the existing water supply tank and its own overflow will discharge through the existing tank outlet to the existing soak-pit in the lawn area. No new discharge point is required.

Earthworks are limited to a 200mm topsoil scrape of less than 20m^3 for the shed, with all soil retained on site, together with minor ground preparation for the attenuation tank.

7. Legal Context – Status of the District Plan

Two district plan instruments are relevant to this application - the Operative Far North District Plan (ODP), and the Proposed Far North District Plan – Appeals Version (PDP).

The ODP's Rural Production Zone chapter (Chapter 8.6) is fully operative and is not subject to appeal. It carries full weight for the purposes of section 104(1)(b) of the Resource Management Act 1991 (RMA).

The PDP's Rural Production Zone (RPROZ) and Horticulture Precinct (PREC2) chapters, which apply to this site, are both recorded as subject to appeal in their entirety. As unsettled provisions, they carry reduced weight relative to the ODP.

Separately, the site is recorded on Council's ePlan as falling within the mapped extent of an Environment Court appeal seeking to rezone land on both sides of Kerikeri Road, including this site, to a commercial or mixed-use zone (Appellant: Audrey Campbell-Frear, Reference ENV-2026-AKL-000144).

The two Plans reach different activity status outcomes for this application, as also recorded in the Haigh Workman Stormwater Management Report:

- Under the PDP, the proposal is a Restricted Discretionary Activity, as the setback (RPROZ-S3) and impermeable surface coverage (RPROZ-R2 PER-1) standards are not met.

- Under the ODP, the setback breach (Rule 8.6.5.1.4) alone would be Restricted Discretionary. However, the impermeable surface coverage (28.2%) exceeds not only the 15% permitted threshold but also the 20% Controlled Activity threshold (Rule 8.6.5.2.1). As stormwater/impermeable coverage is not one of the standards listed under the Restricted Discretionary rule (Rule 8.6.5.3), this non-compliance defaults the application to a Discretionary Activity (Rule 8.6.5.4(c)).

Applying the standard "bundling" approach, whereby the most restrictive activity status arising from any single non-compliance governs the application as a whole, and having regard to the full weight carried by the operative ODP, this application is assessed and lodged on the basis of a Discretionary Activity under the ODP, while also expressly addressing the Restricted Discretionary matters of discretion arising under the PDP.

8. District Plan Assessment

8.1 Proposed Far North District Plan – Rural Production Zone

The Rural Production Zone rules and standards are assessed in full below, including those not engaged by a storage shed, for completeness.

Table 1 – Rural Production Zone Rules and Standards (PDP)

Provision	Rule / Standard	Assessment
RPROZ-R1	New buildings or structures. PER-2: compliance with RPROZ-S1 to RPROZ-S10.	PER-2 not met (RPROZ-S3 below). **Not met – Restricted Discretionary**
RPROZ-S1	Maximum height of 12m above ground level.	Maximum wall height 3.64m. **Complies**
RPROZ-S2	Height in relation to boundary: recession planes of 55° (north), 45° (east/west) and 35° (south), measured at 2m above ground level.	At the closest (6.17m) setback, the shed's 3.64m height is well within the applicable recession plane envelope under any orientation. **Complies**
RPROZ-S3	Setback of at least 10m from all site boundaries (the <5,000m^2 accessory building exception does not apply; the site is 9,027m^2). Water tanks less than 2.7m high are excluded from the standard.	Shed: 6.17m to the southwestern (access leg) boundary. The 2.5m high attenuation tank is excluded from the standard (exception (d)). **Not met – Restricted Discretionary**
RPROZ-S4	Building or structure coverage no more than 15% (superseded within the Horticulture Precinct by PREC2-S1, see 8.2).	930m^2 (786m^2 existing + 144m^2 proposed) of 9,027m^2 = 10.3%. **Complies**
RPROZ-S5–S9	Setbacks for stock-holding buildings, and sensitive-activity setbacks from Mineral Extraction, intensive primary production, stock buildings and Heavy Industrial zone boundaries.	Not a stock-holding building or sensitive activity; no such zone boundary is nearby. **Not applicable**

Provision	Rule / Standard	Assessment
RPROZ-S10	Sensitive activities setback 20m from the boundary of the Horticulture Precinct.	The site is itself within the Horticulture Precinct; the shed is not a sensitive activity. **Not applicable**
RPROZ-R2	Impermeable surface coverage. PER-1: no more than 10% of the site.	28.2% (2,544m^2 of 9,027m^2) following development (Appendix D). **Not met – Restricted Discretionary**
RPROZ-R3	Residential activity.	No new residential activity proposed. **Not applicable**
RPROZ-R4	Visitor accommodation.	Not proposed. **Not applicable**
RPROZ-R5	Home business.	Not proposed by this application. The existing Laser Plumbing business is an existing, lawfully established activity, unaffected by and not part of this application. **Not applicable**
RPROZ-R6	Educational facility.	Not proposed. **Not applicable**
RPROZ-R7	Farming.	Not proposed. **Not applicable**
RPROZ-R8	Conservation activity.	Not proposed. **Not applicable**
RPROZ-R9	Recreation activity.	Not proposed. **Not applicable**
RPROZ-R10	Rural produce retail.	Not proposed. **Not applicable**
RPROZ-R11	Rural produce manufacturing.	Not proposed. **Not applicable**
Resulting activity status	–	RPROZ-S3 and RPROZ-R2 PER-1 are both not met. The proposal is a Restricted Discretionary Activity under the PDP, with discretion restricted to the matters of discretion of each infringed standard (RPROZ-S3 and RPROZ-R2 PER-1), as provided by RPROZ-R1 and RPROZ-R2.

8.2 Proposed Far North District Plan – Horticulture Precinct

The Precinct chapter applies in addition to the Rural Production Zone provisions above; PREC2-S1 prevails over RPROZ-S4 where the two overlap, as reflected below.

Table 2 – Horticulture Precinct Rules and Standards (PDP)

Provision	Rule / Standard	Assessment
PREC2-S1	Building or structure coverage no more than 12.5% of the site (prevails over RPROZ-S4).	930m^2 of 9,027m^2 = 10.3%. **Complies**
PREC2-R1	Residential activity.	No new residential activity proposed. **Not applicable**
PREC2-R2	Rural produce manufacturing.	Not proposed. **Not applicable**
PREC2-R3	Garden centres ancillary to on-site horticulture.	Not proposed. **Not applicable**
PREC2-R4	Plant and food research.	Not proposed. **Not applicable**
PREC2-R5	Artificial crop protection / crop support structures.	Not proposed. **Not applicable**
PREC2-R6–R20	Visitor accommodation, education, rural industry, tourism, papakāinga, mineral prospecting, emergency services, cemeteries, kennels, recreation, community facility, industrial activity, intensive primary production, composting, mineral extraction.	None of these activities is proposed. The existing Laser Plumbing business predates, and is unaffected by, this application. **Not applicable**

8.3 Operative Far North District Plan – Rural Production Zone

The site is zoned Rural Production under the ODP (Chapter 8.6), which remains fully operative and is not subject to appeal. All permitted activity standards (Rules 8.6.5.1.1 to 8.6.5.1.12) are assessed below.

Table 3 – Rural Production Zone Standards (ODP)

Rule	Requirement	Assessment
8.6.5.1.1	Residential Intensity – one unit per 12ha, each with 3,000m^2 exclusive use plus 11.7ha elsewhere (subject to existing-lot exception).	No new residential unit proposed. **Not applicable**
8.6.5.1.2	Sunlight – 45° recession plane measured from 2m above ground level at any site boundary (measured from the far boundary where the boundary adjoins an access lot serving a rear site).	At the 6.17m closest setback, the recession plane permits a height of approximately 6.17m; the shed's 3.64m height complies. As the adjoining boundary is an access leg serving a rear site, the measurement may in fact be taken from the leg's far boundary, further increasing the available envelope. **Complies**

Rule	Requirement	Assessment
8.6.5.1.3	Stormwater Management – maximum impermeable surface coverage of 15% (Permitted); 20% (Controlled, Rule 8.6.5.2.1).	28.2% following development (Appendix D) – exceeds both the Permitted (15%) and Controlled (20%) thresholds. **Not met**
8.6.5.1.4	Setback from Boundaries – 10m from any site boundary (the <5,000m^2 accessory building exception does not apply).	6.17m to the southwestern boundary. **Not met – Restricted Discretionary (Rule 8.6.5.3.4)**
8.6.5.1.5	Transportation – refer to Chapter 15 (Traffic, Parking and Access).	No new or altered vehicle crossing; existing access retained; no material change in trip generation. **Complies**
8.6.5.1.6	Keeping of Animals – setbacks for factory farming, catteries and boarding kennels.	Not proposed. **Not applicable**
8.6.5.1.7	Noise – 65 dBA L10 (0700–2200), 45 dBA L10 / 70 dBA Lmax (2200–0700).	A storage shed generates no ongoing noise source beyond ordinary use; construction noise is temporary and managed under standard practice. **Complies**
8.6.5.1.8	Building Height – maximum 12m.	3.64m. **Complies**
8.6.5.1.9	Helicopter Landing Area – 200m from Residential/Coastal Residential/Russell Township/Point Veronica zone boundaries.	Not proposed. **Not applicable**
8.6.5.1.10	Building Coverage – 12.5% (Permitted); 15% (Controlled, Rule 8.6.5.2.5).	10.3% (930m^2 of 9,027m^2). **Complies**
8.6.5.1.11	Scale of Activities – limits on persons engaged in activities on site.	A storage shed involves no employees or public activity beyond the household. **Complies**
8.6.5.1.12	Temporary Events.	Not proposed. **Not applicable**
Resulting activity status	–	Rule 8.6.5.1.4 (Setback) triggers Restricted Discretionary status under Rule 8.6.5.3. Rule 8.6.5.1.3 (Stormwater Management) is not a listed Restricted Discretionary matter; exceeding the 20% Controlled threshold (Rule 8.6.5.2.1) therefore defaults this non-compliance to a Discretionary Activity under Rule 8.6.5.4(c). Applying the standard bundling approach, the proposal is a Discretionary Activity under the ODP.

8.4 Other District-Wide Matters

Table 4 – Other District-Wide Matters

Chapter	Subject	Assessment
Transport (PDP TRAN chapter)	Parking, access and vehicle crossings.	No new or altered vehicle crossing is proposed; existing driveways are retained. The shed generates no additional parking or trip generation demand. **Complies**
Earthworks	Excavation and filling.	200mm topsoil scrape (less than 20m^3) for the shed, plus minor ground preparation for the attenuation tank, all retained on site – minor volumes unlikely to trigger a separate district plan earthworks threshold. **Complies**
Natural Hazards	Flood, coastal and land-instability hazards.	No hazard overlay identified. The site is not within a mapped NRC flood hazard or flood susceptible land zone. **Complies**
Heritage / SASM / Notable Trees	Historic heritage, sites of significance to Māori, notable trees.	None known **Complies**
Indigenous Biodiversity	Ecosystems and vegetation clearance.	No vegetation clearance is proposed. **Complies**
Hazardous Substances	Storage and use of hazardous substances.	Not proposed as part of this application. **Complies**
Signs / Lighting	Signage and outdoor lighting.	**Not relevant to a storage shed.** **Complies**

No rule with legal effect requires consent beyond the matters identified in Tables 1 to 3 above.

9. Statutory Considerations

Section 104C of the RMA governs the determination of Restricted Discretionary activities: the consent authority may grant or refuse the application, but may only consider the matters over which discretion is restricted, and may impose conditions under section 108 only in relation to those matters.

The proposal is a Discretionary Activity under the ODP. Section 104B applies to Discretionary activities, and the consent authority may consider any relevant matter under section 104, without restriction. The wider assessment below is therefore the operative basis for assessment, while also expressly addressing the Restricted Discretionary matters of discretion arising under the PDP.

Section 104 requires that, subject to Part 2, the consent authority have regard to any actual and potential effects on the environment, the relevant provisions of national and regional

instruments and the relevant plan or proposed plan, and any other matter the consent authority considers relevant and reasonably necessary. Those matters are addressed below.

Section 104(1)(a) – Assessment of effects on the environment

Setback and effects on the adjoining access leg

The matter engaging discretion under RPROZ-S3 and Rule 8.6.5.1.4 is the 6.17m setback to the southwestern boundary, against a 10m requirement. That boundary adjoins Lot 1 DP 310384, which is a long, narrow access leg serving a rear site, rather than a building platform, occupied dwelling, or any other potentially impacted activity.

The proposed shed does not interrupt or obstruct access or egress along this accessway. Given the leg's narrow, elongated configuration, it is not feasible for any built development (such as a dwelling or other sensitive activity) to be constructed along this part of the site. Effects are therefore avoided by the proposal.

This is consistent with the matters of discretion identified under both RPROZ-S3 (siting and design of the building with respect to privacy and shading; and the safety and efficiency of current or future access and egress) and Rule 8.6.5.3.4 (extent to which the building reduces outlook and privacy, or restricts visibility for vehicle access and egress).

No written approval has been obtained from the owner of Lot 1 DP 310384, on the basis that the effects of the setback shortfall on that party are considered to be avoided for the reasons above.

Stormwater and impermeable surface coverage

The matter engaging discretion under RPROZ-R2 PER-1 and Rule 8.6.5.1.3 is the site's overall impermeable surface coverage. The Haigh Workman Stormwater Management Report calculates this at 28.2% (2,544m^2 of 9,027m^2) following development, compared with 21.9% (1,981m^2) for the surfaces covered by existing building consents.

The 563m^2 difference comprises the proposed shed (144m^2) and attenuation tank (7m^2), together with approximately 412m^2 of existing impermeable surfaces (a shed, a driveway extension, concrete areas and smaller sheds).

Haigh Workman modelled the consented pre-development and post-development scenarios using HydroCAD for the 10% AEP event. Without mitigation, the additional impermeable surfaces would increase peak runoff. The proposed 15,000 litre attenuation tank, receiving roof runoff from the new shed and the existing 275m^2 shed, reduces the peak flow from the connected roofs from 4.7 L/s to 1.7 L/s, and limits the post-development 10% AEP peak runoff from the site to the consented pre-development level (65.8 L/s).

The design is stated to comply with the FNDC Engineering Standards 2023, including the requirements that development not increase peak discharge rates to the receiving environment and that concentrated flows not be discharged onto neighbouring properties.

Surface runoff continues to leave the site as sheet flow following natural contours; the site is not within a mapped flood hazard or flood susceptible land zone. Haigh Workman also identify Rule C.6.4.2 of the Regional Plan for Northland (diversion and discharge of stormwater from outside a public network), which is conditional on there being no increase in flooding of other properties in events up to the 10% AEP. As post-development peak flows are limited to consented pre-development levels, the discharge is considered capable of complying with that rule, and no regional consent is required.

The matters of discretion under RPROZ-R2 PER-1 are addressed in Table 5, drawing on Appendix D. The Chapter 11 stormwater assessment criteria of the ODP are addressed in Table 4 of Appendix D and are adopted for the purposes of this application.

In summary, the proposal uses attenuation as a low impact design measure, mitigates runoff to the level expected under the consented development, makes provision for climate change, and does not alter drainage patterns, soil absorption or the life-supporting capacity of soils.

Table 5 – RPROZ-R2 Matters of Discretion (Impermeable Surface Coverage)

Matter	Criterion	Assessment
(a)	The extent to which landscaping or vegetation may reduce adverse effects of run-off.	The development area is currently grassed. Landscaping could reduce effects further, but the proposed attenuation achieves the greatest reduction.
(b)	The effectiveness of the proposed method for controlling stormwater on site.	The attenuation tank limits 10% AEP post-development peak flow to consented pre-development levels, and the controls comply with the FNDC Engineering Standards 2023.
(c)	Availability of land for disposal of effluent and stormwater without adverse effects on waterbodies, groundwater, or adjoining or downstream sites.	The wastewater disposal field location is known and retains adequate setback and reserve area. Stormwater is discharged well away from it.
(d)	Whether water sensitive design methods and green spaces can be used.	Attenuation and the discharge of flows to the ground surface allow absorption by the soils.
(e)	Any cumulative effects on total catchment impermeability.	Runoff above the consented baseline is attenuated back to pre-development levels, so cumulative catchment effects are nullified.
(f)	Natural hazard mitigation and site constraint.	No natural hazards or site constraints apply; the site is gently sloping.
(g)	Potential adverse effects on cultural, spiritual, heritage and/or amenity values of any affected waterbodies.	No constraints apply. The nearest watercourse is approximately 95m away and receives only attenuated flows.
(h)	The extent to which impermeable surfaces can be avoided or minimised on highly productive land, and the impact on the life-supporting capacity of soils.	The increase attributable to the proposal is the minimum required for the shed. No new driveway or parking is needed, and drainage patterns and soil absorption are not altered.

On this basis, while the site's overall impermeable surface coverage exceeds the applicable permitted (and, under the ODP, controlled) thresholds, the actual adverse stormwater effects of the proposal are considered less than minor, with no adverse effect on adjoining or downstream sites.

Rural character and amenity

The shed is consistent in scale, form and materials with the existing sheds on the site (up to 275m^2), and is sited towards the rear of existing buildings on the site, clustered with the existing shed and hardstand, rather than prominent to Kerikeri Road or neighbouring properties. The site already accommodates a substantial building platform (786m^2 of existing buildings). The

addition of a further, similarly-scaled storage building does not materially alter the rural character or amenity of the site or surrounding area.

Reverse sensitivity

The shed is a storage building, not a sensitive activity, and does not generate odour, noise, dust or other emissions capable of constraining a primary production activity on an adjoining site. No reverse sensitivity effect arises.

Highly Productive Land

As set out under National and Regional Instruments below, the proposal is a small-scale activity clustered with existing development on a small area of land with limited use for horticulture, falls within the Clause 3.9(2)(g) exception to Policy 8 of the NPS-HPL, and accordingly gives rise to no more than minor effects on the availability or productive capacity of highly productive land.

Contaminated soil (HAIL / NES-CS)

As set out under National and Regional Instruments below, the proposed soil disturbance qualifies as a permitted activity under Regulation 8(3) of the NES-CS, and gives rise to no more than minor effects in respect of contaminated soil.

Section 104(1)(ab) – Measures to achieve positive effects

The proposal enables appropriate, ancillary storage for the existing residential and business use of the property, and makes efficient use of land by clustering the new building with existing buildings and hardstand. The new attenuation tank also receives runoff from the existing 275m^2 shed, and limits peak runoff from the site as a whole to consented pre-development levels, which will improve the management of stormwater from existing as well as proposed impermeable surfaces.

Section 104(1)(b) – National and regional instruments

The national and regional instruments potentially relevant to this application are listed below. The two engaged in substance – the NPS-HPL and the NES-CS – are assessed in detail following the table; the remainder are not relevant to this proposal, for the reasons given.

Table 6 – National and Regional Instruments

Instrument	Relevance	Assessment
National Policy Statement for Highly Productive Land 2022 (NPS-HPL)	Relevant – site is LUC Class 2s1, meeting the transitional HPL definition.	Assessed in detail below. **Consistent**
NES for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NES-CS)	Relevant – site history indicates HAIL Code A10 (historic horticultural/orchard use).	Assessed in detail below. **Permitted activity**
National Policy Statement for Freshwater Management 2020 (NPS-FM)	**Not relevant.**	No works within, or affecting, any waterbody are proposed. Post-development peak flows are limited to consented levels. **Not relevant**

Instrument	Relevance	Assessment
NES for Freshwater 2020 (NES-F)	**Not relevant.**	No wetland or waterway is affected by the proposed works; the nearest watercourse is approximately 95m away. **Not relevant**
New Zealand Coastal Policy Statement 2010 (NZCPS)	**Not relevant.**	The site is not within the coastal environment. **Not relevant**
National Policy Statement for Urban Development 2020 (NPS-UD)	**Not relevant.**	The site is rural and not within an urban environment as defined. **Not relevant**
NES for Air Quality 2004 (NES-AQ)	**Not relevant.**	No discharge to air, burning or industrial activity is proposed. **Not relevant**
NES for Electricity Transmission Activities 2009 (NES-ETA)	**Not relevant.**	No National Grid transmission infrastructure is identified on or near the site. **Not relevant**
NES for Plantation Forestry 2017 (NES-PF)	**Not relevant.**	No forestry activity is proposed. **Not relevant**
National Policy Statement for Indigenous Biodiversity 2023 (NPS-IB)	**Not relevant.**	No significant natural area is identified on or adjacent to the site. **Not relevant**
Northland Regional Policy Statement / Regional Plan for Northland	Relevant as a s104(1)(b) matter generally.	The proposal generates no reverse sensitivity or sterilisation effect, is serviceable on site, and the stormwater discharge is considered capable of complying with Rule C.6.4.2; no regional consent is anticipated to be required. **Consistent**

National Policy Statement for Highly Productive Land 2022

The site is identified as LUC Class 2s1 and therefore meets the transitional definition of highly productive land (HPL).

Policy 8 of the NPS-HPL directs that HPL is protected from inappropriate use and development, implemented through Clause 3.9. Clause 3.9(1) requires that all use or development of HPL that is not land-based primary production be treated as inappropriate, unless it falls within one of the exceptions in Clause 3.9(2).

The proposed shed is not land-based primary production. It is, however, considered to fall within the Clause 3.9(2)(g) exception, being a small-scale land-use activity with no meaningful impact on the productive capacity of the land, for the following reasons:

- In context of the site, the uses consented prior to the imposition of the NPS-HPL limit any meaningful and practical soil based primary production on the site.
- The shed has a modest footprint (144m^2), being approximately 1.6% of the 9,027m^2 site.
- It is located on a small area of lawn immediately adjacent to the existing 275m^2 shed used by Laser Plumbing and the existing concrete apron (part of the footprint, approximately 17.75m^2, overlaps that apron), between existing buildings, driveways and the access leg. That small area has limited practical use for horticulture, and is not part of any productive orchard or cropping area.
- Clustering new buildings with existing development, rather than spreading development across a wider area, is a recognised way of minimising the impact of a proposal on the productive capacity of HPL under Clause 3.9(3)(a).
- The balance of the site (lawns and fruit trees) is unaffected, and the proposal does not fragment the site or reduce access to it.

The measures at Clause 3.9(3) are also satisfied. The siting and clustering of the shed minimises any actual or potential loss of the availability or productive capacity of HPL in the district (Clause 3.9(3)(a)); and the shed, being a storage building generating no odour, noise or dust, avoids any reverse sensitivity effect on land-based primary production activities (Clause 3.9(3)(b)).

The proposal is accordingly considered consistent with Policy 8, Policy 9 and Clause 3.9 of the NPS-HPL.

NES for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NES-CS)

The site's zoning history (Rural Production / Horticulture Precinct) and its locality-wide history of horticultural and orchard production indicate the site is, more likely than not, subject to the Hazardous Activities and Industries List (HAIL) under code A10 (persistent pesticide bulk storage or use, including orchards).

The proposal is not a subdivision and does not involve a change of land use for the purposes of the NES-CS. The shed is ancillary storage within the same Rural Production zoning as the balance of the site. The only NES-CS activity relevant is the soil disturbance associated with constructing the shed's foundations and slab, and preparing the attenuation tank pad.

Soil disturbance on HAIL land is a permitted activity under Regulation 8(3) of the NES-CS (no resource consent required under that instrument) provided:

- controls are put in place to minimise people's contact with the soil during the works;
- the soil is reinstated to an erosion-resistant state within one month of completing the works;
- the integrity of any structure designed to contain contaminants is not compromised (not applicable – no such structure is present);
- any soil taken off-site is disposed of at a facility authorised to receive it;
- the volume of soil disturbed does not exceed 25m^3 (in-situ volume) per 500m^2 of the relevant piece of land;
- the volume of soil removed from the site does not exceed 5m^3 per 500m^2 per year; and
- the disturbance is completed within two months.

The site's history indicates the full site area has historically been in horticultural use. On this basis, the relevant "piece of land" for the purpose of the Regulation 8(3)(e) calculation is taken as the whole 9,027m^2 site, giving a permitted disturbance volume of approximately 451m^3 (25m^3 × 9,027/500).

The proposed earthworks – a 200mm topsoil scrape of less than 20m^3 for the shed, together with minor ground preparation for the attenuation tank, all retained on site – represent a small fraction of this threshold (the shed scrape alone is less than 5%), with no soil taken off-site, and are capable of being completed, and the site reinstated, well within the required timeframes using standard erosion and dust controls.

On this basis, the proposed soil disturbance qualifies as a permitted activity under Regulation 8(3) of the NES-CS, and no separate resource consent is required under that instrument.

Section 104(1)(b)(vi) – Objectives and policies of the PDP and ODP

The relevant objectives and policies of the PDP Rural Production Zone and Horticulture Precinct chapters are assessed in Tables 7 and 8. The relevant objectives and policies of the ODP Rural Environment (Chapter 8) and Rural Production Zone (Chapter 8.6) chapters are assessed in Tables 9 and 10. As the ODP is fully operative and determines the Discretionary Activity status of this application, Tables 9 and 10 are of particular relevance.

Table 7 – Rural Production Zone Objectives and Policies (PDP)

Ref	Objective / Policy	Assessment
RPROZ-O1–O3	Manage the zone for primary production; enable primary production, ancillary and compatible activities; protect highly productive land.	The proposal is ancillary storage associated with the existing lawful use of the site. It is clustered with existing buildings and does not compromise the availability of highly productive land for primary production. **Consistent**
RPROZ-O4 / P4	Maintain rural character and amenity, including low site coverage of buildings and typical rural working-environment effects.	Building coverage remains at 10.3%, well below the applicable thresholds. The shed is consistent in scale with existing buildings on site. **Consistent**
RPROZ-P1–P3	Enable primary production and compatible ancillary activities; manage new sensitive/non-productive activities to avoid reverse sensitivity.	The shed is not a sensitive activity and creates no reverse sensitivity risk. **Consistent**
RPROZ-P5–P7	Avoid incompatible land use; avoid loss of highly productive land and fragmentation.	No subdivision or loss of production capacity arises. **Consistent**

Table 8 – Horticulture Precinct Objectives and Policies (PDP)

Ref	Objective / Policy	Assessment
PREC2-O1 / O2	Protect the precinct for horticultural activities; avoid fragmentation, reverse sensitivity, hazard exacerbation; serviceable on site.	The proposal does not fragment the precinct, generates no reverse sensitivity, and is serviced by existing on-site infrastructure. **Consistent**
PREC2-P1–P4	Avoid incompatible land use; enable horticulture/ancillary activities; ensure sensitive activities avoid reverse sensitivity.	The shed is ancillary storage, not an incompatible land use, and is not a sensitive activity. **Consistent**
PREC2-P5 / P6	Avoid fragmenting subdivision; encourage amalgamation where it assists viability.	No subdivision is proposed. **Consistent**

Table 9 – Rural Environment Objectives and Policies (ODP, Chapter 8)

Ref	Objective / Policy	Assessment
8.3.1	Promote the sustainable management of natural and physical resources of the rural environment.	The shed is ancillary storage on an already developed site, with stormwater managed by an engineered attenuation system. **Consistent**
8.3.2	Ensure the life supporting capacity of soils is not compromised by inappropriate subdivision, use or development.	The shed is small-scale (144m^2, approximately 1.6% of the site), clustered with existing development, and does not alter drainage patterns or soil absorption. No subdivision is proposed, and the balance of the site is unaffected. **Consistent**
8.3.3	Avoid, remedy or mitigate the adverse and cumulative effects of activities on the rural environment.	Effects of the setback shortfall are avoided (the boundary is an access leg). Cumulative stormwater effects are nullified by attenuation to consented pre-development levels, a form of Low Impact Design (Method 8.5.11). Building coverage remains low at 10.3%. **Consistent**
8.3.4	Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.	None identified on or adjacent to the site; no vegetation clearance is proposed. **Not relevant**
8.3.5	Protect outstanding natural features and landscapes.	None identified on or adjacent to the site. **Not relevant**

Ref	Objective / Policy	Assessment
8.3.6	Avoid actual and potential conflicts between land use activities in the rural environment.	The shed is a storage building and not a sensitive activity. It generates no odour, noise or dust capable of conflicting with neighbouring activities. **Consistent**
8.3.7	Promote the maintenance and enhancement of amenity values to a level consistent with the productive intent of the zone.	The shed is consistent in scale, form and materials with the existing sheds on the site and is clustered with them. The rural character of the site and surrounds is maintained. **Consistent**
8.3.8	Facilitate integrated, superior outcomes through management plans and integrated development.	No management plan or integrated development is proposed. **Not relevant**
8.3.9	Enable rural production activities to be undertaken in the rural environment.	The shed does not constrain any rural production activity on the site or on adjoining land. **Consistent**
8.3.10	Enable activities compatible with the amenity values of rural areas and rural production activities to establish.	Ancillary storage for existing residential and business use is compatible with rural amenity values and rural production activities. **Consistent**
8.4.1	Enable activities that contribute to the sustainable management of natural and physical resources to locate in the rural environment.	The proposal makes efficient use of an existing developed part of the site and manages its stormwater effects. **Consistent**
8.4.2	Allow activities to establish to the extent adverse effects can be avoided, remedied or mitigated, safeguarding the life supporting capacity of soils and ecosystems and enabling rural productive activities to continue.	Adverse effects are avoided (setback) or mitigated (stormwater attenuation). Soils are safeguarded and rural production is not constrained. **Consistent**
8.4.3	Design and operate new infrastructure to safeguard the life supporting capacity of air, water, soil and ecosystems.	The attenuation tank is designed to the FNDC Engineering Standards 2023 and limits post-development peak flows to consented levels. It discharges to an existing soak-pit well away from the wastewater disposal field. **Consistent**
8.4.4	Enable development that maintains or enhances the amenity value of the rural environment.	The shed maintains rural amenity values through its modest scale and clustering with existing buildings. **Consistent**

Ref	Objective / Policy	Assessment
8.4.5	Encourage the avoidance of adverse effects from incompatible land uses, including reverse sensitivity.	The shed is not a sensitive activity and does not constrain existing land uses. **Consistent**
8.4.6	Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.	None identified; no clearance proposed. **Not relevant**
8.4.7	Encourage the efficient use and development of natural and physical resources, including consideration of demands upon infrastructure.	The shed uses existing access and services, is clustered with existing development, and requires no new public infrastructure. **Consistent**
8.4.8	Ensure the intensity, scale and type of development avoids, remedies or mitigates effects on habitats (including freshwater), landscapes and amenity, having regard to functional need and the cumulative effects of non-farming activities.	The shed is modest in scale, and no habitats or landscapes are affected. The nearest watercourse (approximately 95m away) receives only attenuated flows. The shed is ancillary to existing lawfully established residential and business activities, and its cumulative effect as a non-farming activity is minor. **Consistent**

Table 10 – Rural Production Zone Objectives and Policies (ODP, Chapter 8.6)

Ref	Objective / Policy	Assessment
8.6.3.1	Promote the sustainable management of natural and physical resources in the Rural Production Zone.	See Table 9 (8.3.1). The proposal is ancillary to an existing developed site and manages its effects. **Consistent**
8.6.3.2	Enable the efficient use and development of the zone so that people and communities can provide for their social, economic and cultural well-being and health and safety.	The shed provides storage for the applicants' household and established business, making efficient use of the developed part of the site. **Consistent**
8.6.3.3	Promote the maintenance and enhancement of amenity values to a level consistent with the productive intent of the zone.	Scale, form and siting are consistent with the existing buildings on the site; building coverage (10.3%) is below the 12.5% permitted threshold. **Consistent**
8.6.3.4	Promote the protection of significant natural values of the zone.	No significant natural values are identified on the site. **Not relevant**

Ref	Objective / Policy	Assessment
8.6.3.5	Protect and enhance the special amenity values of the frontage to Kerikeri Road between SH10 and the urban edge of Kerikeri.	The shed is set back approximately 36.5m from the road frontage (well beyond the 12m frontage setback in Rule 8.6.5.1.4(c)) alongside the existing 275m^2 shed, and is small in scale relative to the site. Existing fruit trees and boundary hedging remain. **Consistent**
8.6.3.6	Avoid, remedy or mitigate conflicts between new land use activities and existing lawfully established activities (reverse sensitivity).	The shed is not a sensitive activity and does not generate emissions that could conflict with existing activities. **Consistent**
8.6.3.7	Avoid, remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources.	The proposal is compatible with the existing use of the site. Effects on soils and water are avoided or mitigated through attenuation, and the NES-CS earthworks conditions will be met. **Consistent**
8.6.3.8	Enable the efficient establishment and operation of activities and services with a functional need to be located in rural environments.	The shed is ancillary storage, not an activity with a functional need to locate in the rural environment. It does not hinder any such activity. **Not relevant**
8.6.3.9	Enable rural production activities to be undertaken in the zone.	The proposal does not constrain rural production activities on the site or adjoining land. **Consistent**
8.6.4.1	Enable farming, rural production and a wide range of activities, subject to avoiding, remedying or mitigating effects (including reverse sensitivity) that are not to the detriment of rural productivity.	Effects are avoided or mitigated and are not to the detriment of rural productivity. **Consistent**
8.6.4.2	Impose standards to ensure off-site effects of activities are avoided, remedied or mitigated.	The standards infringed (setback and impermeable surface coverage) manage off-site effects. Those effects are avoided (setback, access leg) or mitigated (attenuation to consented pre-development flows), so the purpose of the standards is met. **Consistent**
8.6.4.3	Encourage land management practices that avoid, remedy or mitigate adverse effects on natural and physical resources.	Stormwater attenuation, erosion and dust controls during earthworks, and reinstatement of disturbed soil are proposed. **Consistent**

Ref	Objective / Policy	Assessment
8.6.4.4	Have regard to amenity values consistent with the productive intent of the zone in determining the type, scale and intensity of development.	A modest storage building of a scale consistent with existing buildings, with low overall building coverage. **Consistent**
8.6.4.5	Take into account the efficient use and development of physical and natural resources.	The shed is clustered with existing buildings and hardstand and uses existing access and services. **Consistent**
8.6.4.6	Maintain the built form of development on sites with frontage to Kerikeri Road (SH10 to Cannon Drive) as small in scale, set back from the road, relatively inconspicuous and in harmony with landscape plantings and shelter belts.	The shed is small in scale (144m^2, 3.64m maximum height), and set back approximately 36.5m from the road alongside the existing 275m^2 shed. Existing fruit trees and boundary hedging remain. **Consistent**
8.6.4.7	Appropriate activities promote rural productivity, with an underlying goal of avoiding adverse effects of conflicting land use activities.	No conflicting land use is introduced. **Consistent**
8.6.4.8	Give separation to activities whose adverse effects, including reverse sensitivity, cannot be avoided, remedied or mitigated.	Adverse effects of the shed can be avoided or mitigated, so no further separation is required. **Consistent**
8.6.4.9	Discourage activities from locating where they are sensitive to, or may compromise, the continued operation of lawfully established activities.	The shed is not sensitive to neighbouring activities and does not compromise them. **Consistent**

For the reasons above, the proposal is considered consistent with the objectives and policies of both the PDP and the ODP as they apply to this application.

Section 104(1)(c) – Other matters

No other matter is considered relevant to the determination of this application.

10. Notification (ss 95A–95D)

Section 95A sets out the steps for determining public notification:

- Public notification is not mandatory (Step 1); and
- Is not precluded (Step 2).
- Under Step 3, the application is not subject to a rule or national environmental standard requiring public notification, and this assessment concludes that any adverse effects on the environment would be less than minor.
- Under Step 4, there are no unusual or exceptional circumstances that would warrant public notification. The application can be processed without public notification.

Section 95B addresses limited notification:

- There are no affected customary rights or marine title groups, and no statutory acknowledgement is engaged (Step 1).
- Limited notification is not precluded (Step 2).
- Under Step 3, the only party with any potential interest in the setback shortfall is the owner of Lot 1 DP 310384. For the reasons set out earlier (the boundary comprising a narrow access leg serving a rear site, along which no built development is feasible, and the shed not interrupting access or egress in any way), any effect on that party is considered to be avoided, and that party is accordingly not considered to be affected in terms of s95E.
- In respect of stormwater, post-development peak flows are limited to consented pre-development levels, so no adjoining or downstream owner is considered to be adversely affected by the impermeable surface coverage.
- No special circumstances arise (Step 4).

This assessment concludes that potential adverse effects arising from the proposal would be less than minor, and the application can proceed on a non-notified basis.

11. Part 2 of the RMA

Purpose (s5). The proposal promotes the sustainable management of natural and physical resources. It enables appropriate ancillary storage for the site's existing lawful use, clustered with existing development, and provides for the applicants' economic wellbeing without giving rise to more than minor adverse environmental effects.

Matters of national importance (s6). No scheduled heritage resource, site of significance to Māori, outstanding landscape or feature, or area of significant indigenous vegetation is identified on or adjacent to the site.

Other matters (ss7–8). The proposal maintains the amenity values and quality of the environment (s7), including in respect of the efficient use of land highlighted by clustering the shed with existing development, and raises no matter engaging the principles of the Treaty of Waitangi (s8). The proposal is consistent with Part 2.

12. Overall Conclusion

This application seeks resource consent for the storage shed and associated stormwater attenuation

Based on the assessment above, the potential adverse effects on the environment of the proposal would be less than minor and can be appropriately managed through conditions of consent. The proposal is also considered to be consistent with the relevant objectives and policies of both District Plans, and with Part 2 of the RMA.

On this basis, it is considered that the application can be processed on a non-notified basis and granted subject to conditions.

Please do not hesitate to contact me should you require any additional information.

Kind regards,

Steven Sanson

Consultant Planner

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

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

R.W. Muir
Registrar-General
of Land

Identifier **NA108B/622**

Land Registration District **North Auckland**

Date Issued 09 October 1996

Prior References

NA101A/74 NA101A/75 NA102A/448

Estate Fee Simple

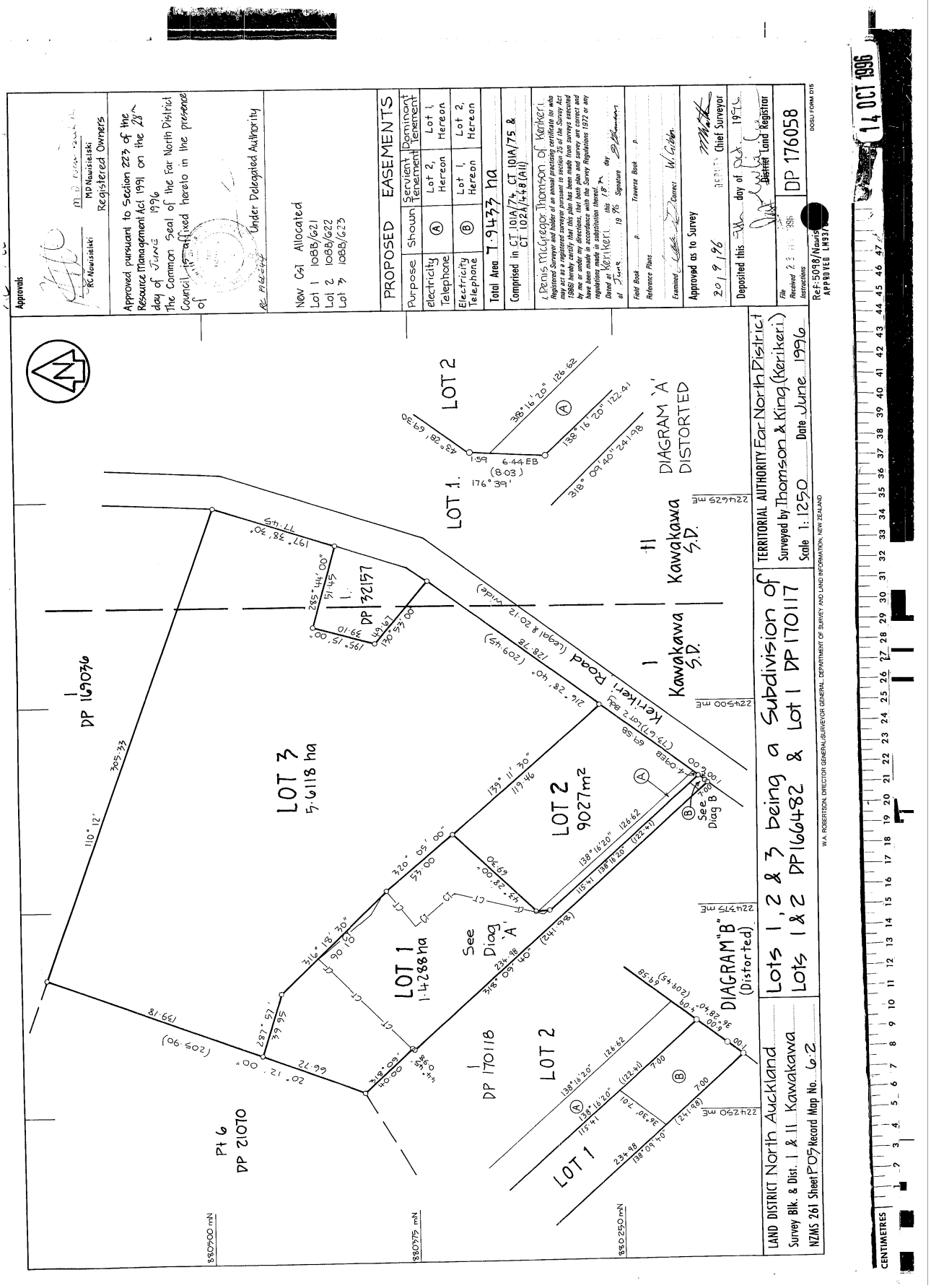
Area 9027 square metres more or less

Legal Description Lot 2 Deposited Plan 176058

Registered Owners

David Ellis George and Tracy Kristina George

Interests


Approvals
MD Nawielski
RG Nawielski
Registered Owners
Approved pursuant to Section 223 of the Resource Management Act 1991 on the 28th day of June 1996
The Common Seal of the Far North District Council was affixed hereto in the presence of
Under Delegated Authority
New Cst Allocated
Lot 1 108B/621
Lot 2 108B/622
Lot 3 108B/623
PROPOSED EASEMENTS
Purpose | Shown | Servient Tenement | Dominant Tenement
Electricity Telephone | A | Lot 2, Hereon | Lot 1 Hereon
Electricity Telephone | B | Lot 1, Hereon | Lot 2, Hereon
Total Area 7.9433 ha
Comprised in CT 101A/74, CT 101A/75 & CT 102A/448 (All)
I, Denis McGregor Thomson of Kerikeri, Registered Surveyor and holder of an annual practising certificate (or who may act as a registered surveyor pursuant to section 23 of the Surveyors Act 1986) hereby certify that this plan and survey are correct and that the survey was carried out by me or under my supervision and that both plan and survey are correct and that the survey was made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof. Dated at Kerikeri this 18th day of June 19 96 Signature
Field Book ... p ... Traverse Book ... p ...
Reference Plans ...
Examined ... Correct ... W. Gribben
Approved as to Survey
20/9/96
Chief Surveyor
Deposited this 14th day of Oct 1996
District Land Registrar
File Ref: 5098/Nawis
Received 23 ... 38h
Instructions
APPROVED LM937
DOSLI FORM 015
DP 176058
TERRITORIAL AUTHORITY Far North District
Surveyed by Thomson & King (Kerikeri)
Scale 1:1250 Date June 1996
Lots 1, 2 & 3 being a Subdivision of Lots 1 & 2 DP 166482 & Lot 1 DP 170117
LAND DISTRICT North Auckland
Survey Blk. & Dist. I & II Kawakawa
NZMS 261 Sheet P05 Record Map No. 6.2
W.A. ROBERTSON, DIRECTOR GENERAL/SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND
LOT 3 5.6118 ha
LOT 2 9027m²
LOT 1 1.4288ha
LOT 1.
LOT 2
DIAGRAM 'A' DISTORTED
DIAGRAM "B" (Distorted)
See Diag 'A'
See Diag B
DP 169076
DP 32157
DP 170118
Pt 6 DP 21070
Kerikeri Road (Legal & Occupied)
Kawakawa S.D.
1 Kawakawa S.D.
11 Kawakawa S.D.
CENTIMETRES

SITEPLAN

Client Name: David George

Client Address: 562 Kerikeri Road, Kerikeri, Northland, 0293

Legal Description: Lot 2 DP 176058

Building Type: Mono Range

Building Size: 18.000m long x 8.000m wide, with 3.100m wall height

Building Use: Storage

Date: 23rd July 2026

DRAWINGS NOT TO SCALE
REPRESENTATION ONLY

ALL DIMENSIONS IN METRES UNLESS SPECIFIED OTHERWISE

Big BOI Sheds Ltd T/A Totalspan Bay of Islands & Hokianga
1235B State Highway 10, R.D.3,
Kerikeri 0293,New Zealand.
Phone: 021 278 0801
Email: Julia.Edwards@Totalspan.co.nz

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District Plan Zoning	Rural Production
Setbacks Required	10m
Corrosion Zone	C
Shed Colour	Titania & NDB Roof
Wind Zone as per AS/NZS 1170.2	36.57 m/s
Site Area M2	9021 m2
Existing Buildings M2	786 m2
Existing Driveways & Paths M2	1594 m2
Proposed Totalspan Building M2 **Part of the proposed shed to be located over an existing concrete pad.	126.25 m2 of 144.00m2
Total Site Coverage M2	2506.25 m2
Impermeable Surfaces %	27.78 %

Earthworks
200mm site scrape of topsoil only, of less than 20 cubic meters. All soil to remain on site.

Stormwater:
To be directed through 80mm Ø PVC DP and led to the existing 25000 Ltr tank & overflow system of a detention basin led to spreader as shown.

- Proposed Totalspan Shed
- Downpipes & Water Tanks
- Distance Markers
- Setback to Boundary
- Survey - Boundary Peg
- Boundary Line

LOT 1
DP 176058

43°28' 00" 69.30

139°11'30" 119.46

LOT 3
DP 176058

LOT 2
DP 322259

356°39' (8.03)

6.44

1.59

7m²

SHED
6m²

SHED
70m²

WATER
TANK

SHED
125m²

shower
4m²

covered area
15m²

POOL

HOUSE
280m²

CONCRETE
14m²

GRAVEL DRIVE 780m²

138°16'20" 122.41

CONCRETE
140m²

1.5m

GL 126.14

FENCE

PROPOSED
NEW SHED
18m X 8m
FL 126.77

SHED
4m²

WATER
TANK

GL 126.33
concrete

CP
126.25

concrete
126.67

GL 126.99

CONCRETE
168m²

GL 126.93

6.17m

7.59m

36.54m

GRAVEL DRIVE

SHED
275m²

SEALED DRIVE
485m²

(73.67)

36°28'40"

69.58

124

126

KERIKERI ROAD

LOT 1
DP 310384

CONCRETE
7m²

4.09

0 20 40m

GENERAL NOTES

Ground levels shown on this plan are current levels and may not be the Ground Level as defined by the FNDC District Plan.

Consideration in terms of the FNDC definition should be undertaken in order to correctly assess the Building Height and Sunlight Rules.

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	Name	Date
Surveyed	MP	March 2019
Drawn	WF	July 2026
Revision		

Height Datum	
Local Reference	
Contour Interval	
Major 2.0m	Minor 0.5m
Address	562 Kerikeri Road, Kerikeri
Title NA108B/622	Area 0.9027 ha.

JOB/CLIENT:

David & Tracy George

KERIKERI

SHEET TITLE:

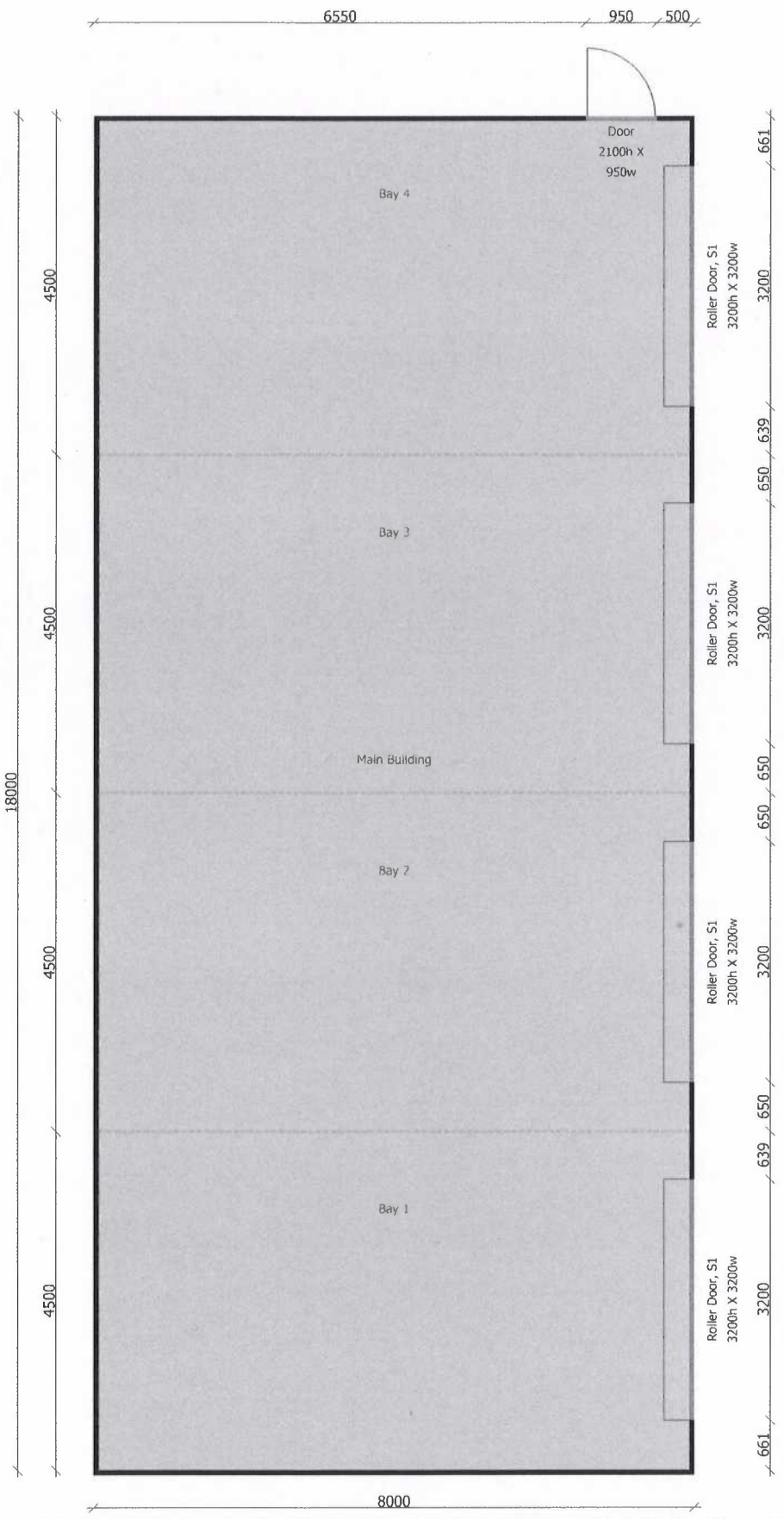
PROPOSED NEW SHED
562 KERIKERI ROAD
SITE SURVEY
LOT 2 DP 176058

Williams & King
Registered Land Surveyors, Planners & Land Development Consultants
27 Hobson Ave
PO Box 937, Kerikeri
Tel: 09-407 6030
Email: kerikeri@saps.co.nz

Job No: 24879

File: George Topo.lcd

SCALE @ A3	SHEET No
1:500	1/1



* All Dimensions in mm. Colours shown are examples only. For exact colour samples see your local Totalspan Bay of Islands/Hokianga representative.
'NOTE' Drawings are not construction issue. Shop drawings (For Construction) will be detailed prior to fabrication.

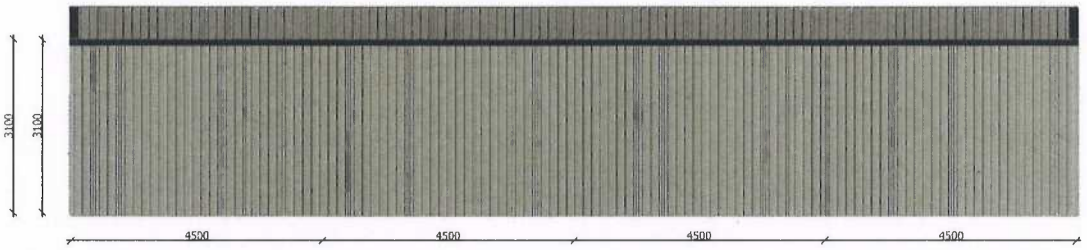
Big BOI Sheds Ltd.
1235 State Highway 10, , Kerikeri, 293, New Zealand
Phone: 94077875
Email: boi_hokianga@totalspan.co.nz

For:
David George
562 Kerikeri Road

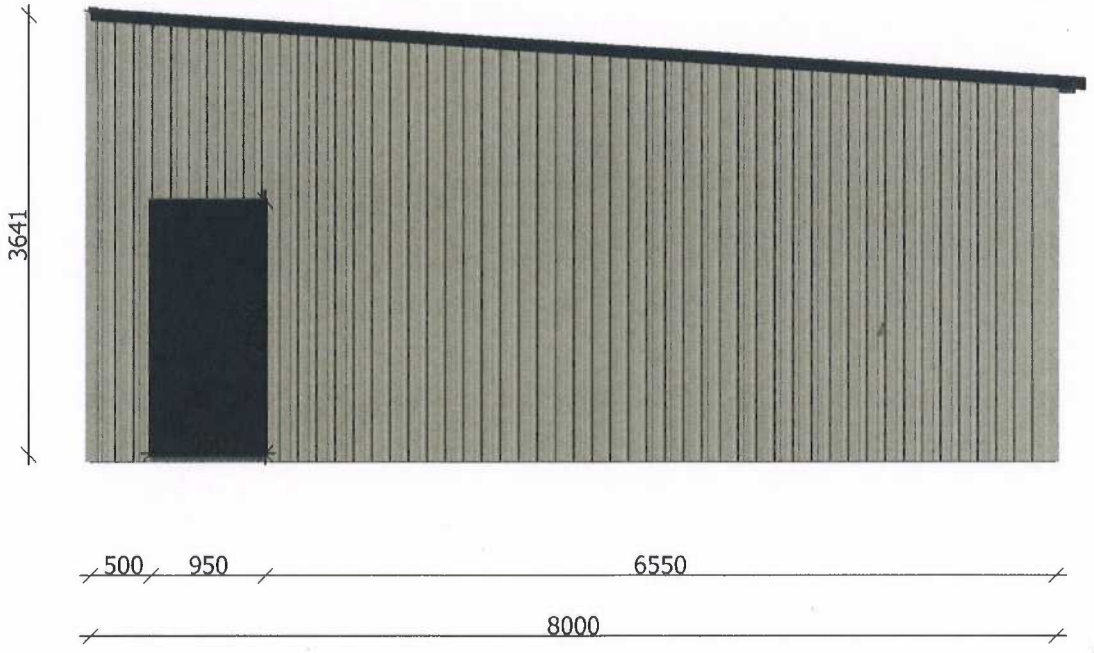
, Kerikeri
0293

Mono Range
Project Number: DN.294

29 Jun 2026



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'NOTE' Drawings are not construction issue. Shop drawings (For Construction) will be detailed prior to fabrication.

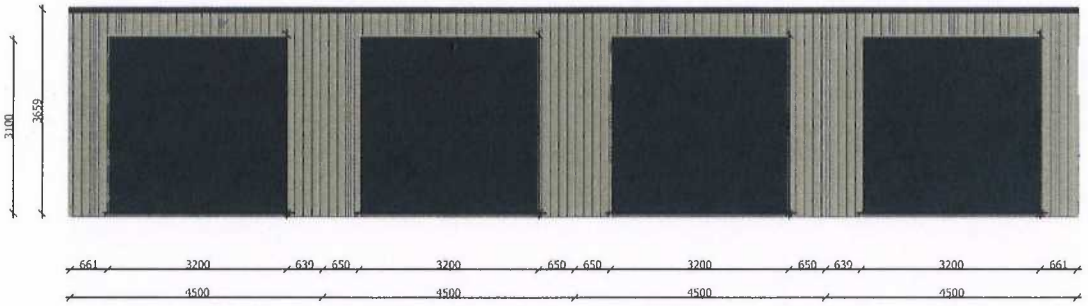
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Phone: 94077875
Email: boi_hokianga@totalspan.co.nz

For:
David George
562 Kerikeri Road

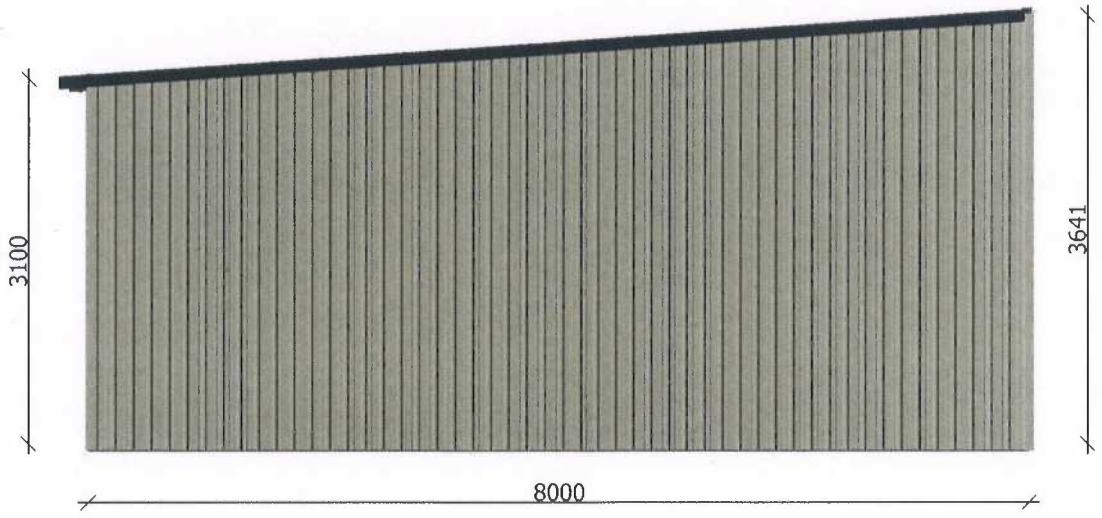
, Kerikeri
0293

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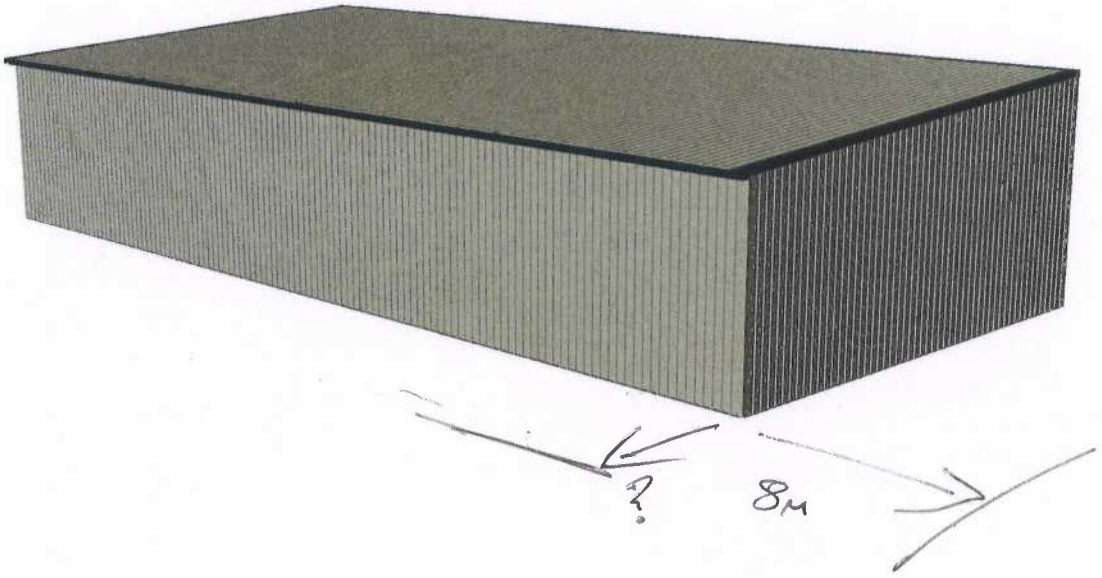
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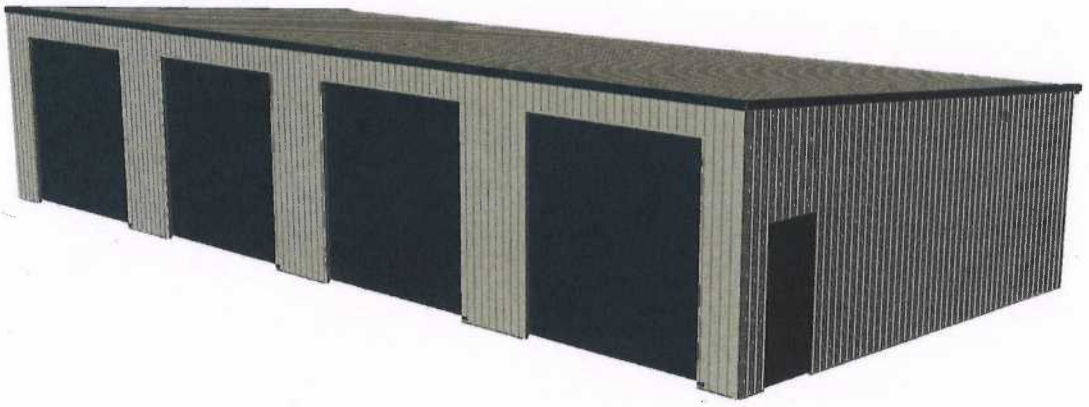
, Kerikeri
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Big BOI Sheds Ltd.
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Phone: 94077875
Email: boi_hokianga@totalspan.co.nz

For:
David George
562 Kerikeri Road

, Kerikeri
0293

Mono Range
Project Number: DN.294

29 Jun 2026

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

9 September 2026

David Ellis George
66 Reinga Road
Kerikeri 0230

Tēnā koe,

Building consent number:	EBC-2027-187/0
Property ID:	3315353
Address:	562 Kerikeri Road, Kerikeri 0293
Description:	Mono Range Shed

Requirement for Resource Consent

PIM Assessment of your application has highlighted the need for Resource Consent that must be granted prior to any building works or earthworks commencing.

The site is zoned **Rural Production** under the Operative District Plan, and **Rural Production and Horticulture Precinct** under the Proposed District Plan – Appeals Version and Resource Consent is required for breach of the following:

Rule:	8.6.5.1.3 STORMWATER MANAGEMENT
Reason:	These plans show the existing and proposed impermeable surfaces area exceeds the 15% permitted threshold.

Rule:	8.6.5.1.4 SETBACK FROM BOUNDARIES
Reason:	These plans show this proposed non-habitable shed located within 10m of a boundary.

Rule:	RPROZ-R2 PER-1 Impermeable surface coverage
Reason:	These plans show the existing and proposed impermeable surfaces area exceeds the 10% permitted threshold.

Rule:	RPROZ-R1 PER-1 S3 Setback from boundaries
Reason:	These plans show this proposed non-habitable shed located within 10m of a boundary.

Please note there may be other rule breaches found during the Resource Consent process. It is your responsibility to ensure the Resource Consent approved plans match the Consented approved plans.

The application form can be downloaded from www.fndc.govt.nz and submitted to Council's (Planning Department) with the appropriate documentation and instalment fee.

If you have any queries, please contact the Duty Planner on Duty.Planner@fndc.govt.nz or 0800 920 029.

Nāku iti nei, nā



Lysigna Mare
PIM Officer
Delivery and Operations

Emailed to: Julia.edwards@totalspan.co.nz

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

FORM 4
Certificate attached to
PROJECT INFORMATION MEMORANDUM

Section 37, Building Act 2004

Building Consent Number: EBC-2027-187/0

RESTRICTIONS ON COMMENCING BUILDING WORK UNDER RESOURCE MANAGEMENT ACT 1991

The building work referred to in the attached Project Information Memorandum is also required to have the following **Resource Consent**(s) under the Resource Management Act 1991:

- **Resource Consent – REQUIRED**

As the above Resource Consent(s) will affect the building work to which the Project Information Memorandum relates, until this has been granted no building work may proceed.

Failure to comply with the requirements of this notice may result in legal action being taken against you under the Resource Management Act 1991.

Signature: [redacted]

Position: Manager - Building Services – Delivery and Operations
On behalf of: Far North District Council (Building Consent Authority)
Date: 9 September 2026

Stormwater Management Report

562 Kerikeri Road, Kerikeri
(Lot 2 DP 176058)

David and Tracy George
Haigh Workman reference: 26 202
Rev A

14 October 2026



Revision History

Revision Nº	Issued By	Description	Date
A	Aaron Thorburn	First Issue	29 October 2026

Prepared By	Reviewed By	Approved By
pp [redacted]	[redacted]	[redacted]
Aaron Thorburn	**Tom Adcock**	
Senior Environmental Advisor	Senior Civil Engineer	Senior Civil Engineer / Director
BAppSc (Env), CEnvP	*BEng (Civil), CMEngNZ*	*BE (Civil), CMEngNZ, CPEng*

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APPENDICES

Appendix A – Drawings
Appendix B – Building Consent Documentation
Appendix C – HydroCAD data

Executive Summary

Haigh Workman Limited was commissioned by David and Tracy George (the client) to undertake a stormwater management report for the construction of a new shed at 562 Kerikeri Road, Kerikeri.

The property is legally described as Lot 2 DP 176058 and has a total area of 9,021 m^2. The property is developed with a dwelling, multiple sheds, asphalt carpark, concrete pad, gravelled driveway and water tanks. The balance of the property comprises lawns, fruit trees and boundary hedging.

The client intends to construct a new Totalspan shed. The proposed development is shown on Williams and King drawing (24879) and Haigh Workman stormwater management plan 26 202 - SWP01 appended.

The proposed development will result in impermeable surfaces of 28.2% which exceeds the Rural Production zone Permitted Activity threshold of 15% under the Operative District Plan making the activity Discretionary, and the 10% threshold under the Proposed District Plan Appeals Version making the activity Restricted Discretionary.

The proposed development results in an increase in runoff of 4.8 litres per second over the existing consented impermeable surfaces. Stormwater attenuation has been designed to limit peak runoff to pre-development levels for the 10% Annual Exceedance Probability event, as per Far North District Council Engineering Standards 2023.

Stormwater detention tank

Roof runoff from the existing large shed and new Totalspan shed will be directed into a 15,000 litre cylindrical tank with a diameter of 3.0m (such as a Promax Enduro). The attenuation tank shall be plumbed to take the overflow from the existing large shed roof water collection tank. The Totalspan shed downpipes can be either connected to the existing collection tank or directly to the attenuation tank. The overflow from the attenuation tank can use the existing collection tank outlet which discharges to the existing soak-pit located in the lawn area.

The attenuation tank shall be fitted with a 34 mm outlet orifice, preferably at the base but not less than 1.7m below the overflow outlet.

1 Introduction

Haigh Workman Limited (Haigh Workman) were commissioned by David and Tracy George (the client) to undertake a stormwater management report for the proposed construction of a new shed at 562 Kerikeri Road, Kerikeri.

The property is legally described as Lot 2 DP 176058 and has a total area of 9,021 m^2. The property is developed with a dwelling, multiple sheds, asphalt carpark, concrete pad, gravelled driveway and water tanks. The balance of the property comprises lawns, fruit trees and vegetation along the property boundary.

1.1 Objective and Scope

The scope of this report is an assessment of impermeable surfaces, stormwater management and recommend mitigation measures for the proposed development.

1.2 Applicability

This report has been prepared for the sole use of our Client David and Tracy George with respect to the particular brief given to us. This report is to be used by our client and their appointed consultants and may be relied upon by the Far North District Council (FNDC) when considering the application for the proposed development. The information and opinions contained within this report shall not be used in any other context for any other purpose without prior review and agreement by Haigh Workman Limited.

All distances and measurements of the proposed re-development have been provided to Haigh Workman by the architects (Williams and King Limited). If the design differs from the conceptual brief, the reliability of this report will need to be revisited.

2 Site Description

2.1 Site Identification

Site Address:	562 Kerikeri Road, Kerikeri
Legal Description:	Lot 2 DP 176058
Site Area:	9,021 m^2
Zone:	Rural Production under both Operative and Proposed District Plan Appeals Version

The site is located on the outskirts of the Kerikeri township and contains a number of existing buildings including a dwelling, a large shed and concrete hardstand, several smaller sheds, parking and driveways both sealed and gravel. The site slopes at a gentle rate to the northeast, draining to a small unnamed stream on neighbouring property.

The site location is shown below in Figure 1 and on drawings provided at **Appendix A**.

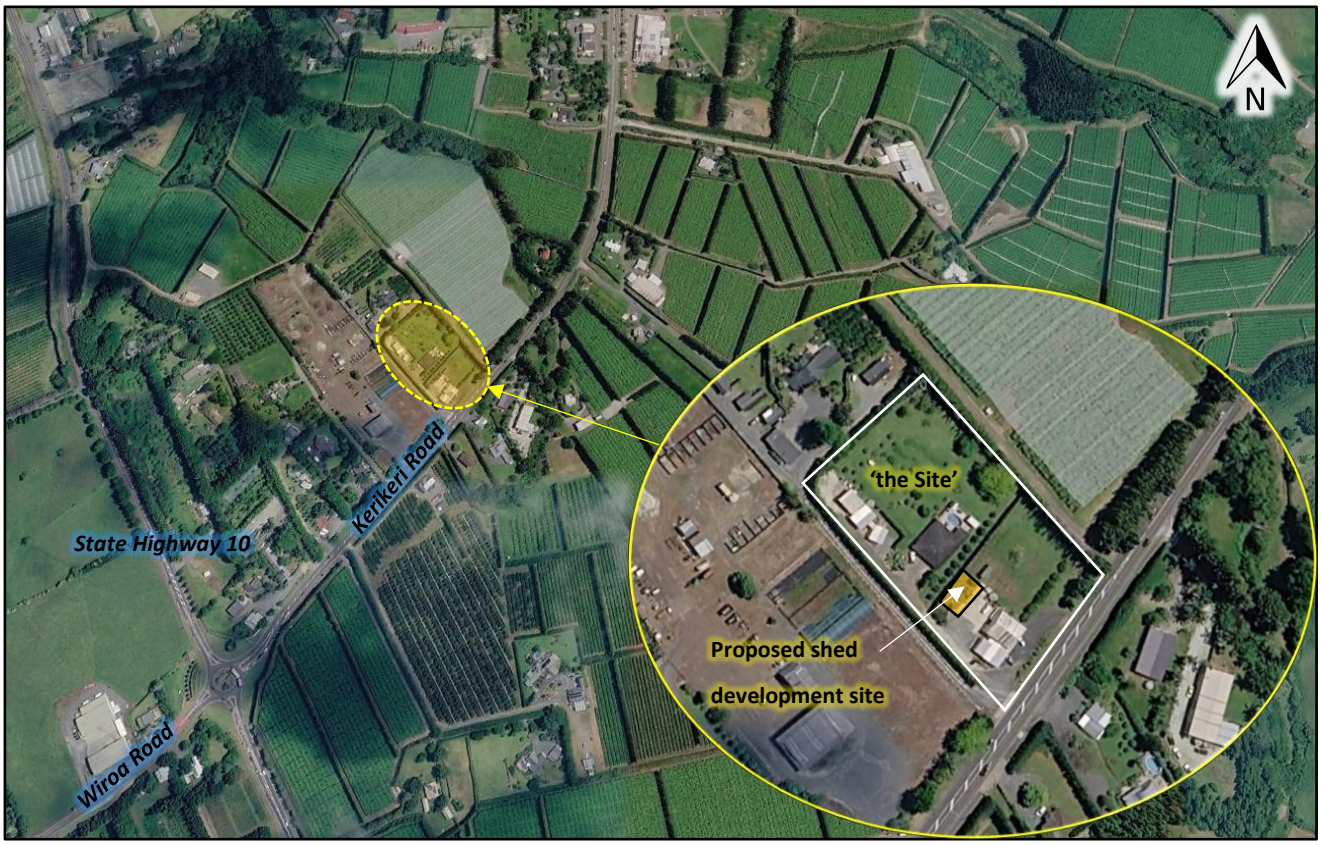


Figure 1 – Site Location *(Source: Google Earth Pro)*

2.2 Consented Development

The property file contains several approved building consents for the various developments, extracts relevant to impermeable surfaces are provided in **Appendix B**.

2.3 Proposed Development

We understand the client intends further development with the construction of a medium sized shed partially occupying an existing concrete hardstand. Refer proposed concept plan prepared by Williams and King Surveyors Limited (dated July 2026) and proposed development plan prepared by Totalspan Limited at **Appendix A**.

3 Environmental Setting

Published environmental data relating to the site has been reviewed. A summary of relevant information is provided below.

3.1 Hydrology and Flooding

The site is not marked by the FNDC or NRC as being subject to flooding. Excess stormwater runoff not absorbed by soil soakage sheds as sheet flow following the natural ground contours and into an unnamed watercourse that forms a tributary of the Puketotara Stream.

A summary of available information pertaining to hydrology and hydrogeology sourced from District and Regional Council GIS databases is presented below in Table 1.

Table 1 – Surface Water Features & Flooding

	Presence / Location	Comments
Surface Water Features (Ponds, Lakes, etc.)	None within 500m	-
Watercourses (within 500m)	Unnamed watercourse approx. 95m to east of the site.	Site runoff drains to this watercourse
Flood Risk Status	None recorded on GIS databases	The site is not within a mapped NRC flood hazard zone
Flood Susceptibility	None recorded on GIS databases	The site is not within a mapped NRC flood susceptible land zone

3.2 Published Geology

Sources of information:

- Institute of Geological & Nuclear Sciences (GNS) 1:250,000 Geological Map 2, 2009: 'Geology of the Whangarei area', and
- NZMS Sheet 290 P04/05, 1:100,000 scale map, edition 1, 1979: 'Whangaroa -Kaikohe' (Soils).

Reference is made to the GNS map of the Whangarei area. The geology underlying the site is mapped as late Miocene to Pliocene age, older basalt flows and flow remnants of the Kerikeri Volcanic Group (Pvb).

Reference is made to the New Zealand Land Inventory Maps NZMS 290 Sheet P04 / 05 Soil map of the Whangaroa – Kaikohe area. This map indicates that the site is underlain by '*soils of the rolling and hill land; excessively to somewhat excessively drained Kerikeri friable clay (KE).*

4 Stormwater Management

4.1 Regulatory Framework

4.1.1 FNDC Operative District Plan

The site is within the Rural Production zone in the Operative District Plan. The relevant stormwater management/ impermeable surface rules are as follows:

4.1.2 Permitted Activity

8.6.5.1.3 STORMWATER MANAGEMENT

The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.

Controlled Activity

8.6.5.2.1 STORMWATER MANAGEMENT

The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

Discretionary Activity

An activity is a discretionary activity in the Rural Production Zone if:

(c) it does not comply with one or more of the other standards for permitted, controlled or restricted discretionary activities in this zone as set out under Rules 8.6.5.1; 8.6.5.2 and 8.6.5.3 above.

The Council may impose conditions of consent on a discretionary activity, or it may refuse consent to the application. When considering a discretionary activity application, the Council will have regard to the assessment criteria set out under **Chapter 11**. If an activity does not comply with the standards for a discretionary activity, it will be a non-complying activity in this zone.

4.1.3 FNDC Proposed District Plan (Appeals Version)

The site is zoned Rural Production.

RPROZ-R2 Impermeable surface coverage

The impermeable surface coverage of any site is no more than 10%.

Where the above threshold is exceeded, the activity status becomes **restricted discretionary**.

4.1.4 Comment

At the time of writing RPROZ provisions were under appeal (outlined with a brown dashed border), meaning that both Operative and Proposed plans shall be considered.

4.1.5 Regional Plan for Northland

Regional Plan for Northland Rule C.6.4.2 provides for the diversion and discharge of stormwater from outside a public stormwater network provided (amongst other conditions) the diversion and discharge does not cause or increase flooding of land on another property in a storm event of up to and including a 10% Annual Exceedance Probability (AEP) or flooding of buildings on another property in a storm event of up to and including a 1% AEP.

4.2 FNDC Engineering Standards 2023

Reference is made to the FNDC Engineering Standards for design guidance.

Section 4.2.5. Discharge to Land:

Subject to the requirements of the NRC Regional Plans, discharge of stormwater from the development onto land is permitted provided that:

a. Flooding levels shall not be increased due to the development,

b. New outlets to any low-lying areas shall be provided or existing outlets retained,

c. Dispersal of concentrated flow from the development shall be designed to occur at the shortest practicable distance and before a concentrated overland discharge to a neighbouring property occurs, and

d. An acceptable rate of dispersed discharge from stormwater runoff at the boundary is < 2 litres/sec/m (e.g. flow can be managed via dispersal swale or trench).

Section 4.3.2. Increases to Impervious Surface:

Where any development increases impervious surface, the development shall be assessed in accordance with Section 4.1.2 Objectives and Section 4.1.3 Performance Standards to determine the requirements, if any, for water quality and quantity controls.

Design of new development or alteration to existing development, resulting in increased impervious surface shall also comply with the NRC Regional Plan.

Section 4.1.3 Performance Standards:

e. The primary stormwater system shall be capable of conveying 10% AEP design storm events without surcharge (see Section 4.3.9 Hydrological Design Criteria).

h. Development shall not increase peak discharge rates to receiving environment. An increase may be acceptable for large events where it is demonstrated that there are no adverse effects (including potential, future, or cumulative effects), on the environment or downstream properties as a result of the increase.

i. The stormwater system shall provide the required amount of treatment through the use of low impact design and sustainable solutions (See Sections 4.3.20 Soakage Devices and 4.3.21 Stormwater Treatment and Detention Devices.

Section 4.1.6 Managing Effects of Land Use on Receiving Environments

In the absence of more detailed assessment of stream stability, the discharges from detention devices into a stormwater network shall be constrained to 80% of pre-development peak flow rate.

Table 4.1 Minimum Design Summary

Flood control (1% AEP event) – Detention required, limited post-development 1% AEP event flow rates to 80% of pre-development, where downstream flooding hazard has been identified and there is no Catchment Management Plan (CMP) or site-specific Stormwater Management Plan (SMP).

Flow attenuation (50% & 20% AEP events) - Limit the post-development 50% & 20% AEP event flow rates to 80% of pre-development, where there is no CMP or site-specific SMP. Typically, always required in the upper catchment and sometimes not where development site is located in proximity to the catchment outlet, discharging to a watercourse with sufficient network capacity, and where flow attenuation may worsen flooding hazards due to relative timing of peak flows. If the proposed stormwater discharge is into a tidal zone, then no attenuation is required.

Design rainfall - Current rainfall (i.e. not climate change adjusted) shall be used for determining pre-development stormwater runoff flows and volumes for use in combination with calculated post development flows to determine stormwater treatment (quantity and quality) requirements.

Climate change adjusted rainfall shall be used for determining post-development stormwater run-off flows and volumes for stormwater infrastructure design.

4.3 Impermeable Surfaces

Pre-development and post development impermeable surfaces are shown on appended drawing 26 202 – SWP01 and in Table 2.

Pre-development surfaces are surfaces with an existing building consent that we take to be the baseline. Proposed impermeable surfaces comprise the new shed and any existing surfaces that we have not been able to link to an existing building consent.

Gravel surfaces were considered permeable up until the introduction of the 2009 Operative District Plan. Hence some older BCs may not show gravel surfaces, even though these may have formed part of the development.

Table 2 – Pre and Post Development Impermeable Surfaces

Component	**Coverage (m^2)**
Pre-Development (BC Consented)	
Roof – existing dwelling	280
Roof – existing sheds	400
Pool	28
Sheds (around pool)	19
Concrete	154
Sealed Driveway	485
Gravel Driveway	615
Total Impermeable Surfaces (Consented)	**1,981**
Site Area	9,027
% Impermeable surfaces (Consented)	**21.9%**
Post-Development (Unconsented + Proposed)	
Existing dwelling	280
Existing sheds	400

Pool	28
Sheds (next to pool)	19
Concrete	154
Sealed Driveway	485
Gravel Driveway	615
Existing shed (unconsented)	70
Pool	28
Existing driveway extension (unconsented)	165
Existing concrete (unconsented)	160
Existing smaller sheds and concrete pad (unconsented)	17
Proposed Total Span shed	144
Proposed attenuation tank	7
Total Imperm. Surfaces (Unconsented + Proposed)	**2,544**
Site Area	9,027
% Impermeable surfaces (Unconsented + Proposed)	**28.2%**

**District Plan definition for impermeable surfaces does not include water tanks up to 20 m² area, slatted timber decks and pathways < 1 m wide.*

The proposed development will result in impermeable surfaces of 28.2% which exceeds the Rural Production zone Permitted Activity threshold of 15% under the Operative District Plan making the activity **Discretionary,** and the 10% threshold under the Proposed District Plan Appeals Version making the activity **Restricted Discretionary.**

When considering a **discretionary** activity application under the Operative District Plan, Council will have regard to the assessment criteria set out under Chapter 11. Refer Section 4.7 below for assessment

When considering a **Restricted Discretionary** activity application under the Proposed District Plan Appeals Version, Council will have regard to RPROZ-R2 matters of discretion. Refer Section 4.7 below for assessment.

4.4 Existing Stormwater Management

The site naturally drains towards the northwest. Surface runoff from existing structures is piped to existing water tanks. In the location of the proposed shed development site, stormwater is collected via an existing water tank that.

4.5 Effects on Runoff

The peak stormwater runoff for the pre and post scenarios were modelled with HydroCAD using a SCS TR-20 Type 1A storm profile with rainfall from HIRDs V4 for the 10% AEP historical rainfall. Runoff coefficients (CN) have been taken from FNDC Engineering Standards 2023 Table 4.3 for Type C low permeability soils.

Using HydroCad; the pre-development BC consented impermeable surfaces allowable runoff is 65.8 L/s.

For the post-development scenario using unconsented and proposed impermeable surfaces factored to 80% of pre-development, the site runoff is 69.0 L/s.

Hence, stormwater attenuation of 3.2 L/s is required to limit the 10% AEP peak runoff to 80% of the consented pre-development impermeable surfaces, as per FNDC Engineering Standards Section 4.1.6.

4.6 Proposed Stormwater Detention Tank

Roof runoff from the existing large shed and new Totalspan shed will be directed into a 15,000 litre cylindrical tank with a diameter of 3.0m (such as a Promax Enduro). The attenuation tank shall be plumbed to take the overflow from the existing large shed roof water collection tank. The Totalspan shed downpipes can be either connected to the existing collection tank or directly to the attenuation tank. The overflow from the attenuation tank can use the existing collection tank outlet which discharges to the existing soak-pit located in the lawn area.

The attenuation tank shall be fitted with a 34 mm outlet orifice, preferably at the base but not less than 1.7m below the overflow outlet, as indicated on drawings 26 202 – SWP01 and SWD01 appended. This arrangement will achieve the required attenuation of 3.2 L/s. The generated HydroCAD report is included in **Appendix C**.

The hydrograph below in Figure 2 shows the combined inflow from existing large shed and proposed shed reaching a maximum rate of 4.7 L/s and a maximum release rate of 1.7 L/s.

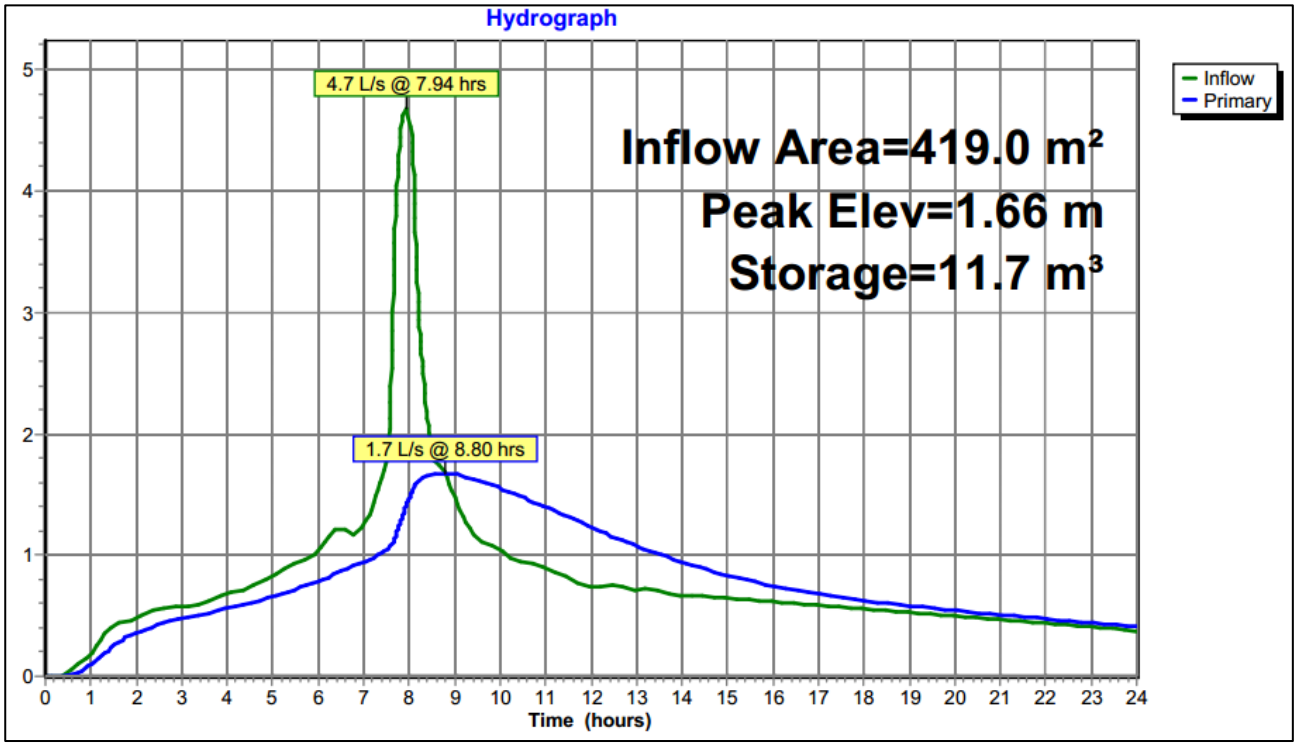


Figure 2 – Attenuation Tanks Hydrograph

4.7 FNDC Assessment Criteria

The proposed stormwater management has been assessed against RPROZ-R2 matters of discretion criteria for the FNDC Proposed District Plan (Appeals Version), and Chapter 11 assessment criteria for the Operative Plan.

Table 3 – RPROZ-R2 Matters of Discretion Criteria *(FNDC Proposed District Plan [Appeals Version])*

Criterion	Assessment
(a) the extent to which landscaping or vegetation may reduce adverse effects of run off;	The proposed development area is currently grassed. Additional landscaping planting if carried out would reduce adverse effects. However, the proposed stormwater attenuation will achieve the greatest reduction in adverse effects.
(b) the effectiveness of the proposed method for controlling stormwater on site;	Stormwater controls comply with FNDC Engineering Standards.
(c) the availability of land for disposal of effluent and stormwater on the site without adverse effects on adjoining waterbodies (including groundwater and aquifers) or on adjoining sites or downstream sites;	The location of the wastewater septic and disposal lines are known. The disposal field has adequate setback and reserve area remaining following development. Stormwater run-off will be discharged well away from the disposal field.
(d) whether water sensitive design methods and use of green spaces can be used;	Stormwater attenuation and the discharge of concentrated flows to the ground surface provides the opportunity for absorption by the soils.
(e) any cumulative effects on total catchment impermeability;	Additional runoff over and above the existing consented development will be attenuated back to pre-development levels, thereby nullifying any cumulative effects on total catchment.
(f) natural hazard mitigation and site constraints; and	No natural hazards or site constraints apply. The site is gently sloping with orcharding immediately downslope.
(g) extent of potential adverse effects on cultural, spiritual, heritage and/or amenity values of any affected waterbodies.	No constraints apply.
(h) the extent to which impermeable surfaces are able to be avoided, or otherwise minimised, on highly productive land and the potential impact on the life-supporting capacity of soils	The increase in impermeable surfaces is the minimum required for the new shed which will overlap existing concrete hardstanding by a small amount. No new driveway or parking is required.

Table 4 - Operative District Plan Chapter 11.3 Stormwater Management Assessment Criteria

Criterion	Assessment
(a) The extent to which building site coverage and impermeable surfaces result in increased stormwater runoff and contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment.	Additional runoff over and above the existing consented development will be attenuated back to pre-development levels for the 10% AEP.
(b) The extent to which Low Impact Design principles have been used to reduce site impermeability.	The use of SW attenuation tanks is a form of Low Impact Design.
(c) Any cumulative effects on total catchment impermeability.	Additional runoff over and above the existing consented development will be attenuated back to pre-development levels, thereby nullifying any cumulative effects on total catchment.

(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.	Drainage patterns or absorption properties of the soil will not be altered by the new development.
(e)	The physical qualities of the soil type.	The soils present onsite are moderately well drained.
(f)	Any adverse effects on the life supporting capacity of soils.	None.
(g)	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.	The location of the wastewater disposal trenches is known. Stormwater runoff will be discharged downslope well away from the disposal field. There is sufficient suitable land available for the disposal of effluent reserve areas in compliance with required setbacks.
(h)	The extent to which paved, impermeable surfaces are necessary for the proposed activity.	The increase in impermeable surfaces is the minimum required for the new shed which will overlap existing concrete hardstanding by a small amount. No new driveway or parking is required.
(i)	The extent to which landscaping may reduce adverse effects of run-off.	The proposed development area is currently grassed. Additional landscaping planting if carried out would reduce adverse effects. However, the proposed stormwater attenuation will achieve the greatest reduction in adverse effects.
(j)	Any recognised standards promulgated by industry groups.	Stormwater attenuation is a recognised means for mitigating the effects of increased impermeable surfaces.
(k)	The means and effectiveness of mitigating stormwater run-off to that expected by the permitted activity threshold.	Stormwater attenuation limiting runoff to previously consented levels has been designed for the site.
(l)	The extent to which the proposal has considered and provided for climate change.	We have adopted HIRDS V4 rainfall estimates adjusted with the RCP 6.0 climate change scenario projected out to the 2081-2100 time period.
(m)	The extent to which stormwater detention ponds and other engineering solutions are used to mitigate any adverse effects.	An attenuation tank has been detailed for the site. Detention ponds are not required.

Appendix A – Drawings

Drawing No.	Title
26 202	Site Location Plan (Haigh Workman)
24879	Proposed Concept Plan (Williams and King Surveyors Limited, dated July 2026)
DN.294	Proposed Development Plans (Totalspan Limited, dated 23 July 2026)
26 202 / SWP01	Stormwater Management Plan (Haigh Workman)
26 202 / SWD01	Stormwater Detention Storage (Haigh Workman)

LOT 1
DP 176058

43°28' 00" 69.30

139°11'30" 119.46

LOT 3
DP 176058

LOT 2
DP 322259

356°39' (8.03)

6.44

1.59

7m²

SHED
6m²

SHED
70m²

WATER
TANK

SHED
125m²

shower
4m²

covered area
15m²

POOL

HOUSE
280m²

CONCRETE
14m²

GRAVEL DRIVE 780m²

138°16'20" 122.41

CONCRETE
140m²

1.5m

GL 126.14

FENCE

PROPOSED
NEW SHED
18m X 8m
FL 126.77

SHED
4m²

WATER
TANK

GL 126.33
concrete

CP
126.25

concrete
126.67

GL 126.99

CONCRETE
168m²

GL 126.93

6.17m

7.59m

36.54m

GRAVEL DRIVE

SHED
275m²

SEALED DRIVE
485m²

(73.67)

36°28'40"

69.58

124

126

KERIKERI ROAD

LOT 1
DP 310384

CONCRETE
7m²

4.09

0 20 40m

GENERAL NOTES

Ground levels shown on this plan are current levels and may not be the Ground Level as defined by the FNDC District Plan.

Consideration in terms of the FNDC definition should be undertaken in order to correctly assess the Building Height and Sunlight Rules.

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	Name	Date
Surveyed	MP	March 2019
Drawn	WF	July 2026
Revision		

Height Datum	
Local Reference	
Contour Interval	
Major 2.0m	Minor 0.5m
Address	562 Kerikeri Road, Kerikeri
Title NA108B/622	Area 0.9027 ha.

JOB/CLIENT:

David & Tracy George

KERIKERI

SHEET TITLE:

PROPOSED NEW SHED
562 KERIKERI ROAD
SITE SURVEY
LOT 2 DP 176058

Williams & King
Registered Land Surveyors, Planners & Land Development Consultants
27 Hobson Ave
PO Box 937, Kerikeri
Tel: 09-407 6030
Email: kerikeri@saps.co.nz

Job No: 24879

File: George Topo.lcd

SCALE @ A3	SHEET No
1:500	1/1

SITEPLAN

Client Name: David George

Client Address: 562 Kerikeri Road, Kerikeri, Northland, 0293

Legal Description: Lot 2 DP 176058

Building Type: Mono Range

Building Size: 18.000m long x 8.000m wide, with 3.100m wall height

Building Use: Storage

Date: 23rd July 2026

DRAWINGS NOT TO SCALE
REPRESENTATION ONLY

ALL DIMENSIONS IN METRES UNLESS SPECIFIED OTHERWISE

Big BOI Sheds Ltd T/A Totalspan Bay of Islands & Hokianga
1235B State Highway 10, R.D.3,
Kerikeri 0293,New Zealand.
Phone: 021 278 0801
Email: Julia.Edwards@Totalspan.co.nz

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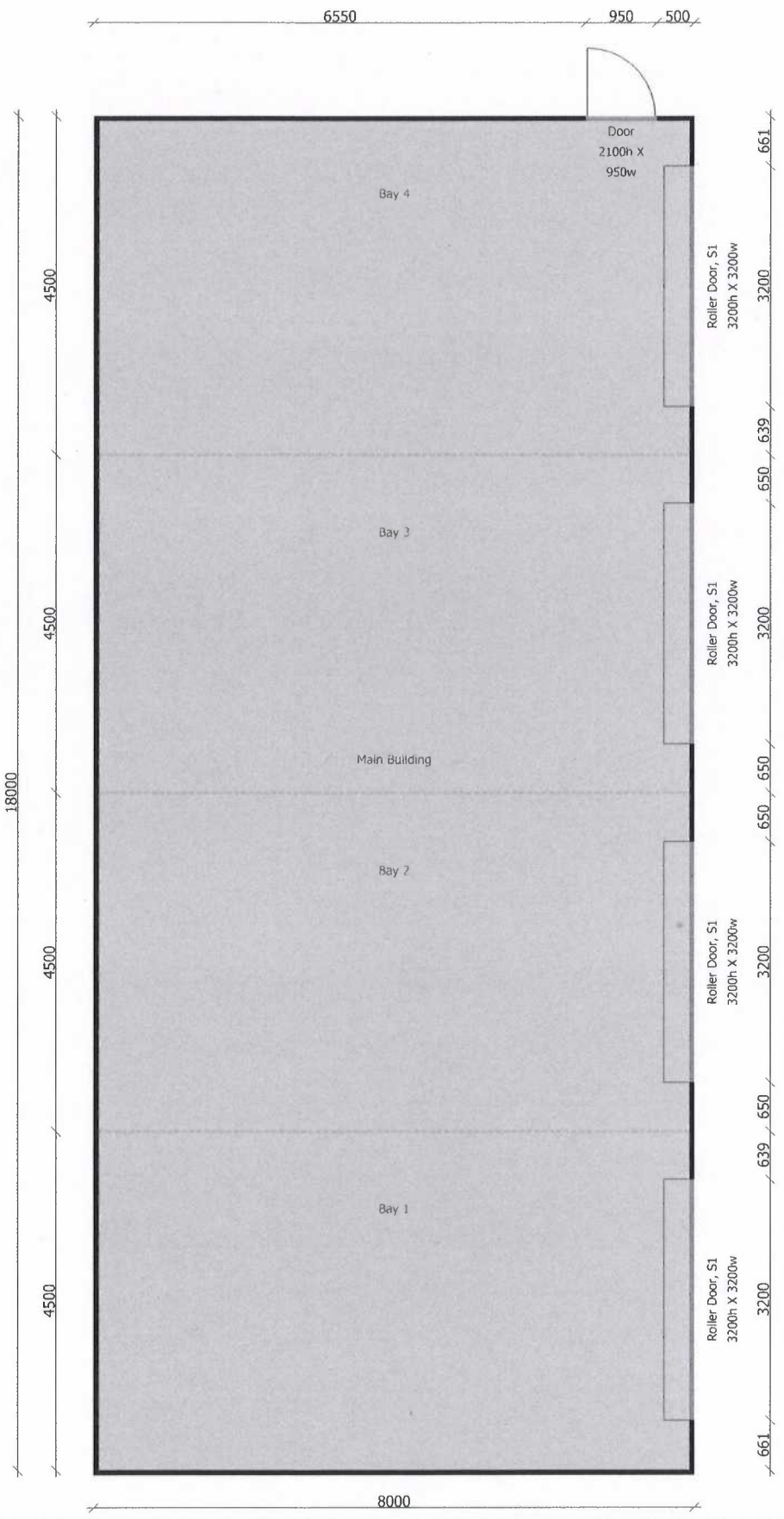


District Plan Zoning	Rural Production
Setbacks Required	10m
Corrosion Zone	C
Shed Colour	Titania & NDB Roof
Wind Zone as per AS/NZS 1170.2	36.57 m/s
Site Area M2	9021 m2
Existing Buildings M2	786 m2
Existing Driveways & Paths M2	1594 m2
Proposed Totalspan Building M2 **Part of the proposed shed to be located over an existing concrete pad.	126.25 m2 of 144.00m2
Total Site Coverage M2	2506.25 m2
Impermeable Surfaces %	27.78 %

Earthworks
200mm site scrape of topsoil only, of less than 20 cubic meters. All soil to remain on site.

Stormwater:
To be directed through 80mm Ø PVC DP and led to the existing 25000 Ltr tank & overflow system of a detention basin led to spreader as shown.

- Proposed Totalspan Shed
- Downpipes & Water Tanks
- Distance Markers
- Setback to Boundary
- Survey - Boundary Peg
- Boundary Line



* All Dimensions in mm. Colours shown are examples only. For exact colour samples see your local Totalspan Bay of Islands/Hokianga representative.
'NOTE' Drawings are not construction issue. Shop drawings (For Construction) will be detailed prior to fabrication.

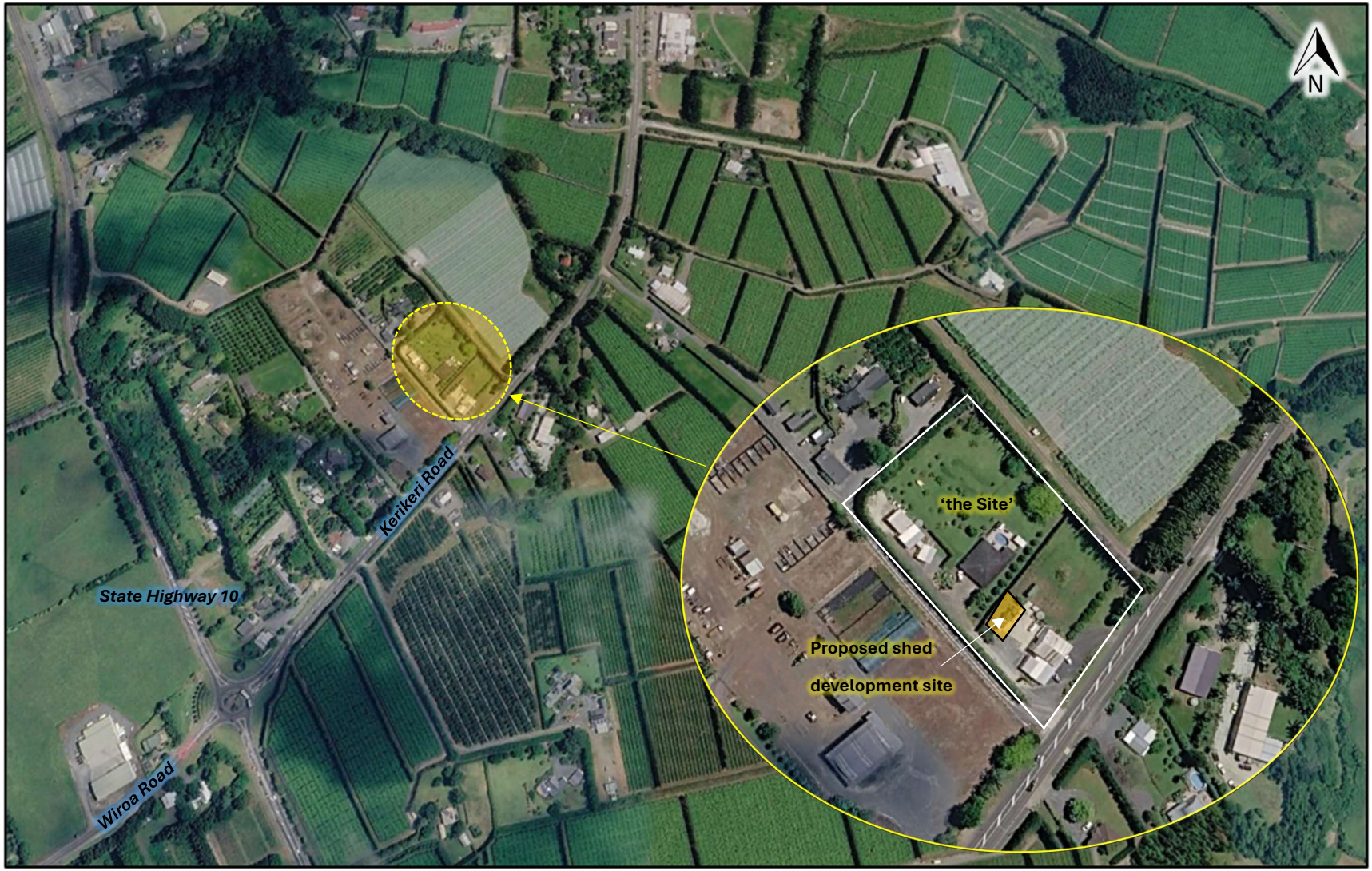
Big BOI Sheds Ltd.
1235 State Highway 10, , Kerikeri, 293, New Zealand
Phone: 94077875
Email: boi_hokianga@totalspan.co.nz

For:
David George
562 Kerikeri Road

, Kerikeri
0293

Mono Range
Project Number: DN.294

29 Jun 2026



26 202 – Site Location Plan





Locality Plan (NTS)

GENERAL NOTES:

4. Location and size of the soakpit is indicative only and based on site observations by Haigh Workman.
5. Location od septic tank is indicative only and based on site observations by Haigh Workman.
6. All other features are taken from Topo plan by Williams & King, ref 24879, dated July 2026.
7. 0.5m Lidar Contours (Courtesy of LINZ 2018-20, NZVD 2016).
8. Basemap Aerial image courtesy of LINZ.

SITE INFORMATION:

Legal Description: Lot 2 DP 176058
Area: 9,027m²
Zone: Hortuculture

LEGEND

- Property Boundaries
- Adjacent Boundary
- SW — Stormwater pipe
- SS — Wastewater pipe
- Unconsented impermeable areas
- Roof area connected to attenuation tank

PREVIOUSLY CONSENTED IMPERMEABLE SURFACES	Coverage (m^2)
Roof – existing dwelling	280
Roof – existing sheds	400
Existing pool	28
Smaller sheds around the pool	19
Concrete	154
Sealed drive	485
Driveway – Gravel	615
Total Impermeable Surfaces	**1,981.0**
Site area (m^2)	9,027
% coverage	**21.9%**

EXISTING AND PROPOSED IMPERMEABLE SURFACES	Coverage (m^2)
Roof – existing dwelling	280
Roof – existing sheds	400
Existing pool	28
Concrete	154
Sealed areas	485
Driveway – Gravel	615
Smaller sheds around the pool	19
Existing shed (unconsented)	70
Existing driveway extension (unconsented)	165
Existing concrete (unconsented)	160
Existing smaller sheds+concrete pad (unconsented)	17
Proposed shed	144
Proposed attenuation tank	7.1
Total Impermeable Surfaces	**2,544.1**
Site area	9,027
% coverage	**28.2%**

For Consent

Rev	Date	Description	By	Checked
A	30/10/2026	For Consent	LP	AR

DWG STORMWATER ATTENUATION PLAN

A3 Scale 1: 500 (0 10 25) Date 30/10/2026

Drawn LP | Checked AT | Approved JP

File T:\CLIENTS\DAVID AND TRACY GEORGE\26 202 - 562 KERIKERI ROAD, KERIKERI\ENGINEERING\04_DRAWINGS\62 202_C3D_SW PLAN.DWG

HAIGH WORKMAN LTD
Civil & Structural Engineers
6 Fairway Drive
Kerikeri, BOI
T: 09 407 8327
F: 09 407 8378
E: info@haighworkman.co.nz

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Project STORMWATER MANAGEMENT
562 KERIKERI ROAD, KERIKERI (LOT 2 DP 176058)

Client DAVID AND TRACEY GEORGE

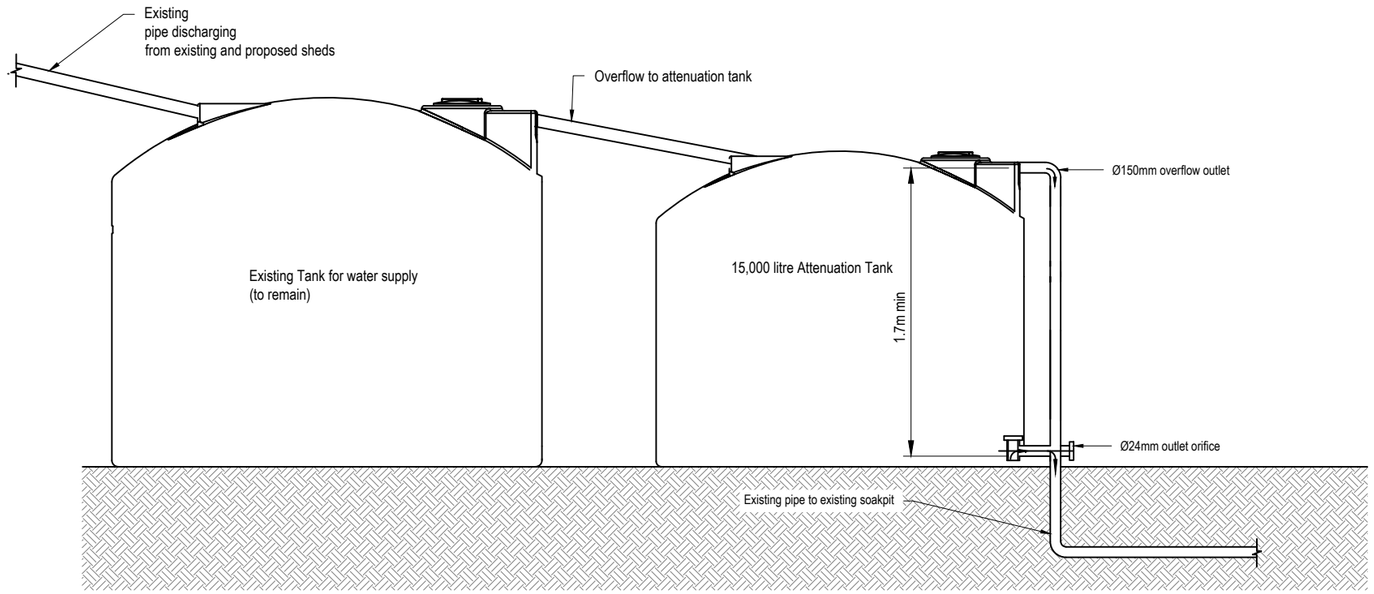
Project No. 26 202

RC no.

Stage 00

Dwg No. SWP01

Sheet No. 1 of 2



NOTE

- Maximun orifice pipe length is 150mm. Allow 75mm clearance from end of pipe to outside tank wall
- Fix orifice pipe to tee junction using reducer fittings

For Consent

Rev	Date	Description	By	Checked
A	30/10/2026	For Consent	LP	AR

DWG ATTENUATION TANK DETAILS

A3 SCALE NTS | Date 30/10/2026

Drawn LP | Checked AT | Approved JP

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Client DAVID AND TRACEY GEORGE

Project No. 26 202 | RC no.

Stage 00

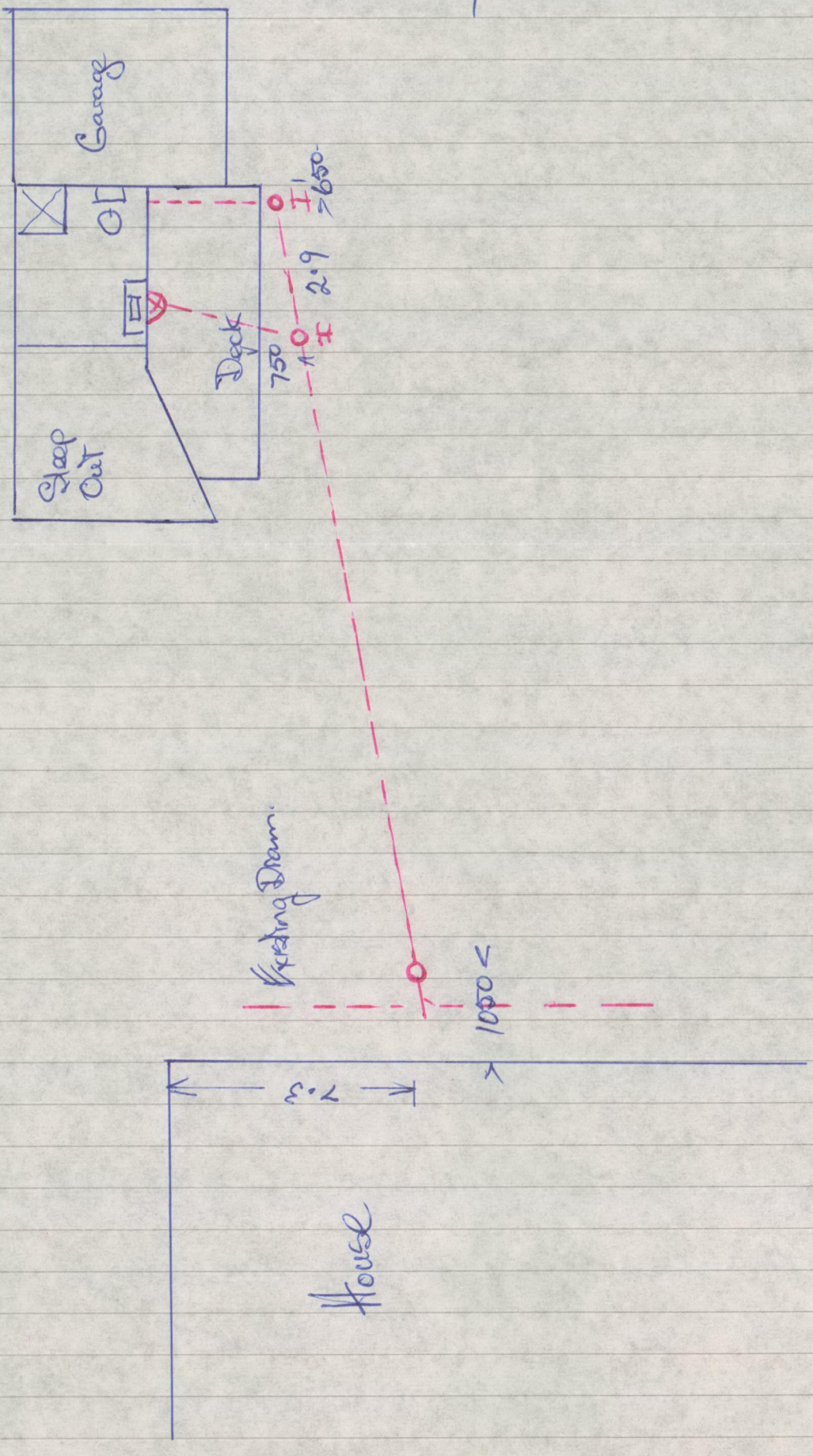
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Sheet No. 2 of 2

Appendix B – Building Consent Documentation

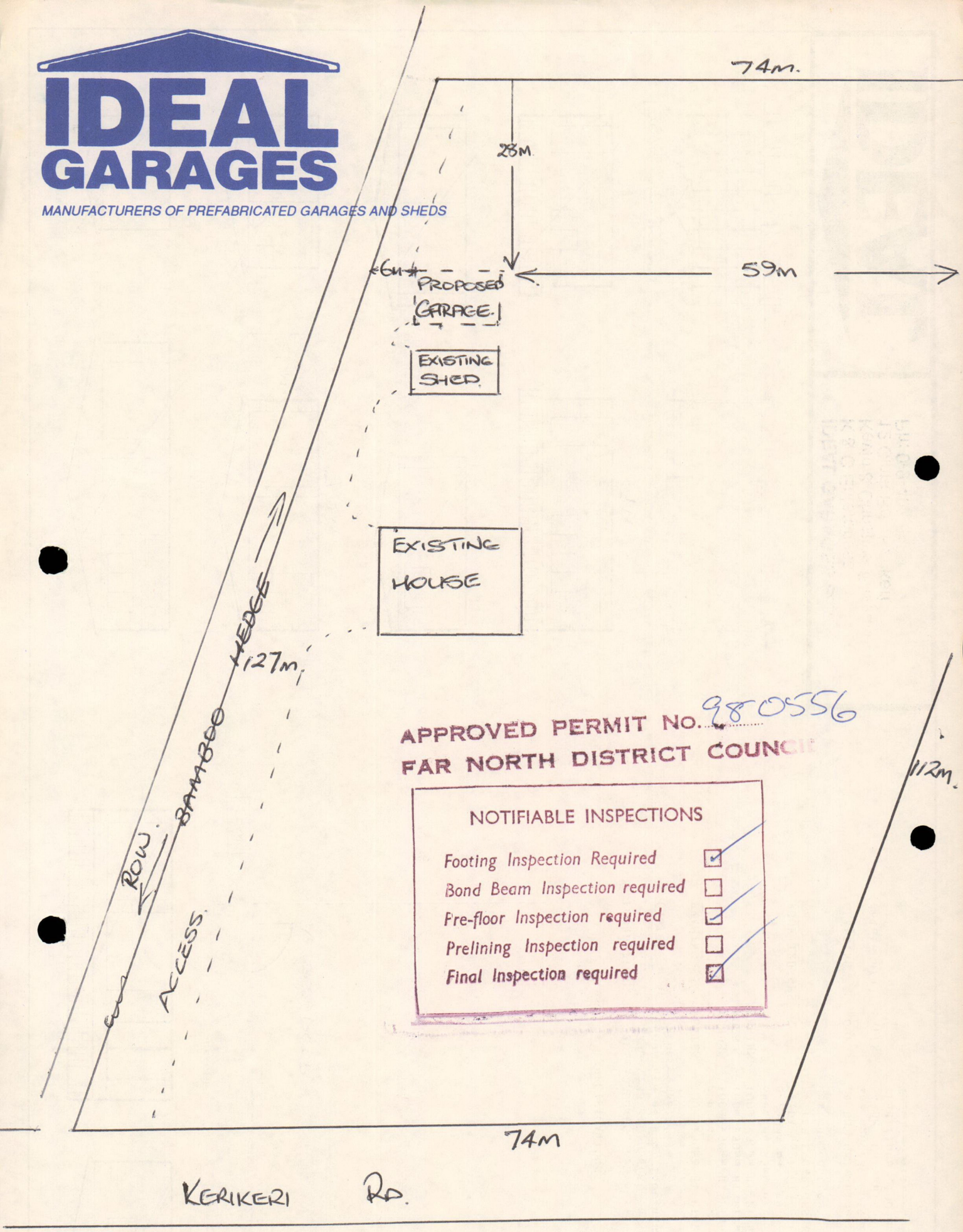
219-567-00

Rewi Chaney Korikori Rd.



IDEAL GARAGES

MANUFACTURERS OF PREFABRICATED GARAGES AND SHEDS



APPROVED PERMIT NO. 980556

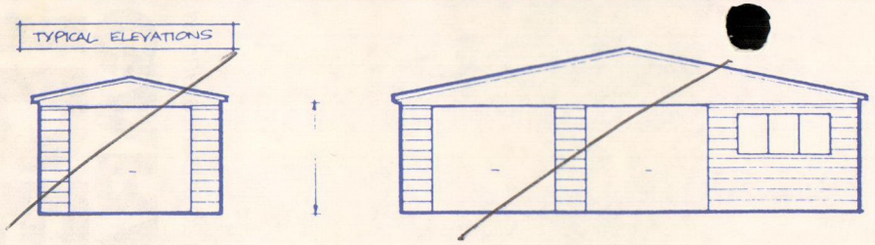
FAR NORTH DISTRICT COUNCIL

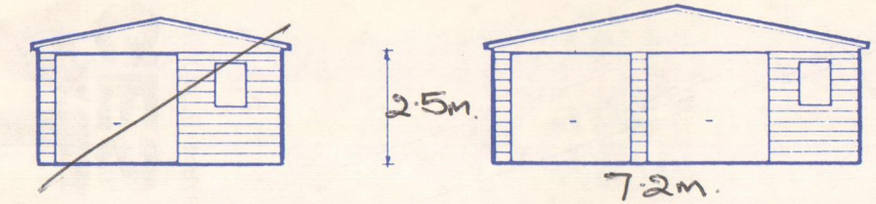
NOTIFIABLE INSPECTIONS

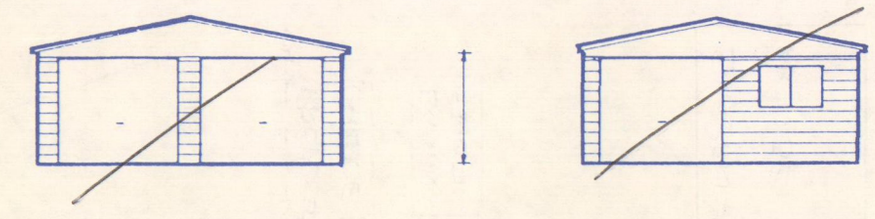
Footing Inspection Required	☑
Bond Beam Inspection required	☐
Pre-floor Inspection required	☑
Prelining Inspection required	☐
Final Inspection required	☑

These plans and specifications must be kept 'on site' during construction. All boundary pegs must be located and flagged before work is commenced.

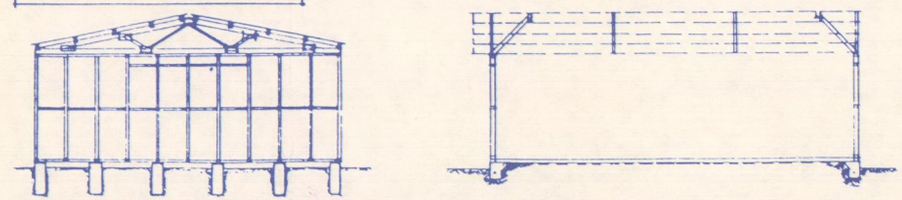
TYPICAL ELEVATIONS

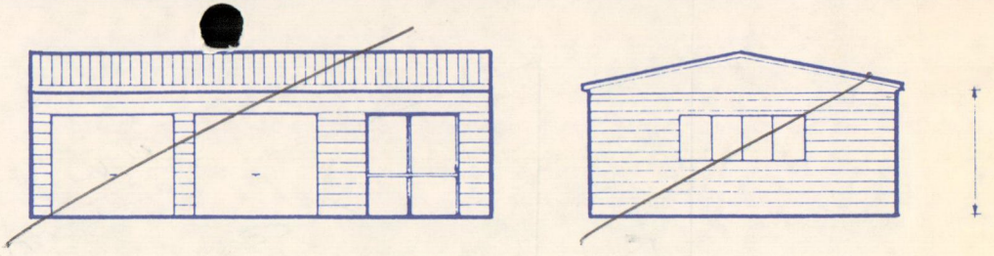




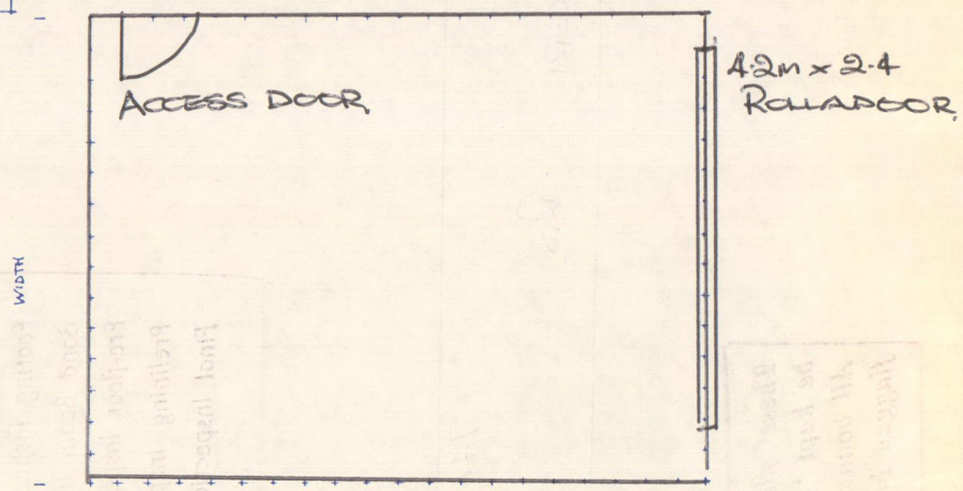


TYPICAL CROSS-SECTIONS





PLAN



SPECIFICATIONS

FOUNDATIONS (delete n/a)
- ~~200mmx200mm Concrete piles @ 1200mm max. crs.~~
- ~~125mmx125mm H5 Square piles @ 1200mm max. crs.~~
- Concrete slab w/ footings & mesh reinf.
- ~~Other (specify)~~

FRAMING
- PLATES - 100mmx50mm H1 Pinus rad. 150mm clear of ground.
- STUDS - 100mmx50mm H1 Pinus rad. @ 600mm crs.
- NOGS - 100mmx50mm H1 Pinus rad. 1 row / 2 rows
- PURLINS - 100mmx50mm H1 Pinus rad. on edge. Checked 25mm over truss cords. Installed @ 750mm max crs.

ROOF TRUSSES
PRYDA nail plate trusses (ref. A2962) by IDEAL GARAGES LTD. Installed @ 2400mm maximum centres

CLADDING (delete n/a)
- ROOF - .4 BMT Galvanised steel/ ~~Colorsteel G II Corrugated profile~~/ Trimline profile
- WALLS - .4 BMT Galvanised steel/ ~~Colorsteel G II~~ Traditional 100mm w/b, ~~Supercladd w/b Trimline vertical profile~~.

IDEAL

IDEAL GARAGES LTD.
K & C Enterprises
Kevin & Christine Eastlan
12 Clark Rd, Hobsonville
Ph: 0-9-407 8424

Attachment (3)



NEW SITE
REMOVE ORANGE TREES
SCRAPE TOPSOIL REMOVE OFFSITE
(BUILDING 12 m x 30)
BUD + BUD FOOTINGS
SOIL REMOVED OFFSITE
NIL CUT + FILLING

120

LOT 2
DP 176058
0.9027 ha

existing house

proposed building

35m

ext

LOT 1
DP 310384
1.4705 ha

100m

10

PARKING

entrance

existing building

Kerikeri Rd

LOT 1
DP 158861
0.5250 ha

LOT 2
DP 158861
0.3590 ha

QuickMap
Custom Software Ltd

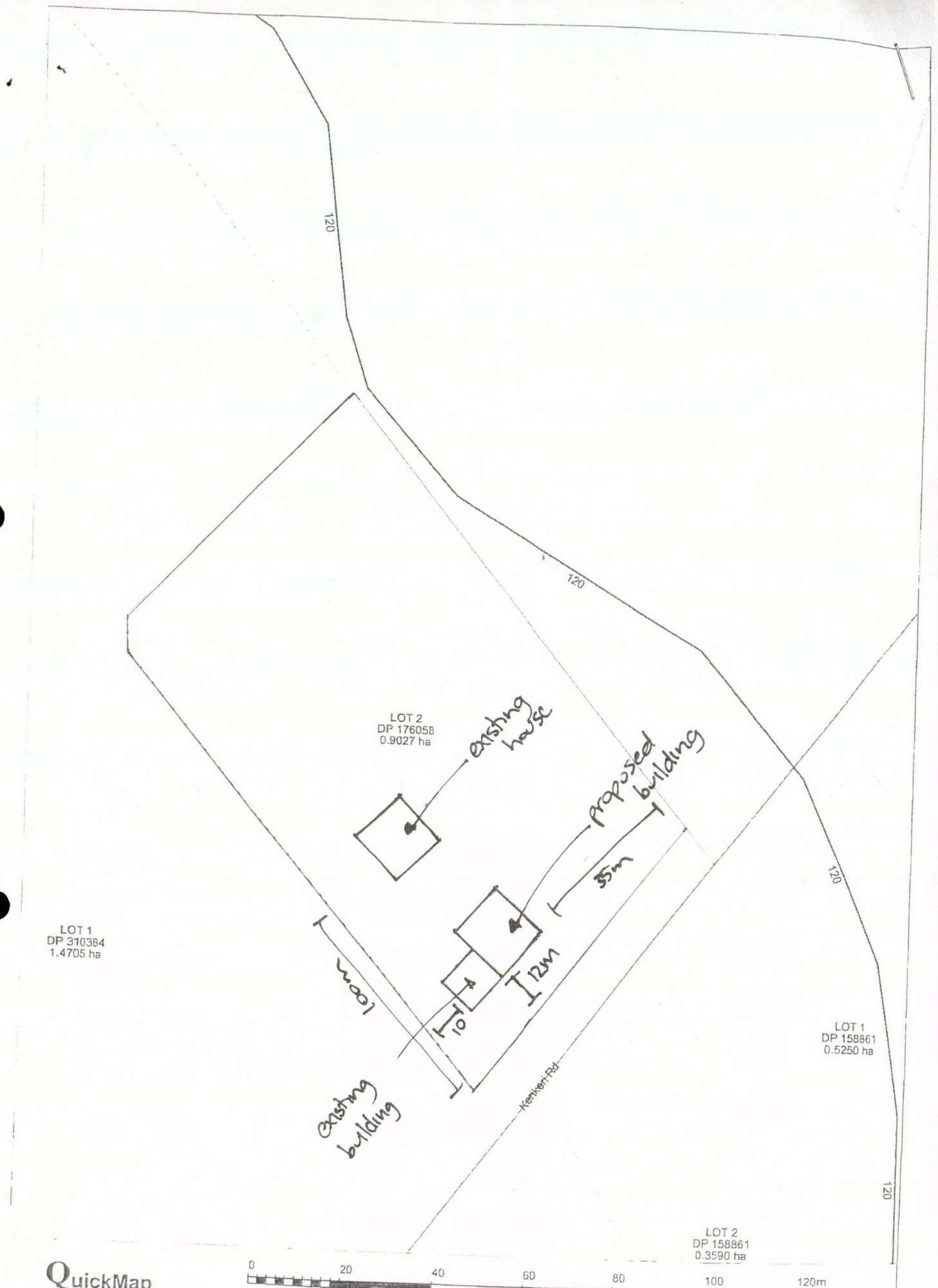
0 20 40 60 80 100 120m

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

Scale 1:1000 Topographical and Cadastral map derived from LINZ data. Printed 20/03/2006 16:08

CHANEY

Totalspan Far North



CHANEY

Totalspan Far North

Attachment (3)



NEW SITE
REMOVE ORANGE TREES
SCRAPE TOPSOIL REMOVE OFFSITE
(BUILDING 12 m x 30)
BUD + BUD FOOTINGS
SOIL REMOVED OFFSITE
NIL CUT + FILLING

120

LOT 2
DP 176058
0.9027 ha

existing house

proposed building

35m

ext

LOT 1
DP 310384
1.4705 ha

100m

10

PARKING

entrance

existing building

Kerikeri Rd

LOT 1
DP 158861
0.5250 ha

LOT 2
DP 158861
0.3590 ha

QuickMap
Custom Software Ltd

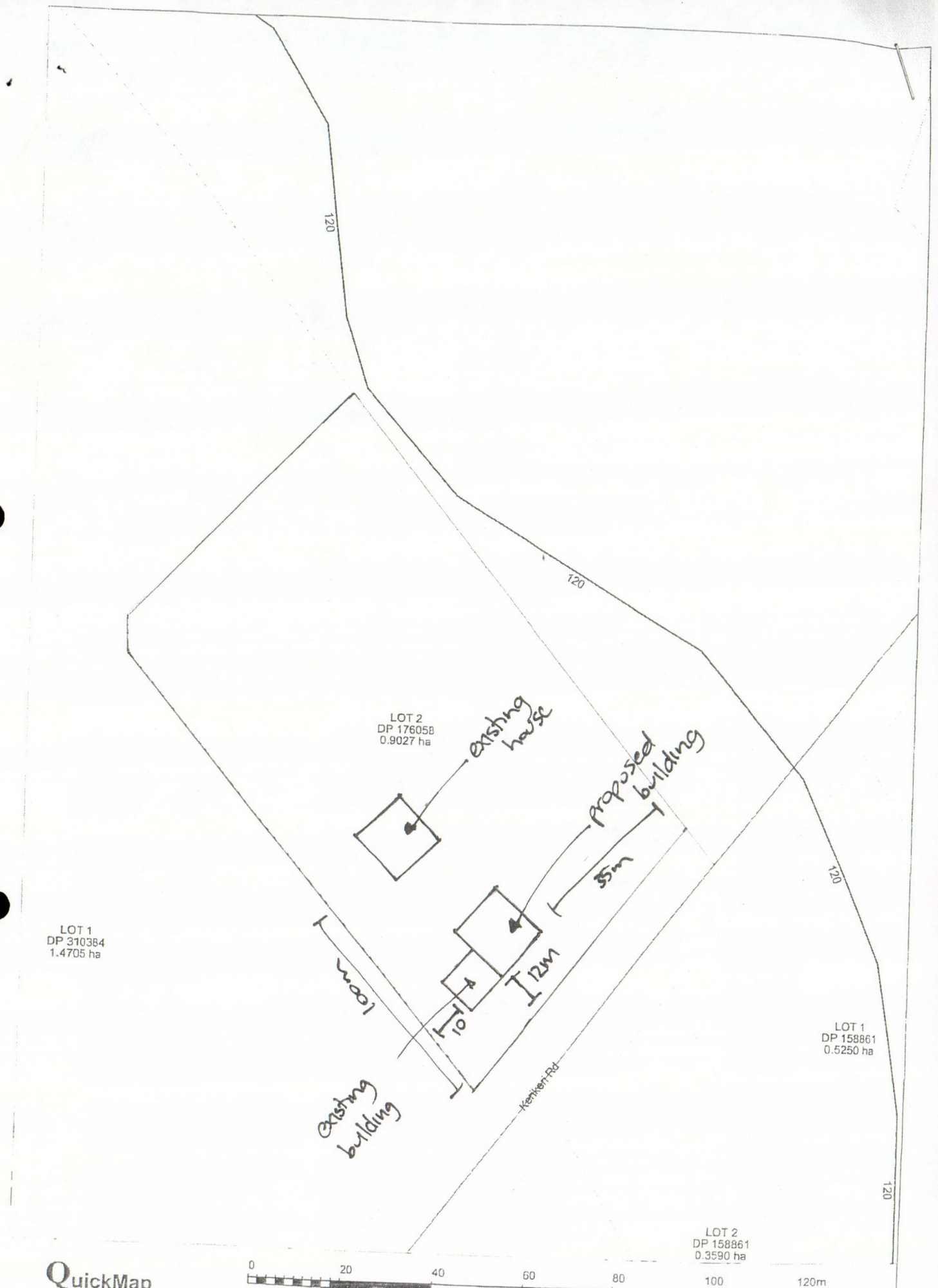
0 20 40 60 80 100 120m

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

Scale 1:1000 Topographical and Cadastral map derived from LINZ data. Printed 20/03/2006 16:08

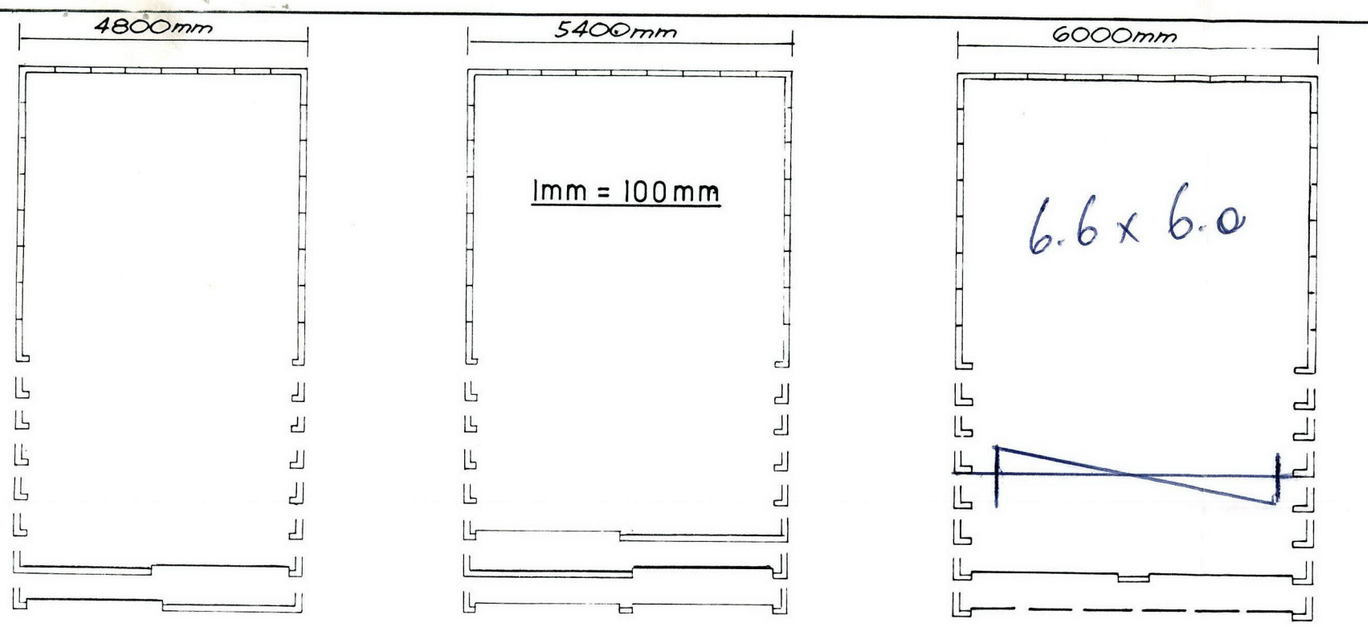
CHANEY

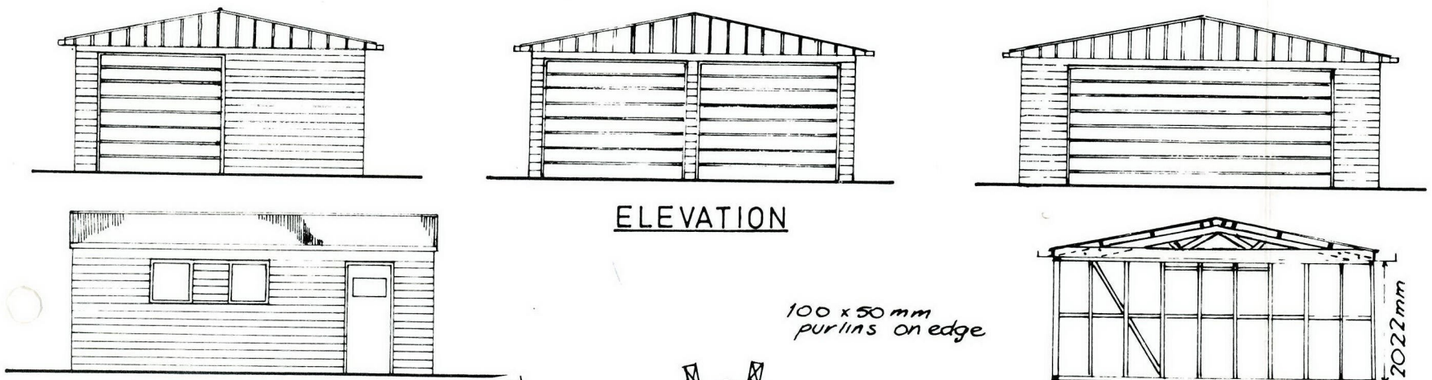
Totalspan Far North



CHANEY

Totalspan Far North





Detail of 6000mm span truss

SCALE 1m = 25m

Trusses for 5400mm & 4800mm are similar. but reduced to suit and have stiffeners of 50x50mm in lieu of 75 x50 mm, When 4500 mm doors are fitted in double garages, the gable end is formed with a similar truss and completely metal lined.

SPECIFICATIONS:

Foundations : 200 x 150mm concrete piles at 1200mm & 600mm centres under studs or continuous concrete dwarf walls or complete floors.

Dampcourse : 2 ply d.p.c. under all plates.

Framing : All timber is boric treated machine gauged radiata
All framing is housed i.e. studs checked into plates & nogs checked into studs.
Studs at 600mm centres top and bottom plates and nogs - 100 x 50mm.

Wall Braces : 75 x 50 mm cut on edge

Door Beams : Minimum 150 x 50 mm with minimum of 13mm check in at each end

Roof trusses and purlins as per detail drawing placed over studs at 1800mm and 2400mm centres to suit.

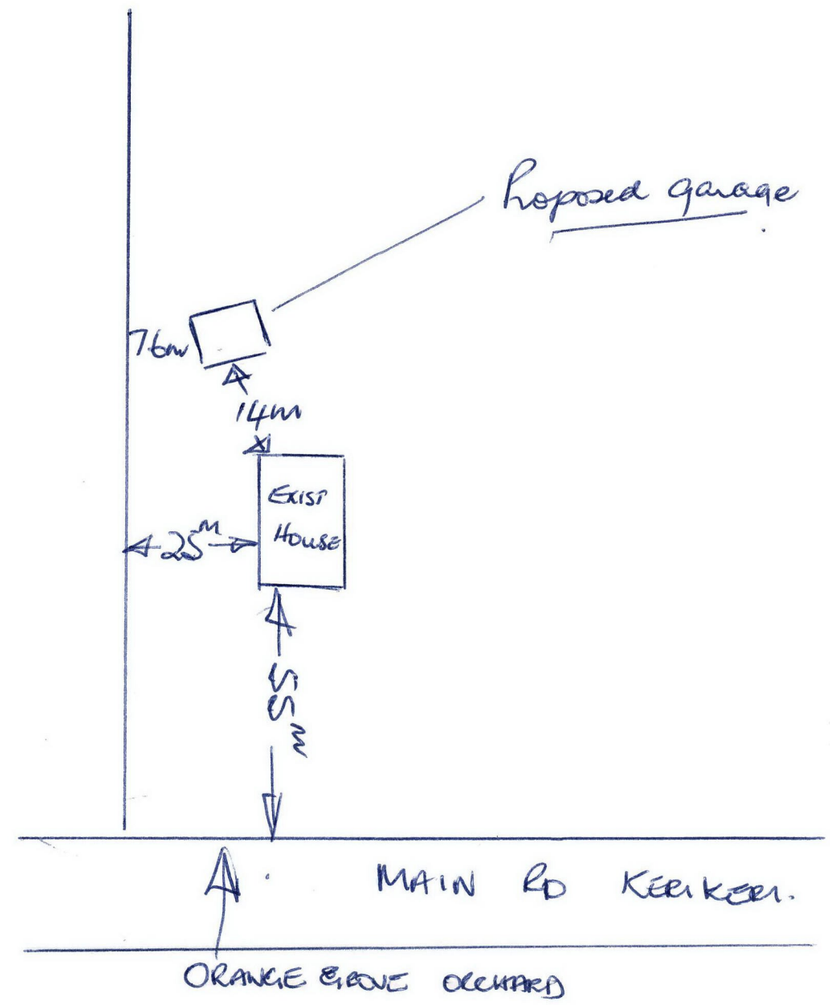
Dragon ties : 75 x 50 mm at 45° over top plate to each corner.

Roofing : 26 g. galv. corr. iron single sheets. Ridging : 26g. galv. lead edged. Walls : 26 g. galv. metal weatherboards.
Spouting : 24 g. galv. iron gutters fixed ea. side. Downpipes : 75 x 50mm galv. iron Doors : 24g. or 26g. metal doors on overhead gear or galv. roller doors.

GARAGE, SHED at MAIN ROAD KERIKERI. for J H SENIOR

SKYLINE GARAGES

manufactured by Skyline Buildings Ltd.,
64 A Wall's Rd., Penrose, Auckland. Ph. 598.821



APPROVED PERMIT NO.....
COUNTY ENGINEERS OFFICE
BAY OF ISLANDS C COUNCIL

SITE PLAN 1mm = 200mm.

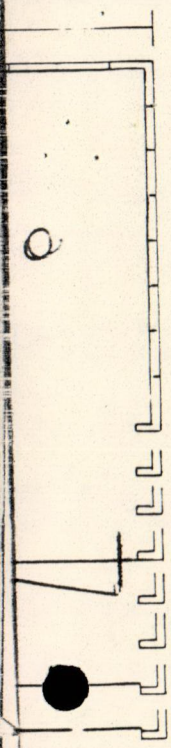
SKYLINE GARAGES

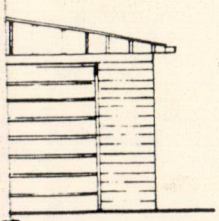
manufactured by Skyline Buildings Ltd.,
64A Wall's Rd, Penrose, Auckland. Ph. 598 821

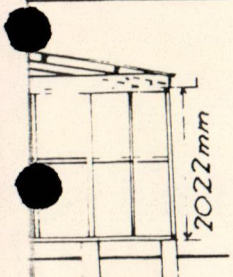
BCPLA

NOTIFIABLE INSPECTIONS

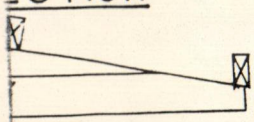
- Footing Inspection Required ☑
- Bond Beam Inspection required ☐
- Pre-floor Inspection required ☑
- Prelining Inspection required ☐
- Final Inspection required ☑







ECTION

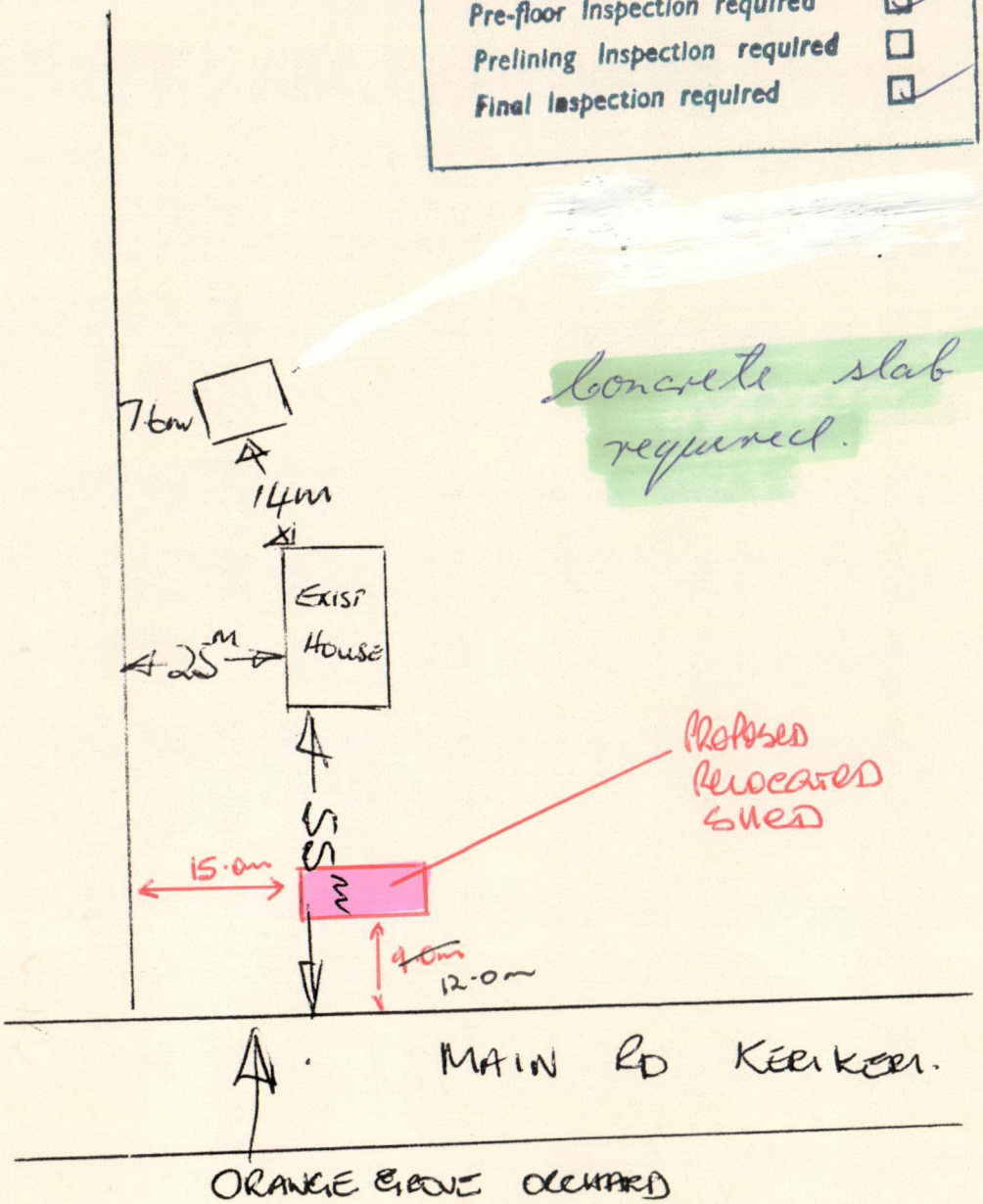


1m = 25m

50mm in lieu of
ed with a similar

studs

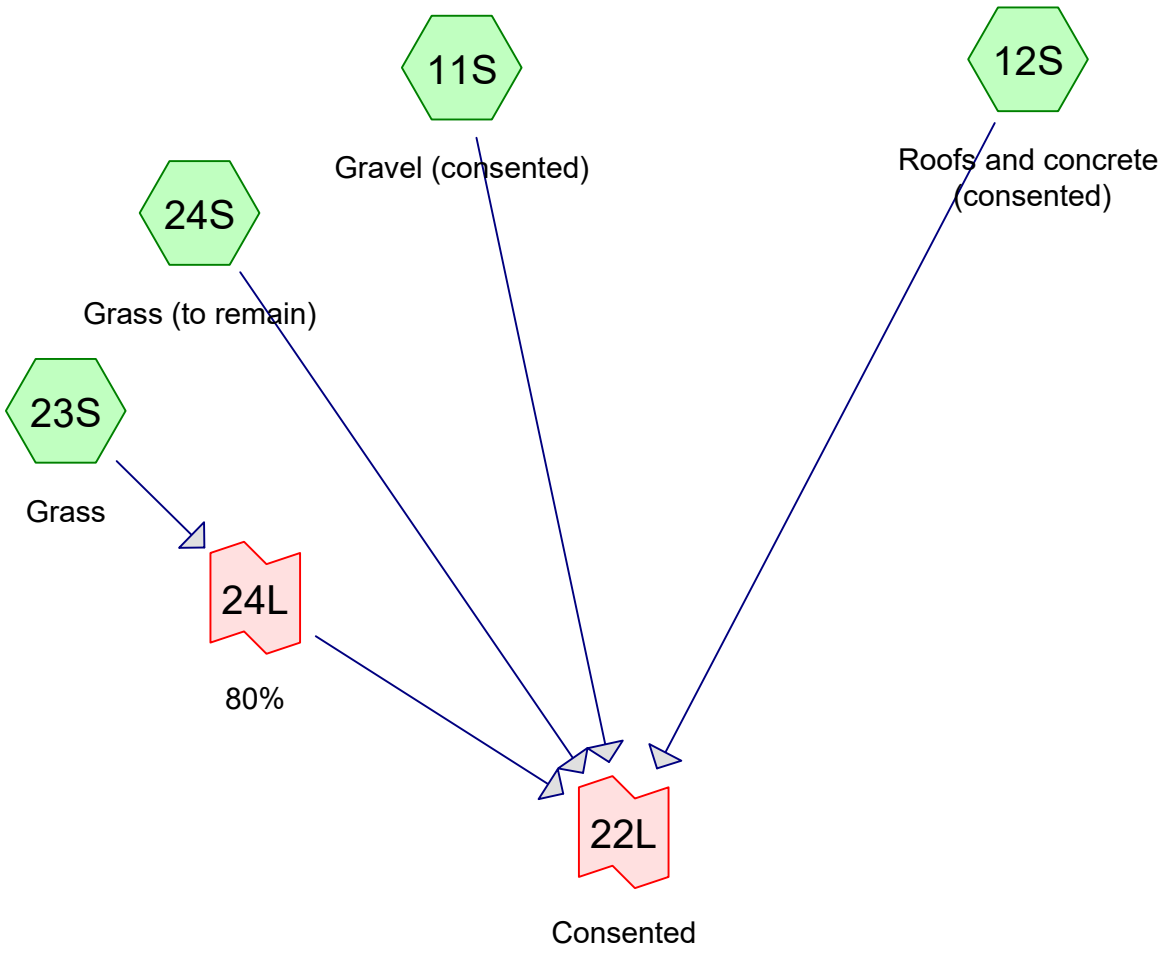
cked into studs.
100 x 50mm



concrete slab required.

Proposed relocated shed

Appendix C – HydroCAD Data



Subcat Reach Pond Link

Routing Diagram for 26 202_20261030_(Type 1A)_EXIST 80%
Prepared by Haigh Workman Limited, Printed 30/10/2026
HydroCAD® 10.20-5c s/n 13322 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-meters)	CN	Description (subcatchment-numbers)
280.0	98	House (12S)
400.0	98	Sheds (12S)
154.0	98	concrete (12S)
7,046.0	74	grass (23S, 24S)
615.0	89	gravel drive (11S)
28.0	98	pool (12S)
485.0	98	sealed drive (12S)
19.0	98	smaller sheds at the pool (12S)
9,027.0	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-meters)	Soil Group	Subcatchment Numbers
0.0	HSG A	
0.0	HSG B	
0.0	HSG C	
0.0	HSG D	
9,027.0	Other	11S, 12S, 23S, 24S
9,027.0		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-meters)	HSG-B (sq-meters)	HSG-C (sq-meters)	HSG-D (sq-meters)	Other (sq-meters)	Total (sq-meters)	Ground Cover	Subcatchment Numbers
0.0	0.0	0.0	0.0	280.0	280.0	House	12S
0.0	0.0	0.0	0.0	400.0	400.0	Sheds	12S
0.0	0.0	0.0	0.0	154.0	154.0	concrete	12S
0.0	0.0	0.0	0.0	7,046.0	7,046.0	grass	23S, 24S
0.0	0.0	0.0	0.0	615.0	615.0	gravel drive	11S
0.0	0.0	0.0	0.0	28.0	28.0	pool	12S
0.0	0.0	0.0	0.0	485.0	485.0	sealed drive	12S
0.0	0.0	0.0	0.0	19.0	19.0	smaller sheds at the pool	12S
0.0	**0.0**	**0.0**	**0.0**	**9,027.0**	**9,027.0**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 11S: Gravel (consented) Runoff Area=615.0 m² 0.00% Impervious Runoff Depth>137 mm
Tc=10.0 min CN=89 Runoff=6.1 L/s 84.2 m³

Subcatchment 12S: Roofs and concrete (consented) Runoff Area=1,366.0 m² 100.00% Impervious Runoff Depth>163 mm
Tc=10.0 min CN=98 Runoff=15.3 L/s 223.3 m³

Subcatchment 23S: Grass Runoff Area=563.1 m² 0.00% Impervious Runoff Depth>95 mm
Tc=10.0 min CN=74 Runoff=3.6 L/s 53.8 m³

Subcatchment 24S: Grass (to remain) Runoff Area=6,482.9 m² 0.00% Impervious Runoff Depth>95 mm
Tc=10.0 min CN=74 Runoff=41.8 L/s 619.0 m³

Link 22L: Consented Inflow=65.8 L/s 969.5 m³
Primary=65.8 L/s 969.5 m³

Link 24L: 80% x 0.80 Inflow=3.6 L/s 53.8 m³
Primary=2.9 L/s 43.0 m³ Secondary=0.7 L/s 10.8 m³

Total Runoff Area = 9,027.0 m² Runoff Volume = 980.3 m³ Average Runoff Depth = 109 mm
84.87% Pervious = 7,661.0 m² 15.13% Impervious = 1,366.0 m²

Summary for Subcatchment 11S: Gravel (consented)

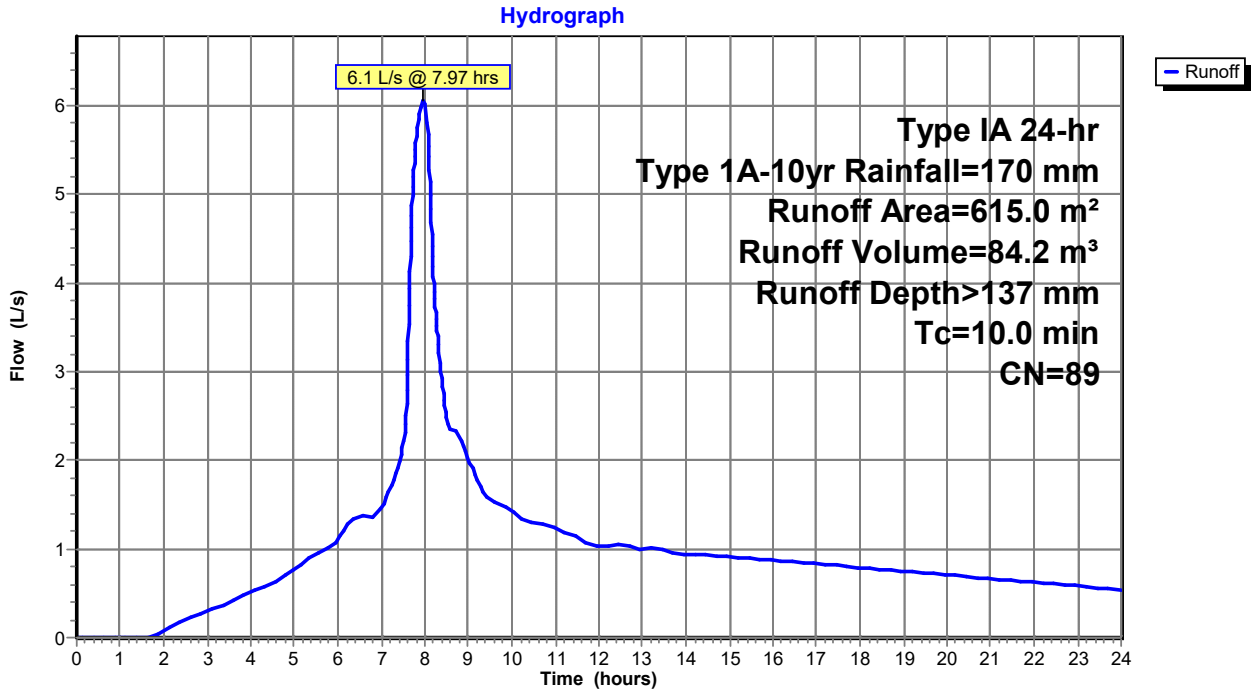
Runoff = 6.1 L/s @ 7.97 hrs, Volume= 84.2 m³, Depth> 137 mm
Routed to Link 22L : Consented

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	615.0	89	gravel drive
	615.0		100.00% Pervious Area

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

Subcatchment 11S: Gravel (consented)



Hydrograph for Subcatchment 11S: Gravel (consented)

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0
0.20	1	0	0.0
0.40	1	0	0.0
0.60	2	0	0.0
0.80	3	0	0.0
1.00	3	0	0.0
1.20	4	0	0.0
1.40	5	0	0.0
1.60	6	0	0.0
1.80	7	0	0.0
2.00	9	0	0.1
2.20	10	0	0.1
2.40	11	1	0.2
2.60	12	1	0.2
2.80	13	1	0.3
3.00	14	2	0.3
3.20	15	2	0.3
3.40	16	2	0.4
3.60	17	3	0.4
3.80	18	3	0.5
4.00	20	4	0.5
4.20	21	5	0.6
4.40	22	5	0.6
4.60	24	6	0.6
4.80	25	7	0.7
5.00	27	8	0.8
5.20	28	9	0.8
5.40	30	10	0.9
5.60	31	11	1.0
5.80	33	12	1.0
6.00	35	14	1.1
6.20	37	15	1.3
6.40	39	17	1.4
6.60	41	18	1.4
6.80	43	20	1.4
7.00	46	22	1.5
7.20	48	24	1.7
7.40	51	26	2.0
7.60	56	31	3.0
7.80	64	38	**5.6**
8.00	72	45	**6.0**
8.20	77	49	4.1
8.40	80	52	2.9
8.60	83	55	2.3
8.80	86	57	2.3
9.00	88	59	2.0
9.20	91	61	1.8
9.40	93	63	1.6
9.60	94	65	1.5
9.80	96	67	1.5
10.00	98	68	1.4
10.20	100	70	1.4
10.40	101	71	1.3
10.60	103	73	1.3
10.80	105	74	1.3
11.00	106	76	1.2
11.20	108	77	1.2
11.40	109	79	1.2
11.60	110	80	1.1
11.80	112	81	1.1
12.00	113	82	1.0
12.20	114	84	1.0
12.40	115	85	1.0
12.60	117	86	1.1
12.80	118	87	1.0
13.00	119	88	1.0
13.20	120	90	1.0
13.40	122	91	1.0
13.60	123	92	1.0
13.80	124	93	0.9
14.00	125	94	0.9
14.20	126	95	0.9
14.40	127	96	0.9
14.60	129	97	0.9
14.80	130	98	0.9
15.00	131	99	0.9
15.20	132	100	0.9
15.40	133	102	0.9
15.60	134	103	0.9
15.80	135	104	0.9
16.00	136	105	0.9
16.20	137	106	0.9
16.40	138	107	0.9
16.60	139	108	0.8
16.80	140	109	0.8
17.00	141	110	0.8
17.20	142	111	0.8
17.40	143	111	0.8
17.60	144	112	0.8
17.80	145	113	0.8
18.00	146	114	0.8
18.20	147	115	0.8
18.40	148	116	0.8
18.60	149	117	0.8
18.80	150	118	0.8
19.00	151	119	0.7
19.20	152	120	0.7
19.40	153	120	0.7
19.60	153	121	0.7
19.80	154	122	0.7
20.00	155	123	0.7
20.20	156	124	0.7
20.40	157	125	0.7
20.60	158	125	0.7
20.80	158	126	0.7
21.00	159	127	0.7
21.20	160	128	0.7
21.40	161	128	0.6
21.60	162	129	0.6
21.80	162	130	0.6
22.00	163	131	0.6
22.20	164	131	0.6
22.40	165	132	0.6
22.60	165	133	0.6
22.80	166	133	0.6
23.00	167	134	0.6
23.20	167	135	0.6
23.40	168	135	0.6
23.60	169	136	0.6
23.80	169	137	0.5
24.00	**170**	**137**	0.5

Summary for Subcatchment 12S: Roofs and concrete (consented)

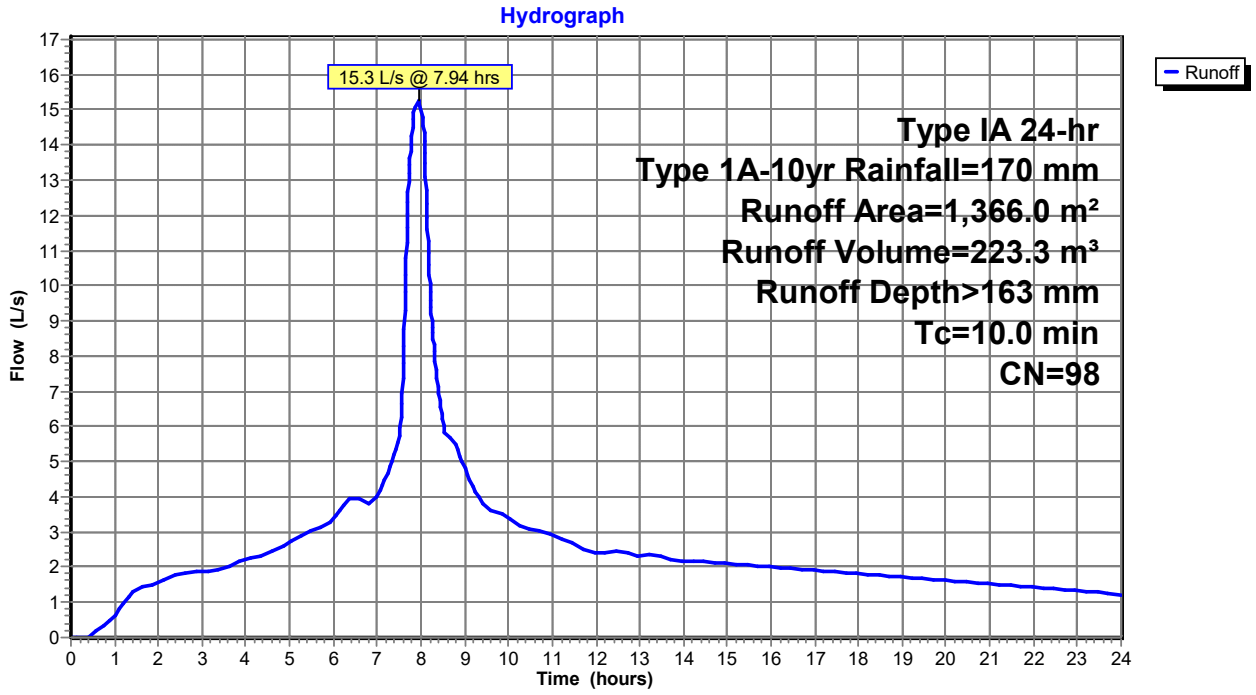
Runoff = 15.3 L/s @ 7.94 hrs, Volume= 223.3 m³, Depth> 163 mm
Routed to Link 22L : Consented

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	280.0	98	House
*	400.0	98	Sheds
*	28.0	98	pool
*	19.0	98	smaller sheds at the pool
*	154.0	98	concrete
*	485.0	98	sealed drive
	1,366.0	98	Weighted Average
	1,366.0		100.00% Impervious Area

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

Subcatchment 12S: Roofs and concrete (consented)



Hydrograph for Subcatchment 12S: Roofs and concrete (consented)

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0
0.20	1	0	0.0
0.40	1	0	0.0
0.60	2	0	0.2
0.80	3	0	0.4
1.00	3	1	0.6
1.20	4	1	1.0
1.40	5	2	1.3
1.60	6	3	1.4
1.80	7	4	1.5
2.00	9	4	1.6
2.20	10	5	1.7
2.40	11	6	1.8
2.60	12	7	1.8
2.80	13	8	1.9
3.00	14	9	1.9
3.20	15	10	1.9
3.40	16	11	1.9
3.60	17	12	2.0
3.80	18	13	2.1
4.00	20	15	2.2
4.20	21	16	2.3
4.40	22	17	2.3
4.60	24	18	2.4
4.80	25	20	2.5
5.00	27	21	2.7
5.20	28	23	2.9
5.40	30	24	3.0
5.60	31	26	3.1
5.80	33	28	3.2
6.00	35	29	3.4
6.20	37	32	3.7
6.40	39	34	4.0
6.60	41	36	4.0
6.80	43	38	3.8
7.00	46	40	4.1
7.20	48	42	4.6
7.40	51	45	5.3
7.60	56	51	7.8
7.80	64	59	**14.4**
8.00	72	66	**15.1**
8.20	77	71	10.1
8.40	80	74	7.0
8.60	83	77	5.6
8.80	86	80	5.4
9.00	88	82	4.8
9.20	91	85	4.3
9.40	93	87	3.8
9.60	94	89	3.6
9.80	96	90	3.5
10.00	98	92	3.4
10.20	100	94	3.2
10.40	101	95	3.1
10.60	103	97	3.0
10.80	105	99	3.0
11.00	106	100	2.9
11.20	108	102	2.8
11.40	109	103	2.7
11.60	110	104	2.6
11.80	112	106	2.5
12.00	113	107	2.4
12.20	114	108	2.4
12.40	115	109	2.4
12.60	117	111	2.5
12.80	118	112	2.3
13.00	119	113	2.3
13.20	120	114	2.4
13.40	122	116	2.3
13.60	123	117	2.2
13.80	124	118	2.2
14.00	125	119	2.2
14.20	126	120	2.2
14.40	127	121	2.2
14.60	129	123	2.1
14.80	130	124	2.1
15.00	131	125	2.1
15.20	132	126	2.1
15.40	133	127	2.1
15.60	134	128	2.0
15.80	135	129	2.0
16.00	136	130	2.0
16.20	137	131	2.0
16.40	138	132	2.0
16.60	139	133	1.9
16.80	140	134	1.9
17.00	141	135	1.9
17.20	142	136	1.9
17.40	143	137	1.9
17.60	144	138	1.9
17.80	145	139	1.8
18.00	146	140	1.8
18.20	147	141	1.8
18.40	148	142	1.8
18.60	149	143	1.8
18.80	150	144	1.7
19.00	151	145	1.7
19.20	152	146	1.7
19.40	153	147	1.7
19.60	153	147	1.7
19.80	154	148	1.6
20.00	155	149	1.6
20.20	156	150	1.6
20.40	157	151	1.6
20.60	158	152	1.6
20.80	158	152	1.5
21.00	159	153	1.5
21.20	160	154	1.5
21.40	161	155	1.5
21.60	162	156	1.5
21.80	162	156	1.4
22.00	163	157	1.4
22.20	164	158	1.4
22.40	165	158	1.4
22.60	165	159	1.4
22.80	166	160	1.3
23.00	167	161	1.3
23.20	167	161	1.3
23.40	168	162	1.3
23.60	169	163	1.3
23.80	169	163	1.2
24.00	**170**	**164**	1.2

Summary for Subcatchment 23S: Grass

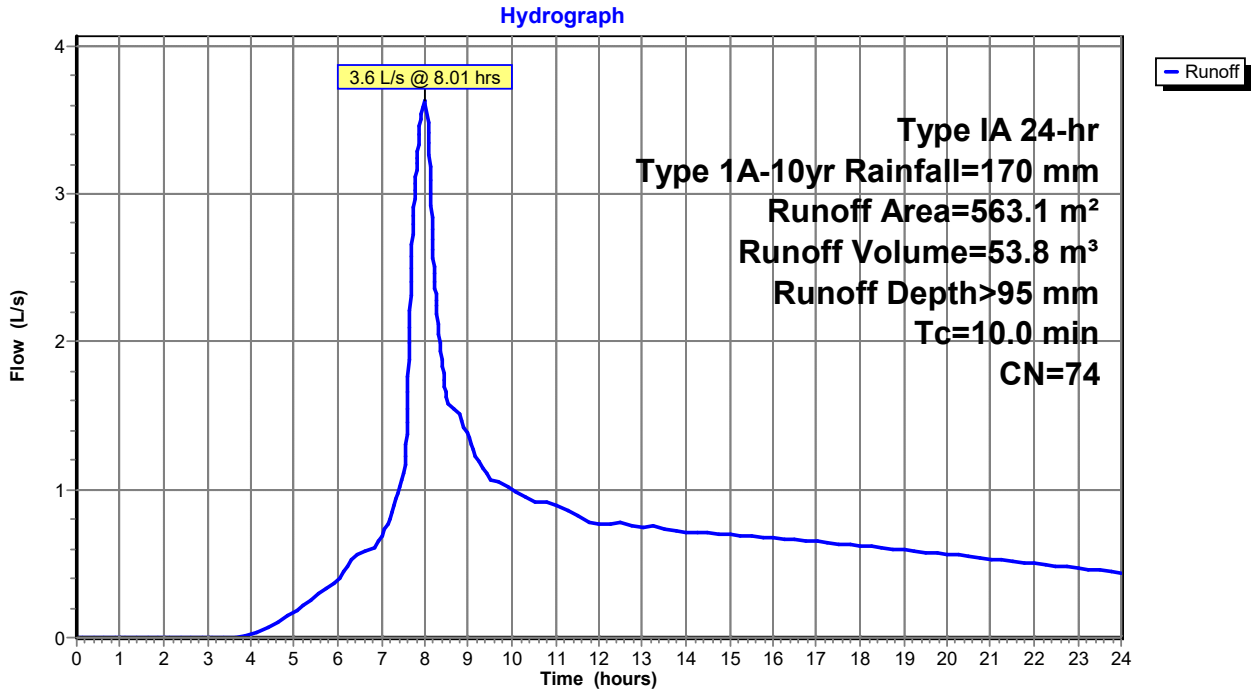
Runoff = 3.6 L/s @ 8.01 hrs, Volume= 53.8 m³, Depth> 95 mm
Routed to Link 24L : 80%

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	563.1	74	grass
	563.1		100.00% Pervious Area

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

Subcatchment 23S: Grass



Hydrograph for Subcatchment 23S: Grass

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)	Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0	14.40	127	60	0.7
0.20	1	0	0.0	14.60	129	61	0.7
0.40	1	0	0.0	14.80	130	62	0.7
0.60	2	0	0.0	15.00	131	63	0.7
0.80	3	0	0.0	15.20	132	64	0.7
1.00	3	0	0.0	15.40	133	65	0.7
1.20	4	0	0.0	15.60	134	66	0.7
1.40	5	0	0.0	15.80	135	67	0.7
1.60	6	0	0.0	16.00	136	67	0.7
1.80	7	0	0.0	16.20	137	68	0.7
2.00	9	0	0.0	16.40	138	69	0.7
2.20	10	0	0.0	16.60	139	70	0.7
2.40	11	0	0.0	16.80	140	71	0.7
2.60	12	0	0.0	17.00	141	72	0.6
2.80	13	0	0.0	17.20	142	72	0.6
3.00	14	0	0.0	17.40	143	73	0.6
3.20	15	0	0.0	17.60	144	74	0.6
3.40	16	0	0.0	17.80	145	75	0.6
3.60	17	0	0.0	18.00	146	76	0.6
3.80	18	0	0.0	18.20	147	76	0.6
4.00	20	0	0.0	18.40	148	77	0.6
4.20	21	0	0.0	18.60	149	78	0.6
4.40	22	0	0.1	18.80	150	79	0.6
4.60	24	0	0.1	19.00	151	80	0.6
4.80	25	1	0.1	19.20	152	80	0.6
5.00	27	1	0.2	19.40	153	81	0.6
5.20	28	1	0.2	19.60	153	82	0.6
5.40	30	1	0.3	19.80	154	82	0.6
5.60	31	2	0.3	20.00	155	83	0.6
5.80	33	2	0.3	20.20	156	84	0.6
6.00	35	3	0.4	20.40	157	85	0.6
6.20	37	3	0.5	20.60	158	85	0.5
6.40	39	4	0.5	20.80	158	86	0.5
6.60	41	5	0.6	21.00	159	87	0.5
6.80	43	6	0.6	21.20	160	87	0.5
7.00	46	7	0.7	21.40	161	88	0.5
7.20	48	8	0.8	21.60	162	89	0.5
7.40	51	9	1.0	21.80	162	89	0.5
7.60	56	12	1.6	22.00	163	90	0.5
7.80	64	16	3.2	22.20	164	91	0.5
8.00	72	21	**3.6**	22.40	165	91	0.5
8.20	77	23	**2.6**	22.60	165	92	0.5
8.40	80	26	1.8	22.80	166	92	0.5
8.60	83	28	1.5	23.00	167	93	0.5
8.80	86	29	1.5	23.20	167	94	0.5
9.00	88	31	1.4	23.40	168	94	0.5
9.20	91	33	1.2	23.60	169	95	0.4
9.40	93	34	1.1	23.80	169	95	0.4
9.60	94	35	1.1	24.00	**170**	**96**	0.4
9.80	96	37	1.0				
10.00	98	38	1.0				
10.20	100	39	1.0				
10.40	101	40	0.9				
10.60	103	42	0.9				
10.80	105	43	0.9				
11.00	106	44	0.9				
11.20	108	45	0.9				
11.40	109	46	0.8				
11.60	110	47	0.8				
11.80	112	48	0.8				
12.00	113	49	0.8				
12.20	114	50	0.8				
12.40	115	51	0.8				
12.60	117	52	0.8				
12.80	118	53	0.7				
13.00	119	54	0.7				
13.20	120	55	0.8				
13.40	122	56	0.7				
13.60	123	57	0.7				
13.80	124	58	0.7				
14.00	125	59	0.7				
14.20	126	59	0.7				

Summary for Subcatchment 24S: Grass (to remain)

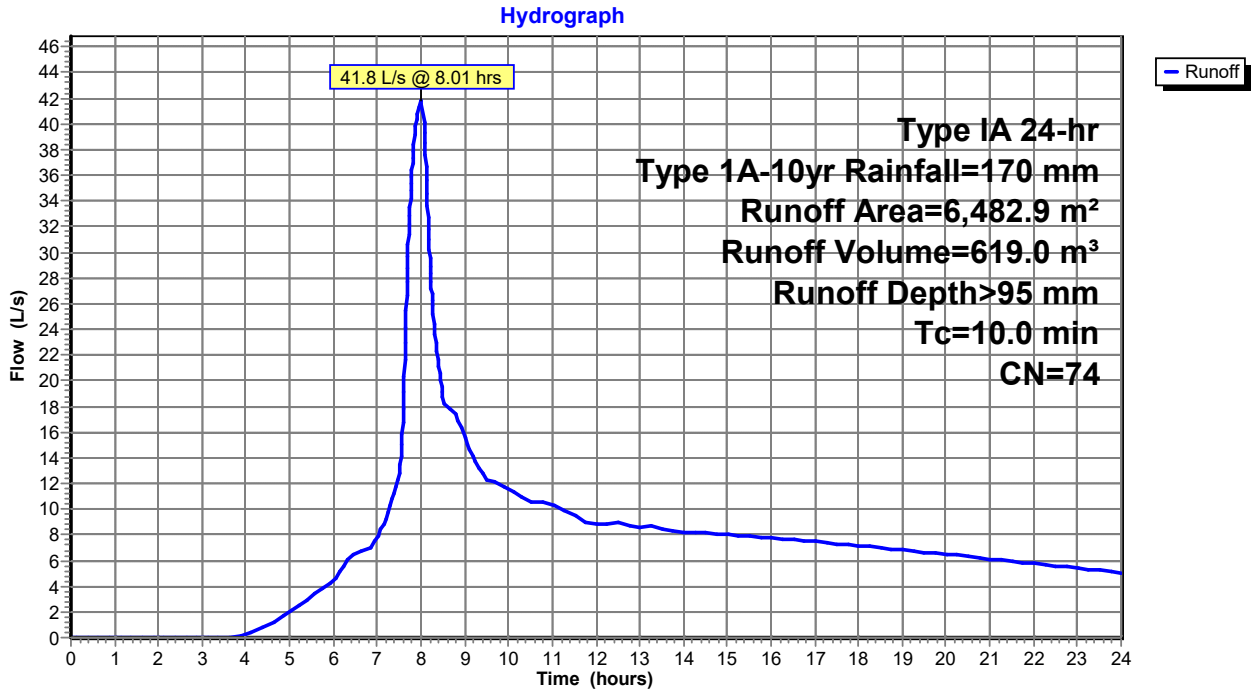
Runoff = 41.8 L/s @ 8.01 hrs, Volume= 619.0 m³, Depth> 95 mm
Routed to Link 22L : Consented

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	6,482.9	74	grass
	6,482.9		100.00% Pervious Area

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

Subcatchment 24S: Grass (to remain)



Hydrograph for Subcatchment 24S: Grass (to remain)

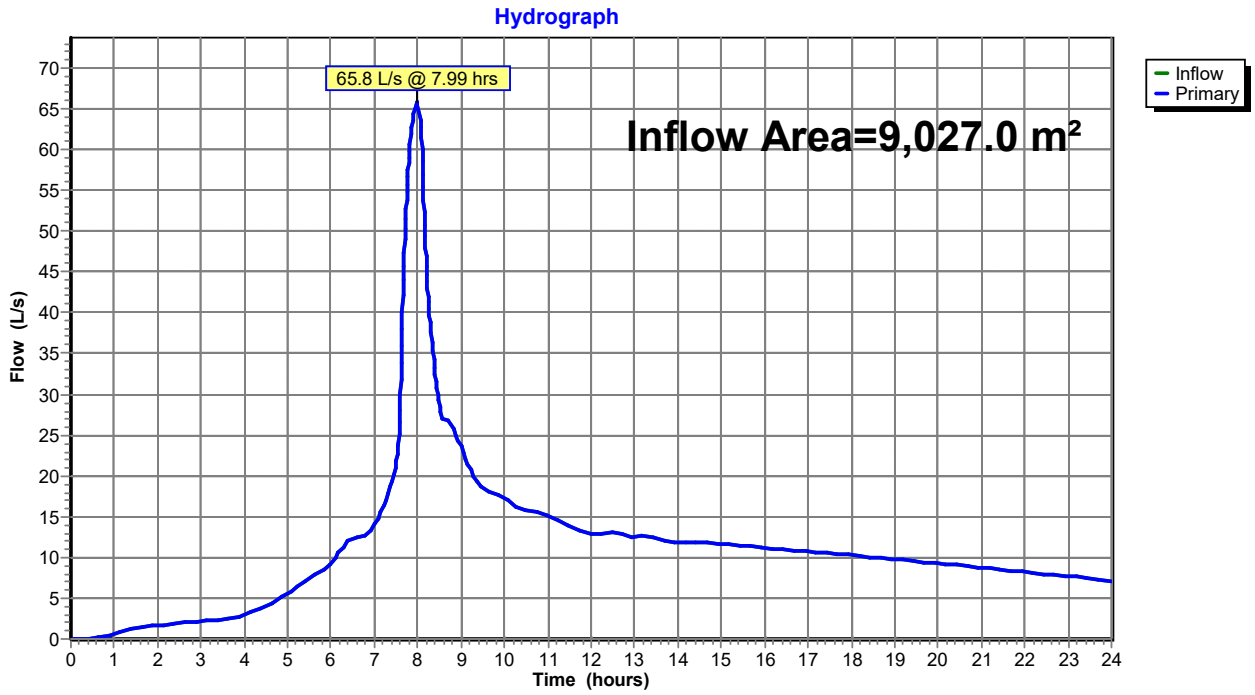
Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)	Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0	14.40	127	60	8.2
0.20	1	0	0.0	14.60	129	61	8.1
0.40	1	0	0.0	14.80	130	62	8.1
0.60	2	0	0.0	15.00	131	63	8.0
0.80	3	0	0.0	15.20	132	64	8.0
1.00	3	0	0.0	15.40	133	65	7.9
1.20	4	0	0.0	15.60	134	66	7.9
1.40	5	0	0.0	15.80	135	67	7.8
1.60	6	0	0.0	16.00	136	67	7.8
1.80	7	0	0.0	16.20	137	68	7.7
2.00	9	0	0.0	16.40	138	69	7.7
2.20	10	0	0.0	16.60	139	70	7.6
2.40	11	0	0.0	16.80	140	71	7.5
2.60	12	0	0.0	17.00	141	72	7.5
2.80	13	0	0.0	17.20	142	72	7.4
3.00	14	0	0.0	17.40	143	73	7.3
3.20	15	0	0.0	17.60	144	74	7.3
3.40	16	0	0.0	17.80	145	75	7.2
3.60	17	0	0.0	18.00	146	76	7.2
3.80	18	0	0.0	18.20	147	76	7.1
4.00	20	0	0.2	18.40	148	77	7.0
4.20	21	0	0.5	18.60	149	78	7.0
4.40	22	0	0.8	18.80	150	79	6.9
4.60	24	0	1.2	19.00	151	80	6.8
4.80	25	1	1.6	19.20	152	80	6.8
5.00	27	1	2.0	19.40	153	81	6.7
5.20	28	1	2.5	19.60	153	82	6.6
5.40	30	1	3.0	19.80	154	82	6.6
5.60	31	2	3.4	20.00	155	83	6.5
5.80	33	2	3.9	20.20	156	84	6.4
6.00	35	3	4.5	20.40	157	85	6.3
6.20	37	3	5.5	20.60	158	85	6.3
6.40	39	4	6.3	20.80	158	86	6.2
6.60	41	5	6.8	21.00	159	87	6.1
6.80	43	6	6.9	21.20	160	87	6.1
7.00	46	7	7.8	21.40	161	88	6.0
7.20	48	8	9.3	21.60	162	89	5.9
7.40	51	9	11.4	21.80	162	89	5.8
7.60	56	12	17.9	22.00	163	90	5.8
7.80	64	16	36.4	22.20	164	91	5.7
8.00	72	21	**41.7**	22.40	165	91	5.6
8.20	77	23	**29.5**	22.60	165	92	5.6
8.40	80	26	21.2	22.80	166	92	5.5
8.60	83	28	17.6	23.00	167	93	5.4
8.80	86	29	17.3	23.20	167	94	5.3
9.00	88	31	15.6	23.40	168	94	5.3
9.20	91	33	14.0	23.60	169	95	5.2
9.40	93	34	12.7	23.80	169	95	5.1
9.60	94	35	12.1	24.00	**170**	**96**	5.0
9.80	96	37	12.0				
10.00	98	38	11.6				
10.20	100	39	11.1				
10.40	101	40	10.7				
10.60	103	42	10.6				
10.80	105	43	10.6				
11.00	106	44	10.3				
11.20	108	45	10.0				
11.40	109	46	9.7				
11.60	110	47	9.3				
11.80	112	48	8.9				
12.00	113	49	8.8				
12.20	114	50	8.8				
12.40	115	51	8.9				
12.60	117	52	9.1				
12.80	118	53	8.6				
13.00	119	54	8.5				
13.20	120	55	8.8				
13.40	122	56	8.6				
13.60	123	57	8.4				
13.80	124	58	8.3				
14.00	125	59	8.2				
14.20	126	59	8.2				

Summary for Link 22L: Consented

Inflow Area = 9,027.0 m², 15.13% Impervious, Inflow Depth > 107 mm for Type 1A-10yr event
Inflow = 65.8 L/s @ 7.99 hrs, Volume= 969.5 m³
Primary = 65.8 L/s @ 7.99 hrs, Volume= 969.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 22L: Consented



Hydrograph for Link 22L: Consented

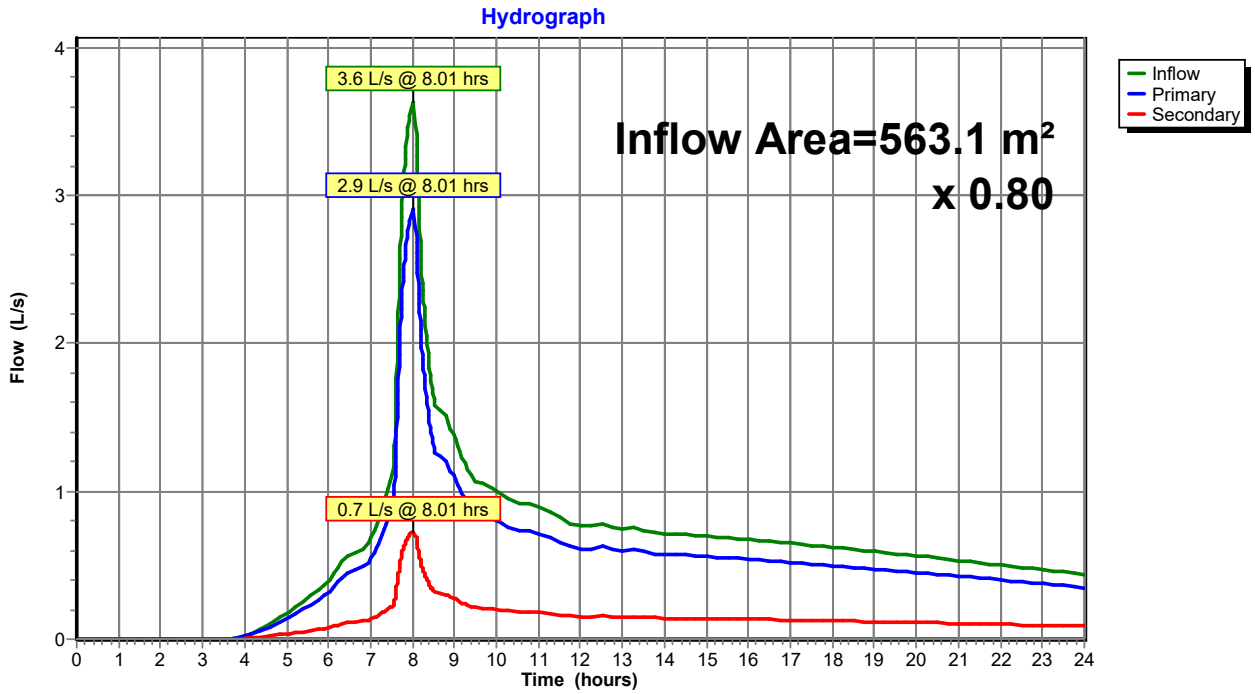
Time (hours)	Inflow (L/s)	Elevation (meters)	Primary (L/s)	Time (hours)	Inflow (L/s)	Elevation (meters)	Primary (L/s)
0.00	0.0	**0.00**	0.0	14.40	11.9	0.00	11.9
0.20	0.0	0.00	0.0	14.60	11.8	0.00	11.8
0.40	0.0	0.00	0.0	14.80	11.7	0.00	11.7
0.60	0.2	0.00	0.2	15.00	11.6	0.00	11.6
0.80	0.4	0.00	0.4	15.20	11.5	0.00	11.5
1.00	0.6	0.00	0.6	15.40	11.4	0.00	11.4
1.20	1.0	0.00	1.0	15.60	11.4	0.00	11.4
1.40	1.3	0.00	1.3	15.80	11.3	0.00	11.3
1.60	1.4	0.00	1.4	16.00	11.2	0.00	11.2
1.80	1.5	0.00	1.5	16.20	11.1	0.00	11.1
2.00	1.6	0.00	1.6	16.40	11.0	0.00	11.0
2.20	1.8	0.00	1.8	16.60	10.9	0.00	10.9
2.40	2.0	0.00	2.0	16.80	10.8	0.00	10.8
2.60	2.1	0.00	2.1	17.00	10.7	0.00	10.7
2.80	2.1	0.00	2.1	17.20	10.6	0.00	10.6
3.00	2.2	0.00	2.2	17.40	10.5	0.00	10.5
3.20	2.2	0.00	2.2	17.60	10.4	0.00	10.4
3.40	2.3	0.00	2.3	17.80	10.4	0.00	10.4
3.60	2.4	0.00	2.4	18.00	10.3	0.00	10.3
3.80	2.6	0.00	2.6	18.20	10.2	0.00	10.2
4.00	3.0	0.00	3.0	18.40	10.1	0.00	10.1
4.20	3.4	0.00	3.4	18.60	10.0	0.00	10.0
4.40	3.8	0.00	3.8	18.80	9.9	0.00	9.9
4.60	4.3	0.00	4.3	19.00	9.8	0.00	9.8
4.80	4.9	0.00	4.9	19.20	9.7	0.00	9.7
5.00	5.5	0.00	5.5	19.40	9.6	0.00	9.6
5.20	6.3	0.00	6.3	19.60	9.5	0.00	9.5
5.40	7.1	0.00	7.1	19.80	9.4	0.00	9.4
5.60	7.8	0.00	7.8	20.00	9.3	0.00	9.3
5.80	8.4	0.00	8.4	20.20	9.2	0.00	9.2
6.00	9.3	0.00	9.3	20.40	9.1	0.00	9.1
6.20	10.8	0.00	10.8	20.60	9.0	0.00	9.0
6.40	12.0	0.00	12.0	20.80	8.8	0.00	8.8
6.60	12.6	0.00	12.6	21.00	8.7	0.00	8.7
6.80	12.5	0.00	12.5	21.20	8.6	0.00	8.6
7.00	13.9	0.00	13.9	21.40	8.5	0.00	8.5
7.20	16.2	0.00	16.2	21.60	8.4	0.00	8.4
7.40	19.5	0.00	19.5	21.80	8.3	0.00	8.3
7.60	29.8	0.00	29.8	22.00	8.2	0.00	8.2
7.80	**59.0**	0.00	**59.0**	22.20	8.1	0.00	8.1
8.00	**65.8**	0.00	**65.8**	22.40	8.0	0.00	8.0
8.20	45.7	0.00	45.7	22.60	7.9	0.00	7.9
8.40	32.5	0.00	32.5	22.80	7.8	0.00	7.8
8.60	26.8	0.00	26.8	23.00	7.7	0.00	7.7
8.80	26.2	0.00	26.2	23.20	7.6	0.00	7.6
9.00	23.5	0.00	23.5	23.40	7.5	0.00	7.5
9.20	21.0	0.00	21.0	23.60	7.4	0.00	7.4
9.40	19.1	0.00	19.1	23.80	7.2	0.00	7.2
9.60	18.1	0.00	18.1	24.00	7.1	0.00	7.1
9.80	17.9	0.00	17.9				
10.00	17.3	0.00	17.3				
10.20	16.4	0.00	16.4				
10.40	15.8	0.00	15.8				
10.60	15.6	0.00	15.6				
10.80	15.6	0.00	15.6				
11.00	15.2	0.00	15.2				
11.20	14.7	0.00	14.7				
11.40	14.2	0.00	14.2				
11.60	13.7	0.00	13.7				
11.80	13.1	0.00	13.1				
12.00	12.8	0.00	12.8				
12.20	12.8	0.00	12.8				
12.40	13.0	0.00	13.0				
12.60	13.2	0.00	13.2				
12.80	12.5	0.00	12.5				
13.00	12.4	0.00	12.4				
13.20	12.8	0.00	12.8				
13.40	12.5	0.00	12.5				
13.60	12.2	0.00	12.2				
13.80	12.0	0.00	12.0				
14.00	11.9	0.00	11.9				
14.20	11.9	0.00	11.9				

Summary for Link 24L: 80%

Inflow Area = 563.1 m², 0.00% Impervious, Inflow Depth > 95 mm for Type 1A-10yr event
Inflow = 3.6 L/s @ 8.01 hrs, Volume= 53.8 m³
Primary = 2.9 L/s @ 8.01 hrs, Volume= 43.0 m³, Atten= 20%, Lag= 0.0 min
Routed to Link 22L : Consented
Secondary = 0.7 L/s @ 8.01 hrs, Volume= 10.8 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 24L: 80%



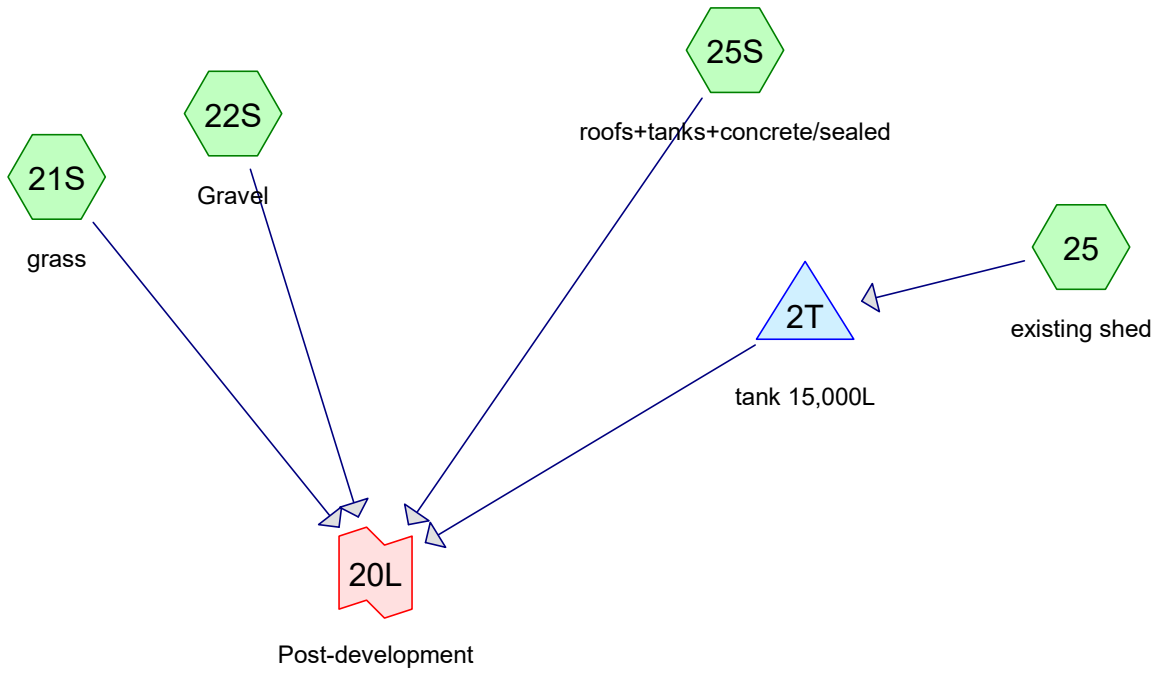
Hydrograph for Link 24L: 80%

Time (hours)	Inflow (L/s)	Elevation (meters)	Primary (L/s)	Secondary (L/s)
0.00	0.0	**0.00**	0.0	0.0
0.20	0.0	0.00	0.0	0.0
0.40	0.0	0.00	0.0	0.0
0.60	0.0	0.00	0.0	0.0
0.80	0.0	0.00	0.0	0.0
1.00	0.0	0.00	0.0	0.0
1.20	0.0	0.00	0.0	0.0
1.40	0.0	0.00	0.0	0.0
1.60	0.0	0.00	0.0	0.0
1.80	0.0	0.00	0.0	0.0
2.00	0.0	0.00	0.0	0.0
2.20	0.0	0.00	0.0	0.0
2.40	0.0	0.00	0.0	0.0
2.60	0.0	0.00	0.0	0.0
2.80	0.0	0.00	0.0	0.0
3.00	0.0	0.00	0.0	0.0
3.20	0.0	0.00	0.0	0.0
3.40	0.0	0.00	0.0	0.0
3.60	0.0	0.00	0.0	0.0
3.80	0.0	0.00	0.0	0.0
4.00	0.0	0.00	0.0	0.0
4.20	0.0	0.00	0.0	0.0
4.40	0.1	0.00	0.1	0.0
4.60	0.1	0.00	0.1	0.0
4.80	0.1	0.00	0.1	0.0
5.00	0.2	0.00	0.1	0.0
5.20	0.2	0.00	0.2	0.0
5.40	0.3	0.00	0.2	0.1
5.60	0.3	0.00	0.2	0.1
5.80	0.3	0.00	0.3	0.1
6.00	0.4	0.00	0.3	0.1
6.20	0.5	0.00	0.4	0.1
6.40	0.5	0.00	0.4	0.1
6.60	0.6	0.00	0.5	0.1
6.80	0.6	0.00	0.5	0.1
7.00	0.7	0.00	0.5	0.1
7.20	0.8	0.00	0.6	0.2
7.40	1.0	0.00	0.8	0.2
7.60	1.6	0.00	1.2	0.3
7.80	3.2	0.00	2.5	0.6
8.00	**3.6**	0.00	**2.9**	**0.7**
8.20	**2.6**	0.00	**2.1**	**0.5**
8.40	1.8	0.00	1.5	0.4
8.60	1.5	0.00	1.2	0.3
8.80	1.5	0.00	1.2	0.3
9.00	1.4	0.00	1.1	0.3
9.20	1.2	0.00	1.0	0.2
9.40	1.1	0.00	0.9	0.2
9.60	1.1	0.00	0.8	0.2
9.80	1.0	0.00	0.8	0.2
10.00	1.0	0.00	0.8	0.2
10.20	1.0	0.00	0.8	0.2
10.40	0.9	0.00	0.7	0.2
10.60	0.9	0.00	0.7	0.2
10.80	0.9	0.00	0.7	0.2
11.00	0.9	0.00	0.7	0.2
11.20	0.9	0.00	0.7	0.2
11.40	0.8	0.00	0.7	0.2
11.60	0.8	0.00	0.6	0.2
11.80	0.8	0.00	0.6	0.2
12.00	0.8	0.00	0.6	0.2
12.20	0.8	0.00	0.6	0.2
12.40	0.8	0.00	0.6	0.2
12.60	0.8	0.00	0.6	0.2
12.80	0.7	0.00	0.6	0.1
13.00	0.7	0.00	0.6	0.1
13.20	0.8	0.00	0.6	0.2
13.40	0.7	0.00	0.6	0.1
13.60	0.7	0.00	0.6	0.1
13.80	0.7	0.00	0.6	0.1
14.00	0.7	0.00	0.6	0.1
14.20	0.7	0.00	0.6	0.1
14.40	0.7	0.00	0.6	0.1
14.60	0.7	0.00	0.6	0.1
14.80	0.7	0.00	0.6	0.1
15.00	0.7	0.00	0.6	0.1
15.20	0.7	0.00	0.6	0.1
15.40	0.7	0.00	0.6	0.1
15.60	0.7	0.00	0.5	0.1
15.80	0.7	0.00	0.5	0.1
16.00	0.7	0.00	0.5	0.1
16.20	0.7	0.00	0.5	0.1
16.40	0.7	0.00	0.5	0.1
16.60	0.7	0.00	0.5	0.1
16.80	0.7	0.00	0.5	0.1
17.00	0.6	0.00	0.5	0.1
17.20	0.6	0.00	0.5	0.1
17.40	0.6	0.00	0.5	0.1
17.60	0.6	0.00	0.5	0.1
17.80	0.6	0.00	0.5	0.1
18.00	0.6	0.00	0.5	0.1
18.20	0.6	0.00	0.5	0.1
18.40	0.6	0.00	0.5	0.1
18.60	0.6	0.00	0.5	0.1
18.80	0.6	0.00	0.5	0.1
19.00	0.6	0.00	0.5	0.1
19.20	0.6	0.00	0.5	0.1
19.40	0.6	0.00	0.5	0.1
19.60	0.6	0.00	0.5	0.1
19.80	0.6	0.00	0.5	0.1
20.00	0.6	0.00	0.5	0.1
20.20	0.6	0.00	0.4	0.1
20.40	0.6	0.00	0.4	0.1
20.60	0.5	0.00	0.4	0.1
20.80	0.5	0.00	0.4	0.1
21.00	0.5	0.00	0.4	0.1
21.20	0.5	0.00	0.4	0.1
21.40	0.5	0.00	0.4	0.1
21.60	0.5	0.00	0.4	0.1
21.80	0.5	0.00	0.4	0.1
22.00	0.5	0.00	0.4	0.1
22.20	0.5	0.00	0.4	0.1
22.40	0.5	0.00	0.4	0.1
22.60	0.5	0.00	0.4	0.1
22.80	0.5	0.00	0.4	0.1
23.00	0.5	0.00	0.4	0.1
23.20	0.5	0.00	0.4	0.1
23.40	0.5	0.00	0.4	0.1
23.60	0.4	0.00	0.4	0.1
23.80	0.4	0.00	0.4	0.1
24.00	0.4	0.00	0.3	0.1

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Subcat Reach Pond Link

Routing Diagram for 26 202_20261030_(Type 1A)_POSTDEVELOPMENT
Prepared by Haigh Workman Limited, Printed 30/10/2026
HydroCAD® 10.20-5c s/n 13322 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-meters)	CN	Description (subcatchment-numbers)
615.0	89	Consented (22S)
275.0	98	Existing shed (25)
6,482.9	74	Grass (21S)
144.0	98	Proposed shed (25)
280.0	98	Roofs (25S)
165.0	89	Unconsented (22S)
7.1	98	atten tank (25S)
154.0	98	consented concrete (25S)
485.0	98	consented sealed drive (25S)
28.0	98	existing pool (25S)
125.0	98	shed (25S)
19.0	98	smaller sheds at the pool (25S)
160.0	98	unconsented concrete (25S)
70.0	98	unconsented shed (25S)
17.0	98	unconsented sheds+pad (25S)
9,027.0	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-meters)	Soil Group	Subcatchment Numbers
0.0	HSG A	
0.0	HSG B	
0.0	HSG C	
0.0	HSG D	
9,027.0	Other	21S, 22S, 25, 25S
9,027.0		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-meters)	HSG-B (sq-meters)	HSG-C (sq-meters)	HSG-D (sq-meters)	Other (sq-meters)	Total (sq-meters)	Ground Cover	Subcatchment Numbers
0.0	0.0	0.0	0.0	615.0	615.0	Consented	22S
0.0	0.0	0.0	0.0	275.0	275.0	Existing shed	25
0.0	0.0	0.0	0.0	6,482.9	6,482.9	Grass	21S
0.0	0.0	0.0	0.0	144.0	144.0	Proposed shed	25
0.0	0.0	0.0	0.0	280.0	280.0	Roofs	25S
0.0	0.0	0.0	0.0	165.0	165.0	Unconsented	22S
0.0	0.0	0.0	0.0	7.1	7.1	atten tank	25S
0.0	0.0	0.0	0.0	154.0	154.0	consented concrete	25S
0.0	0.0	0.0	0.0	485.0	485.0	consented sealed drive	25S
0.0	0.0	0.0	0.0	28.0	28.0	existing pool	25S
0.0	0.0	0.0	0.0	125.0	125.0	shed	25S
0.0	0.0	0.0	0.0	19.0	19.0	smaller sheds at the pool	25S
0.0	0.0	0.0	0.0	160.0	160.0	unconsented concrete	25S
0.0	0.0	0.0	0.0	70.0	70.0	unconsented shed	25S
0.0	0.0	0.0	0.0	17.0	17.0	unconsented sheds+pad	25S
0.0	**0.0**	**0.0**	**0.0**	**9,027.0**	**9,027.0**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 21S: grass Runoff Area=6,482.9 m² 0.00% Impervious Runoff Depth>95 mm
Tc=10.0 min CN=74 Runoff=41.8 L/s 619.0 m³

Subcatchment 22S: Gravel Runoff Area=780.0 m² 0.00% Impervious Runoff Depth>137 mm
Tc=10.0 min CN=89 Runoff=7.7 L/s 106.8 m³

Subcatchment 25: existing shed Runoff Area=419.0 m² 100.00% Impervious Runoff Depth>163 mm
Tc=10.0 min CN=98 Runoff=4.7 L/s 68.5 m³

Subcatchment 25S: roofs+tanks+concrete/sealed Runoff Area=1,345.1 m² 100.00% Impervious Runoff Depth>163 mm
Tc=10.0 min CN=98 Runoff=15.0 L/s 219.9 m³

Pond 2T: tank 15,000L Peak Elev=1.66 m Storage=11.7 m³ Inflow=4.7 L/s 68.5 m³
Outflow=1.7 L/s 67.7 m³

Link 20L: Post-development Inflow=65.8 L/s 1,013.4 m³
Primary=65.8 L/s 1,013.4 m³

Total Runoff Area = 9,027.0 m² Runoff Volume = 1,014.2 m³ Average Runoff Depth = 112 mm
80.46% Pervious = 7,262.9 m² 19.54% Impervious = 1,764.1 m²

Summary for Subcatchment 21S: grass

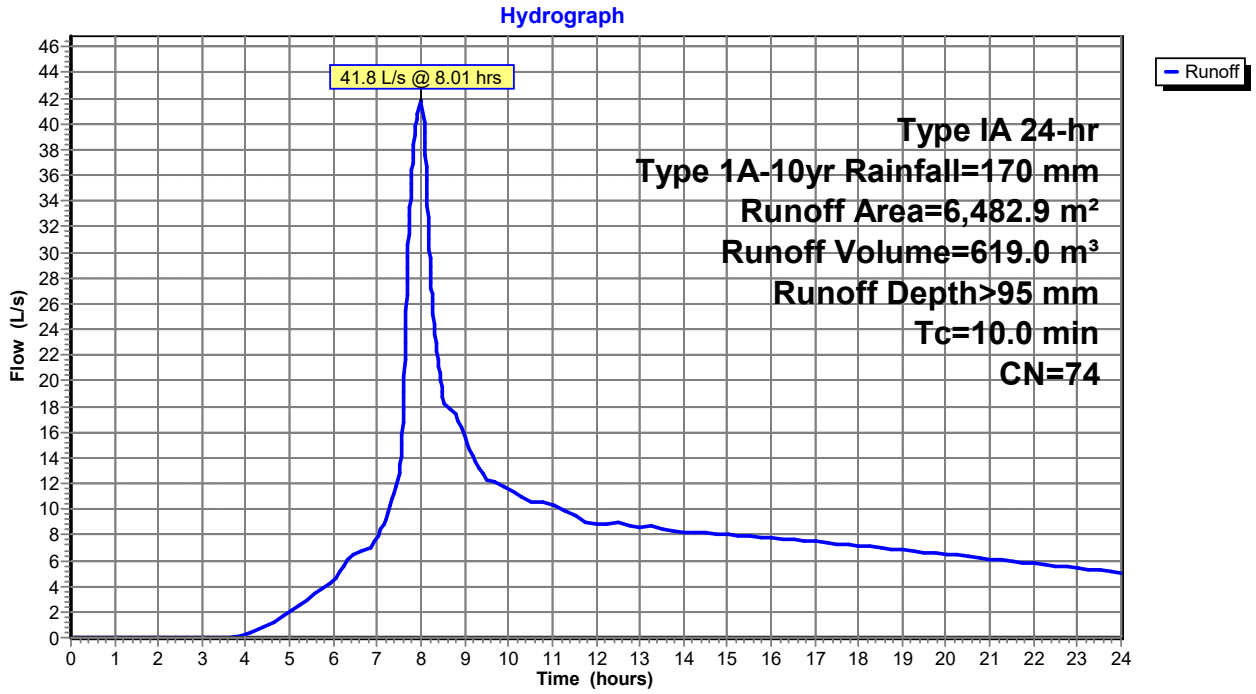
Runoff = 41.8 L/s @ 8.01 hrs, Volume= 619.0 m³, Depth> 95 mm
Routed to Link 20L : Post-development

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	6,482.9	74	Grass
	6,482.9		100.00% Pervious Area

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

Subcatchment 21S: grass



Hydrograph for Subcatchment 21S: grass

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)	Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0	14.40	127	60	8.2
0.20	1	0	0.0	14.60	129	61	8.1
0.40	1	0	0.0	14.80	130	62	8.1
0.60	2	0	0.0	15.00	131	63	8.0
0.80	3	0	0.0	15.20	132	64	8.0
1.00	3	0	0.0	15.40	133	65	7.9
1.20	4	0	0.0	15.60	134	66	7.9
1.40	5	0	0.0	15.80	135	67	7.8
1.60	6	0	0.0	16.00	136	67	7.8
1.80	7	0	0.0	16.20	137	68	7.7
2.00	9	0	0.0	16.40	138	69	7.7
2.20	10	0	0.0	16.60	139	70	7.6
2.40	11	0	0.0	16.80	140	71	7.5
2.60	12	0	0.0	17.00	141	72	7.5
2.80	13	0	0.0	17.20	142	72	7.4
3.00	14	0	0.0	17.40	143	73	7.3
3.20	15	0	0.0	17.60	144	74	7.3
3.40	16	0	0.0	17.80	145	75	7.2
3.60	17	0	0.0	18.00	146	76	7.2
3.80	18	0	0.0	18.20	147	76	7.1
4.00	20	0	0.2	18.40	148	77	7.0
4.20	21	0	0.5	18.60	149	78	7.0
4.40	22	0	0.8	18.80	150	79	6.9
4.60	24	0	1.2	19.00	151	80	6.8
4.80	25	1	1.6	19.20	152	80	6.8
5.00	27	1	2.0	19.40	153	81	6.7
5.20	28	1	2.5	19.60	153	82	6.6
5.40	30	1	3.0	19.80	154	82	6.6
5.60	31	2	3.4	20.00	155	83	6.5
5.80	33	2	3.9	20.20	156	84	6.4
6.00	35	3	4.5	20.40	157	85	6.3
6.20	37	3	5.5	20.60	158	85	6.3
6.40	39	4	6.3	20.80	158	86	6.2
6.60	41	5	6.8	21.00	159	87	6.1
6.80	43	6	6.9	21.20	160	87	6.1
7.00	46	7	7.8	21.40	161	88	6.0
7.20	48	8	9.3	21.60	162	89	5.9
7.40	51	9	11.4	21.80	162	89	5.8
7.60	56	12	17.9	22.00	163	90	5.8
7.80	64	16	36.4	22.20	164	91	5.7
8.00	72	21	**41.7**	22.40	165	91	5.6
8.20	77	23	**29.5**	22.60	165	92	5.6
8.40	80	26	21.2	22.80	166	92	5.5
8.60	83	28	17.6	23.00	167	93	5.4
8.80	86	29	17.3	23.20	167	94	5.3
9.00	88	31	15.6	23.40	168	94	5.3
9.20	91	33	14.0	23.60	169	95	5.2
9.40	93	34	12.7	23.80	169	95	5.1
9.60	94	35	12.1	24.00	**170**	**96**	5.0
9.80	96	37	12.0				
10.00	98	38	11.6				
10.20	100	39	11.1				
10.40	101	40	10.7				
10.60	103	42	10.6				
10.80	105	43	10.6				
11.00	106	44	10.3				
11.20	108	45	10.0				
11.40	109	46	9.7				
11.60	110	47	9.3				
11.80	112	48	8.9				
12.00	113	49	8.8				
12.20	114	50	8.8				
12.40	115	51	8.9				
12.60	117	52	9.1				
12.80	118	53	8.6				
13.00	119	54	8.5				
13.20	120	55	8.8				
13.40	122	56	8.6				
13.60	123	57	8.4				
13.80	124	58	8.3				
14.00	125	59	8.2				
14.20	126	59	8.2				

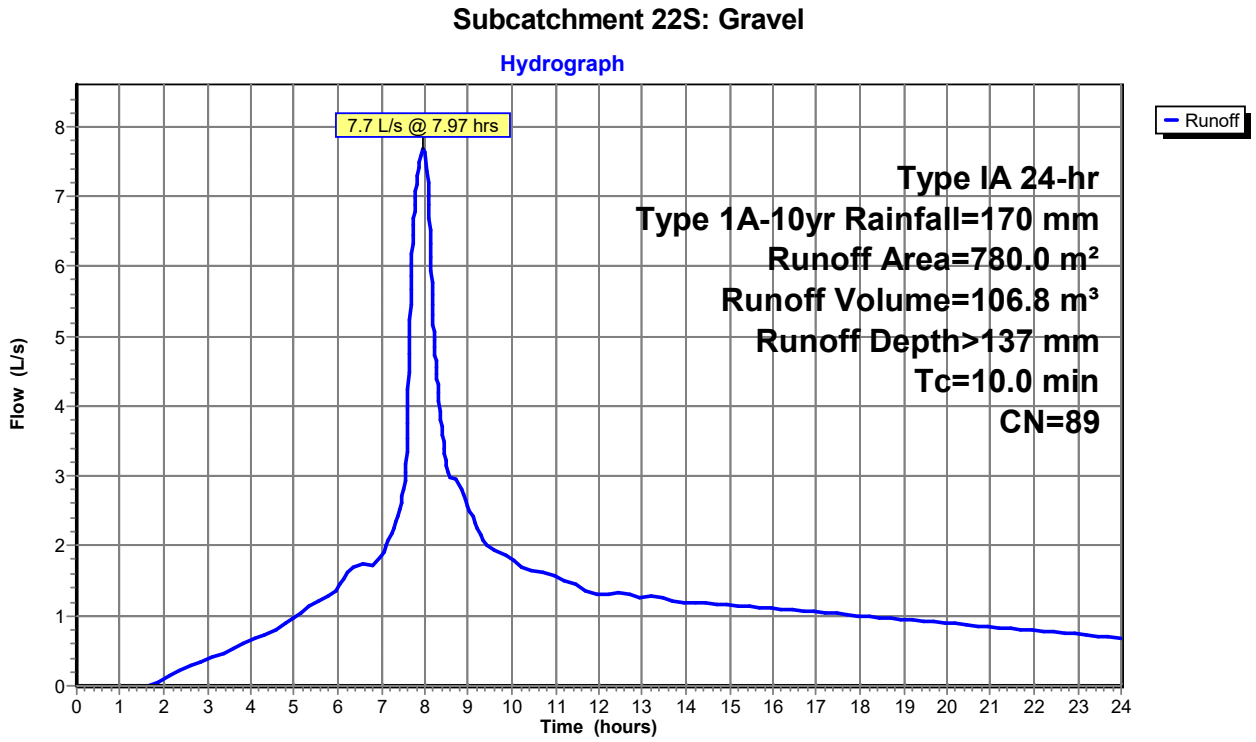
Summary for Subcatchment 22S: Gravel

Runoff = 7.7 L/s @ 7.97 hrs, Volume= 106.8 m³, Depth> 137 mm
Routed to Link 20L : Post-development

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	615.0	89	Consented
*	165.0	89	Unconsented
	780.0	89	Weighted Average
	780.0		100.00% Pervious Area

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



Hydrograph for Subcatchment 22S: Gravel

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)	Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0	14.40	127	96	1.2
0.20	1	0	0.0	14.60	129	97	1.2
0.40	1	0	0.0	14.80	130	98	1.2
0.60	2	0	0.0	15.00	131	99	1.2
0.80	3	0	0.0	15.20	132	100	1.1
1.00	3	0	0.0	15.40	133	102	1.1
1.20	4	0	0.0	15.60	134	103	1.1
1.40	5	0	0.0	15.80	135	104	1.1
1.60	6	0	0.0	16.00	136	105	1.1
1.80	7	0	0.0	16.20	137	106	1.1
2.00	9	0	0.1	16.40	138	107	1.1
2.20	10	0	0.2	16.60	139	108	1.1
2.40	11	1	0.2	16.80	140	109	1.1
2.60	12	1	0.3	17.00	141	110	1.1
2.80	13	1	0.3	17.20	142	111	1.0
3.00	14	2	0.4	17.40	143	111	1.0
3.20	15	2	0.4	17.60	144	112	1.0
3.40	16	2	0.5	17.80	145	113	1.0
3.60	17	3	0.5	18.00	146	114	1.0
3.80	18	3	0.6	18.20	147	115	1.0
4.00	20	4	0.7	18.40	148	116	1.0
4.20	21	5	0.7	18.60	149	117	1.0
4.40	22	5	0.8	18.80	150	118	1.0
4.60	24	6	0.8	19.00	151	119	0.9
4.80	25	7	0.9	19.20	152	120	0.9
5.00	27	8	1.0	19.40	153	120	0.9
5.20	28	9	1.1	19.60	153	121	0.9
5.40	30	10	1.2	19.80	154	122	0.9
5.60	31	11	1.2	20.00	155	123	0.9
5.80	33	12	1.3	20.20	156	124	0.9
6.00	35	14	1.4	20.40	157	125	0.9
6.20	37	15	1.6	20.60	158	125	0.9
6.40	39	17	1.7	20.80	158	126	0.9
6.60	41	18	1.8	21.00	159	127	0.8
6.80	43	20	1.7	21.20	160	128	0.8
7.00	46	22	1.9	21.40	161	128	0.8
7.20	48	24	2.1	21.60	162	129	0.8
7.40	51	26	2.5	21.80	162	130	0.8
7.60	56	31	3.7	22.00	163	131	0.8
7.80	64	38	**7.1**	22.20	164	131	0.8
8.00	72	45	**7.6**	22.40	165	132	0.8
8.20	77	49	5.2	22.60	165	133	0.8
8.40	80	52	3.6	22.80	166	133	0.7
8.60	83	55	2.9	23.00	167	134	0.7
8.80	86	57	2.9	23.20	167	135	0.7
9.00	88	59	2.5	23.40	168	135	0.7
9.20	91	61	2.3	23.60	169	136	0.7
9.40	93	63	2.0	23.80	169	137	0.7
9.60	94	65	1.9	24.00	**170**	**137**	0.7
9.80	96	67	1.9				
10.00	98	68	1.8				
10.20	100	70	1.7				
10.40	101	71	1.7				
10.60	103	73	1.6				
10.80	105	74	1.6				
11.00	106	76	1.6				
11.20	108	77	1.5				
11.40	109	79	1.5				
11.60	110	80	1.4				
11.80	112	81	1.3				
12.00	113	82	1.3				
12.20	114	84	1.3				
12.40	115	85	1.3				
12.60	117	86	1.3				
12.80	118	87	1.3				
13.00	119	88	1.3				
13.20	120	90	1.3				
13.40	122	91	1.3				
13.60	123	92	1.2				
13.80	124	93	1.2				
14.00	125	94	1.2				
14.20	126	95	1.2				

Summary for Subcatchment 25: existing shed

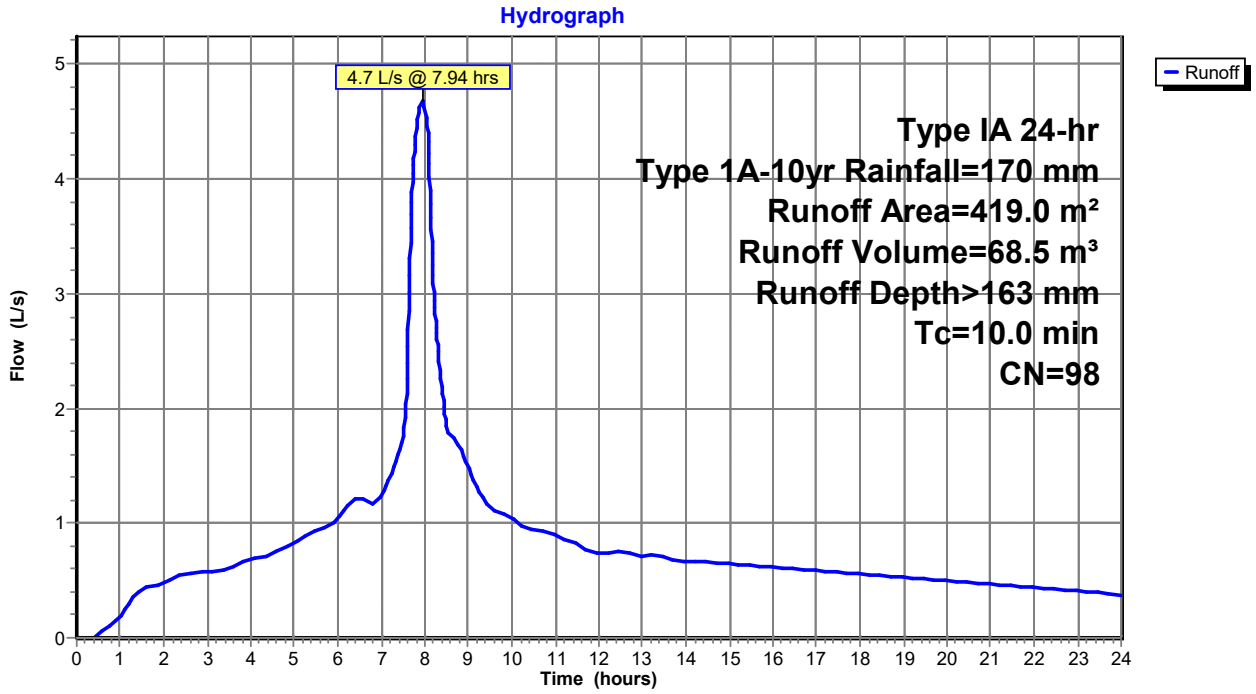
Runoff = 4.7 L/s @ 7.94 hrs, Volume= 68.5 m³, Depth> 163 mm
Routed to Pond 2T : tank 15,000L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	144.0	98	Proposed shed
*	275.0	98	Existing shed
	419.0	98	Weighted Average
	419.0		100.00% Impervious Area

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

Subcatchment 25: existing shed



Hydrograph for Subcatchment 25: existing shed

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0
0.20	1	0	0.0
0.40	1	0	0.0
0.60	2	0	0.1
0.80	3	0	0.1
1.00	3	1	0.2
1.20	4	1	0.3
1.40	5	2	0.4
1.60	6	3	0.4
1.80	7	4	0.5
2.00	9	4	0.5
2.20	10	5	0.5
2.40	11	6	0.5
2.60	12	7	0.6
2.80	13	8	0.6
3.00	14	9	0.6
3.20	15	10	0.6
3.40	16	11	0.6
3.60	17	12	0.6
3.80	18	13	0.7
4.00	20	15	0.7
4.20	21	16	0.7
4.40	22	17	0.7
4.60	24	18	0.7
4.80	25	20	0.8
5.00	27	21	0.8
5.20	28	23	0.9
5.40	30	24	0.9
5.60	31	26	1.0
5.80	33	28	1.0
6.00	35	29	1.0
6.20	37	32	1.1
6.40	39	34	1.2
6.60	41	36	1.2
6.80	43	38	1.2
7.00	46	40	1.2
7.20	48	42	1.4
7.40	51	45	1.6
7.60	56	51	2.4
7.80	64	59	**4.4**
8.00	72	66	**4.6**
8.20	77	71	3.1
8.40	80	74	2.1
8.60	83	77	1.7
8.80	86	80	1.7
9.00	88	82	1.5
9.20	91	85	1.3
9.40	93	87	1.2
9.60	94	89	1.1
9.80	96	90	1.1
10.00	98	92	1.0
10.20	100	94	1.0
10.40	101	95	0.9
10.60	103	97	0.9
10.80	105	99	0.9
11.00	106	100	0.9
11.20	108	102	0.9
11.40	109	103	0.8
11.60	110	104	0.8
11.80	112	106	0.8
12.00	113	107	0.7
12.20	114	108	0.7
12.40	115	109	0.7
12.60	117	111	0.8
12.80	118	112	0.7
13.00	119	113	0.7
13.20	120	114	0.7
13.40	122	116	0.7
13.60	123	117	0.7
13.80	124	118	0.7
14.00	125	119	0.7
14.20	126	120	0.7
14.40	127	121	0.7
14.60	129	123	0.7
14.80	130	124	0.7
15.00	131	125	0.6
15.20	132	126	0.6
15.40	133	127	0.6
15.60	134	128	0.6
15.80	135	129	0.6
16.00	136	130	0.6
16.20	137	131	0.6
16.40	138	132	0.6
16.60	139	133	0.6
16.80	140	134	0.6
17.00	141	135	0.6
17.20	142	136	0.6
17.40	143	137	0.6
17.60	144	138	0.6
17.80	145	139	0.6
18.00	146	140	0.6
18.20	147	141	0.6
18.40	148	142	0.5
18.60	149	143	0.5
18.80	150	144	0.5
19.00	151	145	0.5
19.20	152	146	0.5
19.40	153	147	0.5
19.60	153	147	0.5
19.80	154	148	0.5
20.00	155	149	0.5
20.20	156	150	0.5
20.40	157	151	0.5
20.60	158	152	0.5
20.80	158	152	0.5
21.00	159	153	0.5
21.20	160	154	0.5
21.40	161	155	0.5
21.60	162	156	0.4
21.80	162	156	0.4
22.00	163	157	0.4
22.20	164	158	0.4
22.40	165	158	0.4
22.60	165	159	0.4
22.80	166	160	0.4
23.00	167	161	0.4
23.20	167	161	0.4
23.40	168	162	0.4
23.60	169	163	0.4
23.80	169	163	0.4
24.00	**170**	**164**	0.4

Summary for Subcatchment 25S: roofs+tanks+concrete/sealed

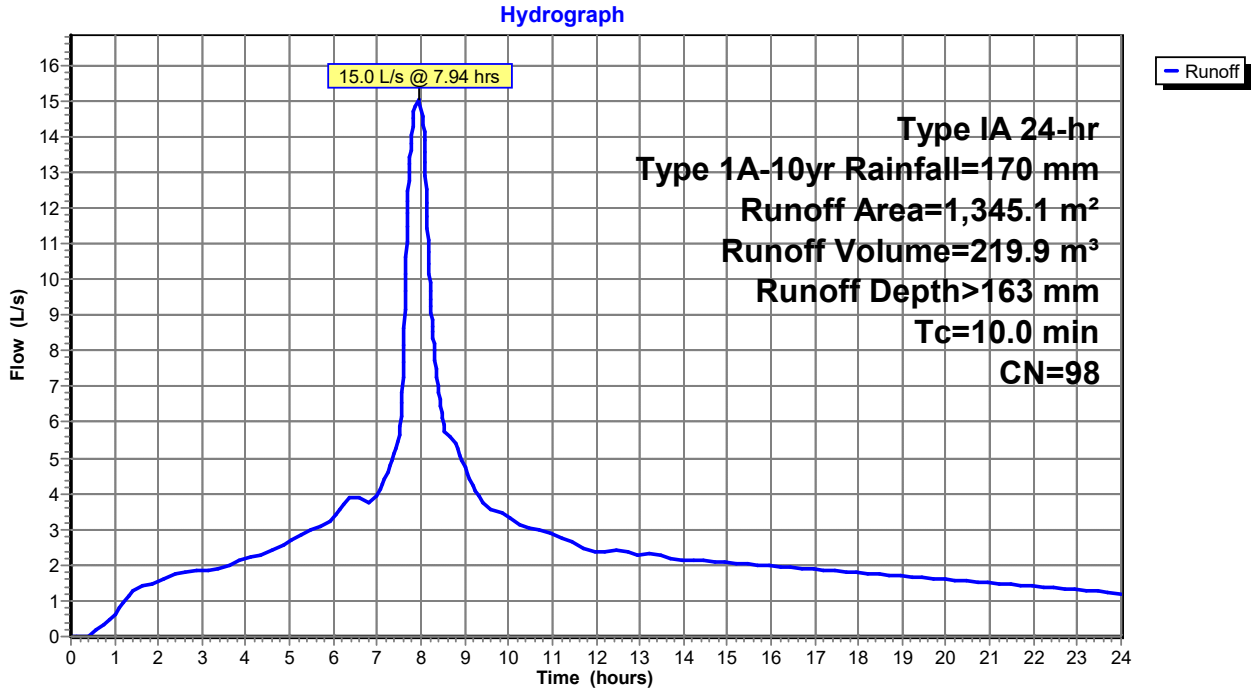
Runoff = 15.0 L/s @ 7.94 hrs, Volume= 219.9 m³, Depth> 163 mm
Routed to Link 20L : Post-development

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type IA 24-hr Type 1A-10yr Rainfall=170 mm

	Area (m²)	CN	Description
*	280.0	98	Roofs
*	125.0	98	shed
*	28.0	98	existing pool
*	19.0	98	smaller sheds at the pool
*	70.0	98	unconsented shed
*	17.0	98	unconsented sheds+pad
*	485.0	98	consented sealed drive
*	154.0	98	consented concrete
*	160.0	98	unconsented concrete
*	7.1	98	atten tank
	1,345.1	98	Weighted Average
	1,345.1		100.00% Impervious Area

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

Subcatchment 25S: roofs+tanks+concrete/sealed



Hydrograph for Subcatchment 25S: roofs+tanks+concrete/sealed

Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)	Time (hours)	Precip. (mm)	Excess (mm)	Runoff (L/s)
0.00	0	0	0.0	14.40	127	121	2.1
0.20	1	0	0.0	14.60	129	123	2.1
0.40	1	0	0.0	14.80	130	124	2.1
0.60	2	0	0.2	15.00	131	125	2.1
0.80	3	0	0.4	15.20	132	126	2.1
1.00	3	1	0.6	15.40	133	127	2.0
1.20	4	1	0.9	15.60	134	128	2.0
1.40	5	2	1.2	15.80	135	129	2.0
1.60	6	3	1.4	16.00	136	130	2.0
1.80	7	4	1.5	16.20	137	131	2.0
2.00	9	4	1.5	16.40	138	132	1.9
2.20	10	5	1.7	16.60	139	133	1.9
2.40	11	6	1.8	16.80	140	134	1.9
2.60	12	7	1.8	17.00	141	135	1.9
2.80	13	8	1.8	17.20	142	136	1.9
3.00	14	9	1.8	17.40	143	137	1.8
3.20	15	10	1.8	17.60	144	138	1.8
3.40	16	11	1.9	17.80	145	139	1.8
3.60	17	12	2.0	18.00	146	140	1.8
3.80	18	13	2.1	18.20	147	141	1.8
4.00	20	15	2.2	18.40	148	142	1.7
4.20	21	16	2.2	18.60	149	143	1.7
4.40	22	17	2.3	18.80	150	144	1.7
4.60	24	18	2.4	19.00	151	145	1.7
4.80	25	20	2.5	19.20	152	146	1.7
5.00	27	21	2.6	19.40	153	147	1.7
5.20	28	23	2.8	19.60	153	147	1.6
5.40	30	24	3.0	19.80	154	148	1.6
5.60	31	26	3.1	20.00	155	149	1.6
5.80	33	28	3.1	20.20	156	150	1.6
6.00	35	29	3.3	20.40	157	151	1.6
6.20	37	32	3.7	20.60	158	152	1.5
6.40	39	34	3.9	20.80	158	152	1.5
6.60	41	36	3.9	21.00	159	153	1.5
6.80	43	38	3.7	21.20	160	154	1.5
7.00	46	40	4.0	21.40	161	155	1.5
7.20	48	42	4.5	21.60	162	156	1.4
7.40	51	45	5.2	21.80	162	156	1.4
7.60	56	51	7.7	22.00	163	157	1.4
7.80	64	59	**14.2**	22.20	164	158	1.4
8.00	72	66	**14.9**	22.40	165	158	1.4
8.20	77	71	9.9	22.60	165	159	1.3
8.40	80	74	6.9	22.80	166	160	1.3
8.60	83	77	5.6	23.00	167	161	1.3
8.80	86	80	5.3	23.20	167	161	1.3
9.00	88	82	4.8	23.40	168	162	1.3
9.20	91	85	4.2	23.60	169	163	1.2
9.40	93	87	3.8	23.80	169	163	1.2
9.60	94	89	3.6	24.00	**170**	**164**	1.2
9.80	96	90	3.5				
10.00	98	92	3.3				
10.20	100	94	3.2				
10.40	101	95	3.0				
10.60	103	97	3.0				
10.80	105	99	3.0				
11.00	106	100	2.9				
11.20	108	102	2.8				
11.40	109	103	2.7				
11.60	110	104	2.6				
11.80	112	106	2.4				
12.00	113	107	2.4				
12.20	114	108	2.4				
12.40	115	109	2.4				
12.60	117	111	2.4				
12.80	118	112	2.3				
13.00	119	113	2.3				
13.20	120	114	2.3				
13.40	122	116	2.3				
13.60	123	117	2.2				
13.80	124	118	2.2				
14.00	125	119	2.1				
14.20	126	120	2.1				

Summary for Pond 2T: tank 15,000L

Inflow Area = 419.0 m²,100.00% Impervious, Inflow Depth > 163 mm for Type 1A-10yr event
Inflow = 4.7 L/s @ 7.94 hrs, Volume= 68.5 m³
Outflow = 1.7 L/s @ 8.80 hrs, Volume= 67.7 m³, Atten= 64%, Lag= 51.3 min
Primary = 1.7 L/s @ 8.80 hrs, Volume= 67.7 m³
Routed to Link 20L : Post-development

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1.66 m @ 8.80 hrs Surf.Area= 7.1 m² Storage= 11.7 m³

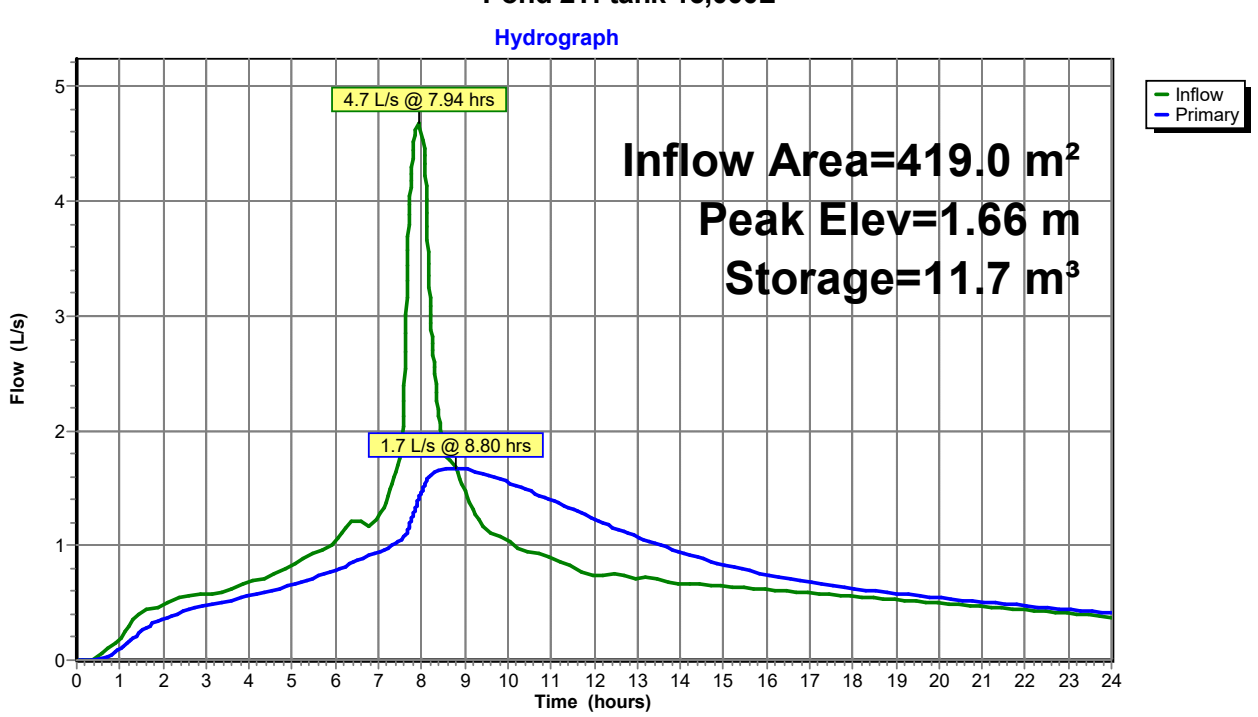
Plug-Flow detention time= 71.3 min calculated for 67.7 m³ (99% of inflow)
Center-of-Mass det. time= 62.4 min (713.6 - 651.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00 m	17.7 m³	**3.00 mD x 2.50 mH Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00 m	**24 mm Vert. DIA Orifice/Grate** C= 0.650 Limited to weir flow at low heads

Primary OutFlow Max=1.7 L/s @ 8.80 hrs HW=1.66 m (Free Discharge)
└**1=DIA Orifice/Grate** (Orifice Controls 1.7 L/s @ 3.69 m/s)





Hydrograph for Pond 2T: tank 15,000L

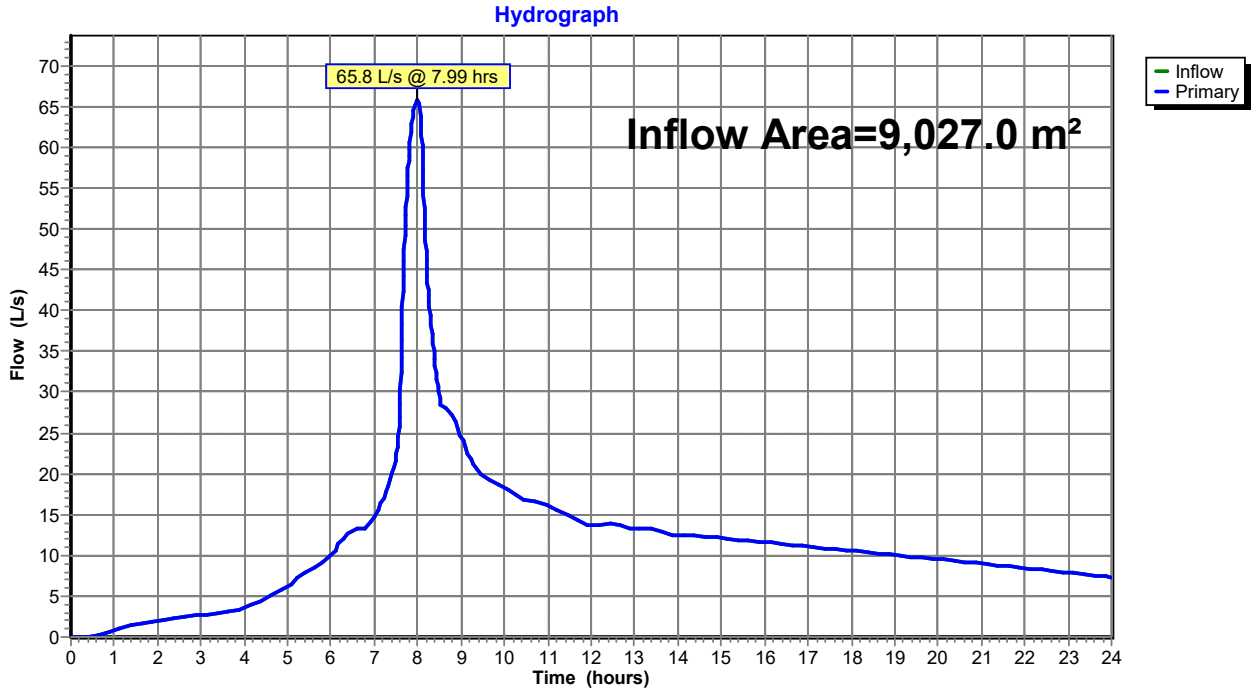
Time (hours)	Inflow (L/s)	Storage (cubic-meters)	Elevation (meters)	Primary (L/s)
0.00	0.0	0.0	0.00	0.0
0.20	0.0	0.0	0.00	0.0
0.40	0.0	0.0	0.00	0.0
0.60	0.1	0.0	0.00	0.0
0.80	0.1	0.1	0.01	0.1
1.00	0.2	0.1	0.02	0.1
1.20	0.3	0.2	0.03	0.2
1.40	0.4	0.3	0.04	0.2
1.60	0.4	0.4	0.06	0.3
1.80	0.5	0.5	0.07	0.3
2.00	0.5	0.6	0.09	0.4
2.20	0.5	0.7	0.10	0.4
2.40	0.5	0.8	0.11	0.4
2.60	0.6	0.9	0.13	0.4
2.80	0.6	1.0	0.14	0.5
3.00	0.6	1.0	0.15	0.5
3.20	0.6	1.1	0.16	0.5
3.40	0.6	1.2	0.17	0.5
3.60	0.6	1.2	0.17	0.5
3.80	0.7	1.3	0.18	0.5
4.00	0.7	1.4	0.20	0.6
4.20	0.7	1.5	0.21	0.6
4.40	0.7	1.6	0.22	0.6
4.60	0.7	1.7	0.23	0.6
4.80	0.8	1.8	0.25	0.6
5.00	0.8	1.9	0.27	0.7
5.20	0.9	2.0	0.28	0.7
5.40	0.9	2.2	0.31	0.7
5.60	1.0	2.3	0.33	0.7
5.80	1.0	2.5	0.35	0.8
6.00	1.0	2.6	0.37	0.8
6.20	1.1	2.9	0.40	0.8
6.40	1.2	3.1	0.44	0.9
6.60	1.2	3.4	0.48	0.9
6.80	1.2	3.6	0.50	0.9
7.00	1.2	3.8	0.53	0.9
7.20	1.4	4.0	0.57	1.0
7.40	1.6	4.4	0.62	1.0
7.60	2.4	5.0	0.70	1.1
7.80	**4.4**	6.7	0.95	1.3
8.00	**4.6**	9.1	1.29	1.5
8.20	3.1	10.9	1.54	1.6
8.40	2.1	11.5	1.63	1.7
8.60	1.7	11.7	1.65	1.7
8.80	1.7	**11.7**	**1.66**	**1.7**
9.00	1.5	11.6	1.65	1.7
9.20	1.3	11.5	1.62	1.7
9.40	1.2	11.2	1.58	1.6
9.60	1.1	10.8	1.53	1.6
9.80	1.1	10.5	1.48	1.6
10.00	1.0	10.1	1.43	1.6
10.20	1.0	9.7	1.38	1.5
10.40	0.9	9.3	1.32	1.5
10.60	0.9	9.0	1.27	1.5
10.80	0.9	8.6	1.21	1.4
11.00	0.9	8.2	1.16	1.4
11.20	0.9	7.9	1.11	1.4
11.40	0.8	7.5	1.06	1.3
11.60	0.8	7.1	1.01	1.3
11.80	0.8	6.8	0.96	1.3
12.00	0.7	6.4	0.91	1.2
12.20	0.7	6.1	0.86	1.2
12.40	0.7	5.7	0.81	1.2
12.60	0.8	5.5	0.77	1.1
12.80	0.7	5.2	0.73	1.1
13.00	0.7	4.9	0.69	1.1
13.20	0.7	4.7	0.66	1.0
13.40	0.7	4.4	0.63	1.0
13.60	0.7	4.2	0.60	1.0
13.80	0.7	4.0	0.56	1.0
14.00	0.7	3.8	0.54	0.9
14.20	0.7	3.6	0.51	0.9
14.40	0.7	3.4	0.48	0.9
14.60	0.7	3.3	0.46	0.9
14.80	0.7	3.1	0.44	0.9
15.00	0.6	3.0	0.42	0.8
15.20	0.6	2.8	0.40	0.8
15.40	0.6	2.7	0.39	0.8
15.60	0.6	2.6	0.37	0.8
15.80	0.6	2.5	0.35	0.8
16.00	0.6	2.4	0.34	0.7
16.20	0.6	2.3	0.33	0.7
16.40	0.6	2.2	0.32	0.7
16.60	0.6	2.2	0.31	0.7
16.80	0.6	2.1	0.29	0.7
17.00	0.6	2.0	0.28	0.7
17.20	0.6	1.9	0.28	0.7
17.40	0.6	1.9	0.27	0.7
17.60	0.6	1.8	0.26	0.6
17.80	0.6	1.8	0.25	0.6
18.00	0.6	1.7	0.24	0.6
18.20	0.6	1.7	0.24	0.6
18.40	0.5	1.6	0.23	0.6
18.60	0.5	1.6	0.22	0.6
18.80	0.5	1.5	0.22	0.6
19.00	0.5	1.5	0.21	0.6
19.20	0.5	1.5	0.21	0.6
19.40	0.5	1.4	0.20	0.6
19.60	0.5	1.4	0.20	0.6
19.80	0.5	1.3	0.19	0.6
20.00	0.5	1.3	0.19	0.5
20.20	0.5	1.3	0.18	0.5
20.40	0.5	1.2	0.18	0.5
20.60	0.5	1.2	0.17	0.5
20.80	0.5	1.2	0.17	0.5
21.00	0.5	1.2	0.16	0.5
21.20	0.5	1.1	0.16	0.5
21.40	0.5	1.1	0.16	0.5
21.60	0.4	1.1	0.15	0.5
21.80	0.4	1.0	0.15	0.5
22.00	0.4	1.0	0.14	0.5
22.20	0.4	1.0	0.14	0.5
22.40	0.4	1.0	0.14	0.5
22.60	0.4	0.9	0.13	0.5
22.80	0.4	0.9	0.13	0.4
23.00	0.4	0.9	0.13	0.4
23.20	0.4	0.9	0.12	0.4
23.40	0.4	0.8	0.12	0.4
23.60	0.4	0.8	0.12	0.4
23.80	0.4	0.8	0.11	0.4
24.00	0.4	0.8	0.11	0.4

Summary for Link 20L: Post-development

Inflow Area = 9,027.0 m², 19.54% Impervious, Inflow Depth > 112 mm for Type 1A-10yr event
Inflow = 65.8 L/s @ 7.99 hrs, Volume= 1,013.4 m³
Primary = 65.8 L/s @ 7.99 hrs, Volume= 1,013.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 20L: Post-development



Hydrograph for Link 20L: Post-development

Time (hours)	Inflow (L/s)	Elevation (meters)	Primary (L/s)	Time (hours)	Inflow (L/s)	Elevation (meters)	Primary (L/s)
0.00	0.0	**0.00**	0.0	14.40	12.4	0.00	12.4
0.20	0.0	0.00	0.0	14.60	12.3	0.00	12.3
0.40	0.0	0.00	0.0	14.80	12.2	0.00	12.2
0.60	0.2	0.00	0.2	15.00	12.1	0.00	12.1
0.80	0.4	0.00	0.4	15.20	12.0	0.00	12.0
1.00	0.7	0.00	0.7	15.40	11.9	0.00	11.9
1.20	1.1	0.00	1.1	15.60	11.8	0.00	11.8
1.40	1.5	0.00	1.5	15.80	11.7	0.00	11.7
1.60	1.7	0.00	1.7	16.00	11.6	0.00	11.6
1.80	1.8	0.00	1.8	16.20	11.5	0.00	11.5
2.00	2.0	0.00	2.0	16.40	11.4	0.00	11.4
2.20	2.2	0.00	2.2	16.60	11.3	0.00	11.3
2.40	2.4	0.00	2.4	16.80	11.2	0.00	11.2
2.60	2.5	0.00	2.5	17.00	11.1	0.00	11.1
2.80	2.6	0.00	2.6	17.20	11.0	0.00	11.0
3.00	2.7	0.00	2.7	17.40	10.9	0.00	10.9
3.20	2.8	0.00	2.8	17.60	10.8	0.00	10.8
3.40	2.9	0.00	2.9	17.80	10.7	0.00	10.7
3.60	3.0	0.00	3.0	18.00	10.6	0.00	10.6
3.80	3.3	0.00	3.3	18.20	10.5	0.00	10.5
4.00	3.6	0.00	3.6	18.40	10.4	0.00	10.4
4.20	4.0	0.00	4.0	18.60	10.3	0.00	10.3
4.40	4.5	0.00	4.5	18.80	10.2	0.00	10.2
4.60	5.0	0.00	5.0	19.00	10.0	0.00	10.0
4.80	5.6	0.00	5.6	19.20	9.9	0.00	9.9
5.00	6.2	0.00	6.2	19.40	9.8	0.00	9.8
5.20	7.0	0.00	7.0	19.60	9.7	0.00	9.7
5.40	7.8	0.00	7.8	19.80	9.6	0.00	9.6
5.60	8.5	0.00	8.5	20.00	9.5	0.00	9.5
5.80	9.1	0.00	9.1	20.20	9.4	0.00	9.4
6.00	10.0	0.00	10.0	20.40	9.3	0.00	9.3
6.20	11.5	0.00	11.5	20.60	9.2	0.00	9.2
6.40	12.7	0.00	12.7	20.80	9.1	0.00	9.1
6.60	13.3	0.00	13.3	21.00	9.0	0.00	9.0
6.80	13.3	0.00	13.3	21.20	8.9	0.00	8.9
7.00	14.6	0.00	14.6	21.40	8.8	0.00	8.8
7.20	16.9	0.00	16.9	21.60	8.7	0.00	8.7
7.40	20.1	0.00	20.1	21.80	8.5	0.00	8.5
7.60	30.4	0.00	30.4	22.00	8.4	0.00	8.4
7.80	**59.0**	0.00	**59.0**	22.20	8.3	0.00	8.3
8.00	**65.7**	0.00	**65.7**	22.40	8.2	0.00	8.2
8.20	46.2	0.00	46.2	22.60	8.1	0.00	8.1
8.40	33.4	0.00	33.4	22.80	8.0	0.00	8.0
8.60	27.8	0.00	27.8	23.00	7.9	0.00	7.9
8.80	27.2	0.00	27.2	23.20	7.8	0.00	7.8
9.00	24.6	0.00	24.6	23.40	7.7	0.00	7.7
9.20	22.1	0.00	22.1	23.60	7.5	0.00	7.5
9.40	20.2	0.00	20.2	23.80	7.4	0.00	7.4
9.60	19.2	0.00	19.2	24.00	7.3	0.00	7.3
9.80	19.0	0.00	19.0				
10.00	18.3	0.00	18.3				
10.20	17.5	0.00	17.5				
10.40	16.9	0.00	16.9				
10.60	16.6	0.00	16.6				
10.80	16.6	0.00	16.6				
11.00	16.1	0.00	16.1				
11.20	15.6	0.00	15.6				
11.40	15.1	0.00	15.1				
11.60	14.6	0.00	14.6				
11.80	14.0	0.00	14.0				
12.00	13.7	0.00	13.7				
12.20	13.6	0.00	13.6				
12.40	13.8	0.00	13.8				
12.60	14.0	0.00	14.0				
12.80	13.3	0.00	13.3				
13.00	13.1	0.00	13.1				
13.20	13.5	0.00	13.5				
13.40	13.2	0.00	13.2				
13.60	12.8	0.00	12.8				
13.80	12.6	0.00	12.6				
14.00	12.5	0.00	12.5				
14.20	12.5	0.00	12.5				

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