This information is provided by the Waikato District Council

In reply, please quote
LIM0610/27

Postal Address
Private Bag 544, Ngaruawahia 3742
New Zealand

0800 492 452
www.waikatodistrict.govt.nz

03 November 2026

Fusion Realty Limited
6 Waipapa Way
Te Kauwhata 3710

Kia Ora,

LAND INFORMATION MEMORANDUM

Please find enclosed your Land Information Memorandum for 380 Churchill East Road TE KAUWHATA

If you have any questions regarding the information or content in the Land Information Memorandum, please contact the team responsible for the relevant section of the report.

Some of the reports and consents referenced in this report can be found using the Waikato District Councils Property Information Search listed below. After accepting the terms and conditions by clicking **"Agree and Continue"**, enter the **property address or application number** to view the available documents.

https://www.waikatodistrict.govt.nz/services-facilities/land-and-property/buying-a-property/property-information-search

Ngaa mihi,

Lilivaine Tukutama

Lilivaine Tukutama
Land & Property Information Team

Land Information

Memorandum

LOCAL GOVERNMENT OFFICIAL INFORMATION AND MEETINGS ACT 1987

The information supplied in this Land Information Memorandum is based on existing Waikato District Council records that may not be complete. The property has not been inspected or surveyed by the Council. It is the purchaser's responsibility to check the boundaries of the property.

It is assumed that any purchaser will search for the certificate of title that is not held by the Council and will personally inspect the property and its surrounds. This information deals solely with the property named below and does not disclose any relevant information that may affect adjacent properties.

It is the sole responsibility of any purchaser to ensure that the land is suitable for a particular purpose.

▶ Property Details:

Valuation Reference:	04390/284.06
Legal Description:	Lot 13 DP 488718
Area:	7764 square metres more or less
Property Location:	380 Churchill East Road TE KAUWHATA
Owners:	Mark Bruce Gasson, Lisa Maria Gasson

▶ Property Location:



■ Rates

Information regarding –
44A(2)
(c) information relating to any rates owing in relation to the land

▶ Rates & Rating Valuation:	Information regarding – 44A(2)(c) information relating to any rates owing in relation to the land.
Annual rates for 2026/2027	$ 3,428.64 Balance Owing: $ 0.00 *(Balance of 2nd instalment due 20 January 2027)*
Value of Improvements	$ 690,000.00
Land Value	$ 435,000.00
Capital Value	$1,125,000.00
Date of Valuation	1 October 2023

Valuation
Properties in the Waikato District are re-valued every three years in accordance with the Rating and Valuations Act 1988.

Current Rates
The 2026/2027 rates are based on the valuations dated 1 October 2023. A copy of the 2026/2027 rates assessment is attached.

A new part fee and charge will apply for those ratepayers that connect to specific council services after 1 July. These changes will mean that anyone that builds a new dwelling after 1 July will pay for the services their property receives (e.g. waste water, storm water, rubbish) through fees and changes, rather than rates, until rates are struck on their property in the following financial year. You will receive an invoice from Council following granting of your Code Compliance Certificate (CCC). Rates are only struck once a year.

For Further Information: https://www.waikatodistrict.govt.nz/request-it/property/rates-information-database

Rates Capital Value
Please note that the rates reflected in this LIM were calculated based on the capital value of the property as at 1 July of the current rating year. Any changes to the capital value of the property that have taken place since 1 July will be reflected in the rating charges for this property in the next rating year. Please contact a member of the rating team on 0800 492 452 if you require further clarification or have any questions.

Regional Council: Waikato Regional Council
Waikato Regional Council sends their rates notices annually. You are able to get specific annual regional rates information at www.waikatoregion.govt.nz Search under address or valuation reference. Alternatively, contact them on freephone 0800 800 401

■ Planning

Information regarding –
44A(2)
(f) information relating to the use to which that land may be put and conditions attached to that use:
(g) information which, in terms of any other Act, has been notified to the territorial authority by any statutory organisation having the power to classify land or buildings for any purpose:
(h) any information which has been notified to the territorial authority by any network utility operator pursuant to the Building Act 1991 or the Building Act 2004

Operative Waikato District Plan (Waikato Section)
This only applies where there are outstanding appeals on the provisions of the Proposed Waikato District Plan (appeals version), to the extent they are relevant to any proposed works or project.
Zone: Rural
Policy: Waikato River Catchment
For further information please refer to the planning maps attached and the Waikato District Plan

Waikato District Plan – Operative in Part
Waikato District Council notified its decisions on Variation 3 on 30 October 2024, and the Plan became Partially Operative.
The zone of this property is: **General rural zone**
The following overlays apply to the property: **Flood plain management area, Waikato River Catchment**

If the provisions relevant to this property are subject to an appeal, both the Waikato District Plan Operative in Part and the Operative Waikato District Plan will need to be considered.

Consent Notice
A Consent Notice exists for this property and is attached for your information.

Monitoring – MON1335/25
This property is subject to a resource consent that requires monitoring by the Waikato District Council. Charges will be made for any monitoring of the consent that takes place. Charges are applied in accordance with Section 36 of the Resource Management Act 1991.
For further information please contact Councils Monitoring Team

Designations
This property is within close proximity (500m) to land that is designated for a particular purpose:
Operative District Plan:
- *B4 – Waikato River Islands Wildlife Management Reserve*
- *D4 - Soil Conservation & River Control*

Waikato District Plan - Operative in Part:
- *MCON-4 – Waikato River Islands Wildlife Management Reserve*
- *WRC-4 - Soil Conservation & River Control*

For further information please refer to the planning maps attached and the Waikato District Plan, which is available to view on our website: https://eplan.waikatodistrict.govt.nz/?docId=59t2XIJn9rI%253d

■ Planning continued

Information regarding –
4AA(2)
(f) information relating to the use to which that land may be put and conditions attached to that use.
(g) information which, in terms of any other Act, has been notified to the territorial authority by any statutory organisation having the power to classify land or buildings for any purpose.
(h) any information which has been notified to the territorial authority by any network utility operator pursuant to the Building Act 1991 or the Building Act 2004

Development Contributions
Builders, developers and owners cannot presume that all development contributions have been paid at the time of subdivision.

The current Development Contributions Policy can be viewed here.

For any queries on specific properties please email info@waidc.govt.nz providing the specific property number and/or property address

Development contributions policies, capital works schedules, catchments and levies are subject to review and change.

Credits are given for any development contributions paid at the time of subdivision but additional development contributions may be required at time of building consent or service connection.

For any restrictions on the use of the property please refer to the Record/Certificate of Title.

▶ Resource Consents:

Application No	Description	Decision
	SUBDIVISION CONSENTS	**GRANTED**
SUB0023/09	Two stage subdivision	18 August 2011
SUB0023/09.02	S 127 RMA 1991 – Change/cancel conditions	16 January 2015
SUB0023/09.03	Revocation of easement	16 December 2015
	LAND USE CONSENTS	**GRANTED**
LUC0323/25	Construct a dependant person's dwelling	17 June 2025

Requisitions: No known planning requisitions to date.

Planning rules relating to this property are contained in the Waikato District Plan and are not outlined in this LIM report. The Waikato District Plan is available to view on Council's website at www.waikatodc.govt.nz.

■ Building

Information regarding –
44A(2)
(d) information concerning any consent, certificate, notice, order, or requisition affecting the land or any building on the land previously issued by the territorial authority (whether under the Building Act 1991, the Building Act 2004, or any other Act):
(e) information concerning any certificate issued by a building certifier pursuant to the Building Act 1991 or the Building Act 2004:
(ea) information notified to the territorial authority under section 124 of the Weathertight Homes Resolution Services Act 2006:

It is recommended that a potential purchaser engage a building consultant to complete a pre-purchase inspection of buildings. Irrespective of code of compliance, structures are subject to deterioration over time and works may have been undertaken without building consent. If requested and supplied, a copy of this may be filed on council records for future references and Land Information Memoranda.

Architects and designers require wind & earthquake information to establish bracing requirements for building development.

▶ Building Consents/Permits:

Number	Description	Consent/Permit issued date	CCC Issued/ Completed Date
BLD1331/18	Dwelling	25 May 2018	9 January 2019
BLD0508/21	Shed	13 October 2020	13 October 2022
BLD1107/25	Minor dwelling	30 June 2025	29 September 2025

Requisitions: No known building requisitions to date.

If you feel there has been unauthorised building work undertaken on this property, please note that Council has no authority to issue retrospective building consents. The current owner can, however, apply for a Certificate of Acceptance (COA).

- Please refer to the BuildWaikato site for further information regarding COAs.

■ Water Supply

Information regarding –
44A(2)
(ba) any information that has been notified to the territorial authority by a drinking-water supplier under section 69ZH of the Health Act 1956:
(bb) information on—
(i) whether the land is supplied with drinking water and if so, whether the supplier is the owner of the land or a networked supplier:
(ii) if the land is supplied with drinking water by a networked supplier, any conditions that are applicable to that supply:
(iii) if the land is supplied with water by the owner of the land, any information the territorial authority has about the supply:

The property is located outside an area currently served by a community water supply administered by Waikato District Council.

■ Drinking Water (potable water supply)

The property is not connected to a community water supply. It is the property owner's responsibility to ensure suitable drinking water is supplied on-site.

The construction of a bore for the taking of ground water requires consent from the Waikato Regional Council, for further information contact Waikato Regional Council.

Council Water Services Update – Effective 1 July 2026
Council advises that effective 1 July 2026, **IAWAI Flowing Waters Limited (IAWAI)** a Council Controlled Organisation (CCO) jointly owned by Waikato District Council and Hamilton City Council, will manage water services for their communities.

From 1 July 2026, **IAWAI Waters Growth Charges** will apply to properties where new residential development results in increased demand on water supply and wastewater networks.

Residential Development Growth Charges
The following charges will apply to each Household Unit Equivalent (HUE):

- **Water Supply Growth Charge:**
  $200 per HUE per year, applied over a 25-year period
- **Wastewater Growth Charge:**
  $300 per HUE per year, applied over a 25-year period

If the development is not a full (HUE) or partial connection only a partial charge applies.

Please note: If a property is sold during the 25-year period, responsibility for any remaining payments will transfer to the new owner.

Non-Residential Development
Water Supply and Wastewater Growth Charges for non-residential development will be determined as part of the 2027–2037 Water Services Strategy.

For further information, please visit the IAWAI website www.iawai.co.nz or contact IAWAI directly for assistance.

■ Council Utilities

Information regarding –
44A(2)
(b) information on private and public stormwater and sewerage drains as shown in the territorial authority's records:

■ Wastewater

The property is located outside an area currently served by a community system for wastewater disposal.

On-site wastewater disposal must comply with the Waikato Regional Plan and the AS/NZS standard for On-site Domestic Wastewater Management. New on-site effluent disposal systems must be designed and certified by an engineer or suitably qualified person.

Existing System

The property has an existing on-site wastewater disposal system. Wastewater disposal systems are sized in relation to the number of bedrooms of a dwelling and the potential occupancy.

Future building works that include additional bedrooms will require an assessment from an engineer or other suitably qualified person approved by the Council, of whether the existing on-site effluent treatment system is capable of adequately treating and disposing of the increased loadings. If upgrades are required, these shall be designed, supervised and certified by an engineer or other suitably qualified person to comply with AS/NZS 1547:2012 and the Waikato Regional Plan.

It is recommended that potential purchasers engage a contractor to inspect the septic tank prior to settlement. The Waikato District Council does not maintain or monitor private wastewater disposal systems and NZ standards indicate a septic tank should be cleaned / emptied every 3 years.

■ Stormwater

The property is located within a land drainage area administered by the Waikato Regional Council. For further information contact Waikato Regional Council.

For any new development, Onsite Stormwater Disposal will be required under the Waikato District Plan & Waikato Regional Plan prior to connection to any public stormwater network or drains.

For further Information please contact a Project Planning & Engineering Officer at the Waikato District Council.

■ Natural Hazards

Information regarding –

- Whether the site is affected by potential erosion, avulsion, falling debris, subsidence, slippage, alluvion, inundation, peat, contamination or poor soakage.
- whether there is the likely presence of hazardous substances on the site and in particular whether the site has been recorded as being on the Regional Council's HAIL list of potentially contaminated sites.
- Refer to a copy of special features map.

LRI (Slope/ Us)
New Zealand Land Resource Inventory Maps indicate that the soils in this area may have poor bearing capacity for building foundations due to **Unconsolidated Sediments and Natural Sloping Topography.** A geotechnical engineer may be required to investigate ground or sub-soil conditions to establish any specific requirements for building development.

Earthquakes and Landslides
Waikato Regional Hazards Portal indicates that Liquefaction Level A Category is Possible on this property. For further information please visit the portal below.

Flood Risk Area – Waikato Regional Council & Waikato District Council
This property has been identified as being **in a flood risk area** by both **Waikato Regional Council and Waikato District Council.**
Part of the land or site may be subject to flooding or inundation. A potential flooding hazard has been identified for this site.

- *Where a proposed building is not above the identified flood level, Land Use Consent may be required under the Resource Management Act. To establish the ground level in relation to the design flood level in terms of Moturiki datum (sea level), it is recommended to engage a registered surveyor. Council holds no records relating to the ground level for this property.*

For further information, please refer to the **Waikato Regional Council Hazard Portal** here and navigate to the *River Flooding* section. You may also refer to the **Waikato District Plan** here for additional information regarding flood risk.

Climate change means long-term changes in the Earth's weather patterns and temperatures. These changes are mostly caused by human activities like burning coal, oil, and gas, which release gases that trap heat in the atmosphere. As a result, we're seeing more extreme weather, rising sea levels, and increased risks like flooding and drought. For further information regarding climate change please visit Earth Sciences New Zealand

Flood hazards across Aotearoa New Zealand
Earth Sciences New Zealand has released the country's first nationally consistent flood risk model, alongside a public flood hazard viewer that enables New Zealanders to assess their local flood exposure in the context of national trends. This national flood hazard viewer maps areas at risk from extreme rainfall events under current and future climate conditions. For further information please visit Public Flood Hazard Viewer

Waikato Regional Council Hazards Portal contains information about the natural hazards that may be relevant to the site. Before exploring the Portal, please read the terms of use to understand the limitations of the information contained on the site. The recipient is advised to seek expert advice in terms of the applicability and accuracy of the information as it relates to the site.
Click here to access Waikato Regional Hazards Portal | Waikato Regional Council
Supporting Information Documents: Waikato Regional Hazards Portal - Supporting information | Waikato Regional Council

Under section 71-74 of the Building Act 2004, upon application for a building consent applicant must demonstrate that any proposed building work will be protected from hazards.

■ Additional Information

Information regarding –
44A(3) In addition to the information provided for under subsection (2), a territorial authority may provide in the memorandum such other information concerning the land as the authority considers, at its discretion, to be relevant.

■ Health

There are no outstanding Notices or Orders under the Health Act 1956 and related legislation in respect of the property.

Report Available

- HAIL Report HAIL0408/18 dated 15 May 2018 – No Record of a HAIL activity has been found on Council records

■ Refuse

Waikato District Council's goal is to work towards a 'zero waste' target. On 1 July 2016 we introduced a pre-paid service to our refuse and recycling to help Waikato residents reduce the volume of waste they send to landfill. Less waste will save us all more in the long run.

Refuse & Recycling Service Collection Day for this property is **Friday.**

For further information please refer to Rubbish and Recycling page

■ Utilities

The Waikato District Council does not hold records concerning utility systems it does not administer. For information concerning state highways (administered by NZ Transport Agency), electricity, telephone or gas, the relevant network operator should be contacted.

■ Telecommunication

This property may not have a physical connection to a telecommunications network.

Developer obligations are to demonstrate that a telecommunication network is available to serve the property, such network can be either physical or wireless.

Please contact the network utility supplier and/or service provider to confirm what telecommunication connection is available to the property.

Ngaa mihi

Lilivaine Tukutama

Lilivaine Tukutama
Land Information Officer

This information is provided by the Waikato District Council

Land Information Memorandum



380 Churchill East Road TE KAUWHATA
Lot 13 DP 488718

Waikato District Council

Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

Rates Information Database

Use the rates information database to find out rates information about property in the Waikato district.

If you would like your details made confidential, please complete the Request to Suppress Personal Information form and return to Waikato District Council. Please note that it is not necessary to complete the form if you have no objection to your name and postal address being published in the Complete Rating Information Database.

If you have a question about your rates, please contact the rates team on 0800 492 452 or complete our online request form for a staff member to contact you directly.

Property details

Property location	380 Churchill East Road TE KAUWHATA
Valuation number	04390/284.06
Legal description	LOT 13 DP 488718 INT IN ESMTS

Property charges (2026/2027)

	Targeted rate factor	Factor applicable	Amount
General Rate	0.0022657c/$	1125000.00	$2,548.91
Uniform Annual General Charge (UAGC)	Fixed Charge	1.00	$564.94
Central District Rubbish and Recycling Collection	per dwelling	1.00	$314.79

Total Waikato District Council rates and IAWAI charges $3,428.64 incl. GST

Property valuation history



⚠ If your property connects to any additional council services between now and the 30 June 2027, there will be additional charges added to your property in the following rating year. If you have any questions or queries with regards to your 2026/27 rates, please complete our online request form for a staff member to contact you directly.

This information is provided by the Waikato District Council

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R. W. Muir
Registrar-General
of Land

Identifier	**711534**
Land Registration District	**South Auckland**
Date Issued	06 July 2017

Prior References
SA52C/849

Estate	Fee Simple
Area	7764 square metres more or less
Legal Description	Lot 13 Deposited Plan 488718
Registered Owners	

Mark Bruce Gasson and Lisa Maria Gasson

Interests

10809574.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 6.7.2017 at 4:58 pm

Appurtenant hereto is a right to convey electricity, telecommunications and computer media created by Easement Instrument 10809574.4 - 6.7.2017 at 4:58 pm

The easements created by Easement Instrument 10809574.4 are subject to Section 243 (a) Resource Management Act 1991

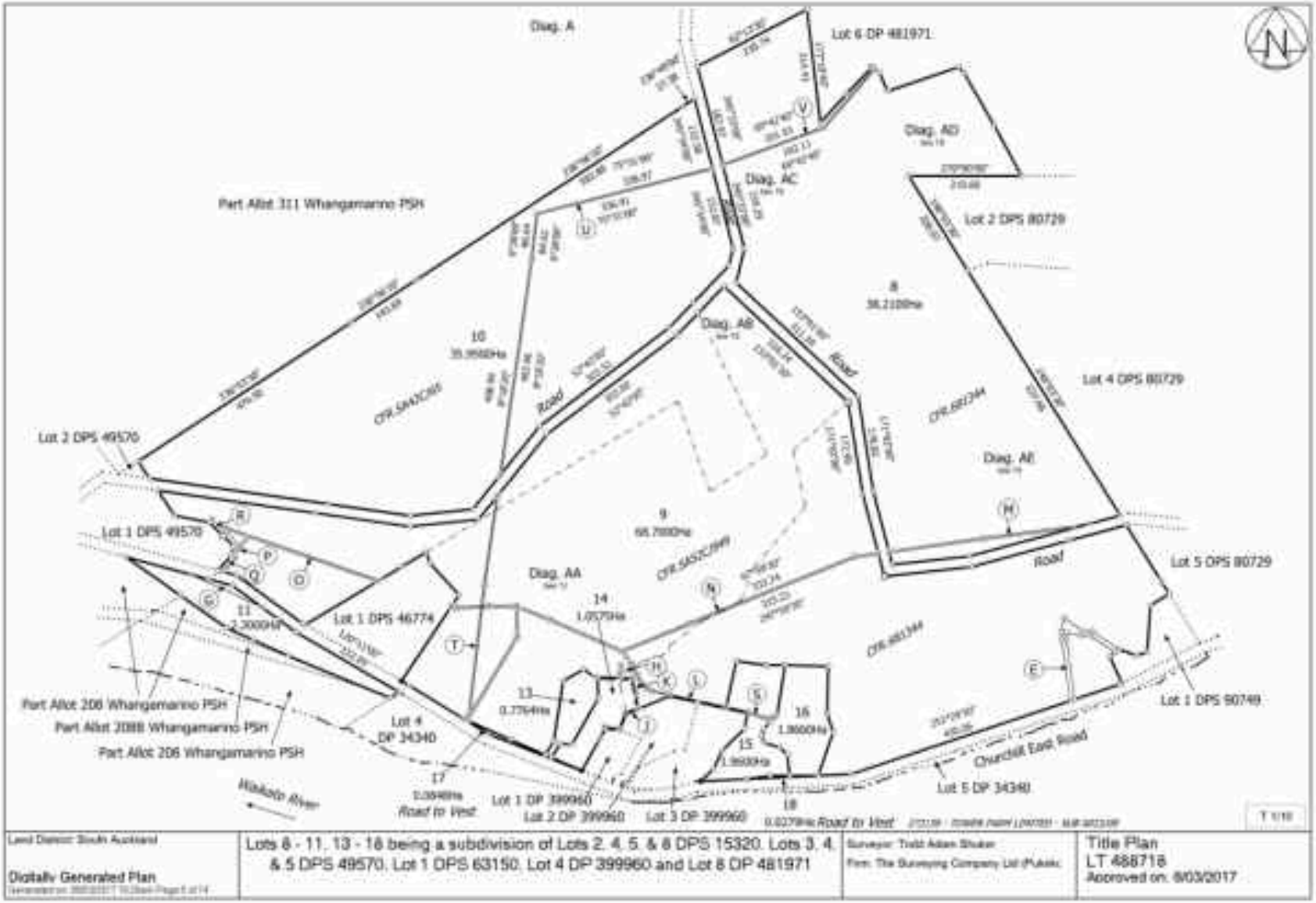
10989226.3 Mortgage to Bank of New Zealand - 19.1.2018 at 3:04 pm

Document Set ID: 7298948
Version: 1, Version Date: 08/10/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Transaction ID 1051242
Document Set ID: 7256410
Version: 1, Version Date: 28/10/2026

Identifier 711534



Land District: South Auckland Digitally Generated Plan	Lots 8 - 11, 13 - 18 being a subdivision of Lots 2, 4, 5, & 8 DPS 15320, Lots 3, 4, & 5 DPS 49570, Lot 1 DPS 63150, Lot 4 DP 399960 and Lot 8 DP 481971	Surveyor: Todd Adam Shuker Firm: The Surveying Company Ltd (Public)	Title Plan LT 488718 Approved on: 8/03/2017

Search Copy Dated 28/10/26 1:13 pm, Page 2 of 2
Register Only

Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

CONSENT NOTICE PURSUANT TO SECTION 221 RESOURCE MANAGEMENT ACT 1991

Waikato DISTRICT COUNCIL

0800 492 452 • www.waikatodistrict.govt.nz

The Registrar General of Land
South Auckland Land Registry

IN THE MATTER of a Consent Notice pursuant to Section 221 of the Resource Management Act 1991 ("the Act")

and

IN THE MATTER of a subdivision Consent pursuant to Sections 104, 108, 220, and 221 of the Act

I, GAVIN JOHN ION Chief Executive of the WAIKATO DISTRICT COUNCIL, hereby certify that the Waikato District Council has granted its consent to the subdivision shown on Deposited Plan 488718, (and being the land described in the First Schedule), subject to certain conditions, including the requirement that the Owner (as defined in the Act) comply on a continuing basis with the conditions set out in the Second Schedule and that this Notice be registered against the Computer Freehold Registers for Lots 9, 10, 11, 13, 14, 15 and 16 on Deposited Plan 488718.

First Schedule

An estate in fee simple in all those parcels of land containing 150.9282 hectares more or less being First Lots 3, 4 and 5 Deposited Plan S49560 and Lots 2, 5 and 8 Deposited Plan S15320 and being all the land comprised in Computer Freehold Register SA42C/65 And Secondly Lot 1 Deposited Plan S63150 and Lot 4 Deposited Plan S15320 and being all the land comprised in Computer Freehold Register SA52C/449 And Thirdly Lot 4 Deposited Plan 399960 and Lot 8 Deposited Plan 481971 and being all the land comprised in Computer Freehold Register 681344

Second Schedule

In respect of Lot 11

1. The Owners of Lot 11 shall, at the time of application for future building consent, address the following matters in the application (the existing dwellings on each of Lots 11 are exempt from this condition):

   (a) For any building site, a Geotechnical assessment, including stormwater management, from a suitably qualified and experienced Geo-Professional, shall be required to confirm that the ground conditions are suitable for a building.

   (b) The existing on-site effluent system shall be assessed by a suitably qualified and experienced person and certified to be sufficient for the additional loading proposed by the additions, or:

Document Set ID: 7256606
Version: 1, Version Date: 08/03/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

A wastewater land application field (primary or secondary level treatment) shall be designed by a suitably qualified and experienced person and submitted with the application. The site assessment and design documentation shall be in accordance with AS/NZS 1547:2000 (or subsequent update) and shall refer to the requirements of the Waikato Regional Plan.

In particular, amongst other things the design shall:

(i) address separation distances from sub-surface water/overland flow paths/potable water supplied; and
(ii) any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects; and
(iii) demonstrate that there is a suitable complying reserve area available; and
(iv) provide evidence that the system can adequately deal with peak loading, where applicable.

2. The height of any structures or vegetation within the area shown marked "G" on Deposited Plan 488718, other than a seven wire post and batten fence, shall be limited to 0.4 metres above the existing ground level, in accordance with the proposed District Plan Appendix A, Table 6, Figure 9, to preserve a sight distance of 145 metres to the south of the entrance to Lot 11.

In respect of Lots 13 and 14

3. The Owners of Lots 13 and 14 shall be advised that at the time of application for building consent, for any future habitable area of a dwelling or ancillary unit, a Chartered Professional Engineer shall investigate the 1% AEP (plus allowance for climate change) flood level and shall set the floor level at a minimum of 300mm above this determined level, to the satisfaction of the Council.

In respect of Lots 9, 10, 15 and 16

4. The Owners of Lots 9, 10, 15 and 16 shall be advised of and comply with the following conditions:

(a) The vegetative cover and planting of gully/slopes shall be maintained to assist in the control of surface erosion.

(b) Any ponding of stormwater at the top of all slopes shall be prevented and there shall be no concentrated flows of stormwater such as discharges from stormwater pipes, over the edge of gully slopes.

(c) No fill, including inorganic or organic matter shall be placed over the gully edges and/or slopes.

Document Set ID: 7256606
Version: 1, Version Date: 08/03/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

In respect of Lots 9, 10, 13, 14, 15 and 16

5. The Owners of Lots 9, 10, 13, 14, 15 and 16 shall be advised that a Geotechnical Assessment for the building foundation design shall be carried out, at the time of application for building consent, by a suitably qualified and experienced Geo-Professional Engineer, to the satisfaction of Council.

6. The Owners of Lots 9, 10, 13, 14, 15 and 16 shall be advised that a wastewater land application field (primary or secondary level treatment) design shall be carried out, at the time of application for building consent, by a suitably qualified and experienced professional, in accordance with AS/NZS 1547:2000 (or subsequent update) and shall refer to the requirements of the Waikato Regional Plan, to the satisfaction of the Council.

   In particular, amongst other things, the design shall address:

   (i) separation distances from subsurface water/overland flow paths/potable water supplies;
   (ii) any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects;
   (iii) demonstrate that there is a suitable complying reserve area available; and
   (iv) provide evidence that the system can adequately deal with peak loading, where applicable.

7. The Owners of Lots 9, 10, 13, 14, 15 and 16 shall be advised that a stormwater retention system design shall be carried out, at the time of application for building consent, by a suitably qualified and experienced Chartered Professional Engineer, to the satisfaction of the Council.

   The stormwater design shall take into consideration the following:

   (i) Management of the net increase in runoff from roofs, driveways and other impermeable areas through the use attenuation systems.
   (ii) Be designed for a 10 year – 60-minute storm (including climate change).
   (iii) Unless soakage testing results or winter ground water levels are adverse to soakage, then soakage shall be adopted.
   (iv) Soakage systems shall be designed based on specific soakage tests undertaken in the area of the proposed system and shall be above the likely winter water table.
   (v) Attenuation systems shall be designed in accordance with NZWERF On-Site Stormwater management Guidelines 2004 or the latest revision.
   (vi) All overflows from such systems shall have suitable outlet with erosion protections measures, if required.

This information is provided by the Waikato District Council

General Condition

8. The Owners shall pay the Council's costs and disbursements in respect of the preparation, execution, registration and enforcement of this Notice and the Council's conditions set out in this Notice and any variation or cancellation of them.

DATED at Ngaruawahia this 11th day of March 2016

G J. Ion

GAVIN JOHN ION
Chief Executive
SU8002309

Document Set ID: 7256606
Version: 1, Version Date: 08/03/2026

This information is provided by the Waikato District Council

Change or Cancel Resource Consent Conditions

(Section 127, Resource Management Act 1991)

Waikato DISTRICT COUNCIL
Te Kaunihera o Tokoroa o Waikato

www.waikatodistrict.govt.nz

DECISION ON APPLICATION SUB0023/09.02

Pursuant to Sections 34(A)(1) and 127 of the Resource Management Act (1991), the Waikato District Council, under delegated authority, gives approval for changes to conditions of an approved resource consent as follows:

Application Number:	SUB0023/09.02
Resource Consent Number:	SUB0023/09
Applicant:	D R Brown, C J Brown
Subject:	S127 to vary conditions PC1, PC3, DC1, UC2, UC11, LC5, PC10, PC12, RC13, RC14, UC20, UC21, UC22, UC23 and LC12 of SUB0093/11 to create Lot 712 and remove Lots 7 and 12, remove the condition to connect Lot 3 to Council's water supply and to remove the requirement to provide hard wired telecommunications to the boundaries of Lots 1 and 2.Lots 1, 3, 4, 13, 14, 15 and 16.
Location Address:	368 Hall Road, Te Kauwhata
Legal Description:	As per Appendix A

The resource consent is now subject to the Amended Conditions detailed in the attached Schedule 1.

The Reasons for this decision are detailed in the attached Schedule 2.

SENIOR PLANNER
CONSENTS TEAM LEADER

Dated: 16-1-15

Document Set ID: 9266810
Version: 1, Version Date: 08/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato DISTRICT COUNCIL
Te Kaunihera ao Takiwaa o Waikato

Schedule 1

Conditions of Consent

Resource Consent No: SUB0023/09.02

Stage One

Planning Conditions

PC1 The Land Transfer Plan to give effect to this Resource Consent shall be generally consistent with the subdivision application, prepared by The Surveying Company initially received by Council on 29 August 2008, Council reference: SUB0023/09, and the *s127 application received by Council on 10 November 2014 including the plans prepared by The Surveying Company entitled "Proposed Subdivision of Lot 1 DPS 86123, Lots 9-11 DPS 87386, Lot 4 DP 382698, Lots 3-5 DPS 49570 & Lots 2, 5 & 8 DPS 15320, Lot 1 DPS 63150, Lot 4 DPS 15320, Lots 4 & 5 DP 399960" referenced SUBCON 8-B and dated October 2014.* A copy of each of the approved plans, number sheet 1 of 6, 2 of 6, 4 of 6 and 5 of 6 is attached.

PC2 In the event of any archaeological site or waahi tapu being discovered or disturbed while undertaking works to give effect to the conditions of this consent, the works in the area of the discovery shall cease immediately, and iwi and the Waikato District Council shall be notified within 48 hours. Works may recommence with the written approval of the Waikato District Council's Consents Manager. Such approval shall be given after the Consents Manager has considered:

a) Tangata Whenua interests and values,

b) the consent holders interests,

c) any archaeological or scientific evidence.

PC3 Written confirmation shall be provided from network utility operators for energy supply confirming that the connections and reticulations have been placed underground to the boundaries of Lots 1, 3 and 4 prior to the section 224 certificate being signed by Council.

PC4 Within 12 months from the date of issue of this consent, the consent holder shall construct a seven wire post and batten stock proof fence around the periphery of the covenanted bush area marked 'X' on the approved application plan to the satisfaction of the Waikato District Council's Monitoring Manager.

PC5 Within 12 months from the date of issue of this consent, the consent holder shall prepare a pest management plan for the forest remnant marked 'X' on the approved application plan and submit this to Waikato District Council's Monitoring Manager for approval. The pest management plan shall be prepared by a suitably qualified professional to provide guidance for the pest control of animal and plant pests in accordance with the Waikato Regional Council's Regional Pest Management Strategy 2008 - 2013.

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PC6 The consent holder shall engage a suitably qualified ecologist to prepare a planting schedule and restoration plan for the forest remnant marked 'X' on the approved application plans (PC1). The plan shall include, but not be limited to the following:

a) Identify and illustrate on a plan, the specific areas of the forest remnant where restoration planting is required to be carried out;

b) Include provision for plantings around the peripheries of the forest to protect the forest from the 'edge effect';

c) Provide a list of the specific 'eco-sourced native' plant species suitable for the forest remnant within the Meremere Ecological District;

d) Identify the quantity of plants required to achieve optimal results and in what sequence the planting should be carried out;

e) Provide some guidance for planting to achieve an optimal strike rate, for example seasonal planting, addition of fertiliser and protection of plants from weeds and animal pests.

This planting schedule and restoration plan shall be submitted to Waikato District Council's Monitoring Manager for approval within three months of the issue of this consent.

PC7 Prior to issuing the certificate pursuant to Section 224 RMA, the consent holder shall provide certification from a suitably qualified ecologist that the planting and restoration requirements outlined in the planting schedule and restoration plan for the forest remnant marked 'X' (required by PC6) have been carried out in accordance with the planting schedule and restoration plan.

PC8 The consent holder shall notify the Waikato District Council Monitoring Manager in writing two weeks prior to the commencement of activities associated with this consent.

PC9 Pursuant to section 36 of the Resource Management Act 1991 the consent holder shall pay the actual and reasonable costs incurred by the Waikato District Council when monitoring the conditions of this consent.

Financial Contributions

Reserves

FC1 Pursuant to Section 108(2)(a) of the Resource Management Act 1991, a reserve contribution of $1,803.00 (One Thousand Eight Hundred and Three Dollars), GST Inclusive shall be paid to Council for the one additional Lot (Lot 4 hereon). This is based on a reserve contribution of $1,803.00 (One Thousand Eight Hundred and Three Dollars) for each additional Lot. This shall be paid to the Council in Lieu of vesting land.

Advisory Note:
A reserve contribution is required for each Lot created by subdivision upon which a dwellinghouse or dwellinghouses are authorised by the Waikato District Plan. Stage One of the subdivision will result in the creation of one additional vacant title. Therefore one reserve contribution of $1,803.00 is required.

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Roading

FC2 That pursuant to section 108(2)(a) of the Resource Management Act 1991 a roading fee of $9,444.00 (Nine Thousand Four Hundred Forty Four Dollars), inclusive of GST, be paid to the Council for the additional Lot (Lot 4 hereon). This is based on a Uniform Roading Fee of $9,444.00 (Nine Thousand Four Hundred and Forty Four Dollars), inclusive of GST, for each additional lot.

Please note: If the contributions are not paid within the financial year of issuing the Resource Consent, the amounts due will be adjusted on July of each year in accordance with the fees and charges prevailing at the time of payment

Development Contributions

DC1 **Water Supply Development Contribution**

Pursuant to the Resource Management Act 1991 the 224 Certificate will not be issued until such time as the consent holder has paid to Council the Development Contributions as prescribed in the advisory note set out below.

Development Contributions - Advisory Note:

Pursuant to Section 106(2) of the Local Government Act 2002 a Development Contribution toward trickle feed within the North Waikato area water supply to Lots 1 & 4 of $13,443.45 (Thirteen Thousand Four Hundred and Forty Three Dollars and Forty Five Cents) GST inclusive shall be paid to Council.

Please note: The amounts of the contributions payable at the time of issue of a Section 224 Certificate are those fees and charges prevailing at the time of payment, not at the time of issuing a resource consent.

All figures are inclusive of GST at the current rate of 15.0%. Should the GST rate change during the year, the balance of any charges not yet invoiced or paid will be adjusted to take account of the change in the rate of GST.

DC2 **Drainage Board Levy**

Pursuant to the Resource Management Act 1991 the 224 Certificate will not be issued until such time as the consent holder has paid to Council the Drainage Board Levy as prescribed in the advisory note set out below.

Drainage Board Levy - Advisory Note:

Pursuant to Section 106(2) of the Local Government Act 2002 a Levy toward land drainage under the Churchill East Drainage District of $398.00. (Three Hundred Ninety Eight Dollars) GST inclusive shall be paid to Council.

Please note: The amounts of the contributions payable at the time of issue of a Section 224 Certificate (subdivisions) or commencement of a resource consent (land use consent) are those fees and charges prevailing at the time of payment, not at the time of issuing a resource consent.

All figures are inclusive of GST at the current rate of 15%. Should the GST rate change during the year, the balance of any charges not yet invoiced or paid will be adjusted to take account of the change in the rate of GST.

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DC3 **District Wide Development Contribution**
Pursuant to the Resource Management Act 1991 the 224 Certificate will not be issued until such time as the consent holder has paid to Council the Development Contributions as prescribed in the advisory note set out below.

Development Contributions - Advisory Note:
Pursuant to Section 106(2) of the Local Government Act 2002 a District Wide Community Facilities Development Contribution of $320.03 (Three Hundred and Twenty Dollars and Three Cents) GST inclusive shall be paid to Council for the one additional lot.

This is based on a Development Contribution of $320.03 (Three Hundred and Twenty Dollars and Three Cents) per lot for Community Facilities.

Please note: The amounts of the contributions payable at the time of issue of a Section 224 Certificate are those fees and charges prevailing at the time of payment, not at the time of issuing a resource consent.
All figures are inclusive of GST at the current rate of 15%. Should the GST rate change during the year, the balance of any charges not yet invoiced or paid will be adjusted to take account of the change in the rate of GST.

Roading Conditions

RC1 The existing entrance to the ROW at 131 Hall Road serving Lots 1, 2 and 5 shall be swept clean of metal and any damaged areas of seal repaired to the satisfaction of Waikato District Council's Consents Manager prior to issuing the Section 224 certificate.

RC2 The proposed right-of-way 'A' shall be a sealed right of way designed and constructed in accordance with Appendix A, Table 4, of the Waikato District Plan and the minimum specifications set out in the Hamilton City Council Development Manual to the satisfaction of Waikato District Council. Design plans shall be forwarded to Waikato District Council's Consents Manager for approval prior to construction starting. The design plans shall included any extension required to the existing right of way.

RC3 Two producer statements shall be submitted to Waikato District Council's Consent Manager. The first shall cover the design, including drainage of right-of-way A, and the second shall cover the construction of right-of-way A. In addition, the Confirmation Form ROW-01 and Confirmation Form ROW-02 shall be completed and submitted to Waikato District Council's Consents Manager prior to issuing the Section 224 certificate.

RC4 Lots 3 shall be provided with a sealed residential vehicle entrance located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E3, to the satisfaction of Waikato District Council's Consents Manager.

RC5 The existing entrance to Lot 3 adjacent to the right of way at 131 Hall Road shall be permanently closed to vehicular traffic. The existing entrance shall be permanently fenced and the water table reinstated to the satisfaction of Waikato District Council's Consents Manager.

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RC6 Lots 4 shall be provided with a sealed residential vehicle entrance located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E3, to the satisfaction of Waikato District Council's Consents Manager. This entrance shall be combined with the proposed entrance specified in condition RC7.

RC7 The existing Lot 5 entrance to the stock yards on Hall Road shall be upgraded to a sealed heavy commercial vehicle entrance located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E, to the satisfaction of Waikato District Council's Consents Manager. This entrance shall be combined with the proposed entrance specified in condition RC6.

Utilities Conditions

UC1 Any existing cross boundary water supply lines no longer required shall be disconnected, or shall have suitable easements over the existing water supply lines, prior to the issuing of section 224 certificate, to the satisfaction of Waikato District Council's Consents Manager.

UC2 Separate water supply connections fitted with a manifold, flow restrictor and backflow preventer shall be provided to Lots 1 & 4 to the satisfaction of Waikato District Council's Consents Manager, prior to the issuing of the 224(c) certificate. Any connection/s to existing Council main or rider main shall be installed by Council. Any extension to existing Council mains and connections to the new main or rider main shall be installed/supervised by a qualified Water Service Person holding a National Certificate in Water Reticulation.

Advisory Note:
Council's trickle feed potable water supply will deliver 1.8 cubic metres per day at a minimum water pressure of 200 kPa at the point of connection. At the time building consents are applied for the owner will be required to provide a minimum tank capacity of 22,000 litres, excluding any additional requirements for stormwater attenuation, on site at a suitable location and elevation to receive water from the connection. The owner shall install a pumping system from his storage to deliver water from storage within the property as required.

UC3 Water supply reticulation along the proposed right of way, including connection to the Council main shall be designed, constructed, and tested to the satisfaction of Waikato District Council's Consents Manager, prior to the issuing of the Section 224(c) certificate. Connection to the existing Council main shall be undertaken by Council staff.

Advisory Note:
The shared water supply line down the right of way shall be constructed at the cost of the developer and shall be vested in Council once the above condition has been satisfied. This portion of line shall then become part of Council water reticulation, and maintenance and repair work will be Council's responsibility.

UC4 The engineering design plans of the proposed water supply reticulation and any extension to the public water reticulation shall be approved by Waikato District Council's Consents Manager prior to any construction being undertaken.

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UC5 As-built plans at a scale acceptable to Waikato District Council's Consents Manager shall be provided showing any water supply reticulation including connections, (meter number/s and backflow preventer number/s) to the satisfaction of Waikato District Council's Consents Manager, prior to the issuing of the Section 224(c) certificate.

UC6 A stormwater management system for the proposed right of way "A" shall be prepared by a suitably qualified experienced Chartered Professional Engineer and the design and engineering design plans shall be approved by Waikato District Council's Consents Manager before construction being undertaken, to the satisfaction of Waikato District Council's Consents Manager, and prior to the issuing of the Section 224(c) certificate. Any erosion protection measures necessary for the design needs to be clearly shown on the engineering plans.

UC7 Prior to the the issuing of the Section 224(c) certificate, the following are required for the proposed right of way stormwater management system, to the satisfaction of Waikato District Council's Consents Manager.

a) A Producer statement PS-4: Construction Review to confirm that the right of way stormwater management system has been constructed in accordance with the submitted design and approved engineering plans under UC6.

b) As-built plans detailing the actual locations and dimensions at a scale acceptable to Waikato District Council's Consents Manager.

c)

UC8 A Geotechnical assessment for building foundation design is to be carried out at the time of building consent application by a suitably qualified and experienced Geo-professional, to the satisfaction of the Waikato District Council's Consents Manager.

Advisory note:
This is a requirement for all current and future owners of Lots 1, 3 & 4. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

UC9 A wastewater land application field (primary or secondary level treatment) design is to be carried out at the time of building consent application by a suitably qualified and experienced professional, in accordance with AS/NZS 1547:2000 (or subsequent update) and refer to the requirements of the Waikato Regional Plan, to the satisfaction of the Waikato District Council's Consents Manager.
In particular (among others), the design is to address separation distances from sub-surface water/overland flow paths/potable water supplies, any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects, demonstrate that there is a suitable complying reserve area available and provide evidence that the system can adequately deal with peak loading (where applicable).

Advisory note:
This is a requirement for all current and future owners of Lots 1, 3 & 4. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

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UC10 A stormwater retention system design is to be carried out at the time of building consent application by a suitably qualified and experienced Chartered Professional Engineer, to the satisfaction of the Waikato District Council's Consents Manager. The stormwater design shall give consideration to the following;

a) Manage the net increase in runoff from roofs, driveways and other impermeable areas through the use of attenuation systems.

b) Be designed for a 10 year - 60-minute storm (considering climate change).

c) Unless soakage testing results or winter groundwater levels are adverse to soakage then soakage shall be adopted.

d) Soakage systems shall be designed based on specific soakage tests undertaken in the area of the proposed system and be above the likely winter water table.

e) Attenuation system shall be designed in accordance with NZWERF On-Site Stormwater Management Guidelines 2004 or latest revision.

f) All overflows from such systems shall have suitable outlet with erosion protection measures if required.

Advisory note:
This is a requirement for all current and future owners of Lots 1, 3 & 4. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

UC11 When any future building consent is applied for on Lots 2, 5, 6, 7/2 & 8, the following matters will need to be addressed in the application (the existing dwelling on each of Lot 2, 5, 6, 7/2 & 8 is exempt from this condition);

a) For any building site, a geotechnical assessment, including stormwater management, from a suitably qualified and experienced Geo-Professional, will be required to confirm that ground conditions are suitable for a building.

b) The existing on-site effluent system is to be assessed by a suitably qualified and experienced person and certified to be sufficient for the additional loading proposed by the additions; or

A wastewater land application field (primary or secondary level treatment) is to be designed by a suitably qualified and experienced person and submitted with the application. The site assessment and design documentation is to be in accordance with AS/NZS 1547:2000 (or subsequent update) and refer to the requirements of the Waikato Regional Plan.

In particular (among others), the design is to address separation distances from sub-surface water/overland flow paths/potable water supplies, any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects, demonstrate that there is a suitable complying reserve area available and provide evidence that the system can adequately deal with peak loading (where applicable).

Advisory note:
This is a requirement for all current and future owners of Lots 2, 5, 6, 7/2 & 8. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

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UC12 Vegetative cover and planting of gully/steep slopes shall be maintained to assist in the control of surface erosion.

Advisory note:
This is a requirement for all current and future owners of Lots 5, 6 & 8. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

UC13 Ponding of stormwater at the top of all slopes shall be prevented and there shall be no concentrated flows of stormwater such as discharges from stormwater pipes, over the edge of gully slopes.

Advisory note:
This is a requirement for all current and future owners of Lots 5, 6 & 8. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

UC14 No fill, including inorganic or organic matter shall be placed over the gully edges and/or slopes.

Advisory note:
This is a requirement for all current and future owners of Lots 5, 6 & 8. The condition is implemented by way of consent notice, as set out in LC5 of the consent conditions.

Legal Conditions

LC1 An easement shall be created over the existing overhead powerlines within Lot 3, shown as easement 'B' on the approved application plan. The easement shall be granted, reserved and shown on the Land Transfer Plan.

LC2 An easement in gross over water rider main on proposed right of way 'A', to convey water, shall be granted in favour of Waikato District Council, to the satisfaction of Council.

LC3 The easement document shall make provision for the ongoing maintenance of right of way 'A' to the satisfaction of Waikato District Council's Consents Manager.

LC4 All easements shall be duly granted, reserved and shown on the Land Transfer Plan.

LC5 Pursuant to section 221 of the Resource Management Act 1991, consent notices shall be prepared by the Council's solicitors at the consent holder's expense to ensure compliance on a continuing basis by the subdividing land owner and subsequent owners of:

(i) Lots 1, 3 & 4 with Conditions UC8, UC9 & UC10.

(ii) Lots 2, 5, 6, 7/2 & 8 with Condition UC11.

(iii) Lots 5, 6 & 8 with Conditions UC12, UC13 & UC14.

Upon the issue of a certificate pursuant to section 224(c) of the Resource Management Act 1991 or at such earlier time as may be required, the consent notices pursuant to section 221 of the Resource Management Act will be issued.

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LC6 A Conservation Covenant pursuant to Section 77 of the Reserves Act (1977) shall be placed on the 2.22ha area of land within Lot 5 (shown as area (X) on the approved plan) to preserve and maintain the native vegetation on an ongoing basis. The covenant document shall include the provision to maintain the stock proof fence required by PC4 on an ongoing basis; to carry out the pest control in accordance with the Pest Management Plan required by PC5 on an ongoing basis and to continue to maintain the existing vegetation and additional restoration plantings as required by the Planting Schedule and Restoration Plan required by PC6, on an ongoing basis, to the satisfaction of Waikato District Council's Consents Manager. The covenant document shall be prepared by the Waikato District Council Solicitor at the expense of the Consent Holder prior to the issuing of the section 224(c) certificate.

LC7 The area of land to be protected by the Conservation Covenant within Lot 5, (shown as area (X) on the approved plan), shall be surveyed and shown as 'X' on the Land Transfer Plan.

LC8 Prior to application for section 223 for Stage One of the subdivision, approval shall be obtained under Section 241(4)(b) of the Resource Management Act 1991, to cancel the amalgamation condition requiring Lots 4 and 5 DP 399960 to be held together in the same computer freehold register.

LC9 Pursuant to Section 220(1)(B)(ii) of the Resource Management Act 1991, Lot 8 hereon and Lot 4 DP 399960 (residue CFR 398648) shall be held in the same computer freehold register. See LINZ request 1003420.

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Stage Two

Planning Conditions

PC10 The Land Transfer Plan to give effect to this Resource Consent shall be generally consistent with the subdivision application, prepared by The Surveying Company initially received by Council on 29 August 2008, Council reference: SUB0023/09, and the *s127 application received by Council on 10 November 2014 including the plans prepared by The Surveying Company entitled "Proposed Subdivision of Lot 1 DPS 86123, Lots 9-11 DPS 87386, Lot 4 DP 382698, Lots 3-5 DPS 49570 & Lots 2, 5 & 8 DPS 15320, Lot 1 DPS 63150, Lot 4 DPS 15320, Lots 4 & 5 DP 399960" referenced SUBCON 8-B and dated October 2014.* A copy of each of the approved plans, numbered sheet 1 of 6, 3 of 6, and 6 of 6 is attached.

PC11 In the event of any archaeological site or waahi tapu being discovered or disturbed while undertaking works to give effect to the conditions of this consent, the works in the area of the discovery shall cease immediately, and iwi and the Waikato District Council shall be notified within 48 hours. Works may recommence with the written approval of the Waikato District Council's Consents Manager. Such approval shall be given after the Waikato District Council has considered:

a) Tangata Whenua interests and values,

b) the consent holders interests,

c) any archaeological or scientific evidence.

PC12 Written confirmation shall be provided from network utility operators for energy supply confirming that the connections and reticulations have been placed underground to the boundaries of Lots 13, 14, 15 and 16 prior to the section 224 certificate being signed by Council.

PC13 The consent holder shall notify the Waikato District council Monitoring Manager in writing two weeks prior to the commencement of activities associated with this consent.

PC14 Pursuant to section 36 of the Resource Management Act 1991 the consent holder shall pay the actual and reasonable costs incurred by the Waikato District Council when monitoring the conditions of this consent.

Financial Contributions

Reserves

FC3 Pursuant to Section 108(2)(a) of the Resource Management Act 1991, a reserve contribution of $7,212.00 (Seven Thousand Two Hundred and Twelve Dollars), GST Inclusive shall be paid to Council for the four additional Lots. This is based on a reserve contribution of $1,803.00 (One Thousand Eight Hundred and Three Dollars) for each additional lot. This shall be paid to the Waikato District Council in lieu of vesting land.

Advisory Note:
A reserve contribution is required for each lot created by subdivision upon which a dwellinghouse or dwellinghouses are authorised by the Waikato District Plan. Stage Two of the subdivision will result in the creation of four additional lots. Therefore

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four reserve contributions of $1,803.00 are required.

Roading

FC4 That pursuant to section 108(2)(a) of the Resource Management Act 1991 a roading fee of $37,776.00 (Thirty Seven Thousand Seven Hundred and Seventy Six Dollars), inclusive of GST, be paid to the Council for the additional lots. This is based on a Uniform Roading Fee of $9,444.00 (Nine Thousand Four Hundred and Forty Four Dollars), inclusive of GST, for each additional lot.

Please note: If the contributions are not paid within the financial year of issuing the Resource Consent, the amounts due will be adjusted on July of each year in accordance with the fees and charges prevailing at the time of payment

Development Contributions

DC4 **Drainage Board Levy**

Pursuant to the Resource Management Act 1991 the 224 Certificate will not be issued until such time as the consent holder has paid to Council the Drainage Board Levy as prescribed in the advisory note set out below.

Drainage Board Levy - Advisory Note:

Pursuant to Section 106(2) of the Local Government Act 2002 a Levy toward land drainage under the Churchill East Drainage District of $2,444.00. (Two Thousand Four Hundred Forty Four Dollars) GST inclusive shall be paid to Council.

Please note: The amounts of the contributions payable at the time of issue of a Section 224 Certificate (subdivisions) or commencement of a resource consent (land use consent) are those fees and charges prevailing at the time of payment, not at the time of issuing a resource consent.

All figures are inclusive of GST at the current rate of 15%. Should the GST rate change during the year, the balance of any charges not yet invoiced or paid will be adjusted to take account of the change in the rate of GST.

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DC5 **District Wide Development Contribution**
Pursuant to the Resource Management Act 1991 the 224 Certificate will not be issued until such time as the consent holder has paid to Council the Development Contributions as prescribed in the advisory note set out below.

Development Contributions - Advisory Note:
Pursuant to Section 106(2) of the Local Government Act 2002 a District Wide Community Facilities Development Contribution of $1,280.12 (One Thousand Two Hundred and Eighty Dollars and Twelve Cents) GST inclusive shall be paid to Council for the four additional lots.

This is based on a Development Contribution of $320.03 (Three Hundred and Twenty Dollars Three Cents) per lot for Community Facilities.

Please note: The amounts of the contributions payable at the time of issue of a Section 224 Certificate are those fees and charges prevailing at the time of payment, not at the time of issuing a resource consent.

All figures are inclusive of GST at the current rate of 15%. Should the GST rate change during the year, the balance of any charges not yet invoiced or paid will be adjusted to take account of the change in the rate of GST.

Roading Conditions

RC8 The existing entrance to Lots 11 shall be upgraded to a sealed residential vehicle entrance located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E3 to the satisfaction of Waikato District Council's Consents Manager.

RC9 Sight removal of trees and vegetation shall be carried out on the berm to the south of the proposed entrance to Lots 11 to achieve sight distances of 145 metres, in accordance with Proposed District Plan Appendix A Table 6, Figure 9, to the satisfaction of Waikato District Council's Consents Manager.

Advisory Note:
Minimum sight distances are measured from a point 5 metres from the centre line of the closest lane, at a height of 1.15m above the midpoint of the entrance.

RC10 The consent holder shall prepare a diagram which clearly identifies the land required to the south of the entrance to Lot 11 where vegetation and structures located on it would be required to be trimmed and/or maintained to achieve sight distance of 145 metres, in accordance with the Proposed District Plan Appendix A, Table 6, Figure 9, to the satisfaction of Waikato District Council's Consents Manager.

RC11 A covenant shall be placed on the area of land identified in condition RC9 above to preserve the sight distance of 145 metres to the south of the entrance, in accordance with the Proposed District Plan Appendix A, Table 6, Figure 9. The height of any structures within this area, other than the existing seven wire post and batten fence shall be limited to 0.4 metres above the existing ground level.

RC12 The existing paddock entrances to Lot 11 shall be permanently closed to vehicular traffic. The existing entrances shall be permanently fenced and the water table reinstated to the satisfaction of Waikato District Council's Consents Manager.

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RC15 Lots 13 and 14 shall be provided with a combined sealed residential vehicle entrances located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E3, to the satisfaction of Waikato District Council's Consents Manager.

RC16 Sight removal of trees and vegetation shall be carried out on the north side of the proposed entrance to Lot 13 to achieve sight distance of 160 metres, in accordance with Proposed District Plan Appendix A Table 6, Figure 9, to the satisfaction of Waikato District Council's Consents Manager.

Advisory Note:
Minimum sight distances are measured from a point 5 metres from the centre line of the closest lane, at a height of 1.15m above the midpoint of the entrance.

RC17 Sight removal of trees and vegetation shall be carried out on the south side of the proposed entrance to Lot 14 to achieve sight distance of 130 metres, in accordance with Proposed District Plan Appendix A Table 6, Figure 9, to the satisfaction of Waikato District Council's Consents Manager.

Advisory Note:
Minimum sight distances are measured from a point 5 metres from the centre line of the closest lane, at a height of 1.15m above the midpoint of the entrance.

RC18 Lots 15 and 16 shall be provided with combined sealed residential vehicle entrances located as indicated on the approved plan and constructed in accordance with Hamilton City Council Development Manual volume 5, Waikato District Council Addendum part 9.1 Plan No. TSG-E3, to the satisfaction of Waikato District Council's Consents Manager.

RC19 Sight removal of trees and vegetation shall be carried out on both sides of the proposed entrances to Lots 15 and 16 to achieve sight distances of 100 metres, in accordance with Proposed District Plan Appendix A Table 6, Figure 9, to the satisfaction of Waikato District Council's Consents Manager.

Advisory Note:
Minimum sight distances are measured from a point 5 metres from the centre line of the closest lane, at a height of 1.15m above the midpoint of the entrance.

Utilities Conditions

UC15 Any remaining existing cross boundary water supply lines no longer required shall be disconnected, or shall have suitable easements over the existing water supply lines, prior to the issuing of section 224 certificate, to the satisfaction of Waikato District Council's Consents Manager.

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UC16 The existing dwelling on Lot 11 shall have an independent potable water supply sourced from within its respective boundaries to the satisfaction of Waikato District Council's Consents Manager or as otherwise approved by Waikato District Council's Consents Manager. Confirmation of the source and location of the water supply shall be shown on an amended site plan in relation to the boundaries of Lot 11 prior to the issuing of Section 223 Certificate.

Advisory Note:
If a supply from outside the legal boundaries is proposed, a legal easement may be required.

UC17 The effluent field for the existing dwelling on Lot 11 shall be located and if necessary relocated to ensure that the effluent disposal system is located at least 1.5m within the boundaries of Lot 11. To confirm compliance with this condition a plan to a scale acceptable to Waikato District Council's Consents Manager locating the position of the effluent field for the dwelling located on Lot 11 and certified by a registered professional surveyor, shall be provided prior to the section 223 certificate being signed by Waikato District Council's Regulatory Manager.
Advisory Note:

If the effluent field is required to be relocated to comply with the above condition a building consent must be obtained from Waikato District Council prior to the relocation.

UC18 A design for the proposed access way to each Lot 15 and Lot 16 shall be prepared by a suitably qualified experienced Chartered Professional Engineer and the design and engineering design plans shall be approved by Waikato District Council's Consents Manager before construction being undertaken, to the satisfaction of Waikato District Council's Consents Manager, and prior to the issuing of the 224(c) certificate. The design plans shall include the following:

a) Initial and final formation levels along the access way and typical cross sections.

b) Earthwork management.

c) Stormwater management.

d) Overland flow paths shall be clearly identified and a proposal for existing overland flow paths across proposed access ways and any easements proposed if applicable.

e) Erosion and sediment control management.

UC19 Prior to the issuing of the 224(c) certificate the following are required for the proposed access way formation, to the satisfaction of Waikato District Council's Consents Manager.

a) A Producer statement PS-4: Construction Review to confirm that the access way formation and stormwater management has been constructed in accordance with the approved engineering plans provided under UC18.

b) As-built plans detailing the actual locations and dimensions at a scale acceptable to Waikato District Council's Consents Manager.

Document Set ID: 9206810
Version: 1, Version Date: 08/01/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

UC20 A Geotechnical assessment for building foundation design is to be carried out at the time of building consent application by a suitably qualified and experienced Geo-professional, to the satisfaction of the Waikato District Council's Consents Manager.

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 13, 14, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

UC21 At the time of building consent application for any future habitable area of a dwelling or ancillary unit, a Chartered Professional Engineer shall investigate the 1% AEP (plus allowance for climate change) flood level, and shall set the floor level at a minimum of 300mm above this determined level, to the satisfaction of Waikato District Council's Consents Manager.

Advisory note
This is a requirement for all current and future owners of Lots 13 & 14. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

UC22 A wastewater land application field (primary or secondary level treatment) design is to be carried out at the time of building consent application by a suitably qualified and experienced professional, in accordance with AS/NZS 1547:2000 (or subsequent update) and refer to the requirements of the Waikato Regional Plan, to the satisfaction of the Waikato District Council's Consents Manager.

In particular (among others), the design is to address separation distances from sub-surface water/overland flow paths/potable water supplies, any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects, demonstrate that there is a suitable complying reserve area available and provide evidence that the system can adequately deal with peak loading (where applicable).

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 13, 14, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

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Version: 1, Version Date: 08/01/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

UC23 A stormwater retention system design is to be carried out at the time of building consent application by a suitably qualified and experienced Chartered Professional Engineer, to the satisfaction of the Waikato District Council's Consents Manager. The stormwater design shall give consideration to the following;

a) Manage the net increase in runoff from roofs, driveways and other impermeable areas through the use of attenuation systems.

b) Be designed for a 10 year - 60-minute storm (considering climate change).

c) Unless soakage testing results or winter groundwater levels are adverse to soakage then soakage shall be adopted.

d) Soakage systems shall be designed based on specific soakage tests undertaken in the area of the proposed system and be above the likely winter water table.

e) Attenuation system shall be designed in accordance with NZWERF On-Site Stormwater Management Guidelines 2004 or latest revision.

f) All overflows from such systems shall have suitable outlet with erosion protection measures if required.

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 13, 14, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

UC24 When any future Building Consent is applied for on Lot 11, the following matters will need to be addressed in the application (the existing dwelling on Lot 11 is exempt from this condition);

a) For any building site, a Geotechnical assessment, including stormwater management, from a suitably qualified and experienced Geo-Professional, will be required to confirm that ground conditions are suitable for a building.

b) The existing on-site system is to be assessed by a suitably qualified and experienced person and certified to be sufficient for the additional loading proposed by the additions; or
A wastewater land application field (primary or secondary level treatment) is to be designed by a suitably qualified and experienced person and submitted with the application. The site assessment and design documentation is to be in accordance with AS/NZS 1547:2000 (or subsequent update) and refer to the requirements of the Waikato Regional Plan.
In particular (among others), the design is to address separation distances from sub-surface water/overland flow paths/potable water supplies, any potential issues with ground stability due to effluent disposal and any mitigation methods necessary to counter these effects, demonstrate that there is a suitable complying reserve area available and provide evidence that the system can adequately deal with peak loading (where applicable).

Advisory note
This is a requirement for all current and future owners of Lot 11. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

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Version: 1, Version Date: 08/01/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

UC25 Vegetative cover and planting of gully/steep slopes shall be maintained to assist in the control of surface erosion.

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

UC26 Ponding of stormwater at the top of all slopes shall be prevented and there shall be no concentrated flows of stormwater such as discharges from stormwater pipes, over the edge of gully slopes.

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

UC27 No fill, including inorganic or organic matter shall be placed over the gully/steep slope edges and/or slopes.

Advisory note
This is a requirement for all current and future owners of Lots 9, 10, 15 & 16. The condition is implemented by way of consent notice, as set out in LC12 of the consent conditions.

Legal Conditions

LC10 All easements shall be duly granted, reserved and shown on the Land Transfer Plan.

LC11 Easement in gross in favour of WEL Networks shall be created over the existing overhead powerlines within Lots 8 and 9, shown as easements 'M', 'N', 'O' and 'P' on the application plan. The easements shall be granted, reserved and shown on the Land Transfer Plan.

LC12 Pursuant to section 221 of the Resource Management Act 1991, consent notices shall be prepared by the Council's solicitors at the consent holder's expense to ensure compliance on a continuing basis by the subdividing land owner and subsequent owners of:

(i) Lots 9, 10, 13, 14, 15 & 16 with Conditions UC20, UC22 & UC23.

(ii) Lots 13 & 14 with Condition UC21.

(iii) Lot 11 with Condition UC24.

(iv) Lots 9, 10, 15 & 16 with Conditions UC25, UC26 & UC27.

Upon the issue of a certificate pursuant to section 224(c) of the Resource Management Act 1991 or at such earlier time as may be required, the consent notices pursuant to section 221 of the Resource Management Act will be issued.

LC13 Prior to application for section 223 for Stage Two of the subdivision, approval shall be obtained under Section 241(4)(b) to cancel the amalgamation condition requiring Lot 1 DPS 631150 and Lot 4 DPS 15320 to be held together in the same computer freehold register.

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Version: 1, Version Date: 08/01/2026
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LC14 Prior to application for section 223 for Stage Two of the subdivision, approval shall be obtained under Section 241(4)(b) to cancel the amalgamation condition requiring Lots 3-5 DPS 49570 and Lots 2, 5 and 8 DPS 15320 to be held together in the same computer freehold register.

LC15 Prior to application for section 223 for Stage Two of the subdivision, approval shall be obtained under Section 241(4)(b) to cancel the amalgamation condition requiring Lot 8 hereon and 4 DP 399960 (residue CFR 398648) to be held together in the same computer freehold register.

LC16 Pursuant to Section 220(1)(b)(ii) of the Resource Management Act 1991, Lots 8, 9 and 10 hereon shall be held in the same computer freehold register. See LINZ request 1003420.

Document Set ID: 9256810
Version: 1, Version Date: 08/01/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Schedule 2

Reasons for Decision

Resource Consent No: SUB0023/09.02

1 The actual and potential effects created by the proposal are acceptable because there is a reduction in the number of Computer Freehold Registers and no additional dwelling or subdivision entitlements created as a result of the variation and there is no further development proposed.

2 The proposal to remove the condition relating to the water supply connection to Lot 3 will not result in any physical changes to the existing subdivision consent.

3 The changes to consent conditions will provide the applicant with options for the provision of telecommunications services. The proposal complies with Rule 25.79(aa) of the Waikato District Plan that provides for every allotment to be connected to a telecommunications network. The applicant has demonstrated, via a report from Vodafone NZ Limited, that wireless telephone can be provided to the lots.

4 That there will be no person adversely affected by the changes, the original consent was processed on a non-notified basis and the scale of effects are not considered to exceed that which was originally consented to.

5 The proposal is consistent with the objectives and policies of the operative District Planning documents.

6 Overall the proposal meets the purpose (section 5) and principles (sections 6-8) of the Resource Management Act 1991.

Document Set ID: 9206910
Version: 1, Version Date: 08/01/2026
Print Date: 6 November 2026, 1:26 pm

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Appendix A

Resource Consent No: SUB0023/09.02

Certificates of Title

Lot 10 DPS 87386 comprised in CFR SA69C/159 – 04 October 2000 (12.1510ha)

Lot 9 DPS 87386 comprised in CFR SA69C/158 – 04 October 2000 (14.1900ha)

Lot 11 DPS 87386 comprised in CFR SA69C/160 – 04 October 2000 (12.1560ha)

Lot 1 DPS 86132 comprised in CFR SA68B/99 – 04 October 2000 (124.3700ha)

Lot 4 DP 382698 comprised in CFR 330423 – 05 July 2010 (198.4900ha)

Lot 3 DP 382698 comprised in CFR 330422 – 05 July 2010 (2.1310ha)

Lots 3-5 DPS 49570 and Lots 2, 5 and 8 DPS 15320 comprised in CFR SA42C/65 – 27 October 1988 (49.4298ha)

Lot 1 DPS 63150 and Lot 4 DPS 15320 comprised in CFR SA52C/849 – 06 August 1993 (31.2811ha)

Lot 4-5 DP 399960 comprised in CFR 398648 – 12 August 2010 (107.5500ha

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LOT 1 1.40ha
LOT 2 2.06ha
LOT 3 9300m²
LOT 4 1.33ha
LOT 5 183ha
LOT 6 216ha
LOT 712 1.00ha
LOT 8 31.92ha
LOT 9 68.61ha
LOT 10 34.65ha
LOT 11 2.30ha
LOT 13 7600m²
LOT 14 1.06ha
LOT 15 1.90ha
LOT 16 2.12ha

1 DPS 83938; 2 DP 397361; 3 DPS 85071; 4 DPS 85071; 4 DPS 82086; 1 DPS 82086; 2 DPS 81124; 4 DPS 81124; 8 DPS 81124; 3 DPS 87386; 4 DPS 87386; 5 DPS 87386; 6 DPS 87386; Allot 711 Whangamarino Psh; HALL ROAD; Curchill East Road; See Sheet 4; See Sheet 5; See Sheet 6; Section 46 Blk XV Maramarua S D; 2 DP 353156; 3 DP 353156; 1 DP 382698; 2 DP 382698; 3 DP 382698; 2 DP 355829; 1 DPS 59544; 1 DPS 80729; 2 DPS 80729; 4 DPS 80729; 5 DPS 80729; 1 DPS 90749; Plantation Road; Unformed Road; Curchill East Road; Waikato River; milking shed; ex. house; 2 LT 386081 CFR 344534; 3 LT 386081 CFR 344535; 9 DPS85071; 1 2 3 LT 399960; 1 DPS 46774; 1 DPS 12119; Pt Allot 465 Whangamarino Psh SO 6253; Pt Allot 311 Whangape Psh; Pt Allot 311 Whangamarino Psh; CFR SA68B/99; CFR SA69C/158; CFR SA69C/159; CFR SA69C/160; CFR 330423; CFR SA42C/65; CFR SA52C/849; CFR 398648

PROPOSED CONSERVATION COVENANT

SHOWN	DESCRIPTION	AREA
Ⓧ	PT LOT 5	2.22ha

EXISTING CONSERVATION SCHEDULE

SHOWN	PURPOSE	DESCRIPTION	DOCUMENT
ⓊⓋ	CONSERVATION	PT LOT 5	B628727.4

MEMORANDUM OF EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 5	Ⓐ	LOTS 1 & 2
	LOT 6	ⒸⒻⒼⒽ ⒾⒿⓁ	LOT 712

THERE IS NO LOT 7 or 12 ON THIS PLAN

AMALGAMATION CONDITION
Section 220 (1)(b)(ii)
THAT LOTS 8, 9 & 10 HEREON BE HELD IN THE SAME COMPUTER FREEHOLD REGISTER

LOCAL AUTHORITY	WAIKATO DISTRICT
ZONING	: RURAL
TOTAL AREA	: 549.6179ha
COMPRISED IN	: CFR's SA68B/99, SA69C/158-160, 330423, SA42C/65, SA52C/849, 398648
REGISTERED OWNERS	: D.R. & C.J. BROWN, TOWER FARM LIMITED TUI RIDGE LIMITED

APPROVED PLAN
SUB0023/0902
14/1/15

THE SURVEYING COMPANY
YOUR LAND DEVELOPMENT CONSULTANTS
APPRAISAL HOUSE, 138 HALL STREET, PUKEKOHE, NEW ZEALAND
PH: 09 238 9981, FAX: 09 238 9307,
e-mail: info@subdivision.co.nz
0800 TO SURVEY (0800 85 78 78)

Client: D.R. & C.J. BROWN

PROPOSED SUBDIVISION OF LOT 1 DPS 86123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 8 DPS 15320, LOT 1 DPS 63150, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960

SUBDIVISION CONSENT PLAN Sheet 1 of 6

DRAWN	L.S.	CHECKED	DRAWING: SUBCON 1-6
SCALE (A3)	1 : 15,000	DATE: OCT 2014	FILE REF: 272139

Document Set ID: 9296810
Version: 1, Version Date: 08/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council



STAGE 1
AMALGAMATION CONDITION

Section 220 (1)(b)(ii)

THAT LOT 8 HEREON AND LOT 4 DP 399960 (RESIDUE CFR.398648) BE HELD IN THE SAME COMPUTER FREEHOLD REGISTER

STAGE ONE

This plan has been prepared for the purpose of obtaining a Resource Consent pursuant to the provisions of the Resource Management Act 1991. Unauthorised copying or use of this plan for any other purpose is not permitted without the prior consent of The Surveying Company Limited. Areas and dimensions shown on this plan are approximate only and are subject to confirmation by survey. This plan is not intended to be used for Architectural Design purposes.

MEMORANDUM OF EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 5	(A)	LOTS 1 & 2
	LOT 6	(C)(F)(G)(H) (I)(J)(L)	LOT 712

PROPOSED EASEMENTS IN GROSS

PURPOSE	SERVIENT TENEMENT	SHOWN	GRANTEE
RIGHT TO CONVEY ELECTRICITY	LOT 3	(B)	WEL NETWORKS LIMITED
	LOT 5	(T)	
	LOT 712	(D)	
	LOT 6	(C)(F)(G)(H) (I)(J)(L)(S)	

EXISTING EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOCUMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 6	(F)(G) (I)(J)(L)	EI.8526148.4
WATER SUPPLY		(F)(H)(I)(J)	TRANSFER H821440.2

PROPOSED CONSERVATION COVENANT

SHOWN	DESCRIPTION	AREA
(X)	PT LOT 5	2.22ha

EXISTING CONSERVATION SCHEDULE

SHOWN	PURPOSE	DESCRIPTION	DOCUMENT
(U)(V)	CONSERVATION	PT LOT 5	B628727.4

APPROVED PLAN

SUB0023/09.02
19/1/15

THERE IS NO LOT 7 or 12 ON THIS PLAN

THE SURVEYING COMPANY
YOUR LAND DEVELOPMENT CONSULTANTS
APPRAISAL HOUSE, 138 HALL STREET, PUKEKOHE, NEW ZEALAND.
PH: 09 238 9001, FAX: 09 238 9307,
e-mail: info@surveyor.co.nz
0800 TO SURVEY (0800 80 78 78)

Client: D.R. & C.J. BROWN

PROPOSED SUBDIVISION OF LOT 1 DPS 86123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 8 DPS 15320, LOT 1 DPS 63150, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960

SUBDIVISION CONSENT PLAN Sheet 2 of 6

DRAWN	L S	CHECKED	DRAWING: SUBCON 6-8
SCALE @A3	1 : 20,000	DATE	OCT 2014
		FILE REF:	272139

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Print Date: 6 November 2026, 1:26 pm

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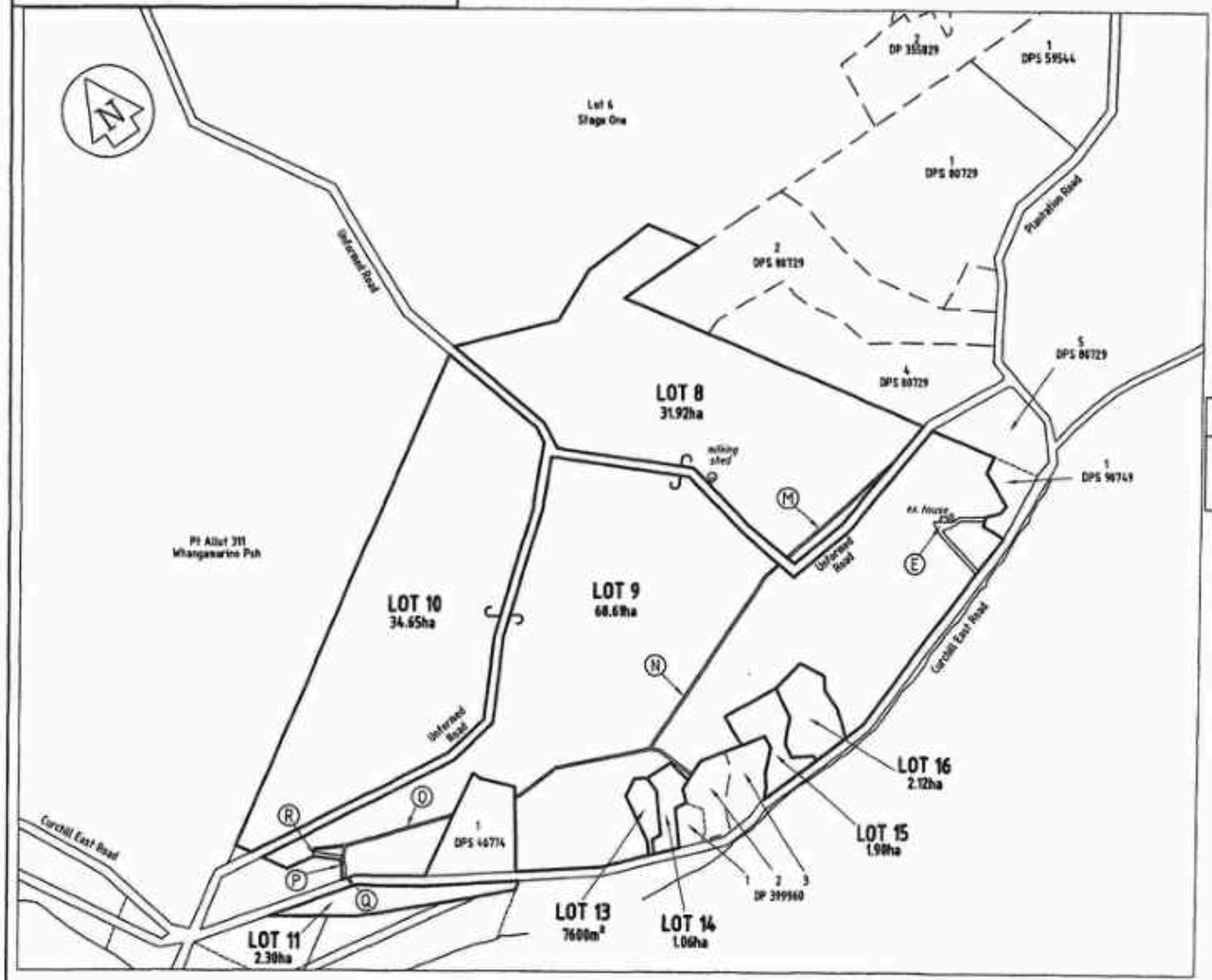

STAGE 2
AMALGAMATION CONDITION

Section 220 (1)(b)(ii)

THAT LOTS 8, 9 & 10 HEREON BE HELD IN THE SAME COMPUTER FREEHOLD REGISTER

MEMORANDUM OF EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 6	(C)(F)(G)(H) (I)(J)(L)	LOT 712

PROPOSED EASEMENTS IN GROSS STG 2

PURPOSE	SERVIENT TENEMENT	SHOWN	GRANTEE
RIGHT TO CONVEY ELECTRICITY	LOT 8	(M)	W E L NETWORKS
	LOT 9	(N)(O)(P)	

EXISTING EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOCUMENT
RIGHT OF WAY	LOT 9	(E)	TRANSFER 5453785.4
		(P)(Q)(R)	E.C. H826447.6

APPROVED PLAN

SUB0023/09.02

KL 14/1/15

THERE IS **NO LOT 7 or 12** ON THIS PLAN

STAGE TWO

THE SURVEYING COMPANY
YOUR LAND DEVELOPMENT CONSULTANTS
APPRAISAL HOUSE, 138 HALL STREET, PUKEKOHE, NEW ZEALAND.
PH: 09 238 9881, FAX: 09 238 9307,
e-mail: info@subdivision.co.nz
0800 TO SURVEY (0800 86 78 78)

Client: D.R. & C.J. BROWN

PROPOSED SUBDIVISION OF LOT 1 DPS 86123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 8 DPS 15320, LOT 1 DPS 63150, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960

SUBDIVISION CONSENT PLAN Sheet 3 of 6

DRAWN	CHECKED	DRAWING SUBCON 3-6
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SCALE @A3 1:10,000	DATE OCT 2014	FILE REF. 272139

Document Set ID: 9266810
Version: 1, Version Date: 08/01/2026

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PROPOSED CONSERVATION COVENANT

SHOWN	DESCRIPTION	AREA
(X)	PT LOT 5	2.22ha

EXISTING CONSERVATION SCHEDULE

SHOWN	PURPOSE	DESCRIPTION	DOCUMENT
(U)(V)	CONSERVATION	PT LOT 5	B628727.4

MEMORANDUM OF EASEMENTS

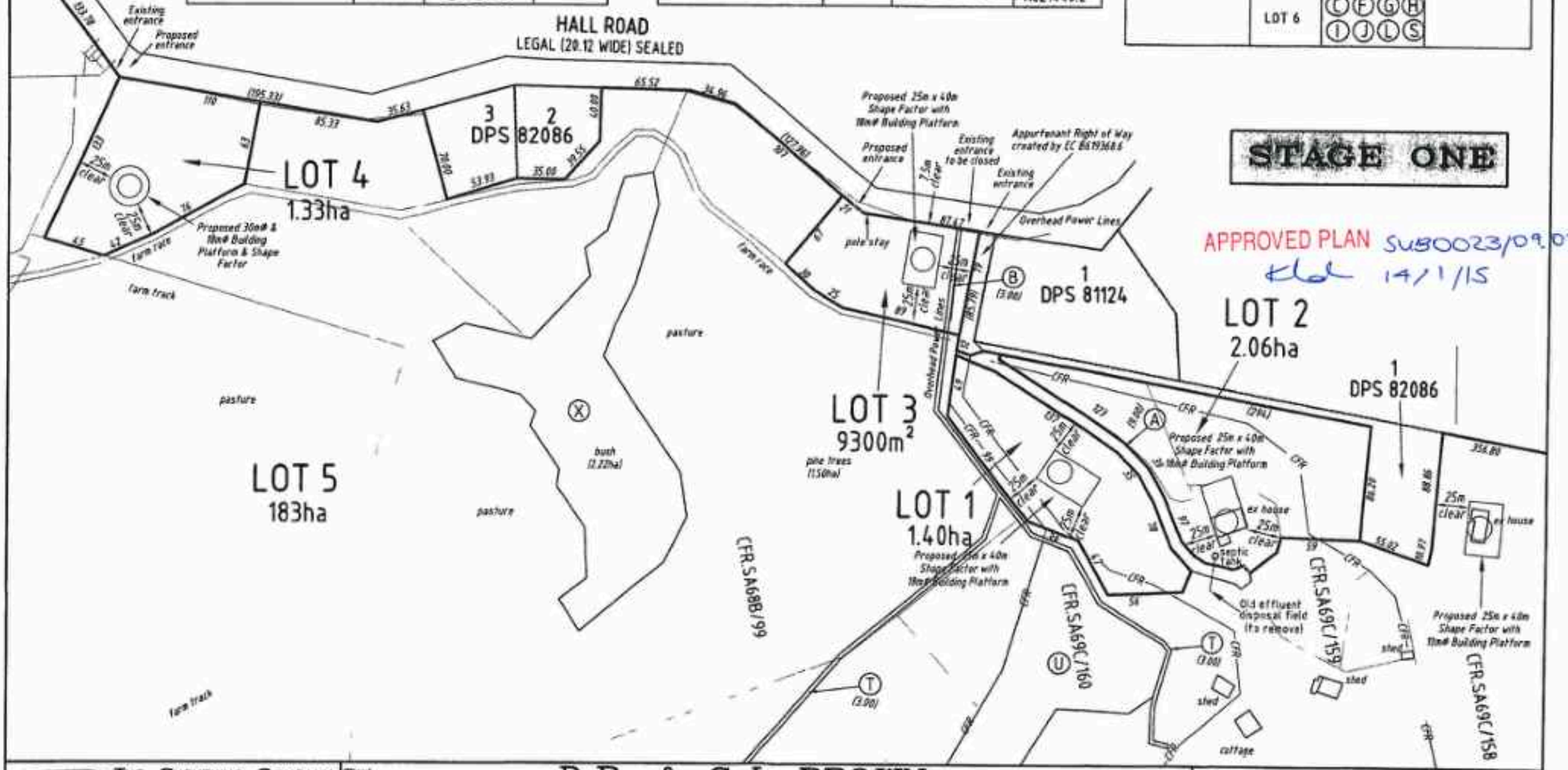
PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 5	(A)	LOTS 1 & 2
	LOT 6	(C)(F)(G)(H)(I)(J)(L)	LOT 712

EXISTING EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOCUMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 6	(F)(G)(I)(J)(L)	EI.8526148.4
WATER SUPPLY		(F)(H)(I)(J)	TRANSFER H821440.2

PROPOSED EASEMENTS IN GROSS

PURPOSE	SERVIENT TENEMENT	SHOWN	GRANTEE
RIGHT TO CONVEY ELECTRICITY	LOT 3	(B)	WEL NETWORKS LIMITED
	LOT 5	(T)	
	LOT 712	(D)	
	LOT 6	(C)(F)(G)(H)(I)(J)(L)(S)	



APPROVED PLAN SUB0023/09.02
14/1/15

THE SURVEYING COMPANY YOUR LAND DEVELOPMENT CONSULTANTS APPRAISAL HOUSE, 138 HALL STREET, PUKEKOHE, NEW ZEALAND. PH: 09 238 9801, FAX: 09 238 5307, e-mail: info@surveyor.co.nz 0800 TO SURVEY (0800 88 78 78)	Client: D.R. & C.J. BROWN PROPOSED SUBDIVISION OF LOT 1 DPS 66123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 8 DPS 15320, LOT 1 DPS 63150, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960	SUBDIVISION CONSENT PLAN Sheet 4 of 6 DRAWN: L.S. CHECKED: DRAWING: SUBCON 8-8 SCALE: @A3 1:3000 DATE: OCT 2014 FILE REF: 272139

Document Set ID: 9296810
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LOT 712
1.00ha

LOT 6
216ha

3
DP 353156

2
DP 353156

1
DP 382698

2
DP 382698

1
DP 355829

3
DP 382698
CFR.330422

2
DP 355829

1
DPS 80729

CFR.330423

PLANTATION ROAD
LEGAL (20.12 WIDE) SEALED

farm track
driveway
pasture
overhead power lines
ex house
shed
milking shed
Proposed 30m² & 18m² Building Platform & Shape Factor
open drain
APPURTENANT RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS AND COMPUTER MEDIA AND RIGHT OF WAY EASEMENTS

APPROVED PLAN SUB0023/09.02
14/1/15

STAGE ONE

MEMORANDUM OF EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOMINANT TENEMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY AND TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 5	(A)	LOTS 1 & 2
	LOT 6	(C)(F)(G)(H)(I)(J)(L)	LOT 712

EXISTING EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOCUMENT
RIGHT OF WAY RIGHT TO CONVEY WATER, ELECTRICITY, TELECOMMUNICATIONS & COMPUTER MEDIA	LOT 6	(F)(G)(I)(J)(L)	EI.8526148.4
WATER SUPPLY		(F)(H)(I)(J)	TRANSFER H821440.2

PROPOSED EASEMENTS IN GROSS

PURPOSE	SERVIENT TENEMENT	SHOWN	GRANTEE
RIGHT TO CONVEY ELECTRICITY	LOT 3	(B)	WEL NETWORKS LIMITED
	LOT 5	(T)	
	LOT 712	(D)	
	LOT 6	(C)(F)(G)(H)(I)(J)(L)(S)	

THE SURVEYING COMPANY
YOUR LAND DEVELOPMENT CONSULTANTS
APPRAISAL HOUSE, 138 HALL STREET, PUKEKOHE, NEW ZEALAND.
Ph: 09 238 9001, FAX: 09 238 9307,
e-mail: info@surveyco.co.nz
0800 TO SURVEY (0800 86 78 78)

Client: D.R. & C.J. BROWN

PROPOSED SUBDIVISION OF LOT 1 DPS 86123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 6 DPS 15320, LOT 1 DPS 63160, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960

SUBDIVISION CONSENT PLAN Sheet 5 of 6

DRAWN	L S	CHECKED	DRAWING: SUBCON 6-2
SCALE @A3	1:3000	DATE OCT 2014	FILE REF: 272139

Document Set ID: 9296810
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This plan has been prepared for the purpose of obtaining a Resource Consent pursuant to the provisions of the Resource Management Act 1991. Unauthorised copying or use of this plan for any other purpose is not permitted without the prior consent of The Surveying Company Limited. Areas and dimensions shown on this plan are approximate only and are subject to confirmation by survey. This plan is not intended to be used for Architectural Design purposes.

AMALGAMATION CONDITION

Section 220 (1)(b)(ii)

THAT LOTS 8, 9 & 10 HEREON BE HELD IN THE SAME COMPUTER FREEHOLD REGISTER

EXISTING EASEMENTS

PURPOSE	SERVIENT TENEMENT	SHOWN	DOCUMENT
RIGHT OF WAY	LOT 9	(E)	TRANSFER 5453785.4
		(P)(Q)(R)	E.C. H826447.6

PROPOSED EASEMENTS IN GROSS

PURPOSE	SERVIENT TENEMENT	SHOWN	GRANTEE
RIGHT TO CONVEY ELECTRICITY	LOT 8	(M)	W E L NETWORKS
	LOT 9	(N)(O)(P)	

LOT 8 31.92ha

LOT 9 68.61ha

LOT 10 34.65ha

LOT 11 2.30ha

LOT 13 7600m²

LOT 14 1.06ha

LOT 15 1.90ha

LOT 16 2.12ha

ROAD LEGAL (20.12 WIDE) 178 m² UNFORMED

CHURCHILL EAST ROAD LEGAL (20.12 WIDE & OVER) SEALED

CFR.SA52C/849

CFR.SA42C/65

CFR.398648

Proposed 30m⌀ & 18m⌀ Building Building Platform & Shape Factors

Proposed 30m⌀ & 18m⌀ Building Platforms & Shape Factors

Proposed dual entrance

Proposed dual entrance at existing gate

Existing Entrances

EXISTING RIGHT OF WAY EASEMENT CREATED BY E.C. H826447.6

Overhead Power Lines

Waikato River

STAGE TWO

APPROVED PLAN SUB0023/09.02 14/1/15

THE SURVEYING COMPANY
YOUR LAND DEVELOPMENT CONSULTANTS

APPRAISAL HOUSE, 130 HALL STREET, PUKEKOHE, NEW ZEALAND.
PH: 09 238 9001, FAX: 09 238 9307,
e-mail: info@tsc.vision.co.nz
0800 TO SURVEY (0800 85 78 79)

Client: D.R. & C.J. BROWN

PROPOSED SUBDIVISION OF LOT 1 DPS 66123, LOTS 9-11 DPS 87386, LOT 4 DP 382698, LOTS 3-5 DPS 49570 & LOTS 2, 5 & 8 DPS 15320, LOT 1 DPS 63150, LOT 4 DPS 15320, LOTS 4 & 5 DP 399960

SUBDIVISION CONSENT PLAN Sheet 6 of 6

DRAWN	CHECKED	DRAWING: SUBCON 6-8
SCALE: (A3) 1:4000	DATE: OCT 2014	FILE REF: 272139

Document Set ID: 9296810
Version: 1, Version Date: 08/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

NOTICE OF REVOCATION OF EXISTING EASEMENTS

Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

www.waikatodistrict.govt.nz

The District Land Registrar
South Auckland Land Registry

Pursuant to sections 34A(1) and 243(e) of the Resource Management Act 1991 the Waikato District Council under delegated authority resolves to cancel the right of way, right to convey water, transmit electricity and telecommunications easement 'B' on Lot 9 DPS 87386 created by Easement Certificate B628727.3.

DATED at Ngaruawahia this 16th day of December 2015

.....
Nicola Lawrenson

Consents Team Leader

Waikato District Council Reference: SUB0023/09.03

Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Resource Consent

(Resource Management Act 1991)

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

DECISION ON APPLICATION: LUC0323/25

Pursuant to Sections 34A(1), Section 104, 104B, 104D, 108 and 108AA of the Resource Management Act 1991, the Waikato District Council, under delegated authority, grants land use consent for a Non Complying Activity under the Operative District Plan:

Activity:	Operative District Plan: To construct a Dependent Persons Dwelling (DPD) in the Rural Zone that does not share an outdoor living court with the principal dwelling on-site.
Applicant:	M B Gasson, L M Gasson
Location Address:	380 Churchill East Road TE KAUWHATA
Legal Description:	LOT 13 DP 488718 Comprised in Record of Title 711534

This consent is subject to the conditions detailed in the attached Schedule 1.

The reasons for this decision are detailed in the attached Schedule 2.



CONSENTS TEAM LEADER

Dated: 17 June 2025

Document Set ID: 8266800
Version: 8, Version Date: 03/01/2026

This information is provided by the Waikato District Council

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Schedule 1

Conditions of Consent

Resource Consent No: LUC0323/25

General Conditions

1 The development must be undertaken in general accordance with the information and plans submitted by the Consent Holder in support of application number LUC0323/25 and officially received by Council on 06/05/2025 and further information received 04/06/2025 except as amended by the conditions below.

Copies of the approved plans are attached. In the case of inconsistency between the application and the conditions of this consent, the conditions of consent shall prevail.

2 Pursuant to Section 36 of the Resource Management Act 1991 the Consent Holder must pay the actual and reasonable costs incurred by the Waikato District Council when monitoring the conditions of this consent.

3 The Dependent Person's Dwelling shall be occupied by a dependent person associated with the occupants of the principal dwelling and shall not be rented out independently from the principal dwelling.

4 The temporary portable building on the site must be removed prior to the occupancy of the proposed Dependent Person's Dwelling.

Prior to Construction/Earthworks

Monitoring Team Notification

5 The Consent Holder must notify the Waikato District Council Monitoring Department at least 2 working days prior to the commencement of activities associated with this consent.

Advice note:
To notify Waikato District Council Monitoring Department, email monitoring@waidc.govt.nz with the consent number, address of property and date for when the works will commence.

6 Onsite wastewater management system

Onsite wastewater management system for the proposed minor dwelling must be constructed in accordance with the wastewater management design, drawings and recommendations given in the following report, OR an alternative report, undertaken by a suitably qualified and experienced Engineer, is approved by Waikato District Council.
Soil Assessment, Effluent Disposal and Stormwater management Report by Tilsley Engineering LTD, Reference: BD 26827 Rev 0, Date: 16/04/2025.

7 Producer Statement – PS4 for wastewater

After completion of construction of onsite wastewater management system for the dwelling and prior to occupation of the dwelling, the Consent Holder must provide Producer Statement - PS4 construction review, for certification by the Monitoring Officer, Waikato District Council.

This information is provided by the Waikato District Council

Advisory Notes

Lapse Date

1 This Resource Consent for land use lapses five years after the commencement of the consent, unless:

(a) the Consent is given effect to prior to that date.

or

(b) an application is made to the consent authority to extend the period after which the consent lapses, and the consent authority decides to grant an extension after taking into account

(i) whether substantial progress or effort has been, and continues to be, made towards giving effect to the consent; and

(ii) whether the applicant has obtained approval from persons who may be adversely affected by the granting of an extension; and

(iii) the effect of the extension on the policies and objectives of any plan or proposed plan.

Other consents/permits may be required

2 To avoid doubt; except as otherwise allowed by this resource consent, all land uses must comply all remaining standards and terms of the relevant Waikato District Plan. The proposal must also comply with the Building Act 2004, Regional Infrastructure Technical Specifications, Waikato Regional Plans and National Environmental Standards. All necessary consents and permits shall be obtained prior to development.

Archaeological sites may be **affected** by the proposal

3 It is possible that archaeological sites may be affected by the proposed work. Evidence of archaeological sites may include burnt and fire cracked stones, charcoal, rubbish heaps including shell, bone and/or glass and crockery, ditches, banks, pits, old building foundations, artefacts of Maori and European origin or human burials.

The applicant is advised to immediately stop work and contact Heritage New Zealand Pouhere Taonga if the presence of an archaeological site is suspected. Work affecting archaeological sites is subject to a consenting process under the Heritage New Zealand Pouhere Taonga Act 2014. If any activity associated with this proposal, such as earthworks, fencing or landscaping, may modify or destroy any archaeological site(s), an authority (consent) from Heritage New Zealand Pouhere Taonga must be obtained for the work to proceed lawfully. The Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage.

In addition to contacting Heritage New Zealand Pouhere Taonga, it is requested that you also contact Council's Monitoring Team at monitoring@waidc.govt.nz with the consent number, address of property and date of when works ceased.

Enforcement Action

4 Failure to comply with the conditions of consent may result in Council taking legal action under the provisions of Part 12 of the Resource Management Act (1991).

Private Covenants

5 Please be aware if a private covenant is registered on the Record of Title, it is the responsibility of the consent holder to investigate the relevance of that covenant, as some covenants may restrict certain activities occurring on the site.

This information is provided by the Waikato District Council

Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

Schedule 2

Reasons for Decision

Resource Consent No: LUC0323/25

1 The actual and potential effects created by the proposal are acceptable for the following reasons:

(a) Due to its size and occupancy, the DPD will be used at an intensity which is appropriate for the Rural Zone;
(b) The DPD is able to comply with the relevant rule, sharing driveway with, and being situated 20m from the principal dwelling;
(c) Ample amount of open space will be retained on the subject site ensuring rural character and amenity is maintained; and
(d) The effect of not sharing an outdoor living court is with the principal dwelling is acceptable as there is easy connectivity between the two dwellings.

2 The proposal is not contrary to the objectives and policies of the Operative District Plan consistent with the objectives and policies of the Waikato District Plan – Operative in Part

3 The proposal is consistent with the National Policy Statement for Highly Productive Land.

4 The proposal is consistent with the operative Waikato Regional Policy Statement, and all other relevant matters.

5 Overall, the proposal meets the purpose (section 5) and principles (sections 6-8) of the Resource Management Act 1991.

This information is provided by the Waikato District Council

NOTES -
1) ALL LEVELS TO BE CONFIRMED ON SITE BEFORE COMMENCEMENT OF WORK

2) CHECK ALL SETOUT DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORK

3) LOCATE AND CONFIRM ALL PUBLIC DRAINS AND CONNECTIONS ON SITE BEFORE COMMENCEMENT OF WORK

4) DETERMINE DRAINAGE LINE LOCATIONS FOR SUFFICENT FALL BEFORE COMMENCEMENT OF WORK - ADJUST DRAINAGE LAYOUT TO SUIT - PLUMBER/DRAINLAYER TO DETERMINE FINAL LAYOUT ON SITE

LOT .13.
DP. 488718
0.7764 Ha
WIND ZONE - HIGH
DURABILITY ZONE .C.



SITE PLAN.
1 : 500

SITE PLAN FULL
1 : 1000

TO BE READ IN CONJUNCTION WITH ATTACHED TILSLEY ENGINEERING LTD REPORT

1. A suitably qualified Chartered Professional Engineer or their representative shall confirm the finished building platform meets the required bearing strength of 100kPa
2. Any cut/fill under and around the foundations to be inspected by a qualified Engineer.
3. If any structure or infrastructure is relocated outside of the area shown on the site plan, then additional analysis will be required prior to any works being undertaken.
4. All cut/fill over 1.0m in height must be supervised by a suitably qualified Chartered Professional Engineer or their representative.
5. No water shall be discharged into the ground within 5.0m of the foundations
6. Install an approved wastewater system such as Hynds Lifestyle.

Project:
Proposed Minor Dwelling For Bruce Gasson at 380 Churchill Road East Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

Sheet Number: 2 of

Document Set ID: 9268480
Version: 8, Version Date: 03/01/2900

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

NOTES -

1) INSTALL ALL FLASHINGS TO MANUFACTURES SPECIFICATIONS AND TO LOCAL BODY REQUIREMENTS.

2) ALL MATERIAL TO BE SUITABLE FOR DURABILITY ZONE B

3) ALL CONNECTING BRACKETS/FIXINGS TO BE APPROVED FOR SITUATION AS PER MANUFACTURES RECOMMENDATIONS AND LOCAL BODY REQUIREMENTS ALL EXPOSED FIXINGS TO BE TYPE 304 STAINLESS STEEL MINIMUM.

4) ALL DRAINAGE AND WASTE PIPES TO COMPLY WITH AS/NZS3500.2. 2015

5) LOCATE ALL PUBLIC SERVICES AND CONNECTIONS BEFORE EXCAVATION - USE EXISTING CONNECTIONS WHERE POSSIBLE

APPROVED PLANS

No: LUC0323/25

Approved by: Priya Pandiarajan

Date: 16/06/2025

NOT FOR CONSTRUCTION

LOT .13.
DP. 488718
0.7764 Ha

114.18 m 8° 59' 12"

25000

05° 8'

NORTH W S E

install approved sedimentation control fencing, to remain untill completion of project

9.6 x 6.0 minor dwelling

deck

FFL = 11.20

DP

FFL = 10.50

approved wastewater system to be confirmed - see design by Tilsley Engineers

cesspit

kitchen sink to run into ORG

ORG

max. 50m2 sealed drive area - fall to cesspit

vent

EXIST. DWELLING REMAINS INTACT.

100ø PVC

9.0

Ø100 sealed SW line to level spreader

Existing Water Tanks provide orifice controlled outlet

16.50 wash on site

ED FIELD 290m² - see design by Tilsley Engineers

15000

17000

99.06 m 209° 31' 12"

GENERAL NOTES

- All details shown are as per the site plan provided.
- **Verify all details on site before commencing.**
- All levels shown are to LINZ datum Per the topo provided.
- The works involve a new 58 m2 Minor Unit.
- The building platform to the Proposal will only need minor clearing to achieve the required building platform. This involves topsoil only to a depth of around 200mm. 12m3 approx. total.
- Sewer to the existing dwelling run to an existing Effluent system. and new private drains will be connected to existing. An updated report is provided by Tilsley Engineering for any upgrades required.
- The existing water tanks will provide the potable supply to the new minor dwelling

THE MINOR DWELLING WILL HAVE A MINIMUM FFL OF 11.20.

BUILDING COVER = 397 M2 = 5.1 %
(Existing House = 227 m2, exist Shed 112m2, Minor Unit = 58 m2)
DRIVES, PATIO, All existing etc = 342 M2 = 4.4 %
TOTAL IMPERMEABLE = 9.5 %
PERMEABLE = 90.5 % Bal.

DRAINAGE PLAN

1 : 200

Project:
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For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

Sheet Number: 3 of

Document Set ID: 6266400
Version: 8, Version Date: 03/01/2900

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

PLUMBING & DRAINAGE:

- All work must be carried out to the latest and best trade practice by experienced and competent tradesman, familiar with all necessary installation techniques.
  It is the building contractors responsibility to ensure that all restricted building work is carried out by or under the direct supervision of a registered tradesperson or Licensed Building Practitioner.

Plumber / Drainlayer is to provide an "As Built" to the main contractor upon completion of all works.
Ensure that all sanitary sewer plumbing and drainage including pipes, junctions, sleeves, fixings, flashings etc are correctly installed and incorporated into the structure to comply with the NZBC G13/AS1/AS2 Local Territorial By-laws and statutory authority regulations as required to leave the works in correct working order.
- Ensure that all stormwater drainage including pipes, junctions, fixings etc are correctly installed and incorporated into the structure to comply with the NZBC E1, Local Territorial By-laws and statutory authority regulations as required to leave the works in correct working order.

- **The drainlayer must locate and confirm the position of existing Effluent system and irrigation field prior to commencing work & check all specified pipe diameters & gradients to ensure the required falls can be achieved.**
  Stormwater runs to existing water tanks which will provide the potable water supply to the minor dwelling.
  THESE MUST BE CONFIRMED BEFORE ANY WORK COMMENCES.
  THE WORK MUST ALSO COMPLY WITH THE NEW REPORTS BY TILSLEY ENGINEERING.

- Commence drain laying at the low end of even fall sections of drains and proceed in a continuous sequence to the fitting's connections.

- Internal water reticulation pipes (hot & cold) are to be polybutylene installed to the manufacturers specification and arranged and fixed so that all joints are in a fully relaxed condition without any stress or tension.

- The HWC hot water supply must be insulated to comply with the min standards in NZS 4305 & H1/AS1 5.0 All aspects of installation must comply with NZBC G12. Install a Tempering Valve to to control the HW temperature at any sanitary fixture used per personal hygiene at not more than 55 degrees. Install pressure relief valves, cold water expansion valves, flow control valves, pressure limit valves & non-return / isolating valves as required to leave the HW system in full operational order. Provide Seismic Strapping & Equipotential Bonding.

- All systems shall be fully tested before being covered in with any defects rectified and then re-tested.

SANITARY SEWER DRAINAGE:

- 100Ø U-PVC SS lines will run to the existing @ 1:60 min fall.
- All sanitary sewer plumbing and drainage pipes are to be U-PVC and must comply with standards AS/NZS 1260 or AS/NZS 1254.

Fixture	DIA	Grade
Kitchen Sink	65Ø	1:40
Laundry Tub	65Ø	1:40
Basin	65Ø	1:40
Shower	65Ø	1:40
WC	80Ø	1:60
TV	50Ø	

NOTE all under floor wastes are to be 65Ø minimum.

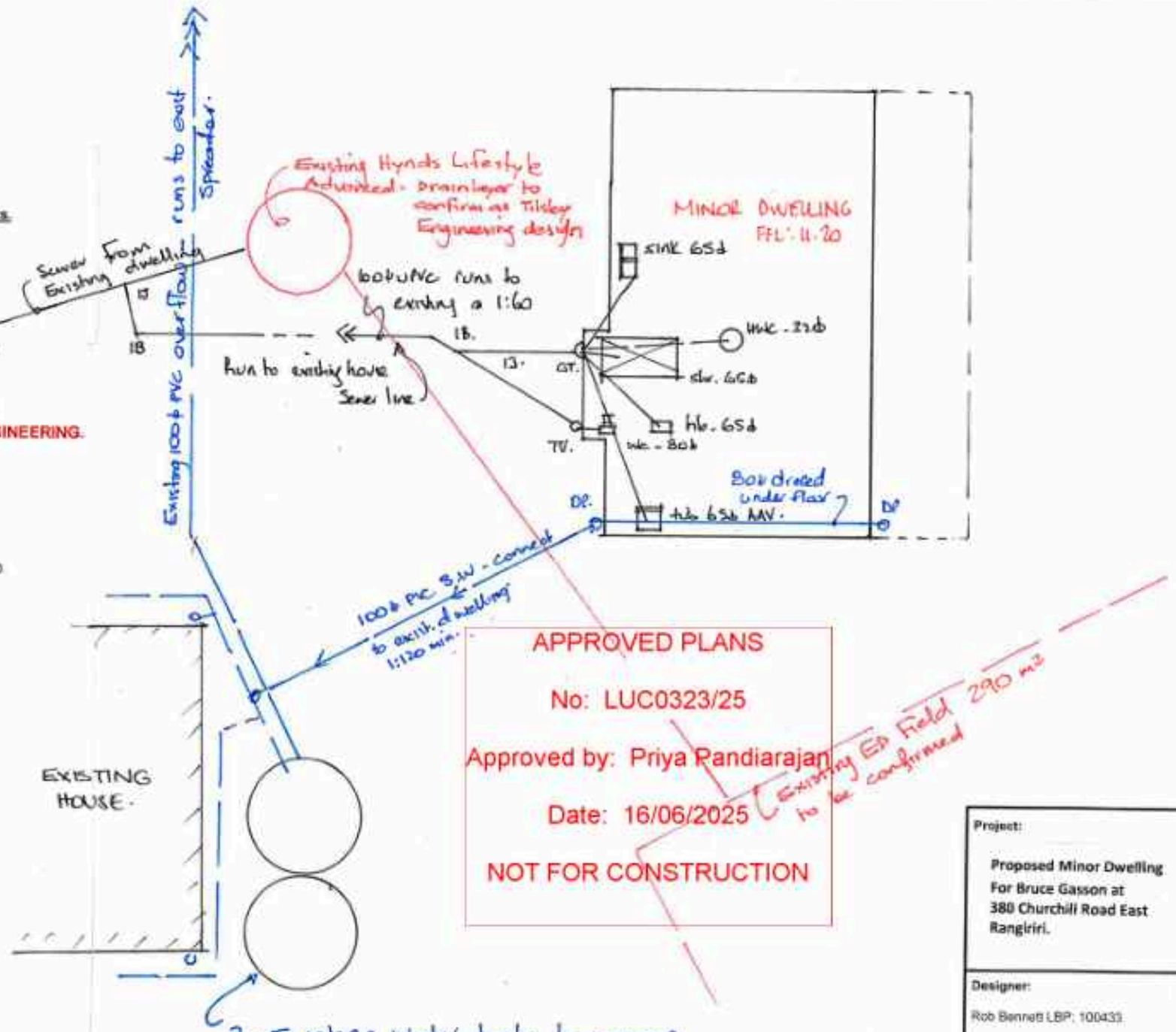
STORMWATER DRAINAGE:

- 100Ø U-PVC SW lines for the minor dwelling will run to the Existing water tanks @ 1:120 min fall. The existing SW lines may need alteration to connect the existing downpipes to the new water tanks. Thereafter overflow via an existing overflow system/ stormwater connection.100Ø U-PVC @ 1:120 minimum.

- Downpipes are to be 80Ø.

- All stormwater pipes are to be U-PVC and must comply with standards AS/NZS 1260

The EXISTING water tanks will provide the potable water supply for the dwelling and minor dwelling.
Provide an in-line leaf & debris diverter or Gutter screens.
Provide a first flush diverter pipe and screwed end cap with 3mm hole.
A suitable filtration system must be installed before the building is occupied.
This is to be a UV Filtration system by Healthy Water tanks approved under NZDWS 2008 standards for residential water treatment.



APPROVED PLANS
No: LUC0323/25
Approved by: Priya Pandiarajan
Date: 16/06/2025
NOT FOR CONSTRUCTION

4 PLUMBING + DRAINS
Scale: 1:100

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025.
Revision:

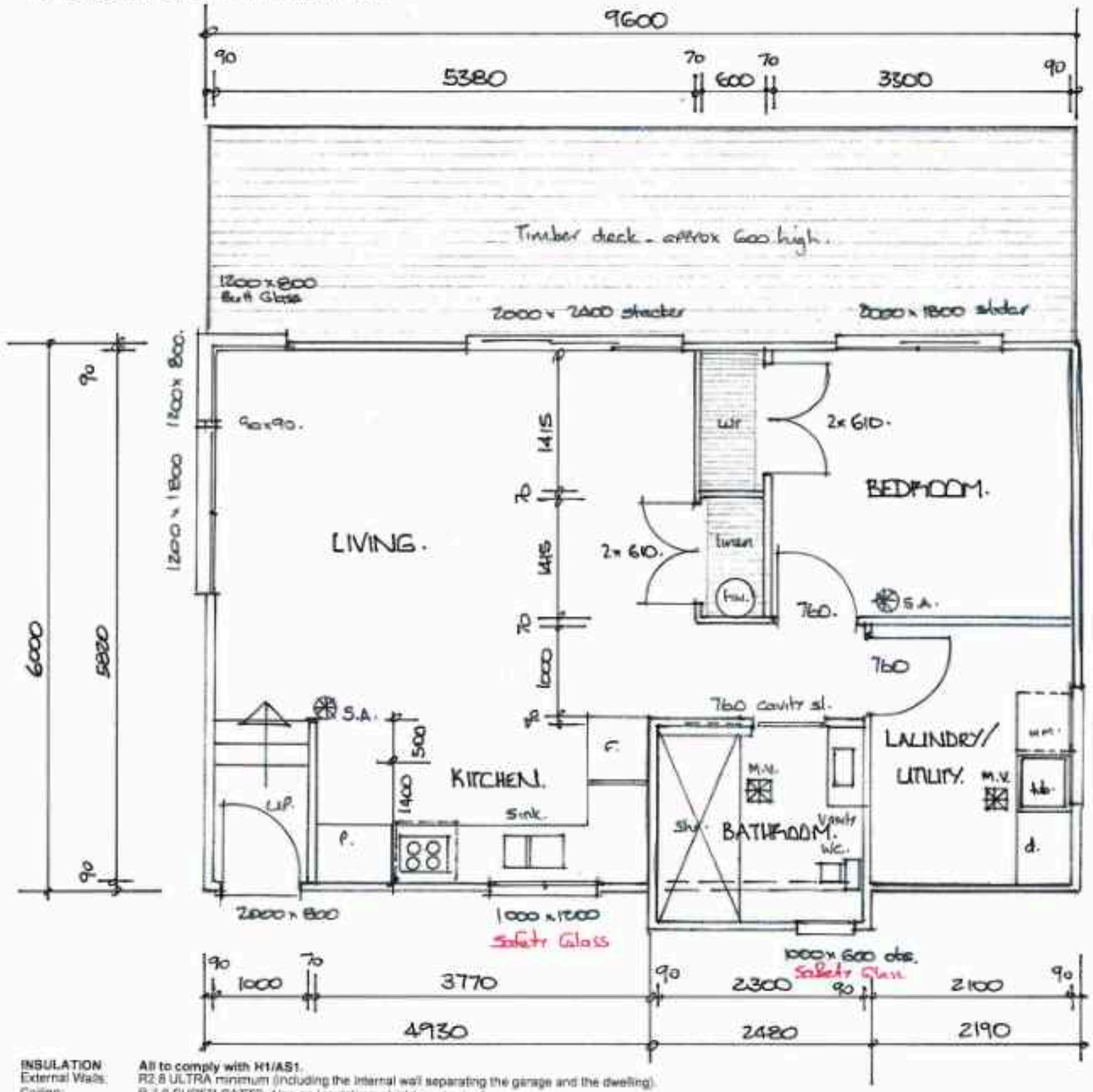
Sheet Number: 4 of

Document Set ID: 8268850
Version: 8, Version Date: 03/01/2900
Print Date: 6 November 2026, 1:26 pm

This information provided by the Waikato District Council

Fire Safety
Domestic Smoke alarms installed within 3.0m of each bedroom
and in the escape routes of the dwelling.
Install & test smoke alarms on or near the ceiling as per AS1670.5 and
the manufacturers specification.

Extraction:
Rangehood to be installed above the hob ducted to the exterior
with min air flow 55l/s.
Extraction fans to be installed in the bathroom & Laundry ducted to the exterior
soffits (where possible). Min vent rate of 25L per second.



INSULATION All to comply with H1/AS1.
External Walls: R2.8 ULTRA minimum (including the internal wall separating the garage and the dwelling).
Ceiling: R 7.0 SUPER BATTS- Use an Insulations shield as required.
Floor: Timber subfloor and foundation. Use R 1.4 EXPOL minimum.
All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46

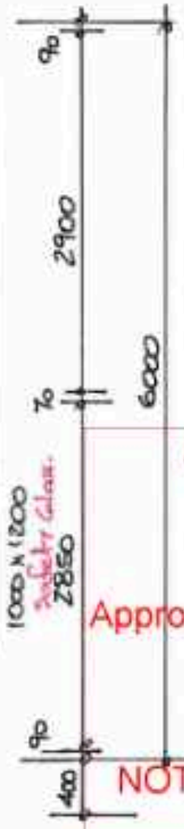
Work must comply with the NZBC & current compliance documents including NZS 3604.2011.
Check & confirm all site details including the proposed Setout & levels prior to commencing work.
Any discrepancies or variations from that shown, or any other concerns, must be addressed to the Designer or Engineer prior to commencing any work.

EXTERNAL CLADDING

Ext Walls:	Selected metal cladding on cavity all over Thermakraft Watergate wall wrap.
Roofing:	Selected Metal Corrugate profile roofing installed over Thermakraft self-supporting roofing underlay on H1.2 timber purlins. External Timber fascia / 125mm gutter system with 80mm downpipes.
Soffit Lining:	4.5mm fibre cement soffit lining with a paint finish.

JOINERY Joinery must be to NZ standards for manufacture and installation.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.
NOTE: If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.



STRUCTURE

Concrete Floor:	Timber subfloor to SED. By Tilsley Engineering Ltd. Call 09 2383245 for an inspection - NO INSPECTION EQUALS NO PS4. **A MINIMUM FLOOR LEVEL APPLIES SEE SPECIFIC NOTATIONS.**
External Walls:	90mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 + 140x35 top plate, 90x45 bottom plate. **Loadbearing Walls** 2.42m stud height - 90x45 @ 400 c/c Note 3.0m stud in entry 90x45 studs @ 300 cts.
Internal Walls:	90mm & 70mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 top & bottom plate. 140x35 over top plates. **Internal Non Loadbearing Walls** 2.42m stud height - 90x45 or 70x45 @ 600 c/c
Window Head:	All external doors and windows at 2020 nominal head to suit 2.42 nominal stud.
Roof Trusses:	SG8 H1.2 treated timber. All timber must comply with NZBC B2. Gang-nail/Mitek truss system. All trusses @ 900 max c/c.
Exterior Use Timber:	SG8 H3.2 treated timber.
Timber in Ground Contact:	SG8 H5 treated timber.

APPROVED PLANS
No: LUC0323/25
Approved by: Priya Pandiarajan
Date: 16/06/2025
NOT FOR CONSTRUCTION

⑥ FLOOR PLAN. 1:50
58.8 m²

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

Sheet Number: 6 of

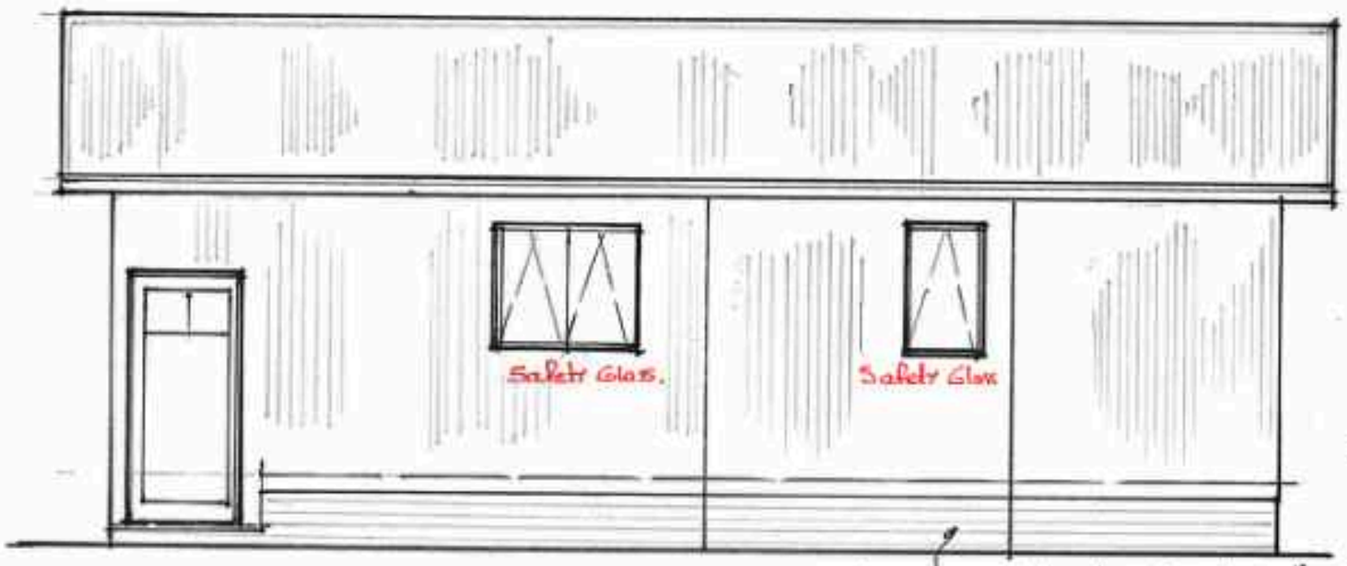
Document Set ID: 8268800
Version: 8, Version Date: 03/01/2900

This information is provided by the Waikato District Council

ELEVATION NOTES

- Roofing to be select long run Colorsteel Roofing at 20 degrees.
- Double Glazed Thermally Broken powder coated aluminium Joinery Low E to provide R 0.46.
- Selected Metal cladding over thermakraft wrap on cavity to exterior.
- Selected Fascia with Colorsteel Gutter system.
- Colorsteel downpipes to match.

APPROVED PLANS
No: LUC0323/25
Approved by: Priya Pandiarajan
Date: 16/06/2025
NOT FOR CONSTRUCTION

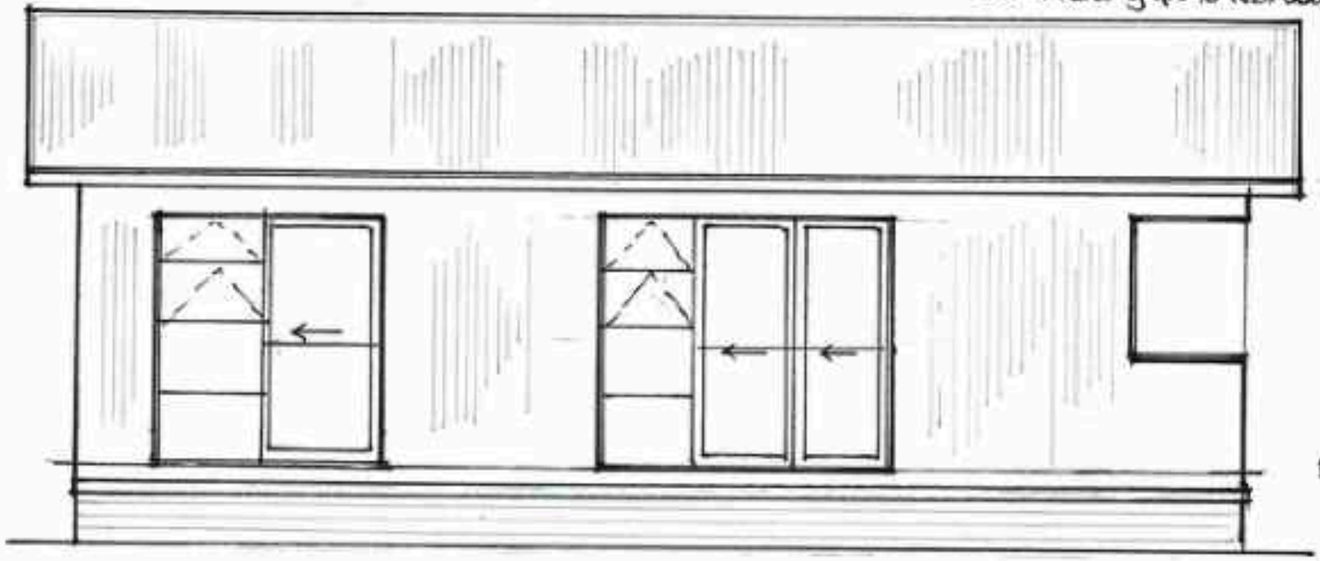


ELEVATION. 1.

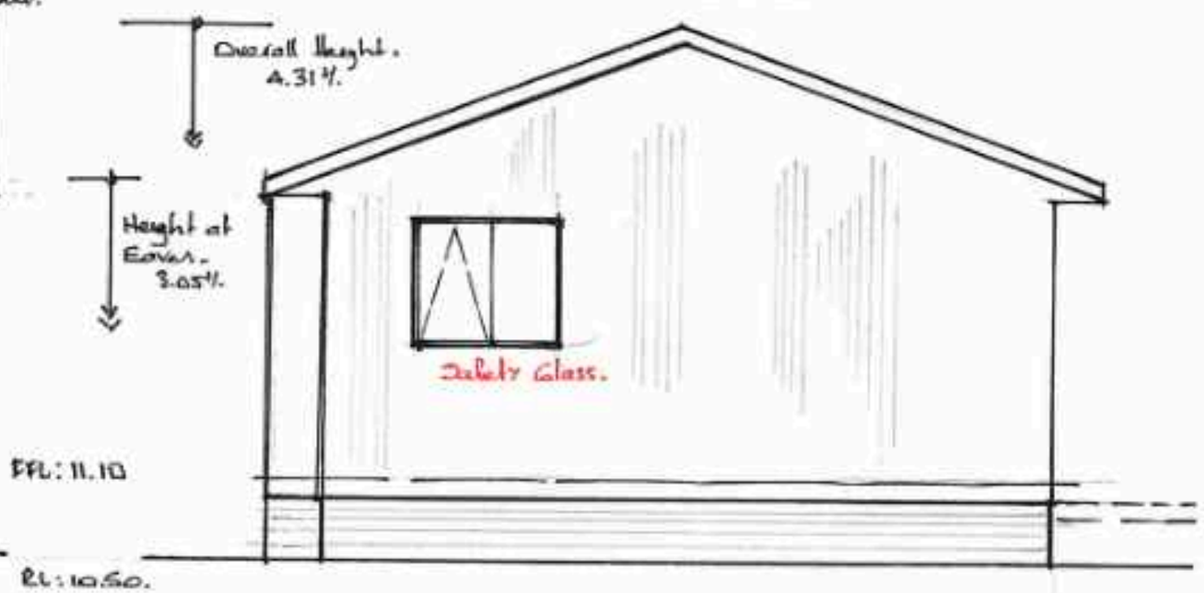
Timber base boards with 20mm vent gaps to NZS 3604.



ELEVATION. 2



ELEVATION. 3.



ELEVATION. 4.

JOINERY Joinery must be to NZ standards for manufacture and installation.
All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 3.8.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.**NOTE:** If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension restrictor stays must be measured vertically from the top of the sanitary fixture.

Project:	Designer:	Date: April 2025.
Proposed Minor Dwelling For Bruce Gasson at 380 Churchill Road East Rangiriri.	Rob Bennett LBP: 100433 **BENNETT DRAUGHTING** 116 RED HILL ROAD PAPAKURA (09) 296 6369	Revision: Sheet Number: 8 of

Document Set ID: 6258109
Version: 8, Version Date: 03/01/2900

Print Date: 6 November 2026, 1:26 pm

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Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

Form 7
CODE COMPLIANCE CERTIFICATE
Section 95 Building Act 2004

The Building

Street address of building:	380 Churchill East Road TE KAUWHATA
Legal description of land where building is located:	LOT 13 DP 488718
Valuation number:	04390/284.06
Property number:	2018152
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A
Current, lawfully established, use:	Detached Dwellings
Number of occupants per level and per use if more than 1:	N/A
Year first constructed:	2018

The Owner

Name of owner: M B Gasson, L M Gasson
Contact person: *Mark or Lisa Gasson*
Mailing address: 380 Churchill East Road, RD 2, Te Kauwhata 3782

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the building consent authority

Name: M B Gasson, L M Gasson
Mailing address: 380 Churchill East Road, RD 2, Te Kauwhata 3782

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Facsimile number:	N/A	Email address:	landmgasson@gmail.com

Building Work:

Project:	**Dwelling**
Building consent number:	**BLD1331/18**
Issued by:	**Waikato District Council**

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent.

Signature:

Name: **Anthony Krippner**
Position: Building Inspector
On behalf of: Waikato District Council **Date:** **09 January 2019**

Document Set ID: 2255475
Version: 1, Version Date: 09/01/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato DISTRICT COUNCIL
Te Kaunihera o Tainawa o Waikato

Form 5

BUILDING CONSENT NO: BLD1331/18

Section 51, Building Act 2004

ISSUED BY: WAIKATO DISTRICT COUNCIL

The Building

Street address of building:	380 Churchill East Road TE KAUWHATA
Legal description of land where building is located:	LOT 13 DP 488718
Valuation Number: 04390/284.06	Property Number: 2018152
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A

The Owner

Name of owner:	M B Gasson, L M Gasson
Contact person:	Mark & Lisa Gasson
Mailing Address:	380 Churchill East Road, RD 2, Te Kauwhata 3782

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the Building Consent Authority

Name:	M B Gasson, L M Gasson
Mailing Address:	380 Churchill East Road, RD 2, Te Kauwhata 3782

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	Fax number:	N/A
Email address:	landmgasson@gmail.com		

Building Work

The following building work is authorised by this building consent:

Dwelling

Project type:	Dwelling	$410,000
Total Value of work:		$410,000

This building consent is issued under Section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Document Set ID: 7965480
Version: 1, Version Date: 05/05/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent No: BLD1331/18

This Building Consent is subject to the following conditions:

1. Inspections:

When booking your inspections please phone (07) 824 8633 or (0800) 492 452 and quote your building consent number. Whilst we will endeavour to provide inspections in a timely manner, please provide **at least 48 hours notice** prior to any of the following mandatory inspections. *(Click here for more information on Inspections & Certification)*

- Excavation, Siting, Foundation, PreFloor Plumbing, PreFloor Building (prior to pouring concrete) - *Owner/builder to locate boundary pegs prior to council carrying out a foundation/siting inspection.*
- Pre-wrap / Structural Framing (pre-wrap)
- Exterior Cladding
- Pre-line
- Post-line
- Drainage
- Final Plumbing / Final Building (Code Compliance Certificate) to be called for - *Some final inspections require Council to have access into the building. If no-one is onsite to allow access to the interior of the building it is likely the inspection will fail.*

2. The following documents from third parties need to be provided to the BCA to certify that the building work complies with the plans and specifications and in order for Council to issue a CCC: *(Click here for more information on Producer Statements & Memoranda)*

Producer Statements:

- Sand pad / Sub grade (PS 4)
- Engineering - Structural design elements (Pre Pour Foundation)(PS 4)
- Wastewater disposal system (PS 3 / PS 4)
- Stormwater disposal system (PS 3 / PS 4)

Certificates / Memorandums / Statements / Letters:

- Code Compliance Certificate application
- Record of Works
  - Foundation Specialist

Document Set ID: 7966480
Version: 1, Version Date: 05/05/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

  - Carpenter
  - Brick / Blocklayer
  - Roofer
- Waterproofing systems (internal)
- Electrical Compliance Certificate (if applicable)
- Plumbing pressure test
- Gas Certificate
- As laid drainage plan

Compliance Schedule:

- A compliance schedule is not required for the building.

Advisory Notes:

- Owner/Builder MUST locate boundary pegs prior to Council carrying out a foundation inspection.
- Remember verandah posts are to comply with Figure 9.2 and 9.3 NZS 3604:2011.
- Trusses or rafters shall be fixed at tails to top plate with wire dogs at each end.
- The roof shall be braced to comply with NZS 3604:2011.
- The moisture barrier beneath the floor shall comply with the New Zealand Building Code 1992.
- Provide breather type building paper on outside of frame, to extend to top plate level.
- Insulation shall be a minimum of:- Floor R1.3; Walls R1.9; Roof/Ceiling R2.9; Glazing R0.26 and comply with NZBC H1 Energy Efficiency.
- Soils may be soft in this area. Foundations shall sit on soils capable of supporting 100kpa. If soft soils are encountered an engineer's design of the foundations will be required.
- All drainage and plumbing shall comply with the New Zealand Building Code 1992.

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- At least 48 hours' notice shall be required for plumbing and drainage inspections.
- Plumbing preline inspection shall be required.
- Plumbing inspection shall be required before pouring floor slab.
- An as built drainage plan and an electrical certificate of compliance is required on completion.
- Please supply Plumbers and Drainlayers name.
- Installer of the wastewater treatment system to provide a Producer Statement Construction / Construction Review.
- Stormwater shall be disposed of in an approved manner.
- All roof trusses shall be designed and fabricated by a certified manufacturer.
- All timber treatment shall comply with NZS 3602:2003.
- Fixings within 600mm of the ground shall be stainless steel or shall comply with N.Z.S. 3604:2011.
- Wall and roof framing shall comply with NZS 3604: 2011.
- Domestic smoke alarms must be installed before a final inspection is requested. The number of alarms required and their location in the dwelling is to be in accordance with the New Zealand Building Code.

Lapsing of a building consent:
A building consent lapses and is of no effect if the building work to which it relates does not commence within:

a) 12 months after the date of issue of the building consent or
b) Any further period that the building consent authority may allow.

The granting of this building consent, with or without a certificate under section 37 of the Building Act 2004, does not remove the need to obtain a resource consent if one is required under the Waikato District Plan.

Document Set ID: 7965480
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Print Date: 6 November 2026, 1:26 pm

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The granting of this building does not authorise interference with any easement/s. Any encroachment upon or into an easement will require the consent of the grantee(s), and is a private matter between the grantee(s) and grantor(s).

Code Compliance Certificate will be issued after your final inspection has been carried out and passed, you have applied for your Code Compliance Certificate and all documentation has been received and approved. *(Click here for your CCC application form).*

Restricted Building Work:

- This Building Consent involves Restricted Building Work that must be undertaken or supervised by a Licensed Building Practitioner that holds the appropriate license class.
- If you have not already done so, you are required to notify Council in writing, the name of every Licensed Building Practitioner who is going to be engaged to carry out the Restricted Building Work prior to work commencing. *LBP notification forms can be found on www.buildwaikato.co.nz – Application Forms & Checklists.*
- You will not be able to book inspections for Restricted Building Work until written notification regarding the Licensed Building Practitioners has been received and approved by Council.
- You are required to obtain a Record of Building Work Memorandum from all the Licensed Building Practitioners involved, detailing the Restricted Building Work they have completed. The Record of Building Work Memorandum is to be attached to the application for the Code Compliance Certificate.

Signature:



Name: **Trish Simon**
Position: **Building Administrator**

On Behalf of: **Waikato District Council**

Date: **25 May 2018**

Document Set ID: 7966486
Version: 1, Version Date: 05/05/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

4390/254.06

ELITE DRAINAGE LTD

339

DRAINAGE PLAN BCD 1331/18

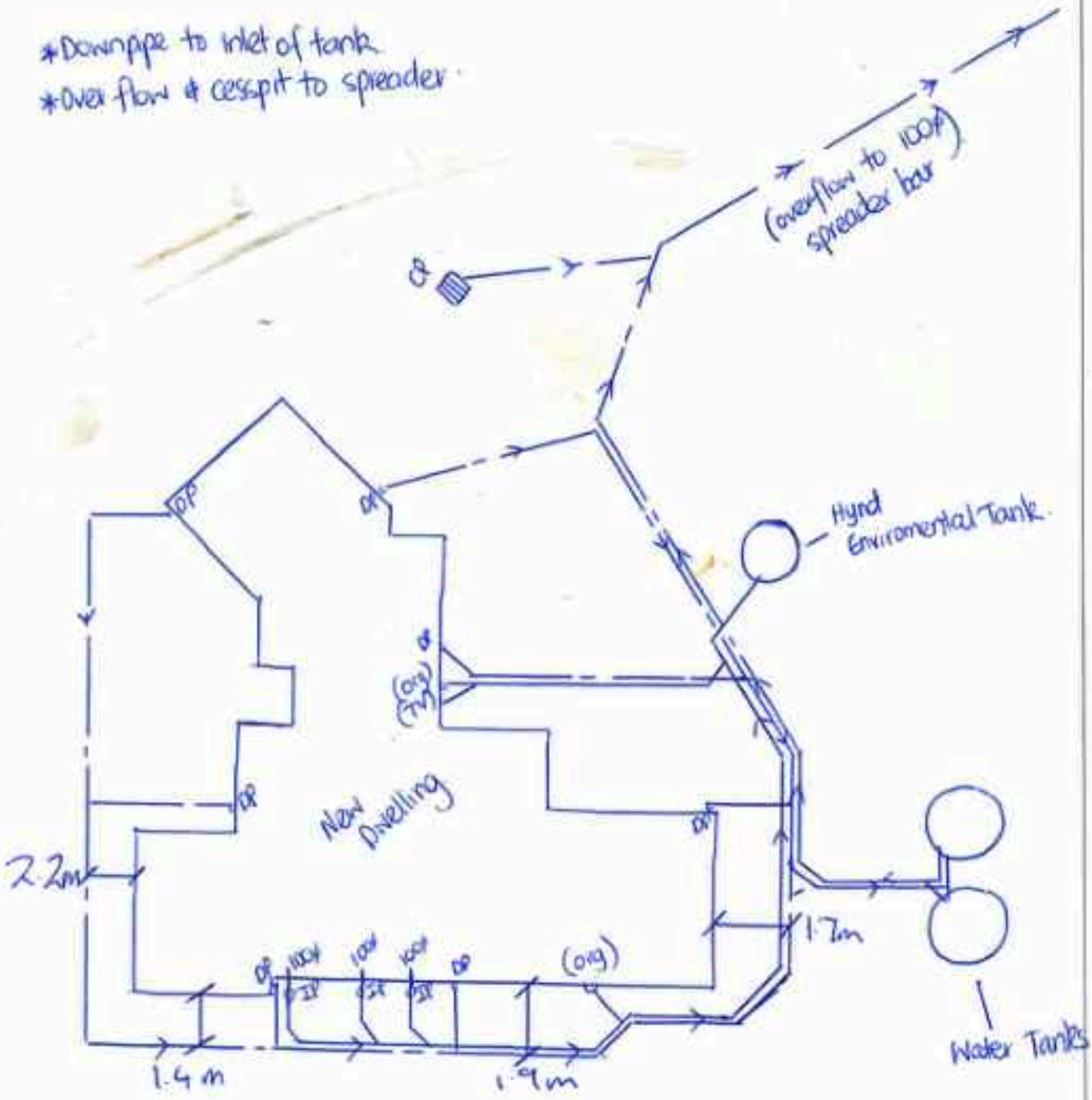
LOT: 13 **DP:** 488718 **CONSENT NO:** **REG NO:** 20843

STREET NO & NAME:
380 Churchill East Road Rangiriri

OWNER: Mark & Lisa Grasson **DRAINLAYER:** REECE GASSON

NOTE: PLEASE PROVIDE FIGURED MEASUREMENTS FROM A DEFINED POINT OF REFERENCE IN BLACK INK

*Downpipe to inlet of tank
*Over flow & cesspit to spreader



16.8.18

Document Set ID: 2065630
Version: 1, Version Date: 03/08/2026
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

IPENZ ENGINEERS NEW ZEALAND | NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED ACENZ | Building Code Clause(s) B1

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: Tilsley Engineering Ltd (27 Roulston St, Pukekohe)
(Construction Review Firm)

TO: Gasson Residence
(Owner/Developer)

TO BE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: Compaction (Cut-fill)
(Description of Building Work)

AT: 380 Churchill East Road, Rangariri
(Address)

LOT 13 **DP** 488718 **SO**

Tilsley Engineering Ltd (Construction Review Firm) has been engaged by M&L Gasson

to provide ○ CM1 ○ CM2 ○ CM3 ○ CM4 ○ CM5 (Engineering Categories) or ○ OL1 ○ OL2 ○ OL3 ○ OL4 (Architectural Categories)

observation ◉ or other Compaction (Cut-fill)100+kPa achieved - passed (Extent of Engagement) services

in respect of clause(s) B1/VM1 of the Building Code for the building work described in documents relating to Building Consent No. 1331/18 and those relating to Building Consent Amendment(s) Nos. N/A issued during the course of the works. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions / variation(s) No. N/A (copies attached)

or by the attached Schedule ☐ have been issued during the course of the works.

On the basis of ◉ this ○ these review(s) and information supplied by the contractor during the course of the works, I **believe on reasonable grounds that** ○ All ◉ Part only of the building works have been completed in accordance with the relevant requirements of the Building Consents and Building Consent Amendments identified above, with respect to Clause(s) B1 of the Building Regulations.

I, Robert Tilsley (Name of Construction Review Professional) am: ☑ CPEng No. 85675

☐ Reg Arch No.

I am a Member of ☑ IPENZ ☐ NZIA and hold the following qualifications: B.E. (civil)

The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.

The Construction Review Firm is a member of ACENZ ○ YES ◉ NO

SIGNED BY Robert Tilsley ON BEHALF OF Tilsley Engineering Ltd SM5618 SN6082

Date 1 May 2018 Signature sig# #198

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

This form to accompany **Forms 6 or 8 of the Building (Form) Regulations** 2004 for the issue of a Code Compliance Certificate.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020
Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

PO Box 392
27 Roulston Street, Pukekohe
(09) 238 3245
info@teng.co.nz

TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | ENVIRONMENTAL

Principal: Robert Tilsley MNZM B.E. (Civil) C.P. Eng. MIPENZ

SITE INSPECTION NOTE

No: 6062
Job: 5616

An Inspection by Tilsley Engineering Ltd has been undertaken.

Dat 1-5-18 Time: 11:55 a.m Inspected By: Scott

For: Gasson Residence

Engaged By: M & L Gasson

Address: 380 Churchill East Road, Rangariri

Lot # 13 DP #: 488718 Consent #: 1331/18

In respect of: Compaction (cut - fill)

☐ FAIL ☐ MINOR AMENDMENT ☑ PASS

Con ntis/Instructions:

100+ kPa achieved.

This does not constitute a PS4 construction review. A PS4 shall be issued within one week from the above date.
The PS4 will not be released until full payment is received.
The PS4 will be released to the person/entity who has engaged Tilsley Engineering Ltd and shall remain the property of the payee.

This information is provided by the Waikato District Council

PO Box 392
27 Rouatoa Street, Pukekohe
(09) 238 3248
info@tleng.co.nz

TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | ENVIRONMENTAL

Principal: Robert Tilsley MNZM B.E. (Civil) C.P. Eng. MIPENZ

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☐ FAIL ☐ MINOR AMENDMENT ☑ PASS

Com ments/instructions:

100+ kPa achieved.

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Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020

Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

Our Ref. # : 19746
Building Consent # :

PRODUCER STATEMENT – CONSTRUCTION

To: **Waikato District Council**

Issued by: **Plumbing & Gas Works Ltd, 213 Ellis Street, Hamilton**

For: **Mark and Lisa Gasson**
(Owner)

In respect of: **LIFESTYLE - ADVANCED AERATED WASTEWATER TREATMENT SYSTEM (AWTS) AND IRRIGATION / DISPOSAL FIELD INSTALLATION**

At: **380 Churchill East Road, Rangiriri**
Lot 13 DP: 488718

Plumbing & Gas Works Ltd has contracted to the Gasson Residence to construct the building work described in the Producer Statement – Design prepared by DJS Draughting Services Ltd dated April 2018 and to Hynds own specifications.

I, Mike Foote, a duly authorized agent of Plumbing & Gas Works Ltd, believe on reasonable grounds that, as at today's date and following the commissioning of this system on 28 September 2018 the LIFEstyle-Advanced AWTS and the associated 207sq m Surface irrigation / disposal field, the building work described above has been completed to the extent required by the Producer Statement – Design, the building consent and Hynds own specifications.

Excepting that the following design requirements, not contracted to us, may still to be completed:
Planting of suitable water tolerant plants and laying of bark / mulch to cover the irrigation lines on the disposal field.

.....
(Signature of Duly Authorized Agent)

2 October, 2018
(Date)

on behalf of **Plumbing & Gas Works Ltd**

Note: This Producer Statement is limited to the installation of the Lifestyle Advanced tank and effluent disposal field only and does not cover any geotechnical considerations for the site. All information should be read in conjunction with the site geotechnical report where available.

The Owner has contractually agreed to enter into a Service Contract with us for the Lifestyle AWTS installed on this site once the 1st year free servicing period has been completed.

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020

Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

Waikato Building Consents

Working Together

As Laid Drainage

Building Consent Number: Date: 1 / 10 / 18 No. of pages: 1

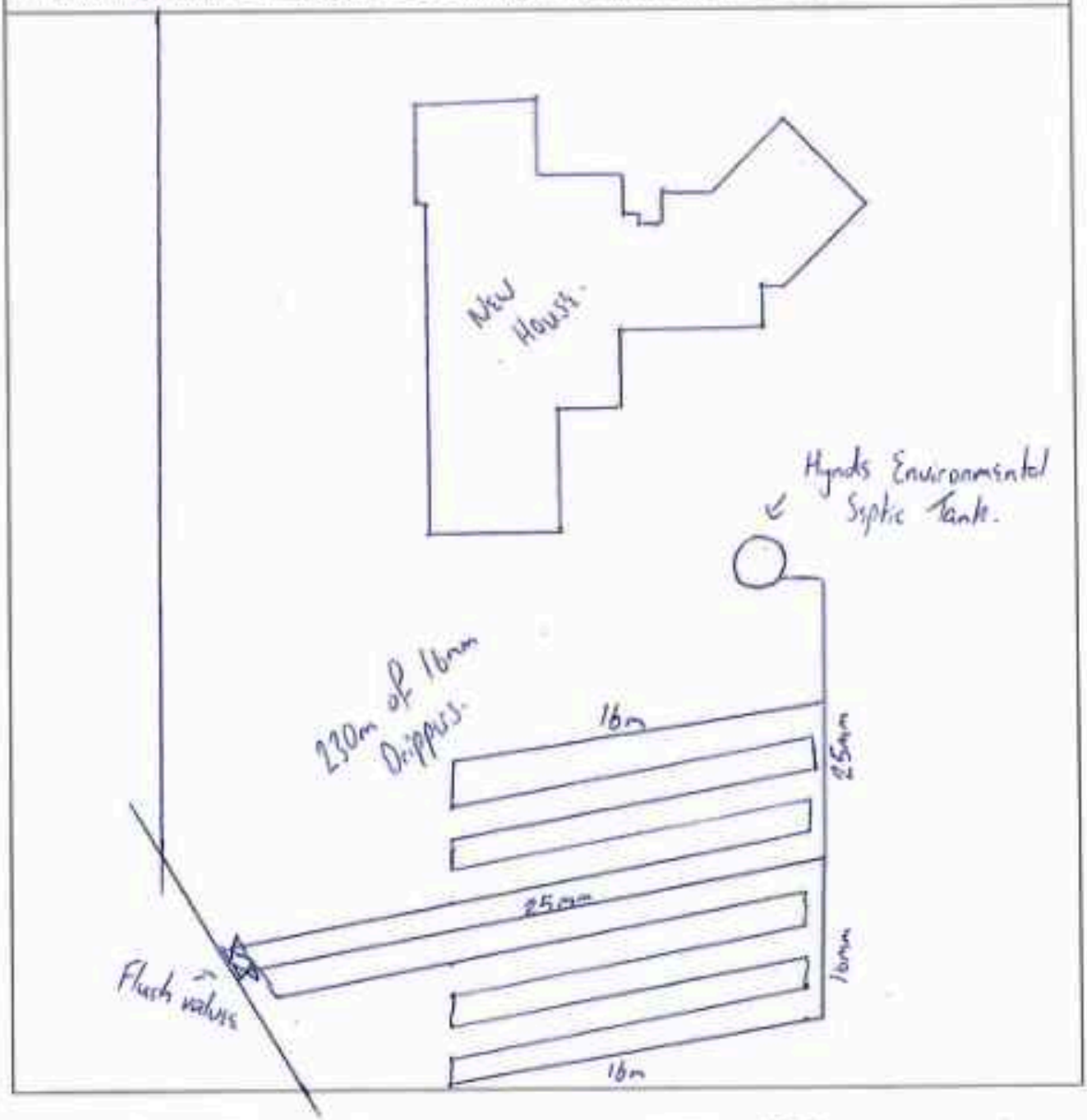
Building Address: 380 Churchill East Road, Rangiriri

Drain Layer Name: Hayden Scott [Please print clearly] Signature:

Registration Number: 20526 Business Name: Plumbing & Gas Works

To Council: [Tick]

☐ Hamilton ☐ Hauraki ☐ Matamata-Piako ☐ Otorohanga ☐ Thames-Coromandel ☐ Waipa ☐ Waikato ☐ Waitomo



HAURAKI · Matamata-Piako · Waitomo · Otorohanga · Waipa · Waikato · Thames-Coromandel · Hamilton City Council

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020
Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

Producer statement construction (PS3)
Drainage

Auckland Council

All sections of this form must be completed

TO BE COMPLETED BY THE DRAINLAYER WHO COMPLETED THE WORK

Author's name: Reece Gasson

Building consent No: 1331/18

Author's company: Elite Drainage Limited

Description of drainage work:
- Install private stormwater & sanitary sewer to approved connections
- Install overflow line from water tank to a 14m level spreader line
- Install orice to water tanks on overflow.

Legal description: Lot 13 DP 488718

Site address: 350 Churchill East Rd Ranginiri

I have sighted the above building consent and read the attached conditions of consent. I confirm that the drainage pipe work and fittings have been selected and constructed to comply with the consented plans to the extent required by the above building consent and comply with clauses E1 and G.13 of the Building Regulations 1992.

I hereby certify that I have personally tested the drainage system by the method indicated below:

- ☐ NZ Building Code E1/VM1 air test in accordance with paragraph 8.3; or
- ☒ AS/NZS 3500.2.2:2003 air test in accordance with clause 12.3.2; or
- ☒ NZS 7643 water test in accordance with section 11.

I understand that Council will rely upon this producer statement, for the purposes of establishing compliance with the above building consent.

Signature: RGasson Date: 20 September 2018

Certifying drainlayer's registration No: 20843

Drainlayer's contact details

Address: 140 Papakura-Clevedon Rd Clevedon Postcode: 2585

Business: Fax:

Mobile: 0226391080 Email: elitedrainage@gmail.com

COUNCIL USE ONLY

☐ Central ☐ Henderson ☐ Manukau ☐ Orewa ☐ Papakura ☐ Pukekohe ☐ Takapuna

Received by:	Register checked:	YES / NO
Signature:	Registration current:	YES / NO
Producer statement accepted as establishing compliance with the consented plans:		YES / NO

Document Set ID: 2358403
Version: 1, Version Date: 03/01/2020
Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

ELITE DRAINAGE LTD

339

DRAINAGE PLAN

LOT: _____ DP: _____ CONSENT NO: _____ REG NO: 20843

STREET NO & NAME: -

OWNER: _____ DRAINLAYER: REECE GASSON

NOTE: PLEASE PROVIDE FIGURED MEASUREMENTS FROM A DEFINED POINT OF REFERENCE IN BLACK INK



Document Set ID: 2352400
Version: 1, Version Date: 03/01/2028

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Producer statement construction (PS3) Waterproofing

Auckland Council

All sections of this form must be completed

TO BE COMPLETED BY THE APPLICATOR WHO CARRIED OUT THE WATERPROOFING WORK

Author name:	HAM Sieu PHAM	Building consent No:	1331/18
Author company:	exceltiler LTD	Author registration No:	MPN2 244
Site address:	380 Churchill east RD rangiriri AKL		
Legal description:	/		
Product used:	ARDEX Superflex WPM 001		
Location: (e.g. balcony)	Bathrooms		

I have sighted the above building consent and read the attached conditions of consent together with the waterproofing details contained therein; and confirm that

- the substrate is suitable for the application of the above waterproof membrane
- the waterproof membrane has been applied in accordance with the manufacturer's specifications and technical requirements
- all work has been carried out in accordance with the building consent and complies with the following clauses of the Building Code (tick as applicable)
  - ☐ **B2** Durability and **E2** External Moisture – All external membranes (roofs, gutters, decks, balconies, etc.) have been flood tested or electrically tested (mandatory) **Test method:** ☐ electronic ☐ flood
  - ☑ **B2** Durability and **E3** Internal Moisture – All tiled internal showers and wet areas have been flood tested (mandatory)

I attach copies of the following documents:

☑ Product warranty ☐ Workmanship warranty ☐ LBP record of work (if RBW - external W/P only)

I understand that Council will rely upon this producer statement, for the purposes of establishing compliance with the above building consent.

Signature: [signature] Date: 08/10/18

Applicator's contact details:

Address:	3 overton RD PAPATOETOE AKL	Postcode:	2025
Business:	021 399 198	Fax:	/
Mobile:	021 399 198	Email:	exceltiler.hamsy@live.cn

COUNCIL USE ONLY

☐ Central ☐ Henderson ☐ Manukau ☐ Orewa ☐ Papakura ☐ Pukekohe ☐ Takapuna

Accepted: ☐ in support of inspection ☐ instead of inspection

Register checked:	Council	LBP	N/A

Name: Date:

Producer statement accepted as establishing compliance with the consented plans:

YES	NO

Document Set ID: 2358403
Version: 1, Version Date: 03/01/2020
Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

ENGINEERED SOLUTIONS FOR
SLING, FLOORING & WATERPROOFING

Standard Materials Warranty

Warranty Number: NZNSF-0082394 **Date of Installation:** 18-Sep-2018

Building/Project Address: 380 Churchill east road, Rangiriri, Auckland

Company: Ham Sieu Phan ("the Applicator")

Address: 3 Overton Road, Papatoetoe, Auckland 2025

Phone: 021399198 **Reference:** 01

Builder Name: Mark gasson

Product Type and Use: ARDEX Superflex WPM 001, Bathroom and Ensuite

Area Laid: 20.00 SquareMetres

Subject to the conditions appearing below, ARDEX NEW ZEALAND LIMITED ("ARDEX") warrants to 380 Churchill east road that the ARDEX Membrane stated as the Product Type will retain its waterproofing properties for the following period from the date of installation of the Membrane:
This warranty is effective for (15) fifteen years years from the date of installation of the Membrane.

This Warranty is subject to the following conditions.

Extent of Liability

1. Warranty shall only apply to any defect in the Membrane which permits the entry of water due solely to the natural deterioration of the Membrane or ridges or splits not caused by structural failure of movement of or cracks in the substrate or roof base or insulation over which the Membrane is applied. This Warranty does not cover workmanship which is and shall be the sole responsibility of the approved applicator who is not an agent, servant, or employee of ARDEX.
2. Failure to follow the ARDEX Specification and Instructions of use of the Product and/or all applicable laws will render this Warranty null and void. This includes protection of the Membrane when used in below ground DPM tanking, internal waterproofing and external waterproofing applications. ARDEX advise that products may have limitations as detailed in the product datasheets.
3. This Warranty will not apply where any other product or material has been added to or used in conjunction with the product, unless approved by ARDEX in writing (permission can be given or withheld at ARDEX's discretion and is not required when using ARDEX Tile adhesives in conjunction with ARDEX Undertile Membranes).
4. ARDEX's obligations under this Warranty shall be limited to the timely repair or replacement by ARDEX of any defective Membrane which permits the entry of water at ARDEX's cost. This is ARDEX's sole and total liability under this Warranty.
5. ARDEX shall have no further liability or responsibility other than set out in this Warranty. In particular, ARDEX shall not be liable for any loss of profits or loss of revenue or for any other economic loss or for any special, indirect, incidental, consequential damage, loss or injury of any kind, including but not limited to, damage to the structure or its contents arising under any theory of law whatsoever.
6. Without limiting the generality of the preceding clauses, this Warranty shall not cover and ARDEX shall have no liability for the following acts, conditions, or circumstances or any damage or defects which may arise there from:
   a. Wars, strikes, lock-outs, delays, acts of God, fire, earthquake, flood, hail, lightning, hurricane, tornado, windstorm, governmental or environmental interference or any other cause (whether similar or dissimilar) beyond the reasonable control of ARDEX; or
   b. The act, omission, default or representation of any party other than ARDEX or its servants or agents; or
   c. Exposure to a chemical or solution, fire or radiation, or contamination by radioactivity from any nuclear fuel or waste; or
   d. Settlement, distortion, failure of the walls or foundations of the building, ponding or cracking of the roof or the deck; or
   e. Infiltration or condensation of moisture in, through, or around the walls, copings, building structure, or underlying or surrounding materials; or
   f. Any design defect or structural failure of any framework or material in or on which the Membrane has been installed or applied which was not supplied by ARDEX; or
   g. Materials other than the membrane, including, but not limited to, metal work expansion or control joints, fasteners, drains, vents, vapour retarders, walkways, pitch pockets, flashing materials and rooftop units and equipment; or
   h. Expansion or contraction of any flashing or metal work, any adjacent or abutting building, structure or improved or unimproved property, or any component thereof, including but not limited to, structural failure or damage, leakage, or drainage; or
   i. Any new installations, repairs, or other maintenance or construction on, to or through the Membrane; or
   j. Damage caused directly or indirectly by falling objects or traffic of any nature on the roof; or
   k. Improper installation of insulation or defects or failure of any material used in any roof base or insulation over which the Membrane is applied; or

Head Office 32 Lane St, Woolston 8023
PO Box 19549, Woolston 8241
Christchurch, New Zealand
Telephone: (03) 373 6900, Fax: (03) 384 9779

Document Set ID: 2358403
Version: 1, Version Date: 03/01/2020

Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

ENGINEERED SOLUTIONS FOR
TILING, FLOORING & WATERPROOFING

l. The failure of material or structures to conform to manufacturer's specifications as to roof slopes or other requirements; or

m. Negligence, misuse, improper treatment or improper site preparations; or

n. Storage, handling or installation of the Membrane otherwise than in accordance with ARDEX's published use and handling procedures and installation specifications.

Claim

7. This Warranty shall be invalid unless ARDEX receives the Owner's written claim within the warranty period and within fourteen (14) days after the date of reasonable discovery of any alleged defect.

8. This Warranty remains current for the period as specified previously in this document and is transferable should ownership of the property on which the membrane is applied change.

Access to Material and Site

9. In the event that it is necessary for ARDEX to repair or replace any defective Membrane, the Owner shall provide ARDEX with clear and unrestricted access to the Membrane. Nothing in this Warranty shall require ARDEX to remove and/or replace plant, equipment or any other object or substance in order to gain access to the defective Membrane. The Owner shall co-operate in all respects with ARDEX to accomplish the said repair or replacement. The cost of any site visit requested under a Warranty claim which does not reveal any problem which ARDEX has liability for under this Warranty shall be paid for, at ARDEX's sole discretion, by the party requesting the inspection at the then current trade consultancy rates.

Consumer Guarantees Act

10. Where the Membrane is being acquired by you in trade you agree that it is fair and reasonable in the circumstances that the Consumer Guarantees Act 1993 (CGA) not apply. Accordingly, to the maximum extent permitted by law, the CGA shall not apply.

No Other Warranty

12. Except as expressly set out in this Warranty, and with the exception of the relevant statutory warranties contained in the CGA that cannot be excluded, no other warranty or condition shall be implied against ARDEX by any statute, at common law or otherwise, and no representation, express condition, warranty or variation of this warranty shall be binding on ARDEX unless it is in writing and signed for or on behalf of ARDEX. This Warranty shall prevail despite any indication to the contrary by any person acting or purporting to act on ARDEX's behalf and shall replace all or any other alleged rights or remedies contained in any other document or representation whether issued or made prior to or subsequent upon the granting of this Warranty by ARDEX.

Validity of Warranty

13. This Warranty is valid and enforceable on the condition that ARDEX has been paid in full for the Membrane supplied.

Applicable Law

14. This Warranty is governed by the laws of New Zealand.

y:

Date: 06-Oct-2018

Head Office 32 Lane St, Woolston 8023
PO Box 19549, Woolston 8241
Christchurch, New Zealand
Telephone: (03) 373 6900, Fax: (03) 384 9779

Document Set ID: 2358403
Version: 1, Version Date: 03/01/2020

Print Date: 6 November 2020, 1:26 pm

Electrical Workers Registration Board

SAFETY | COMPETENCY | COMPLIANCE

Electrical Certificate of Compliance and Electrical Safety Certificate

Reference/Certificate ID No: 2680145

This form has been designed to be used by licensed electrical workers to certify that installations or Part installations under **Part 1 or Part 2 of AS/NZS 3000** are safe to be connected to the **specified** system of electrical supply.

LOCATION AND CONTACT

Location Details: 380 Churchill East Rd
Contact Name:
Contact Address:
Postcode:

Name of Electrical worker: MANYARA TAYENGWA
Registration/Practising licence number: 1258826
Organisation/ company: Wells Instrument and Electrical Ltd
Phone: 06 7530333
Email: maitta24@hotmail.com
Name of person(s) supervised:

COC

Type of work: ○ Additions ○ Alterations ○ New work

The prescribed electrical work is: ✓ Low risk ● General ○ High risk (specify)

Reference Standards: ○ Part 1 of AS/NZS 3000 ● Part 2 of AS/NZS 3000 ○ Additional Standards

Description of work: (including date/s of work and type of supply system)

INSTALLED REVENUE METER AT METERBOARD AND LIVENED UP TO MAIN SWITCH

I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct in that the installation, or part of the installation:

Select those that apply:

- ✓ Has been installed in accordance with the specified certified design*
- ✓ Has an earthing system that is correctly rated (where applicable)
- ✓ Contains fittings that are safe to connect to a power supply
- Relies on a supplier Declaration of Conformity*
- ✓ Has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010
- ✓ Is safe to connect

Test Results	
Polarity (independent earth)	✓
Insulation resistance	✓
Earth Continuity	0.17Ω
Bonding	0.03Ω
Fault Loop Impedance	✓
Other (specify)	

Electronic/Other reference:

Certifier's signature: M Tayengwa **Date:** 10 / 8 / 18

*Attach or reference. If it is impractical to attach a copy of a particular manufacturer's instructions, or of any certified design or supplier declaration of conformity, provide a reference to where the documents can be found, in a readily accessible format, by electronic means.

ESC

I certify that the installation, or part of the installation, to which this Electrical Safety Certificate applies is connected to a power supply and is safe to use.

Certifier's name: MANYARA TAYENGWA
Registration/Practising licence number: 1258826
Certifier's signature: M Tayengwa
Certificate issue Date: 10 / 8 / 18
Connection Date: 10 / 8 / 18

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS
This certificate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(b) of the Building Act 2004

This information is provided by the Waikato District Council



Compose

Inbox 91
Starred
Sent
Drafts 4
Categories
Computer files
reuntree_l@hotmail... 75
Computer files
Deleted 54
Family Tree Files 21
landmgasson@gmail...
landmgasson@gmail...
Sent
More

Electrical Workers Registration Board

Reference/Record Number: 2680145

Issuer (inspector) details:

Name of Inspector: Manyara Tayengwa

Email Address: info@electrasafe.co.nz

Location of Installation:

Location details: 380 CHURCHILL

Location Type: ☑ Domestic ☐ Non-Dome ☐ Educational ☐ Healthcare

Certifying Electrical Work and Certificate of Compliance

Name of Electrical worker(s): J.C WILLIAMS

Document Set ID: 2358460
Version: 1, Version Date: 03/01/2028

This information provided by the Waikato District Council

380 Churchill East rd COC.jpeg

ELECTRICAL CERTIFICATE OF COMPLIANCE AND ELECTRICAL SAFETY CERTIFICATE

Reference/Certificate ID No: MS 7818

Location Details: 380 Churchill East Rd Ranginui

Contact Details (Name and address): Mark Sasson

Name of Electrical worker: J C Williams — Registration/Practising licence number: E248621

Organisation/company: J C Williams Electrical LTD

Phone and email: 027 277 2425

Name of person(s) supervised:

COC

Type of work: ☐ Additions ☐ Alterations ☑ New work

The prescribed electrical work is: ☐ Low risk ☐ General ☑ High risk (Specify)

Reference Standards: ☐ Part 1 of AS/NZS 3000 ☑ Part 2 of AS/NZS 3000 ☐ Additional standards

Description of Work: (including dates of work and type of supply system)

Install New Mains. New MainEarth New MEN (New House

I certify that the completed prescribed electrical work to which this Certificate of Compliance applies has been done lawfully and safely, and the information in the certificate is correct in that the installation, or part of the installation:

Select those that apply:

- ☑ has been installed in accordance with the specified certified design*
- ☑ has an earthing system that is correctly rated (where applicable)
- ☑ contains fittings that are safe to connect to a power supply
- ☑ relies on a supplier Declaration of Conformity*
- ☑ relies on a manufacturer's instructions*
- ☑ has been satisfactorily tested in accordance with the Electricity (Safety) Regulations 2010
- ☑ is safe to connect

Test Results	
Polarity (Submain/sub-circuits)	
Insulation resistance	1 MΩ
Earth Continuity	0.17 Ω
Earthing	
Fault loop impedance	
Other (specify)	

Electronic/Other reference: active electrical

Certifier's signature:

Date: 10-8-18

* Attach or reference (by registration or project number) any certificate of design, specification, instructions, or any certified design or supplier declaration of conformity relied on. Indicate on where the documents can be found or identify accurately in other way.

ESC

I certify that the installation, or part of the installation, to which this Electrical Safety Certificate applies is connected to a power supply and is safe to use.

Certifier's name: J C Williams — Registration/Practising licence number: E248621

Certifier's signature:

Certificate Issue Date: 10 8 18

Connection Date: 10 8 18

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS

VER 04/06/14

https://mail.google.com/mail/u/0/#search/electrical?projector=1
Document Set ID: 2358460
Version: 1, Version Date: 03/01/2020
Print Date: 6 November 2020 1:26 pm

This information is provided by the Waikato District Council

Auckland Frame & Truss Supplies Ltd
53 McLaughlins Road
Wiri, Manukau City
P.O. Box 97 824
South Auckland Mail Centre
Ph. 250 0300
Fax. 279 5789

June 19, 2018

Client: Mark Gasson

PRODUCER STATEMENT

Ref. New Dwelling
Lot: No.380 Churchill East Road
Rangiriri

Job No. 18-0823
Quote No. C & C

This statement is to confirm the Frames supplied to the above job have been supplied as follows:

Timber frames:

External Walls -	Kiln Dried and Gauged Radiata Pine, H1.2 Boron Treated
Internal Walls -	Kiln Dried and Gauged Radiata Pine, H1.2 Boron Treated
"H" Walls -	Kiln Dried and Gauged Radiata Pine, H3.1 CCA Treated.
Trusses -	Kiln Dried and Gauged Radiata Pine, H1.2 Boron Treated

Note: All timber used in frames and trusses is a minimum grade SG8 unless the architectural plan states SG10/12 and then the higher grade is used.

Yours faithfully

pp AMM

Laurie Smith
Branch Manager

TOGETHER, WE'RE BUILDING NEW ZEALAND

PlaceMakers

Document Set ID: 2258460
Version: 1, Version Date: 03/01/2020

Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

MiTek New Zealand Limited

Correspondence from: AUCKLAND
40 Neales Road, East Tamaki 2013
PO Box 58-014, Botany 2163
Phone: 09 274 7139
Fax: 09 274 7130

CHRISTCHURCH
14 Pilkington Way, Wigram 8042
PO Box 8207, Riccarton 8440
Phone: 03 348 8691
Fax: 03 348 8314

www.mitek.co.nz

Issue 3020 beginning 4.7.1844

Printed: 10:33:03 04 May 2018

PRODUCER STATEMENT for MiTek 20/20® TRUSS DESIGN - Version 4.7

ISSUED BY: **MiTek New Zealand Limited**

TO: **PlaceMakers Frame & Truss**

IN RESPECT OF: **MiTek® Truss Designs**

This producer statement covers the MiTek 20/20® truss design and the structural performance of the GANG-NAIL® connector plate for the job reference **18-0823** and may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

The MiTek 20/20® truss design program has been developed by MiTek New Zealand Limited for the design of MiTek® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MiTek 20/20 ® are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution, to satisfy the requirements of Clauses B1 and B2 of the New Zealand Building Code.

On behalf of MiTek New Zealand Limited, and subject to:

i) All proprietary products meeting their performance specification requirements
ii) The provision of adequate roof bracing and overall building stability
iii) Correct selection and placement of GANG-NAIL connector plates
iv) Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
v) The design being undertaken by the accredited fabricator under the terms of the software licence
vi) Timber is graded to the requirements of NZS 3603:1993
vii) Minimum timber treatment for these MiTek® trusses shall be in accordance with B2/AS1 Table 1A and the relevant sections of NZS 3602:2003

I believe on reasonable grounds that the trusses, if constructed in accordance with the MiTek 20/20® truss design and shop drawings, will comply with the relevant provisions of the New Zealand Building Code.

MiTek New Zealand Limited holds a current policy of Professional Indemnity Insurance no less than $500,000.

On behalf of MiTek New Zealand Limited, **Date: Friday, 4 May 2018**

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Limited

This information is provided by the Waikato District Council

PlaceMakers Frame & Truss

Fabricated Design Statement | Page 1

Job: H-0019

Client: Mark Hansen
Phone:

Site: 183 Churchill Rd
380 Churchill Road
Rangiriri
Auckland

Description:
Building Consent No.:

Phone:

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MiTek accredited fabricator PlaceMakers Frame & Truss, being licensed to use the MiTek 20/20® software, to the client listed above and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

MiTek 20/20® TRUSS DESIGN DATA

The MiTek 20/20® computer design for this job is based on the following design parameters entered into the program. The Fabricator shall ensure that these job details are correct and relevant to the project for the design of the MiTek ® trusses.

Job Details

Roof Truss
- Timber Group: PMFT Truss_H1.2

Roof
- Uniclad: Longrun Iron John
- Dead Load: 0.210 kPa
- Battens: 900 mm centres
- Live Load: Qsr = 0.250 kPa; Qs = 1.100 kN

Importance Level: 2

Pitch: 20.000 deg

Ceiling
- Material: Standard
- Dead Load: 0.200 kPa
- Battens: 400 mm centres
- Live Load: Qs = 1.400 kN

Design Working Life: 50 years

Nominal Ceiling: 600 mm

Wind
- Area: High (44.0 m/s)
- Pressure Coef: Cpe = varies; Cpi = -0.30, 0.20

The minimum timber treatment for these MiTek® trusses shall be in accordance with B3/AS1 Table 1A and the relevant sections of NZS 3602:2003. The timber for these MiTek® trusses shall be graded to the requirements of AS/S 3603:1993. Proprietary fixings and timber connectors shall be selected in accordance with NZS3604:2011 Section 4 - Durability.

MiTek® Truss List

Legend: * = detail only, + = input only, fw = fullist design, @ = not verified, Unmarked trusses = designed successfully, LB = lateral bracing required GB = gable brace required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
GT1	1	6080	20.000	900	J1B	1	3497	20.000	600	J9A	1	1660	20.000	600
GT1A	1	6080	20.000	600	J2	1	2197	20.000	400	T2	3	4066	20.000	750
GT2	1	5570	20.000	600	J2A	1	2197	20.000	300	T3	1	3467	20.000	600
GT3	10	8960	20.000	900	J2B	2	2197	20.000	600	T3A	1	3467	20.000	600
GT4	10	8760	20.000	900	J3	2	1397	20.000	600	T4	1	5650	20.000	600
GT5	1	5480	20.000	900	J4A	1	2567	20.000	600	T4A	1	5570	20.000	600
HTG1	1	8760	20.000	900	J4B	1	2567	20.000	600	T5	1	5480	20.000	900
J4	1	2567	20.000	600	J5	1	2567	20.000	600	T7	4	5480	20.000	600
J5D	1	2567	20.000	900	J5A	1	2567	20.000	600	T8	1	4145	20.000	600
T1	2	8760	20.000	900	J5B	3	2567	20.000	900	T9	1	8060	20.000	600
T5	2	8760	20.000	750	J5D	1	2567	20.000	600	T10	1	5945	20.000	900
TY1	5	6308	20.000	900	J6	1	1867	20.000	600	V1	1	1737	20.000	900
TR1	1	8760	20.000	900	J6A	1	1867	20.000	600	V2	1	1065	20.000	900
TR1A	1	8760	20.000	600	J7	1	2502	20.000	900	V3	1	958	20.000	900
CT1	2	5570	20.000	900	J7A	1	2502	20.000	600	V4	1	1758	20.000	900
ET1	10	5480	20.000	900	J7B	1	2502	20.000	600	V5	1	2668	20.000	900
ET2	10	5260	20.000	900	J8	1	3122	20.000	600	V6	1	1137	20.000	600
J1	1	3097	20.000	600	J8A	1	2122	20.000	600	V7	1	1425	20.000	600
J1A	1	3097	20.000	900	J9	1	1662	20.000	600	V8	1	3645	20.000	900

Total quantity = 73

The computer design input has been carried out by:

Signed:

Name of Detailer: Joseph

On behalf of: PlaceMakers Frame & Truss | 33 McLaughlins Rd, Auckland | 0825555555

Date: Friday, 4 May 2018

Qualifications and Title: Lincoln

PlaceMakers
Know how. Can do.

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020

This information is provided by the Waikato District Council

Job: 18-0833 Client: Mark Sumner Site: 980 Churchill Road
Phone: Rangiriri
Description: Auckland Phone:
Building Consent No.:
Plan/Drawing/Specification #:

MANUFACTURER STATEMENT

This statement is issued by PlaceMakers Frame & Truss to the client listed above, and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.
The MiTek® trusses for the job reference 18-0833 have been fabricated in accordance with the MiTek 20/20® truss design, truss layout and shop drawing output and the specifications for timber defined therein, and are covered by the Producer Statement issued by MiTek New Zealand Limited and the MiTek Fabricator Design Statement.

Summary of fabricated MiTek® trusses in accordance with MiTek 20/20® output
Truss MiTek® trusses must be erected in accordance with the Truss Layout. Proper erection bracing must be installed to hold the trusses true and plumb and in a safe condition until permanent bracing is fixed. All permanent bracing and fixing must be installed before any loads are applied.

Job Details

Importance Level: 2
Design Working Life: 50 years

Roof		Ceiling		Wind	
Material:	Longrun Iron: 5mm	Material:	Standard	Area:	High (46.0 m/s)
Dead Load:	0.210 kPa	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Restraints:	900 mm centres	Restraints:	400 mm centres		
Live Load:	Qu = 0.250 kPa Qc = 1.100 kN	Live Load:	Qc = 1.400 kN		

MiTek® Trues List
Legend: * = detail only, I = input only, Tas = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required
GB = gable brace required, CF = Chemical Free Treatment

Roof Truss

Treatment: Top Chords - H1.2 Bottom Chords - H1.2 Webs - H1.2

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
*CN1	30	600	0.000	900	J5	1	2397	20.000	900	*T9	1	1182	20.000	900
CT1	2	5570	20.000	900	J5A	1	2397	20.000	900	*GB1	30	555	0.000	900
CT1	10	5480	20.000	900	J5B	3	2397	20.000	900	T1	2	6790	20.000	900
CT2	10	3290	20.000	900	J5C	1	2397	20.000	900	T10	1	5945	20.000	900
*TR1	2	3940	20.000	900	J5D	1	2397	20.000	900	T11	1	6335	20.000	900
*TR2	1	4080	20.000	900	J6	1	1897	20.000	900	T2	3	6890	20.000	750
*TR3	1	1480	20.000	900	J6A	1	1897	20.000	900	T3	1	3467	20.000	900
GT1	1	6890	20.000	900	J7	1	2502	20.000	900	T3A	1	3467	20.000	900
GT1A	1	6890	20.000	900	J7A	1	2502	20.000	900	T4	1	5080	20.000	900
GT2	1	5570	20.000	900	J7B	1	2502	20.000	900	T4A	1	5570	20.000	900
GT2	10	5890	20.000	900	J8	1	2122	20.000	900	T5	2	6790	20.000	700
GT4	10	6790	20.000	900	J8A	1	2122	20.000	900	T6	1	5480	20.000	900
GT5	1	5480	20.000	900	J9	1	1602	20.000	900	T7	4	5480	20.000	900
*HB1	2	9102	14.433	900	J9A	1	1602	20.000	900	T8	1	4145	20.000	900
*HB2	1	2903	14.433	900	*OR1	14	1455	0.000	564	T9	1	5945	20.000	900
*HB3	1	7205	14.433	900	*OR2	10	1305	0.000	564	TR1	1	6790	20.000	900
*HB4	2	4388	14.433	900	*R1	8	2392	20.000	900	TR1A	1	5790	20.000	900
*HB5	1	5718	14.433	900	*R2	2	2092	20.000	900	V1	1	1737	20.000	900
*HB6	1	2602	14.433	900	*R2A	1	1857	20.000	900	V2	1	1885	20.000	900
J1	1	3007	20.000	900	*R2B	1	2592	20.000	900	V3	1	958	20.000	900
J1A	1	3007	20.000	900	*R3	1	922	20.000	900	V4	1	1788	20.000	900
J1B	1	3007	20.000	900	*R3A	1	821	20.000	900	V5	1	2858	20.000	900
J2	1	2107	20.000	900	*R4	2	888	20.000	900	V6	1	1137	20.000	900
J2A	1	2107	20.000	900	*R5	1	1390	20.000	900	V7	1	1425	20.000	900
J2B	2	2107	20.000	900	*R6	2	813	20.000	900	V8	1	3885	20.000	900
J3	2	1257	20.000	900	*R6A	3	813	20.000	900	*VN1	35	555	0.000	900
J4	1	2567	20.000	900	*R7	1	1215	20.000	900					
J4A	1	2567	20.000	900	*R7A	1	1315	20.000	900					
J4B	1	2567	20.000	900	*R8	1	813	20.000	900					

Treatment: Top Chords - H1.2 Bottom Chords - H3.1 Webs - H1.2

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
HT01	1	6790	20.000	900

Roof Truss quantity : 288

Total quantity : 288

The MiTek® trusses are fabricated under the supervision of:

Signed: Date: Tuesday, 19 June 2018

Name of Supervisor: Laurie Smith

On behalf of: PlaceMakers Frame & Truss | 53 McLaughlins Rd, Auckland | 0800500300

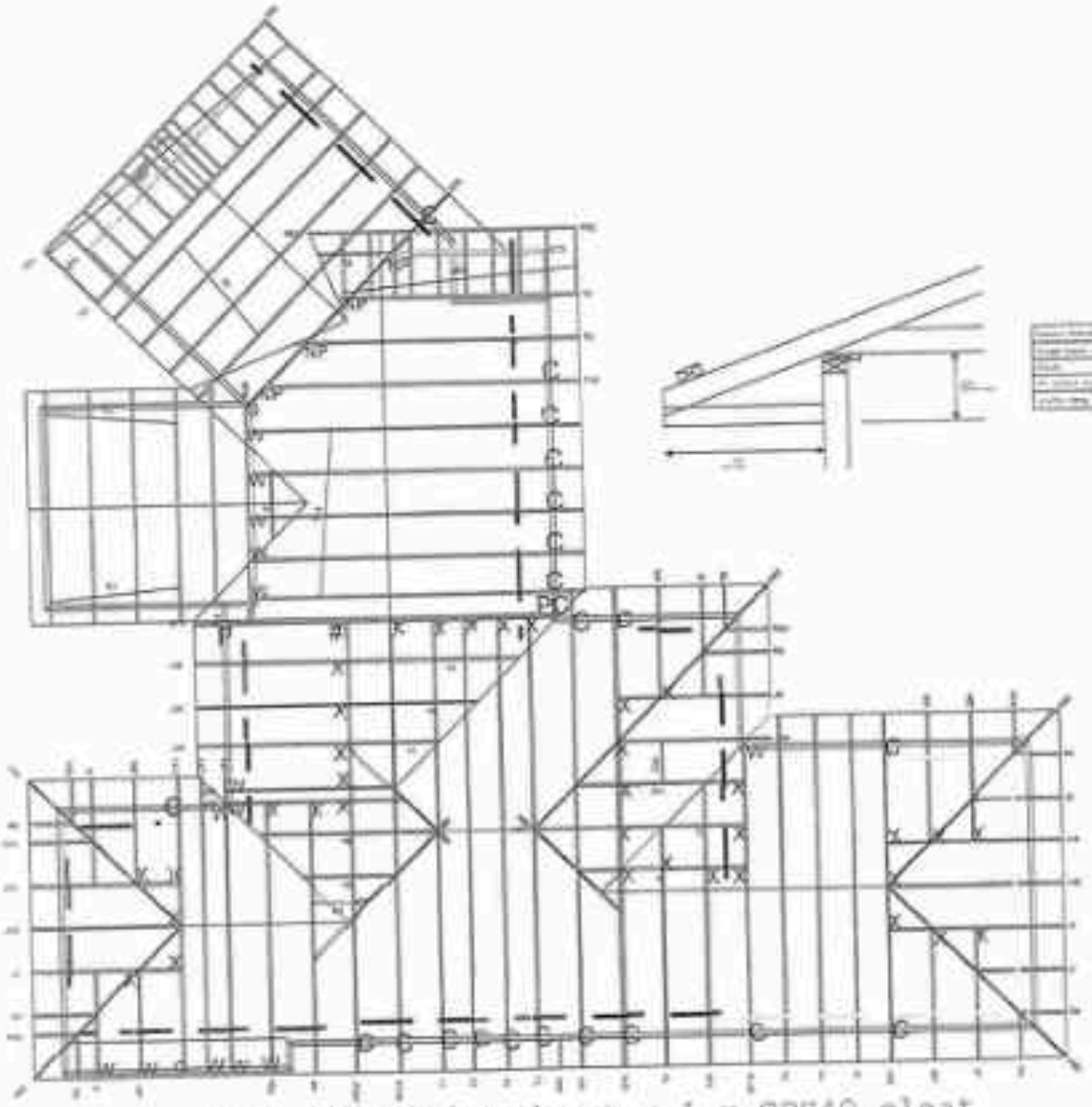
PlaceMakers Know how. Can do.

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020

This information is provided by the Waikato District Council

Document Set ID: 2157103
Version: 1, Version Date: 17/01/2019

AS BUILT FINAL LAYOUT



Type "W" fixing denotes 1 x CPC40 cleat
Type "G" fixing denotes 1 x 9kn pack

ROOF DETAILS

Roof Pitch: 15.00
Roof Type: Lenghot Ind. Semi
Wind Zone: High
Soffit Overhang: 600
Verge Overhang: Varies
Fascia Type:
Trusses & Rafters At 600 Centres Unless
Stated Otherwise
Rafter To Coatbac At Soffit Details 600
Fascia Mid-Support

FIXINGS

- All the Edge supplied for all to be Joist fixing
E – Denotes 90x45 joist hanger
G – Denotes 120x45 joist hanger
B – Denotes 190x45 joist hanger
D – Denotes 300x90 Joist hanger
S – Denotes a pair of 2 / 120 nailing Box
M – Denotes multiply each side
N – Denotes rafter cleats
P – Denotes Pair of CPC90 Cleats

- ALL THE ABOVE DETAILS TO BE FULLY WELDED

- COLOUR CODING OF TRUSSES IS FOR AREA LOCATION ONLY - REFER TO TRUSS NUMBERS FOR SPECIFIC LOCATION

- ALL ROOF AND CEILING BRACING TO BE FIXED TO CENTRES REQUIREMENTS AS DETAILED ON PRIME PLANS OTHERWISE TO NZS 3604 REQUIREMENTS

Roof Area

Rafter Manufacturer Frame No. Unit Approved Stamp Required
For Correct Out Wall Bracing Framing

Roofing Product Plans to be read in conjunction with Architectural Plans, Engineer Details and Specifications for Roofing and Bracing. For Use Build Consenting

Foundation Wall Plate Support to Garage Door Opening Plan is Design Truss. Ground Beam required to Commercial Truss Of The Order As To Accompany Any Details To Foundation Of Joist & Plans.

Engineered by Kiwiplate, Carters

PlaceMakers

PlaceMakers Frame & Truss

[illegible]

Site: 380 Church & Road
Pangkirri
Auckland

Job: 18-0823

Date: [illegible]	Date: 4 May 2018	Scale: [illegible]
Truss Design	Batch	Qty	Unit

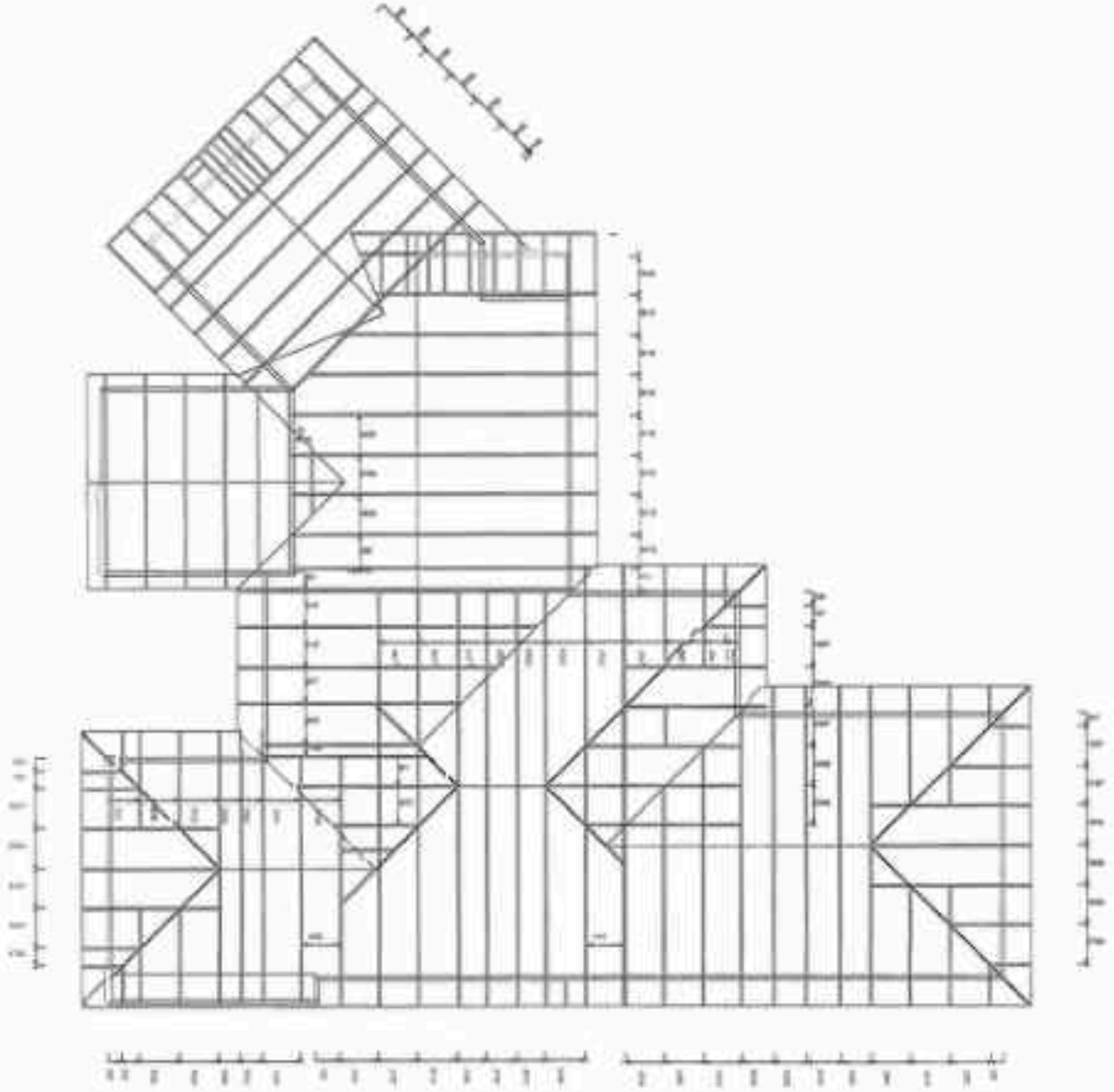
Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Document Set ID: 2157103
Version: 1, Version Date: 17/01/2019

AS BUILT FINAL LAYOUT



ROOF DETAILS

FIXINGS

PlaceMakers

PlaceMakers Frame & Truss

18-0823

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Producer statement construction (PS3) Plumbing

Auckland Council

All sections of this form must be completed

TO BE COMPLETED BY THE CERTIFYING PLUMBER WHO COMPLETED THE WORK

Author name: Wayne Silva

Building consent No: 1331/18

Author company: Silva Plumbing LTD

Description of plumbing work: Plumbing as per plan

Legal description: AS/NZ3500

Site address: 580 Churchill East Road, Ranggiri

I have sighted the above building consent and read the attached conditions of consent, and confirm that the plumbing pipe work and fittings have been selected and constructed to comply with the consented plans. I confirm that I have personally tested the water supply system by the method indicated below:

- [x] By pressurising the pipe work to 1500kPa for a period of not less than 15 minutes (NZBC G12/AS1 7.5.1) (AS3500.4, 11.3 for 30mins, AS3500.5, 2.23.1 for 30mins) for both hot and cold water and checking to see that there are no leaks.
- [ ] By pressurising the u.p.v.c. cold water pipe work to 1.5 times the maximum working pressure for a period of not less that 15 minutes and checking to see that there are no leaks (NZBC G12/AS1, NZS7643 9.3.2)
- [ ] By pressurising the pipe work in accordance with the manufacturer's requirements (note the most robust test must be used)

Test report attached ■ Yes ☐ No

I understand that this producer statement, if accepted, will be relied on by Council for the purposes of establishing compliance with the above building consent.

Signature: [signature]

Date: 10/11/18

Certifying plumber registration No: ZR161

Plumber contact details:

Address: 680 Papakura Clevedon Rd

Postcode:

Business: Silva Plumbing LTD

Fax:

Mobile: 0210773629

Email: Silvaplumbingltd@gmail.com

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Received by:

Signature:

Register checked: YES ☐ NO ☐

Registration current: YES ☐ NO ☐

Producer statement accepted as establishing compliance with the consented plans: YES ☐ NO ☐

Document Set ID: 2352403
Version: 1, Version Date: 03/01/2020

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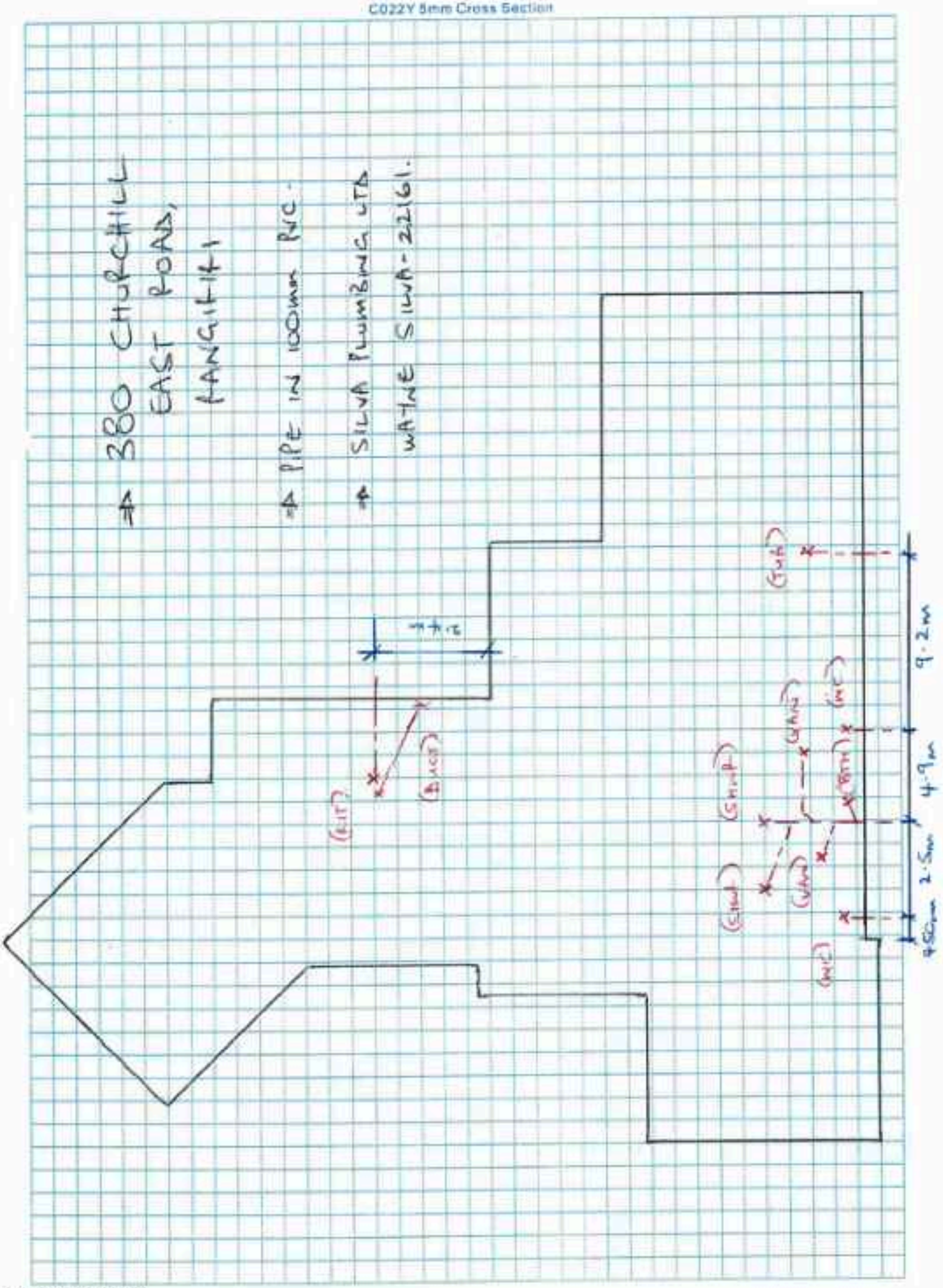
C022Y 5mm Cross Section



Document Set ID: 2352403
Version: 1, Version Date: 03/01/2028

Print Date: 6 November 2026, 1:26 pm

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GASFITTING CERTIFICATE OF COMPLIANCE – GAS SAFETY CERTIFICATE

Certificate of Compliance:

Client Name: MARK GASSON

Reference / Job #: 1331/18 ICP (if known):

Address of work: 380 CHURCHILL ~~ROAD~~ EAST RD

Suburb: HANGATIKI Town / City:

Description of gasfitting work: (if different gasfitting work was done by different people, state who did what gasfitting.)

GAS PIPEWORK FROM BOTTLES TO INFINITY AND HOB. PIPEWORK RUN IN GLYNDE. 25mm | 20mm | 15mm.

Gas supply pressure: 3.0 kPa Risk classification (tick one): ☐ Low-Risk ☑ General ☐ High-risk

Gas type (tick one): ☐ Natural gas ☑ LPG ☐ Biogas ☐ Other (specify)

The work has been done in accordance with a certified design: ☐ Yes ☑ No

If yes – identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
(Or provide reference to readily accessible electronic format, eg internet link.)

Identify:
Link:

The work relies on manufacturer's instructions: ☑ No ☐ Yes:

If yes – identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
(Or provide reference to readily accessible electronic format, eg internet link.)

Identify:
Link:

The work has been done in accordance with means of compliance (specify):

☑ Yes – AS/NZS 5601.1 sections 3 to 6 ☐ Yes – AS/NZS 5601.2 sections 3 to 9 ☐ No

Were any other standards or gas code of practice required for compliance?

☐ Yes (specify) ☑ No

Parts of the gas installation to which this certificate relates that are safe to connect to a gas supply?

☑ All ☐ Parts (specify)

Date(s) on which the work was done: 25 | 10 | 18

Name and registration number of anyone who carried out work under supervision: WAYNE SILVA 22161

By signing this document I confirm that I am satisfied that the work described in this certificate of compliance has been done lawfully and safely, and that the information on this certificate is correct.

Certifier name: JOHN CRAWFORD WELSH Registration number: 25695

Certifier Signature: Date: 20/11/2018

Gas Safety Certificate:

By signing this document I confirm that the work described in this Gas Safety Certificate, and the installation or part installation, is connected to a gas supply and is safe to use.

Name of person authorised to certify the connection: JOHN CRAWFORD WELSH

Registration number: 25695 Date of completion or connection: 20/11/2018

Certifier Signature: Date: 20/11/2018

This Gas Safety Certificate confirms that the gasfitting work complies with the building code for the purposes of Section 19(1)(a) of the Building Act 2004.

This information is provided by the Waikato District Council

Producer statement construction (PS3) Plumbing

Auckland Council

All sections of this form must be completed

TO BE COMPLETED BY THE CERTIFYING PLUMBER WHO COMPLETED THE WORK

Author name: Wayne Silva | Building consent No: 1331/18

Author company: Silva Plumbing LTD

Description of plumbing work: Underslab Drainage as plan

Legal description: G13

Site address: 380 Churchill East Road, Rangariri

I have sighted the above building consent and read the attached conditions of consent, and confirm that the plumbing pipe work and fittings have been selected and constructed to comply with the consented plans. I confirm that I have personally tested the water supply system by the method indicated below:

- ☐ By pressurising the pipe work to 1500kPa for a period of not less than 15 minutes (NZBC G12/AS1 7.5.1) (AS3500.4, 11.3 for 30mins, AS3500.5, 2.23.1 for 30mins) for both hot and cold water and checking to see that there are no leaks.
- ☐ By pressurising the u.p.v.c. cold water pipe work to 1.5 times the maximum working pressure for a period of not less that 15 minutes and checking to see that there are no leaks (NZBC G12/AS1, NZS7643 9.3.2)
- ☑ By pressurising the pipe work in accordance with the manufacturer's requirements (note the most robust test must be used)

Test report attached ■ Yes ☐ No

I understand that this producer statement, if accepted, will be relied on by Council for the purposes of establishing compliance with the above building consent.

Signature: | Date: 10/11/18

Certifying plumber registration No: 22161

Plumber contact details:

Address: 680 Papakura Clevedon Rd, | Postcode: 2582

Business: Silva Plumbing LTD | Fax:

Mobile: 0210773629 | Email: silvaplumbingltd@gmail.com

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Received by: | Register checked: YES ☐ NO ☐

Signature: | Registration current: YES ☐ NO ☐

Producer statement accepted as establishing compliance with the consented plans: YES ☐ NO ☐

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Waikato District Council
Building Consent Number
BLD1331/18
APPROVED

Waikato District Council
Full Application Received
10/04/2018

TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Geotechnical Assessment, Effluent Disposal and Stormwater Management Report

Ref: B5070-0

Report Prepared For:

Mr & Mrs Gasson

Site Location:

380 Churchill East Road, Rangiriri

Date:

3 April 2018

Original Copy

All parties must read and understand this report before taking further action

27 Roulston Street, Pukekohe

Ph: 09 238 3245

info@teng.co.nz

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TILSLEYENGINEERINGLTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

The client proposes to construct a new three bedroomed dwelling with separate media room at 380 Churchill East Road, Rangiriri.

Tilsley Engineering Ltd has been engaged to investigate the site and design an effluent disposal system and stormwater management recommendations to suit the soil conditions and other prevailing conditions of the site. The client also requested geotechnical assessment of the building site.

This report addresses this request.

To our knowledge there are no other reports for this site.

1.1 SITE DESCRIPTION

The property is described as Lot 13 Deposited Plan 488718 and is 7,764 m² in area.

1.2 COUNCIL RESOURCE CONSENT CONDITIONS

10809574.1 – 3 requires the floor level shall be at a minimum of 300mm above the 1% AEP flood level (plus allowance for climate change) as determined by a Chartered Professional Engineer.

10809574.1 – 5 requires that a Geotechnical Assessment for the building foundation shall be carried out by a Geo-Professional Engineer.

10809574.1 – 6 requires that a wastewater land application field design shall be carried out by a professional in accordance with AS/NZS 1547 and the Waikato Regional Plan.

10809574.1 – 7 requires that a stormwater retention system design shall be carried out by a Chartered Professional Engineer.

1.3 SITE CONDITIONS

The property is located on the northern side of Churchill East Road and is irregular in shape.

The site for the proposed building has a maximum slope angle of 5° prior to the cutting of the platform. The building platform is located near an area showing signs of minor instability and historic slumping. The maximum slope angle is 16 degrees. Below the site to the south is a small flood prone area. There is also flood prone land to the north and west in excess of 50m from the proposed building platform.

There is a temporary dwelling and water tank on site and a metalled drive has been constructed to access the dwelling and building site.

The site is subject to 1% AEP flood plain. However, the proposed building platform is raised at least 1.5m above any flood plain.

Site plans attached in Appendix A show the location of the proposed dwelling.

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1.4 HISTORIC AERIALS

The historic aerials available from Google Earth and Waikato IntraMaps date from 2008 to 2017. The aerial photographs show that there have been no major slips within the Lot during that time. The aerial photographs show little change to the topography of the site.

An area to the south of the proposed dwelling appears to have poor drainage but the proposed building platform appears to occupy an elevated location.

1.5 SITE VISITS AND TESTS

The site was visited on the 6th of March 2018 and the soil samples and soil profile were taken and logged in 3 hand augered boreholes.

The soil profile was logged to a maximum 1.2m depth. The test results are shown on the attached result sheet. The locations of the boreholes are shown on the site plan.

1.6 PUBLISHED GEOLOGY - SOIL TYPE

The relevant portion of map, Geology of the Auckland Area (© GNS Science 2016) is enclosed.

The soils of the area are designated "Q1a", "eQr" and "Qti". Soils observed in bore holes are most consistent with soils designated "Q1a".

These soils are mainly alluvial sediments described as Taupo pumice alluvium and are of the Tauranga Group. The soils are described as pumice sands, silts and gravels and can be alluvium/colluvium and fan deposits as well as estuarine deposits, lacustrine swamp deposits. They are of the Holicene Period and tend to be less than 20 thousand years old.

The soils are sandy clays and are relatively free draining down to 800mm below the surface.

1.7 PUBLISHED GEOLOGY - FAULT

This site is near a fault as shown on the attached map, Geology of the Auckland Area (© GNS Science 2016). GNS Science does not identify this fault as being active.

1.8 GEOMORPHOLOGY

Observation of the surrounding land forms indicates mostly gently to moderately sloping ground. There is evidence of land instability within the site and on surrounding properties in slopes over 24 degrees or with overland flow paths affecting the soil moisture content.

In the southern part of the Lot there is instability associated with the overland flow path. The building foundations are to be placed no closer than 10m from the break of slope. No further slope stability investigation is required unless development is proposed within this setback.

The land at the designated building platform is considered to be free from subsidence, slippage or inundations on completion of works mentioned within this report.

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2. GEOTECHNICAL INVESTIGATION

The boreholes were sunk on the Lot using a hand auger. The soils strengths were determined by Scala penetrometer testing.

The boreholes indicated a maximum of 200mm of topsoil within the building site area.

The results are shown on the attached bore logs.

The soils obtained from the boreholes show a similar profile, therefore confirming the consistency of soils across the proposed building area and waste water disposal field. No inference on the type of soils or the bearing capacity is made outside the proposed building platform area shown on the site plan.

2.1 BOREHOLES

The location of the boreholes is shown on the attached site plan.

There is 200-250mm of light brown topsoil within the building platform location and waste water disposal field.

Below the topsoil there is a layer of Silt with some clay and minor sand. This soil is representative of an alluvial and volcanic source which fits with the geology of the area. The soils are a grey and brown colour, with orange striations also present. The soils in this layer are well mixed, slightly plastic and medium dense. Allowable bearing strength over 120kPa was observed.

The weakest layer was found at approximately 700mm – 1m where allowable bearing strength of 90kPa was observed. At these depths the soil is structured silt – sand – clay loam.

Between approximately 1.1m and 1.5m the soil is well structured sandy loam with allowable bearing strength in excess of 110kPa. Below 1.5m is a moist silty clay. At 1.75m depth, an allowable bearing strength of 90kPa was observed.

No water was observed down to a depth of 2m.

2.2 SOIL CLASSIFICATION

Assessment and in-house testing of the soils on the Lot provide the soil classification. The building site soil classification is moderately expansive (Class M) based on their shrink/swell index (ref AS 2870). The characteristics movement of the soils are expected to be in the range of 30 to 40 mm.

2.3 SLOPE STABILITY ANALYSIS

The location of the building site is within an area which is not affected by soil instability or subsidence. No further analysis is required for this building site.

Should the building be placed outside approved building site as shown on the attached site plan, then the site will require further slope stability analysis.

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2.4 FLOOD HAZARD INFORMATION

A flood hazard report prepared for 449 Churchill East Road (approximately 500m downstream of 380 Churchill East Road) determined that the 1% flood level is RL 8.79m (Moturiki datum). This level of flooding will not affect the elevated house site which is 1.7m higher at RL 10.5m.

No further flood analysis is recommended.

3. EARTHWORKS

Development of the site will require minor earthworks to create a level building platform. The Lot is acceptable for both concrete 'raft' style and timber pile foundations.

Should any earthworks be undertaken then silt control measures will be necessary due to the close proximity to the overland flow paths and wetland areas. Future earthworks will need to be undertaken in accordance with any applicable Waikato Council guidelines and the following requirements.

All pipe work entering the dwelling must enter the foundation at 90° and shall not run parallel to the foundation within 1m from the building perimeter.

No earthworks shall be undertaken within 8m of the instability feature identified to the south. No fill shall be placed within 8m of the break of slope.

The wetland area and associated instability shall be planted with suitable species such as phormium (flax), cordyline (cabbage tree) and native grasses such as toetoe and carex. A comprehensive list can be found on the Waikato Regional Council website.

The stormwater systems for the building shall be operational as soon as the roof is in place. This is to ensure that the ground stability within the vicinity of the building is not compromised by the negative effects and the potential consequences of soil saturation.

3.1 FILL

In areas where structural fill is to be placed to carry building loads, we recommend that all earthworks procedures and compaction testing are carried out in accordance with NZS4404 and NZS4431.

All un-retained fill batters shall be not steeper than 1V:3H. Fill batter faces shall be compacted as a separate operation or, alternatively, overfilled and cut back. Maximum fill level for this site is 1m in vertical height. All engineered fill shall be assessed, supervised and approved by a Chartered Professional Engineer experienced in Civil Earthworks.

3.2 CUT

All new un-retained cut batters for the dwelling shall be graded at a maximum slope of 1V:3H and shall not be higher than 1m. Any cut deeper than this shall be approved by a Chartered Professional

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Engineer. Cut batters shall be located at a distance of at least the cut batter height from the building platform site.

The cut area shall be compacted and tested to a minimum allowable bearing strength of 100kPa.

Retaining walls over 1m or within the zone of influence for the building or neighbouring properties shall be designed by a structural Chartered Professional Engineer who is familiar with the contents of this report.

3.3 EARTHWORKS LIMITATION

No un-retained cut or fill depths greater than those mentioned above shall be undertaken without the approval in writing of Waikato Council and that of a Chartered Professional Engineer who is experienced in geo-mechanics and is familiar with the contents of this report. This is due to such works disturbing existing equilibrium conditions or surrounding neighbouring properties.

4. FOUNDATIONS

The building site is acceptable for concrete 'raft' style or timber pile foundations. The location of the dwelling shall be placed on a cut/fill building platform.

4.1 CONCRETE RAFT STYLE FOUNDATIONS

The foundations shall be designed to 100kPa bearing pressure. Soil expansivity provided by the subdivisional geotechnical completion report is class 'M'.

4.2 TIMBER PILE FOUNDATIONS

The foundations shall be designed to 100kPa bearing pressure. Timber piles shall be set into natural 'good ground' at a minimum of 600mm to reduce the effect of weaker soils and soil expansion on the foundations. In-situ end-bearing pressure to be 100kPa.

Alternatively, a specific design by a Structural Engineer for foundations shall be appropriate.

4.3 DESIGN PARAMETERS

For general design purposes, we would assess soil parameters as follows.

a)	**The in-situ shear strength measured onsite was**	100kPa
b)	**Apparent Internal Angle of Friction**	ϕ'=30
c)	**Soil Unit Weight**	γ=18kN/m^3
d)	**Ultimate Bearing Capacity**	q_{ult}= 300kPa
e)	**Allowable Bearing Capacity (F.O.S = 3)**	q_{allow}= 100kPa

For calculation of skin friction, 300mm depth of soil from the EGL should be ignored.

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4.4 ADVERSE AFFECTS ON FOUNDATIONS

Factors that can adversely influence the ground shrinkage and swelling within the vicinity of the foundations are site drainage, excessive watering of gardens, planting of trees and leaking plumbing.

For the life of the foundations no excessive watering shall be undertaken within 5m of the foundations. No trees to be placed within 5m of the foundations or further away from foundations for larger trees. Site drainage and plumbing to be regularly and well maintained.

5. ENVIRONMENTAL ASSESSMENT AND WASTEWATER DESIGN

The proposed dwelling will use an improved septic system that reaches a secondary level of treatment.

In ground pressure compensating dripper line disposal shall also be used and has been designed in accordance with AS/NZS 1547.

The attached site plan shows the available area for wastewater disposal. The effluent disposal field shall be kept at least 20m away from any overland flow path.

Ground water was not encountered in the boreholes and due to the elevated location of the site it is anticipated ground water will be at least 2 metres below ground level. As such, dripper line disposal will not impact on ground water.

There are no trees within 10m or embankments within 20 metres of the disposal field and the slope at the wastewater disposal location is less than 10 degrees.

As such any impact to the environment is considered to be minimal.

5.1 DWELLING WASTEWATER DESIGN

The proposal is to construct a new 3 bedroomed dwelling with media room. It is not considered likely that the media room will be used as a bedroom due to the proximity to the kitchen and dining area. Water will be supplied from stored roof water. It is recommended to install a new AWTS system such as a Hynds Lifestyle Domestic Wastewater System or equivalent with sub surface pressure compensating dripper irrigation. This system has a flow rate of 1600L per day.

No of Bedrooms: 3 Design Occupancy: 5 Water usage per day: 145 litres/day

Total water usage will be: 5 x 145 litres/day = 725 litres/day

It is recommended to install standard water reduction fixtures including dual flush 11/5.5 or 6/3 litre toilet cisterns, shower flow restrictors, aerator faucets and a water conserving automatic washing machine (AS/NZS1547 Table H3, Note 2). A low water use dishwasher should also be used. The soil category is assessed as category 4 as per AS/NZS1547 Table M1 (equivalent to Category 5 soils as per TP58).

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Onsite investigation confirmed the soils as being a sandy clay loam with moderate drainage rates. A loading rate of 3.4mm will be used as per AS/NZS1547 Table M1. This gives a total dripper line length of 207m. Dripper lines to be installed according to manufacturer's recommendations.

The dripper lines shall be laid to the north of the proposed dwelling in the area shown on the site plan. Dripper lines shall be dug 100-150mm into the topsoil layer.

A reserve area of 100% (207m²) shall be maintained on site.

6. STORMWATER MANAGEMENT

The enclosed calculation sheet shows that attenuation built into the proposed water tanks will allow for a 20 year, 5% AEP 10min storm event.

All runoff from roof (proposed dwelling) areas shall be piped and released into at two rain collection tanks for domestic use, attenuation and settling. Attenuated stormwater shall be directed to a level spreader.

All run-off from the impermeable driveway shall be directed to an infiltration trench along the lower periphery. Overflow from the infiltration trench shall be directed to the overland flow path such that there is no detrimental effect to the stability of the building platform or the effluent disposal field.

There is minimal uphill catchment. The 1% AEP 1 in 100 year event is not expected to enter the building if work is carried out to NZ Building Code E1. Finished floor level shall be a minimum of 150mm above ground level.

6.1 DWELLING STORMWATER TANK ATTENUATION

The dwelling has a roof area of approximately 290m². All roof areas shall be piped via a minimum 90mm pipe and released into two linked 25,000 litre rain tanks for attenuation, settling and domestic use. The overflow from these shall be piped to a level spreader.

A stormwater attenuation volume of 3.8m³ is required. If water tanks of standard dimensions are installed, this attenuation may be achieved via a 30mm pipe 0.2m below the overflow outlet allowing flow into the overflow pipe.

6.2 DRIVEWAY

An impermeable driveway of approximately 50m² is proposed. All stormwater runoff shall be collected using either cesspits or an infiltration trench 1m deep by 0.5m wide along the lower edge of the driveway. The outlet for the cesspit or trench shall be directed to the overland flow path.

6.3 LEVEL SPREADER

The level spreader shall be located on a slope of less than 10 degrees close to the flood prone area near the north west boundary. The level spreader shall be 14m long and shall be installed to contour to ensure that overflow water is dispersed evenly along its length.

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Level spreader to discharge at least 10m away from any foundations or wastewater field.

6.4 CONSTRUCTION OF STORMWATER

The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and potential consequences of soil saturation.

7. SYSTEM MAINTENANCE

The equipment suppliers will offer training and maintenance support for the system. However, it is the owner's responsibility to carry out all general maintenance procedures in order for the system to function as designed. We recommend that a maintenance contract be entered into with a recognised wastewater maintenance company. Attached in Appendix D are the operation and maintenance forms for both the stormwater and wastewater.

8. RECOMMENDATIONS:

1. **The proposed building area within the property as shown on the site plan is safe and stable in its current state. A suitably qualified Chartered Professional Engineer (CPEng) or their representative shall confirm the finished building platform meets the required bearing strength of 100kPa.**

2. **A specific foundation design by a Chartered Professional Engineer will be required for the building. The building platform is acceptable for both concrete 'raft' (pod floor) style and concrete slab foundations. Design to meet all the requirements and parameters as described within this report. Soil expansivity is class 'M'.**

3. **Any cut/fill under and around the foundations to be inspected by a suitably qualified engineer. Cut/fill to reach minimum bearing pressure as per foundation design. Cut/fill to meet requirements as per the Earthworks section.**

4. **If any structure or infrastructure is relocated outside of the area shown on the attached site plan then additional analysis will be required prior to any works being undertaken.**

5. **All cut/fill over 1.0m in height must be supervised by a suitably qualified Chartered Professional Engineer (CPEng) or their representative.**

6. **No water shall be discharged into the ground within 5m of the foundations.**

7. **Install an improved wastewater system such as Hynds Lifestyle.**

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8. Install 207m of dripper lines in the location shown on the site plan for the wastewater. Dripper line to be kept at 1m centres. Dripper line to be in accordance with manufacturer's instructions. Dripper line must be at least 3m from buildings, and 1.5m from boundaries.

9. Stormwater from the roof of the dwelling shall flow into two 25,000 litre stormwater tanks. An orifice controlled outlet shall provide 3.8m³ of attenuation. Outflow pipes to be connected to a 14m level spreader placed near the flood prone area to the northwest.

10. The stormwater system for the building and impervious areas shall be operational as soon as the roof is in place.

Report written by:	Report reviewed and approved by:
B. Dobbs	R. Tilsley
BEng (Hons)	BE (Civil) CMEngNZ

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Notice to Reader/ User of this document

Should you be in any doubt as to the applicability of this report and/or its recommendations for the proposed development as described herein, and/or encounter materials on site that differ from those described herein, it is essential that you discuss these issues with the authors before proceeding with any work based on this document.

This is a factual report of field investigations (and laboratory testing). The field investigations have been undertaken at discrete locations and no inferences about the nature and continuity of ground conditions away from the investigation location are made.

Furthermore, the logs are provided presenting descriptions of the soils and geology based on field observations of the samples recovered in the fieldwork and may not be truly representative of the actual underlying conditions.

Ground Bearing Pressures

NZS 3604 States the Ultimate Bearing capacity is to be 300kPa. However, the Definitions (1 April 2007) state the allowable bearing pressure is 100kPa.

Others use the term 'the site should provide an ultimate unfactored bearing capacity of 300kPa or allowable factored bearing capacity of 100kPa for residential type foundations'.

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10. LIST OF APPENDICES

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APPENDIX A – BACKGROUND INFORMATION

LOCALITY PLAN AND GEOLOGICAL MAP



FIGURE 1: NZTOPO MAP AND SITE LOCATION



FIGURE 2: GEOLOGY OF THE AUCKLAND AREA (GNS SCIENCE 2010 SHOWING SITE LOCATION

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PROPOSED SITE PLAN



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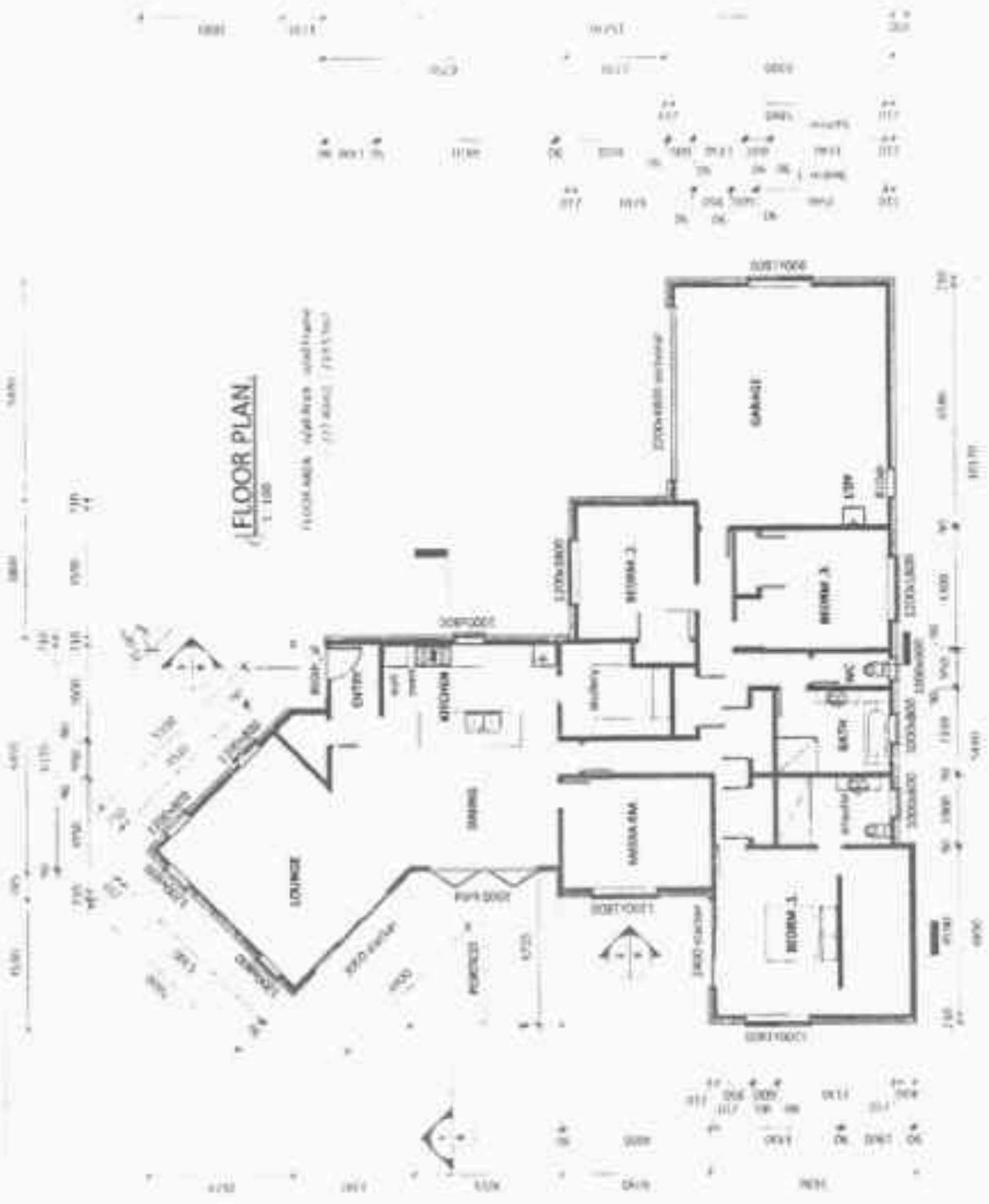
PROPOSED FLOOR PLAN



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NIWA HIRDS DATA

NIWA
Taihoro Nukurangi

High Intensity Rainfall System V3

Calculator Help

Results for 380 Churchill East Road

Intensity-Duration-Frequency results (produced on Tuesday 3rd of April 2018)
Sitename: 380 Churchill East Road
Coordinate system: NZMG
Easting: 2695227
Northing: 6417390

Rainfall Intensities (mm/h)

		Duration									
ARI (y)	aep	10m	20m	30m	60m	2h	6h	12h	24h	48h	72h
1.58	0.633	54.0	37.5	30.2	20.8	13.0	6.2	3.6	2.4	1.5	1.1
2.00	0.500	58.8	40.6	32.8	22.6	14.1	6.7	4.2	2.6	1.6	1.2
5.00	0.200	76.2	52.5	42.2	29.2	18.2	8.6	5.4	3.4	2.0	1.5
10.00	0.100	90.0	62.1	50.0	34.5	21.6	10.2	6.4	4.0	2.4	1.8
20.00	0.050	105.6	73.2	58.8	40.6	25.4	12.0	7.5	4.7	2.8	2.1
30.00	0.033	116.4	80.1	64.6	44.5	27.8	13.2	8.2	5.1	3.1	2.3
40.00	0.025	124.2	85.6	69.0	47.5	29.7	14.1	8.8	5.5	3.3	2.5
50.00	0.020	130.8	90.0	72.6	50.1	31.2	14.8	9.2	5.8	3.5	2.6
60.00	0.017	136.2	93.9	75.6	52.2	32.5	15.4	9.6	6.0	3.6	2.7
80.00	0.012	145.2	100.2	80.8	55.7	34.8	16.4	10.3	6.4	3.9	2.9
100.00	0.010	153.0	105.6	84.8	58.6	36.5	17.3	10.8	6.7	4.1	3.1

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PHOTOGRAPHS



FIGURE 3: VIEW OF PROPOSED BUILDING PLATFORM LOOKING SOUTH

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FIGURE 4: VIEW OF PROPOSED WASTEWATER FIELD LOOKING NORTH

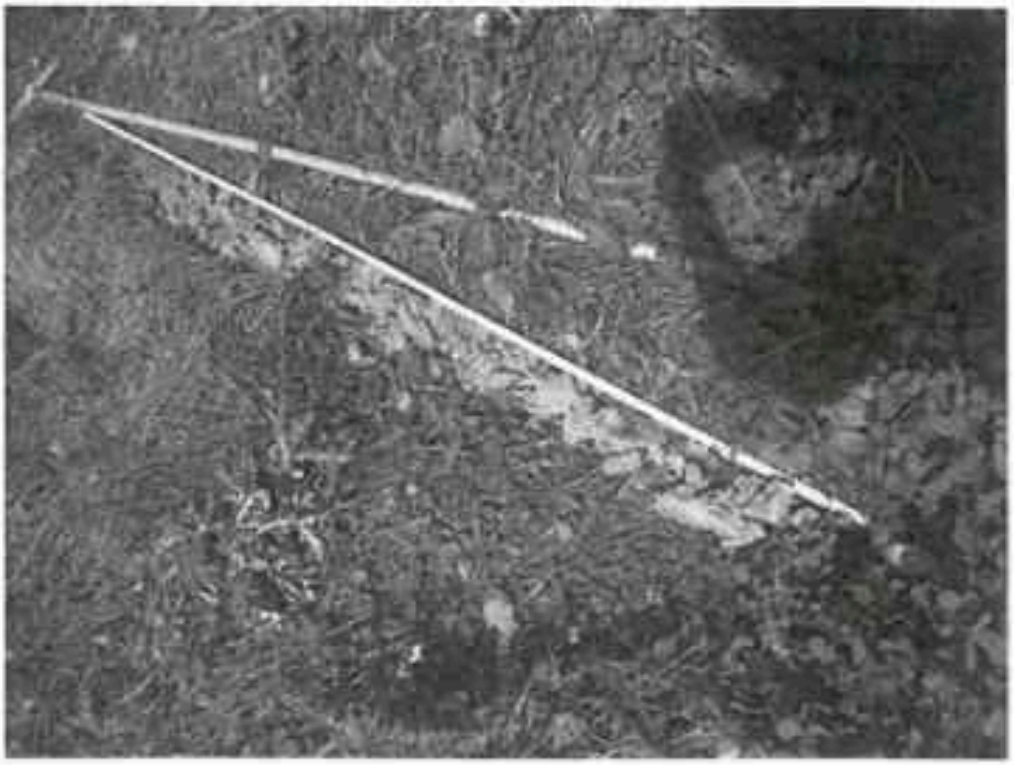

FIGURE 5: VIEW OF TYPICAL SOIL SAMPLE

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CERTIFICATE OF TITLE

COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy

Identifier	711534
Land Registration District	South Auckland
Date Issued	06 July 2017

Prior References
SA52C/849

Estate	Fee Simple
Area	7764 square metres more or less
Legal Description	Lot 13 Deposited Plan 488718

Proprietors
Mark Bruce Gasson and Lisa Maria Gasson

Interests

10809574.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 6.7.2017 at 4:58 pm

Appurtenant hereto is a right to convey electricity, telecommunications and computer media created by Easement Instrument 10809574.4 - 6.7.2017 at 4:58 pm

The easements created by Easement Instrument 10809574.4 are subject to Section 243 (a) Resource Management Act 1991

10989226.3 Mortgage to Bank of New Zealand - 19.1.2018 at 3:04 pm

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APPENDIX B – RESULTS

BORE LOGS

BORE LOG

TILSLEY ENGINEERING LIMITED
27 Bandstone Street, Pukekohe
info@tseng.co.nz
PO Box 262, Pukekohe
Phone: 09 238 1244

Job number: 85070
Client: Mark & Lisa Spooner
Location: 386 Churchill East Road, Rangiriri

Date: 03/04/2018
Time: 11am
Augered by: SD
Logged by: SD
Bore No: BH1

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/100mm - kPa)	Shear Vane Test / Reborn (kPa)
0.1	Topsoil, light, friable.			dry			
0.2						7	
0.3	Silt, brown, with silica						
0.4						5	
0.5	Silt with clay, light brown, friable, moderately firm, lapilli and silica					6	
0.6							
0.7	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm					5.5	
0.8							
0.9						4	
1	Orange sandy clay, grey / orange with mustard yellow, possibly sulphurous inclusions, firm			moist			
1.1							
1.2	EOH						
1.3							
1.4							
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole.
produced by S.Day, S.Beaumont on 03 Apr 2018

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

BORE LOG

TILSLEY ENGINEERING LIMITED
37 Roulston Street, Pukekohe
info@tseng.co.nz
PO Box 392, Pukekohe
Phone: 09 238 3240

Job number: 5007I
Client: Mark & Lisa Gasson
Location: 388 Churchill East Road, Rangiriri

Date: 03/04/2018
Time: 11am
Augered by: SD
Logged by: SD
Bore No: SH2

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/100mm - kPa)	Shear Vane Test / Reform (kPa)
0.1	Topsoil, light, friable.			dry			
0.2	Silt, brown, with silica					2	
0.4	Silt with clay, light brown, friable, moderately firm, lapilli and silica					1	
0.6	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm			moist		3	
0.8	Orange sandy clay, grey / orange with mustard yellow, possibly sulphurous inclusions, firm					5	
1	Sandy loam, silica and fine gravel inclusions					4	
1.2						3	
1.4						8	
1.5	Structured sand / silt mixture, volcanic inclusions, orange streaks, firm			very moist		7	
1.7						4	
1.8							
1.9	Course silty clay, grey / orange						
2	EOB						

Disclaimer: Soil type and strength only applicable at location of bore hole.
produced by GSlog.GSdata.net on 03 Apr 2018

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BORE LOG

TILSLEY ENGINEERING LIMITED
37 Rawhiti Street, Pukekohe
PO Box 392, Pukekohe
Phone: 09 238 3243

Job number: 85070
Client: Mark & Lisa Sasson
Location: 388 Churchill East Road, Rangiriri

Date: 03/04/2018
Time: 11am
Augered by: BD
Logged by: BD
Bore No: BH3

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/100mm - kPa)	Shear Vane Test / Reform (kPa)
0.1	Topsoil, light, friable.			dry			
0.2	Silt, brown, with silica						
0.3							
0.4	Silt with clay, light brown, friable, moderately firm, lapilli and silica						
0.5							
0.6							
0.7	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm			moist			
0.8							
0.9							
1							
1.1	Orange sandy clay, grey / orange, firm						
1.2	EOB						
1.3							
1.4							
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole.
produced by S.Steg, E.Blakeney on 03 Apr 2018

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APPENDIX C – CALCULATIONS AND DESIGNS

STORMWATER DESIGN

APPENDIX C - CALCULATIONS AND DESIGNS

Version 2.1

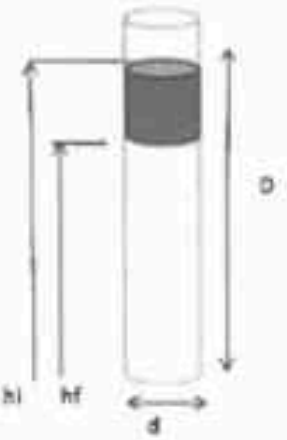
Client Gasson

Address 380 Churchill East Road

Date Apr-18

Soakage Results from 100mm diameter 1.2m deep hole

Time (min)	Accumulative Drop (mm)
0	0
10	78
20	148
30	211
40	257
60	300



Parameters

Hole diameter (d)	10 cm
Hole Depth (D)	150 cm
Head (hi)	120 cm
Depth (hf)	90 cm
time	60 min

Water volume loss $V = \frac{\pi d^2}{4} h$

2356.19 cm^3
2.36 litres

Area (water loss through) $V = \frac{\pi d^2}{4} + (d * \pi * avewaterdepth)$

3377.21 cm^2
0.34 m^2

percolation rate = water volume loss / Area(water loss through) / last hour
Units = litres/m^2/min

percolation rate = litres / m^2 / 60 mins

0.12 l/m^2/min

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Stormwater management, soakage via detention

Client	**Gasson**	Version 2.1
Address	**380 Churchill East Road**	
Date	**Apr-18**	

Pre-development Grass Area	290 m²
Modified (C=0.3)	87.0 m²
Developed Roof Area (house)	290 m²
Modified (C=0.9)	261.0 m²

Design Storm

1 in 20 year (5% AEP), 10min storm NIWA value	105.6 mm/hr
cc. Adjusted for climate change 2.1 degrees	130.9 mm/hr

Quantity of Flow - Pre-development

Pre-development Grass Area	3.2 l/sec

Quantity of Flow - Developed

Developed Roof Area	9.5 l/sec

Storage Volume Required

(developed - pre-developed) flow x 10 x 60	3,797 Litres
	3.8 m³

Attenuation Tank

Water tank Size	2	25,000 litre
Tank Base Dia (Devan)		3.5 m
Attenuation depth		0.197 m

Maximum Orifice Size		**Minimum Orifice Size**	
Q release (pre-development)	3.16 l/sec	Q release (24 hour drain)	0.044 l/sec
V = sqrt(2gh)	1.39 m/s	V = sqrt(2gh)	1.97 m/s
Area = Q/V	0.00227 m²	Area = Q/V	0.00002 m²
Dia = sqrt(4 x A/pi)	0.054 m	Dia = sqrt(4 x A/pi)	0.005 m
Diameter of outlet pipe	54 mm	Diameter of outlet pipe	5 mm

Recommended Outlet to be 30mm Acceptable

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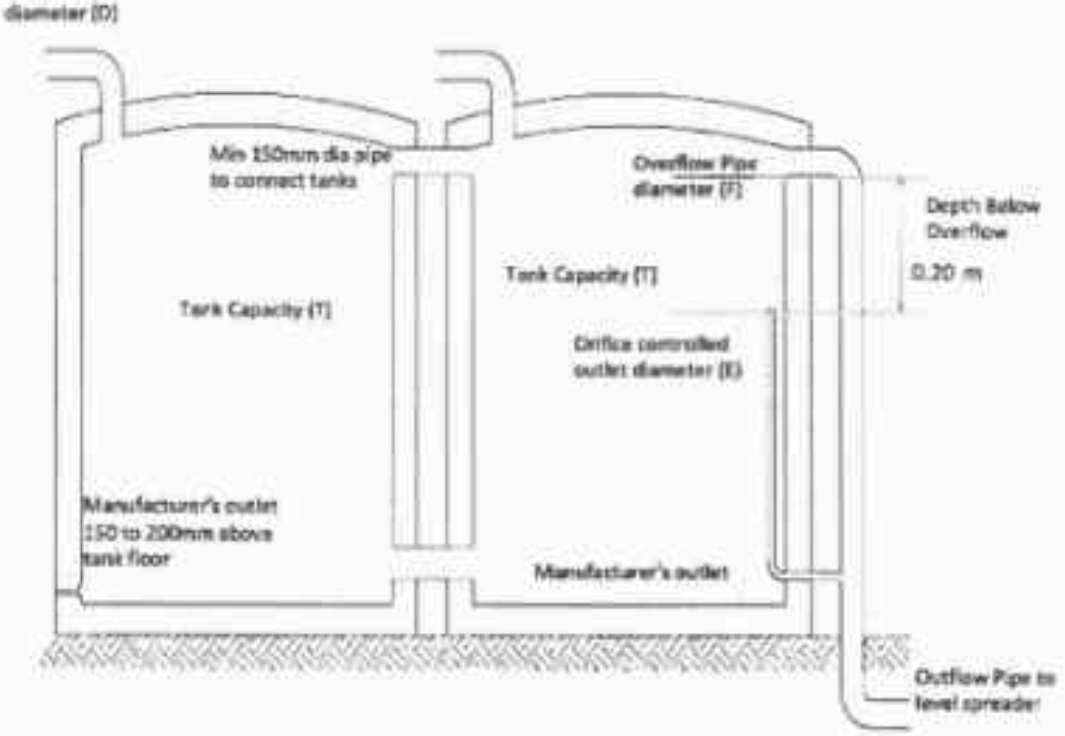
Tank design - attenuation Version 2.1

Client Gatson
Address 880 Churchill East Road
Date Apr-18

Detention Tank Detail



Note: Minimum orifice diameter is 20mm. Screening is required for orifice smaller than 25mm

D= 90 to 110 mm
T= 25000 litres (x 3 tanks)
E= 30mm
F= Overflow pipe size to be larger than inflow pipe/s

Capacity to be used for attenuation 3.8 m³

Notes:
1. Orifice controlled outlet 'E' is to use an approved manufactured's outlet point. This may require an internal PVC pipe connected to a base point
2. If different tank dimensions are used than those specified, the orifice controlled overflow must allow for a minimum attenuation below the overflow pipe of 3.8 m³
3. First flush diverter recommended but not required.
4. Third tank to be connected at top only and used for attenuation.

Tilsley Engineering Ltd

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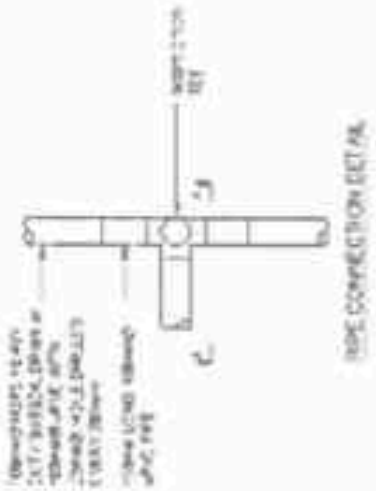
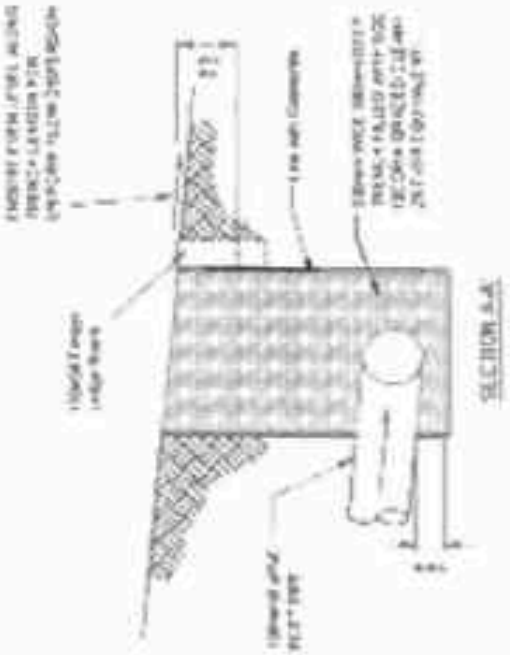
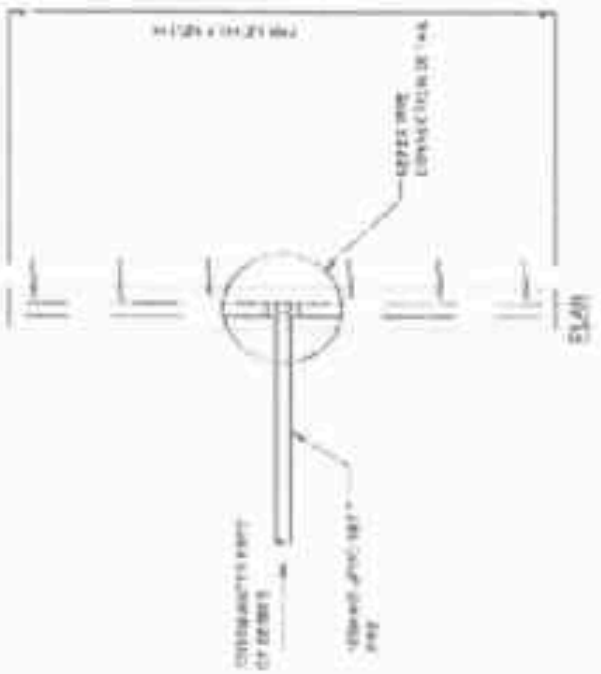
LEVEL SPREADER









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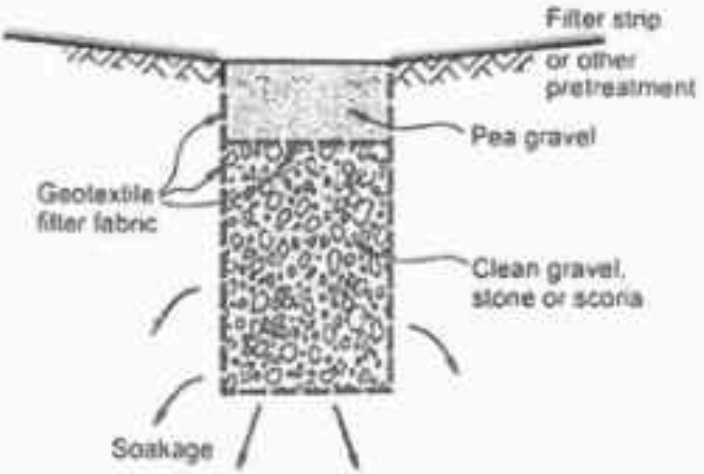
INFILTRATION TRENCH



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APPENDIX D – OPERATIONAL & MAINTENANCE FORM

SOAKHOLE OPERATION AND MAINTENANCE FORM

FORM "OSM-O&M-CERT"

(A) SITE & OSM DEVICE DETAILS:

Site Address: _____

Owners Name: _____

Device(s):

Ref. No	Type	Size (eg m2 or m3)	Date Installed

(B) MAINTENANCE CONTRACTOR'S DETAILS:

Firms Name: _____

Firms Address: _____

Name of Serviceperson: _____

Date(s) of Service: _____

(C) SERVICE DETAILS:

Device Ref. No	Checklist Completed	MAINTENANCE ACTION	
		Item	Action (describe, eg "pipe replaced")
	1	(a)	
		(b)	
		(c)	
		(d)	
	2	(a)	
		(b)	
		(c)	
		(d)	
	3	etc...(continue on a separate sheet)	

* on attached form "Device-Specific O&M Details"

(D) CERTIFICATION:

I/we hereby certify that:

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- The OSM device inspection and maintenance programme has been undertaken in accordance with the provision of Section 11 of the City's "OSM Manual" dated 2002
- The details above and on the attached form(s) are a full and correct record of the work performed
- The OSM device(s) are in sound working order
- The owner has been advised of the problems found (if any) and alerted as to the need to inspect for any recurrences and rectify such promptly

_____ _____

Signed Date

ACE Office Use:

Reference No. _____

Checked by: _____ Date: _____

Entered by: _____ Date: _____

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WASTEWATER OPERATION AND MAINTENANCE FORM

Operational & Maintenance form

On-site Wastewater System Management Procedure

(As per ARC Technical Sheet H1)

Property Owner: _____

Date: _____

Property Address: _____

System Designer
Firm Tilsley Engineering phone 09 2383245

Installation
Supplier/installer _____ phone _____

Drainlayer _____ phone _____

Electrician _____ phone _____

Building Consent No: _____

Date Approved _____

Date Installed _____

Territorial Authority _____

Expiry date _____

Max discharge Vol _____

Other conditions (if any) ------

_____

_____

_____

_____

_____

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Ref: 85070-0

Client
Address

ROUTINE MAINTENANCE CHECKLIST - ONSITE WASTEWATER

Annually	2- yearly	5- yearly	Action
NA			Grease Trap - pump out frequency
		X	Septic Tank - visual check for leaks & rectify - pump out frequency
X			Filter: visual check, hose off any solids
	X		Pump & Alarm: Check to see if functioning by electrician
NA			Trench System - Vegetation maintenance, inspect vent, check irrigation area for wet ground
NA			ETS Beds / Mounds - inspect vents, maintain plant growth, remove weeds, surface water diversion in place
X			AWTS - specific maintenance contract by supplier
			Any ongoing maintenance to be carried out by the owner and suitably qualified
			maintenance contractor

TILSLEY ENGINEERING LTD
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

Document Set ID: 7955490
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APPENDIX E – AS/ANZ 1547 CHECKLIST

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Building Consent Number
BLD1331/18

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Appendix E

Australian/New Zealand Standard®

On-site Wastewater Disposal Site Evaluation Investigation Checklist

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ON-SITE WASTEWATER DISPOSAL SITE EVALUATION INVESTIGATION CHECKLIST
AS/NZS 1547 2012 STANDARDS

1.0 COUNCIL OR AUTHORITY

1.1 Location details

Locality			Rangiriri		
Applicant name, company and address			Mark & Lisa Gasson		
Land owner name and address			Mark Bruce Gasson and Lisa Maria Gasson 380 Churchill East Road		
Lot no#	13	DP no#	488718	CT no#	711534
Site plan ref. no. or description			85070		

1.2 Consultant/ Site evaluator

Consultant	Tilsley Engineering Ltd
Site evaluator name	Bridget Dobbs
Postal address	27 Roulston Street Pukekohe PO BOX 392
Phone number	09 238 3245
Name of contact person	Bridget
E-mail address	info@teng.co.nz

2.0 EXISTING CONDITION OF SITE

Site and soil check (SSC)

2.1 Climate

Annual rainfall (as per NIWA rainfall)	1,200 – 1,400mm

2.2 Water supply

Public Supply		Rainwater	✓	Bore/well/dam	

2.3 Desk study

Has a desk study been undertaken for this property	Yes
If yes, specify findings	Neighbouring properties' systems working well.

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2.4 Slope Stability or geotechnical investigation

Yes	✓	No	

If yes

Author of report	Bridget Dobbs
Company	Tilsley Engineering Ltd
Brief overview of findings	Avoid effluent disposal to south of proposed dwelling

3.0 CONDITIONS DURING ASSESSMENT

3.1 Soil and terrain

Type of terrain	Gentle
Current land use	English grasses
Existing structures onsite	Temporary dwelling
Geology	'Q1a'
Soil and landscape drainage	West
Slope	< 10 degrees
Geomorphology (as per figure C2, slope configuration and surface drainage)	Linear divergent
Ground cover	English grasses
Overland flow path present	Yes. 20m setback achieved

3.2 Site constraints (show details on the site plan)

	Tank	Field
Property boundary	>1.5m	>1.5m
Distances to watercourses, water bodies, wells, bores, or drainable lines downhill	>20m	>20m
High water table (permanent, seasonal, episodic)	Ground water >1.5m	Ground water >1.5m
Downstream embankments, barriers or other impendences to drainage	>3m	>3m
Buildings	>3m	>3m
Unstable soils	>3m	>3m
Recreational areas (children's play areas, swimming pools, etc)	>5m	>5m
In-ground water tank	5m	5m
Other (specific)		

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4.0 SOIL INVESTIGATION

4.1 Soil profile determination

Test Pit		Depth(m)		No. of test pits	
Bore Hole	✓	Depth(m)	1.2	No. of bore holes	3

4.2 Soil Category (as per table 5.1, Determination of soil category)

Soil category	Soil texture	Structure	Indicative permeability (K_{sat}) (m/d)	
1	Gravels and sands	Structureless (Massive)	>3.0	
2	Sandy loams	Weakly structured	>3.0	
		Massive	1.4 – 3.0	
3	Loams	High/Moderate structured	1.5 – 3.0	
		Weakly structured or massive	0.5 – 1.5	
4	Clay loams	High/moderate structured	0.5 – 1.5	✓
		Weakly structured	0.12 – 0.5	
		Massive	0.06 – 0.12	
5	Light clays	Strongly structured	0.12 – 0.5	
		Moderately structured	0.06 – 0.12	
		Weakly structured or massive	<0.06	
6	Medium to heavy clays	Strongly structured	0.06 – 0.5	
		Moderately structured	<0.06	
		Weakly structured or massive	<0.06	

4.3 Wastewater discharge calculations (As per table J1, All-waste septic tank operational capacities)

Number of bedrooms	3	
Design Occupancy	5	(Number of people)
Per capita wastewater production (as per Table H3)	145	(Litres per person per day)
Total daily wastewater production	725	(Litres per day)

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4.4 Is total daily waste production greater than 1300L

Yes		No	✓

If yes, is discharge consent required?

Yes		No	✓

If no, why?

4.5 Recommended land application system (using table K2 as a guide)

Type of tank	Improved system – Biocycle
Capacity of tank	4,000 litres minimum
Special features (tertiary treatment, pump chamber etc.)	Pump chamber, minimum 725 litres

4.6 Recommendations for future monitoring

As per report, system maintenance

4.7 Recommended land disposal method (As per appendix L of AS/NZS 1547:2012)

Surface Dripper Irrigation	
Sub-surface Dripper Irrigation	✓
Standard Trench	
Mound	
Evapo-transpiration Beds	

4.8 Please identify the loading rate you propose for the recommended land disposal method.

Loading rate (table M1)		3.5	mm/day
Disposal area	Areal	207	m^2
	Lineal	207	m
Explanation			

4.9 What is the available reserve area for wastewater disposal area

Reserve disposal area (m^2)	207
Percentage of Primary Disposal area	100

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5.0 ENVIROMENTAL FACTORS

Priority level for heathy rivers project	This property is 2ha or less.
Is nitrogen, phosphorous or E.coli contamination to tributaries likely?	No

6.0 DECLARATION

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true, complete and adheres to the requirements of AS/NZS 1547 2012.

Name	Robert Tilsley	Signature	
Position	Principal	Date	27/03/2018

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Building Code Clause(s) E1 & G13

PRODUCER STATEMENT – PS1 _ DESIGN

(Guidance notes on the use of this form are printed on the reverse)

Waikato District Council
Building Consent Number
BLD1331/18
APPROVED

ISSUEDBY: Tilsley Engineering Ltd (27 Roulston St. Pukekohe)
(Design Firm)

TO: Mr & Mrs Gasson
(Owner/Developer)

TOBE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: On-site stormwater and effluent treatment and disposal system
(Description of Building Work)

AT: 380 Churchill East Road, Rangiriri
(Address)

LOT 13 **DP** 488718 **SO**

We have been engaged by the owner/developer referred to above to provide Design of on-site stormwater and effluent treatment & disposal system according to Tilsley Engineering Ltd calculations services in respect of the requirements of
(Extent of Engagement)
Clause(s) G13 and E1 of the Building Code for
~~All or~~ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:
Compliance Documents issued by Department of Building & Housing G13/AS2/VM4 and E1
(verification method / acceptable solution)
or
Alternative solution as per the attached schedule AS/NZS1547

The proposed building work covered by this producer statement is described on the drawings titled B5070 and numbered Proposed Site Plan
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions

(ii) All proprietary products meeting their performance specification requirements;

I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, Robert Tilsley am: CPEng 85675 #
(Name of Design Professional)
Reg Arch

I am a Member of : IPENZ ~~NZIA~~ and hold the following qualifications: BE (Civil) MIPENZ CPEng

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.

SIGNED BY Robert Tilsley ON BEHALF OF Tilsley Engineering Ltd
(Design Firm)

Date 03/ 04/ 2018 *(signature)*

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

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Waikato District Council
Building Consent Number
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On-site Effluent Treatment National Testing Programme (OSET NTP)

PERFORMANCE CERTIFICATE EXTENSION 2016
Hynds Advanced Lifestyle On-site Domestic Wastewater Treatment System, OSET NTP Trial 4, 2008/2009

System Tested
Hynds Advanced Lifestyle submerged fixed film media treatment unit. Rated design capacity 1,800 litres/day. Total liquid volume 7,420 litres (primary treatment 3,120 litres; secondary treatment aeration and clarification 3,540 litres, pumpout chamber 760 litres). Emergency storage 1,200 litres. No tertiary treatment (such as UV disinfection) is incorporated.

Test Flow Rate
The **Hynds Advanced Lifestyle** was tested at 1,000 litres/day (equivalent to servicing a 3-bedroom 5 person household) over an 8 month (35 week) period November 2008 to July 2009 followed by a 1 month (4 week) high load effects test involving 5 days at 2,000 litres per day followed by 1,000 litres/day over the following 3 weeks.

Testing and Evaluation Procedure
A total of 16 treated effluent samples of organic matter (BOD_5), suspended solids (TSS), total nitrogen (TN), ammonia nitrogen (NH4-N), total phosphorus (TP) and faecal coliforms (FC) at generally six day intervals during weeks 23 through 35 were benchmarked and rated on their median values. In addition, the energy used by the treatment system was assessed on the mean of consumption levels over the 16 sample days, weeks 23 to 35.

Benchmark Ratings
The **Hynds Advanced Lifestyle** system **achieved** the following effluent quality ratings:

Indicator Parameters	Median	Std Dev.	Rating	Rating System				
				A+	A	B	C	D
BOD (g/m^3)	4.9	2.3	A+	<5	<10	<20	<30	≥30
TSS (g/m^3)	9.85	3.76	A	<5	<10	<20	<30	≥30
Total nitrogen TN (g/m^3)	14.3	2.6	A	<5	<15	<25	<30	≥30
Ammonia Nitrogen NH4-N (g/m^3)	0.2	1.4	A+	<1	<5	<10	<20	≥20
Total phosphorus TP (g/m^3)	4.3	0.3	B	<1	<2	<5	<7	≥7
Faecal Coliforms FC (cfu/100mL)	68,000	45,681	C	<10	<200	<10,000	<100,000	≥100,000
Energy (kWh/d) (mean)	1.8	-	B	0	<1	<2	<5	≥5

Performance Certificate Extension
Hynds Pipe Systems Ltd (the manufacturer) have provided a signed and legally witnessed statement that there have been no changes whatsoever from the plant tested in 2009 to that manufactured and marketed in 2016. No changes have occurred to all tank volumes, submerged media (type and quantity), blower and aeration capacity, sludge return and all plant process timer settings. Hence the plants performance results and Benchmark Ratings above, as tested in 2009, can be expected to remain unchanged in 2016 and the previous Performance Certificate can be extended for a period of 3 years from its previous expiry date.

This Performance Certificate and associated Benchmark Ratings is specific to the **Hynds Advanced Lifestyle** model as specified above when operated at a flow rate of 1,000 litres/day, and is **valid to 31 August 2018**. For the full OSET NTP report on the performance of the **Hynds Advanced Lifestyle** system contact Hynds Environmental of Auckland.

Authorised By:
Ray Hedgland
Technical Manager, OSET NTP

25 August 2016

On-site Effluent Treatment National Testing Programme
c/- Technical Manager, 2/12 Mt Blanc Pl, Northpark, Howick, AUCKLAND 2013
Mob: 021 626 772 E-mail: ray@hedgland.co.nz

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Received as Further Information on 21/05/18

This information is provided by The Watermill Online Council

BIANCO PUMPZ

PRODUCT PROFILE
BIANCO SUBMERSIBLE PUMP
BIA-B42A (711924)



Submersible high head pump designed for AWTS and rainwater tanks. Fitted with noryl impellers and stainless steel strainer. AS/NZS4020 Approved for drinking water, 5 star energy rating, 550 watts.

Features
- Glass Filled Nylon pump body and Stainless Steel cover for strength and lightness.
- Easy grip, nylon carry handle.
- Dual mechanical seals (Carbon ceramic on pump side / silicon carbide in oil bath on motor side).
- 3 Stage High Head pump with durable Noryl impellers.
- Elevated (83mm) suction intake with Algae-Proof slotted strainer.
- 10m Power lead and automatic Float Switch. All cables to H07RNF standard.
- 240V Single Phase , 0.55kW 5 Star efficient motor. Built in auto-resetting thermal overloads

Benefits
- Strainer design improves water flow and prevents blockage from algae growth.
- Elevated intake draws oxygenated water from higher in tank and avoids sludge layer.
- Leads to improved water quality with lower algae and anaerobic mater for better smelling water and cleaner clothes washing.
- Quality pump materials assist with longer pump life while still being light to lift and lower.
- High Head pump with low energy usage

Applications
- Domestic pressure systems (with optional Press Control)
- Pumping Clean and pre-treated water.
- AWTS – Automated Water Treatment Systems pump out to dripper beds.
- De-watering of cellars, basements and garages

Liquid:

Clean water temperature range:	2 – 35 °C

Materials:

Pump body:	Glass filled nylon
Strainer:	304 SS
Impeller:	Glass filled nylon
Shaft:	Stainless Steel 410
Shaft seal:	Dual mechanical seals (Carbon ceramic on pump side and silicon carbide/ceramic in oil bath on motor side)

Installation:

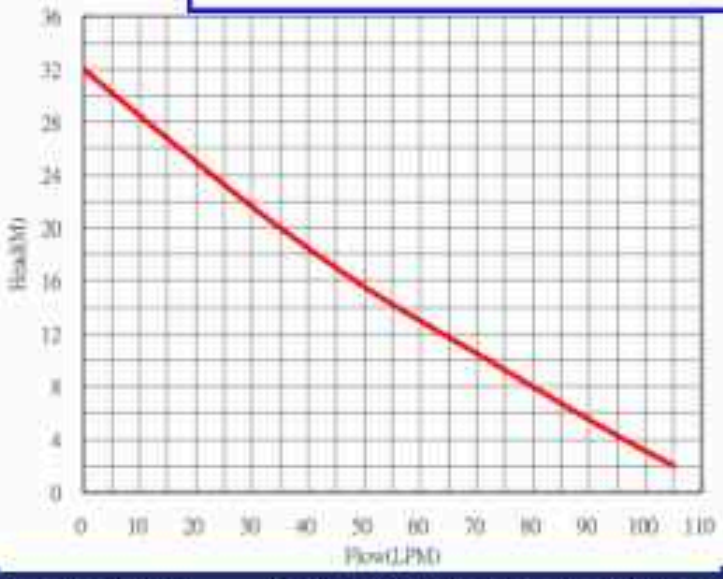
Maximum ambient temperature:	40 °C
Pipe connections discharge:	1"

Electrical data:

Rated voltage:	240V
Mains frequency:	50 Hz
Rated output:	550W
Current:	4.0 amps
Capacitor:	20 uF
Motor duty:	Continuous
Motor type:	Asynchronous
Motor protection:	In-built thermal overload
Ingress protection:	IP 68
Insulation class:	F
Power cable length:	10 m H07RNF
Net weight:	12 kg
Dimensions:	171Lx162Wx461H (mm)

2 Year Bianco Pumpz Warranty

Received as Further Information on: 21/05/18



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Certificate of Warranty

HYNDS WASTEWATER

August 2017

WARRANTY STATEMENT

The quality waste water treatment product you have purchased from Hynds Waste Water is covered under this comprehensive warranty as outlined in the following document and shall be read in conjunction with Hynds Terms and Conditions of Sale.

1. THE ENVELOPE (TANK)

Unless otherwise agreed in writing by duly authorised persons the structural integrity of the concrete tank shall be WARRANTED for a period of 10 years, commencing from the date of delivery; and all other components shall be WARRANTED for a period of 2 years commencing from the date of delivery.

2. THE TREATMENT AND PERFORMANCE

The treatment and performance of the product (as defined in the user's guide supplied with the product) are guaranteed, provided that the terms and conditions set out in this document are complied with.

3. FOREWARD

Hynds Waste Water (hereinafter referred to as "HWW") manufacture and distribute products intended for the treatment of waste water.
The purpose of this document is to inform the owner or installer about the warranty relating to HWW products. This warranty shall cover all waste water treatment products manufactured or distributed by HWW (hereinafter referred to as the "Product").

Products shall consist of an external envelope in concrete or in polyester and internal components can be accompanied by accessories such as but not limited to sockets, pump, raiser, lids and control panels.

In this Agreement or other documents the term "End User Owner" shall be further defined as including or referring to any Purchaser or Customer of Hynds.

4. WARRANTY

HWW warrants to the owner that the product is designed to treat wastewater in compliance with the regulatory requirements in force at the time it is purchased in a new and unused condition.

Notwithstanding anything contained in this Warranty the liability of either Party to the other including the end user owner shall not in aggregate exceed the invoice price of the Goods in respect of which the liability occurs.

The different warranties shall apply from the purchase date by the end user owner of the product, provided that, pursuant to installation, users and operating instructions, the product:

- was correctly sized with consideration to hydraulic and organic loading as specified by the Customers engineer, approved designer or regulatory authority; and
- was correctly installed, connected and commissioned in strict accordance the manufacturer's and local authority requirements by an approved and certified contractor, the Customers engineer, approved designer or regulatory authority; and
- is operated consistently within the parameters of which it was designed; and
- the Product receives regular servicing in accordance with the manufacturers and local authority requirements by an approved and certified contractor.

5. EXCLUSION FROM WARRANTY

The following types of damage including but not limited to shall be excluded and therefore void any warranty:

5.1 Any damage resulting from poor handling, transport (by a third party engaged by the customer directly) or storage defect. More generally, any damage caused by a third party that was not authorized directly by the manufacturer or distributor.

5.2 Any damage resulting from a modification of the product without having consulted the manufacturer or distributor beforehand (and having received either Parties written consent) about the modifications made to the product by any individual, company, agent or person.

5.3 Any damage resulting from an installation that does not comply with the requirements specified in HWW's installation guide (supplied with the product or available upon request at the following address: hwwsupport@hynds.co.nz) or those required by the local regulatory authority.

5.4 All damage resulting from a sizing error of the product, in particular with regard to the hydraulic and organic Load of wastewater intended for the product and to the legislation in force at the time the product was installed. The term "Load" shall refer to water, liquids, any elements sent inside the product to be stored or processed therein.

5.5 Any damage resulting from a change of the use of the product leading to a modification of the Load (flow rate and/or nature of wastewater) intended for the product.

5.6 Any damage caused by using the product in a way not compliant with the requirements set out by HWW in the user's instructions for the product (supplied with each product and available upon request at hwwsupport@hynds.co.nz).

5.7 Any damage caused by failing to observe the maintenance or operating instructions for the product as defined by HWW and as contained in the operating instructions for the product or any other document supplied with the product. Instructions are supplied with the product or are available on demand at hwwsupport@hynds.co.nz. The manufacturer reserves the right to review and update the instructions from time to time and it shall be the Customers responsibility to remained informed.

5.8 At the sole discretion of Hynds, any damage resulting from incorrect, incomplete and/or inadequate installation of the product essential to the correct functioning of the product.

5.9 Any damage resulting from a technical intervention on the installation by any individual, company or person who is not approved/certified (by the manufacturer or local regulatory authority), or does not have the correct equipment and knowledge to intervene on the product and its accessories. More generally, any modification or alteration of the product without the prior, written consent of HWW shall cancel the warranty granted by HWW and release the latter from its obligations without limitation.

5.10 Any damage resulting from elements such as the conditions of placement, conditions of installation, nature of the soil type, nature of the water to be treated or other similar external source that in the sole discretion of HWW is communicated inadequately, or with unreasonable delay or not at all to the installer and directly HWW by the end user owner, individual or company authorized by the latter or to whom said task was entrusted.

5.11 Any damage caused directly or indirectly, deliberate or accidental resulting from negligence, tort or unforeseeable circumstances of the installer, the end user owner, individual or company authorized by the latter. For the purposes of clarity this shall by extension also include force majeure, such as earthquake, storm, flooding, volcanic eruption, and as may be further defined.

6. LIMITATION AND IMPLEMENTATION OF THE WARRANTY

If the product should malfunction and provided that the terms and conditions of the warranty are complied with, HWW shall proceed or nominate an agent to review as soon as practically possible the repair(s) required in accordance with the degree of malfunction and assessment by HWW, or at the sole discretion of HWW the replacement of the product or component(s) of the product as may be required.

Under no circumstances may HWW be held liable for damages of any kind including liquidated damages, direct or indirect, resulting from incorrect or unsafe use of the product. The end user owner is responsible for the daily supervision of the product, within the limits of their competencies, the latter must inform HWW immediately and without unreasonable delay (defined as not more than 5 business days) upon detecting a defect or malfunction of the product. Notification must be in writing to **hwwsupport@hynds.co.nz**.

Any call on the warranty must be made in writing, if possible using the appropriate form (documented entitled "Claim Card" likewise available upon request at hwwsupport@hynds.co.nz), sent to **hwwsupport@hynds.co.nz**.

If, after inspection, it turns out that the damage or defect ascertained by the end user owner, who has informed HWW, does not comply with the terms and conditions of warranty, and where the HWW cannot be held liable, HWW reserves the right to invoice all expenses incurred including but not limited to travel or time & material operations to the end user owner or individual, company or person(s) who has engaged HWW or their nominated repair agent for services.

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This information is provided by the Waikato District Council

Technical Support Sheet

Hynds Domestic Wastewater System

Hynds Lifestyle Systems are a high performing range of aerated wastewater treatment systems for domestic applications that offer environmentally sensitive alternatives to the septic tank.

1. Introduction

Hynds Lifestyle Systems are an elite range of high performance aerated wastewater treatment systems that offer an environmentally sensitive alternative to the septic tank.

The Lifestyle Systems are a complete wastewater treatment unit that only require a sewage and electrical connection from the dwelling and a laid network of irrigation pipe around the landscaping.

The Lifestyle Systems offer a simple cost effective wastewater treatment, and a solutions for environmentally sensitive areas, undulating sites, or where there is poor ground or soakage conditions.

Lifestyle systems produce a clear, odourless liquid suitable for irrigating landscaped gardens, bush or trees.

Lifestyle systems can be easily landscaped to blend into the surrounding environment.

Hynds offer full design, installation and service for both domestic and commercial applications.



2. Applications

Lifestyle wastewater systems are commonly used in rural or residential areas not connected to the sewer mains.

The Advanced Wastewater Treatment Systems offer:

- A level of treatment higher than conventional septic tanks
- Efficient and effective disposal for sites with poor soil or percolation conditions
- Flexible disposal options for sites with difficult contours
- Safe disposal for environmentally protected areas such as beaches and waterways
- The ability to treat large or surge volumes

hyndsenv.co.nz
0800 93 7473

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, none of Hynds Environmental and its subsidiaries warrant the information contained herein for their particular application. Product performance are material only, and should be verified in a particular installation. No warranty is either expressed, implied, or statutory made by Hynds Environmental unless expressly stated in warranties and purchase agreements entered into between Hynds Environmental and the user.

HYNDS ENVIRONMENTAL

Document Set ID: 7965490
Version: 1, Version Date: 05/05/2026

Received as Further information on 21/05/26 | Date: 6 November 2026

This information is provided by the Waikato District Council

3. Features and Benefits

- OSET tested and approved
- Guaranteed strength integrity (ISO 9001 manufactured)
- Highest quality monolithic concrete construction (no joints and no leaks)
- Treatment capacity to cater for up to 3000L per day
- Genuine 24 hour emergency capacity
- Full height primary chamber wall to prevent surging and cross contamination of raw sewage into other chambers
- Zabel filter on Primary chamber to prevent carry through of solids and non biodegradable items
- Sludge-return function which transfers activated sludge back to the primary chamber dramatically reducing pump out frequency
- Simple and protected Electronic control and Alarm system (IP rated)
- Quiet operation
- Economic to operate (OSET Tested)
- Simple Retrofit for the upgrading of an existing septic tank
- Visually unobtrusive with environmentally blending colours
- A fully compensated drip irrigation system for even distribution onto level or undulating contours
- Simple to maintain irrigation filter

4. The Treatment Process

The treatment process occurs through a series of chambers before disposal through a self-compensating drip irrigation lines.

Hynds manufactured systems that have the ability to process and treat up to 3000 litres per day within a 24-hour period.

The treatment process occurs as follows:

Advance and Ultimate treatment system

1. 2750 litre anaerobic chamber with a bio-filter on outlet
2. Two stage aerobic digestion chambers
3. Clarification chamber
4. Activated sludge recycling function
5. Irrigation / pump chamber
6. Fine filtering of suspended solids through a 130 micron disc filter
7. Final disposal of the treated effluent through a 16mm pressurised and compensated drip irrigation network.

Elite treatment system

1. 4500L Primary aerobic tank with a T100 bio filter on the outlet *(for treatment up to 2000-3000L per day only)*
2. 2750 litre anaerobic chamber with a bio-filter on outlet
3. Two stage aerobic digestion chambers
4. Clarification chamber
5. Activated sludge recycling function back to 4500 primary
6. Irrigation / pump chamber
7. Fine filtering of suspended solids through a 130 micron disc filter
8. Final disposal of the treated effluent through a 16mm pressurised and compensated drip irrigation network.



FIG. 1 T100 bio filter

Table 1 Chamber function

System Type	Pre-treatment Volumes (Litres)	Aeration Volumes (Stage 1) (Litres)	Aeration Volumes (Stage 2) (Litres)	Clarify Chamber (Litres)	Irrigation Volume (Litres)	Total System Working Volume (Litres)	Emergency Capacity (Litres)	Total System Capacity (Litres)	Standard System Surge Capacity (Ltrs/hr)	Standard System Treatment Capacity (Ltrs/day)
Advanced	2,750	1440	1650	700	860	6,500	2,300	8,800	600	1,800
Ultimate	2,750	1440	1650	700	860	6,500	2,300	8,800	600	1,800
Elite	3,000	1530	1530	700	1000	11,200	3,020	12,950	800	3,000

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Treatment Stages of a Hynds Advance and Ultimate

1. Wastewater enters from dwelling
2. Primary treatment chamber 2750L
3. Biological filter on primary outlet
4. First stage aeration chamber
5. Second stage aeration chamber
6. Laminer plate clarification chamber
7. Pump out / irrigation chamber
8. Irrigation filter 130 micron
9. To irrigation field



Treatment Stages of a Hynds Elite

1. Wastewater enters from dwelling
2. Primary treatment in 4530L chamber
3. Biological filter on primary outlet
4. Second primary chamber 2750L
5. Biological filter on primary outlet
6. First stage aeration chamber
7. Second stage aeration chamber
8. Laminer plate clarification chamber
9. Pump out / irrigation chamber
10. Irrigation filter 130 micron
11. To irrigation field

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5. Chamber Function

5.1 Pre-treatment Chamber (Anaerobic)

The primary or anaerobic chamber is the first stage of the treatment process. This chamber is designed for 24 hours retention, of large indigestable solids to settle out to form sludge at the bottom of the chamber. Floating scum forms a thick layer of microbes on the top of the liquid, dissolving and de-gassing the methane gas which forms within the tank. Naturally occurring organisms provide the digestion process to break down the organic matter inside this chamber.

5.2 Biological Disc Filter

A biological filter is installed at the outlet of the pre-treatment chamber. The filter performs three main functions as follows:

- Retains the solid matter in the primary chamber
- 4 mm filtration of suspended solids
- Reduces surge action
- Lowers BOD_5

5.3 Submerged Aerated Filtration Chambers (Aerobic Digestion) - Stage one and two

The submerged aerated filtration process is a dual chamber function.

In this chamber the wastewater is infused with oxygen by an electric blower housed in a chamber on top of the tank. The infused air encourages aerobic bacteria organism to rapidly multiply upon the surface of the bio media located in these chambers. This process promotes active digestion and a continuous organic regeneration process (sloughing).

5.4 Laminar Plate Separator and Sludge Return System

A final clarification process occurs in this chamber through a laminar plate separator.

The aerated effluent enters up through the separator from the base of the chamber before passing over a series of diagonal honeycombed plates. The laminar plates allow any fine suspended particles to fall into a tapered base where a venturi suction system carries the activated particles back to the primary chamber. This creates a continuous recycling function. The recycled activated particles assist in improved breakdown of the anaerobic sludge in the primary chamber, reducing the frequency that this chamber will require to be pumped out.

5.5 Irrigation Pump Chamber

The irrigation chamber provides storage for the final treated effluent, where a submersible pump disperses the water by a level activated float switch, into the irrigation disposal field.

At design stage the selection of the appropriate pump type is made based on a series of head loss calculations.



FIG. 2 Pump out chamber



FIG. 3 Landscaping of a lifestyle system



FIG. 4 A typical irrigation field

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6. Design Parameters

A wastewater design must be carried out by a suitably qualified person to ensure the correct system and disposal area is specified. The design will determine:

- The daily hydraulic flow, surge loading, and treatment capacity
- The effluent BOD5 concentration
- The position of the tank on-site in relation to depth, and distance of connecting drainage pipework to ensure adequate fall
- The position and layout of the disposal field is made with consideration to elevations, headloss, pump sizing, servicing and council rules for boundary set backs, distance from structures and water table.

6.1 Hydraulics

A daily hydraulic design may be calculated either by using the Auckland Regional Council Technical Publication (TP58) or the New Zealand/Australian Standards (ASNZS1547).

Surge conditions should be designed for a maximum period of 10 minutes per hour.

6.2 Effluent Concentration

The standard raw wastewater and grey water effluent concentrations to be treated should be within the values stated in either ARC TP 58 or the New Zealand/Australian Standards ASNZS 1547.

Consultation with a Hynds Technical Representative will be required for systems treating effluent with levels above those stated in these documents, as well as for systems with high grey-water proportions.

6.3 Selection of Tank Position on site

The positioning of the tanks on site must allow a minimum gravity fall (vertical drop) into the primary chamber inlet of 1:65. If fall cannot be achieved, additional tank depth may be obtained with the specification of riser sections in 150 mm, 300mm, or 450 mm heights.

Tanks are not suitable for vehicle loads, point loads, or earth-fill above 450 mm deep, unless specified by Hynds.

Consideration may be made for landscaping aesthetics to cover the concrete tank lid, while ensuring no water enters through any access port. All access port should be at finished ground level for servicing purposes.

Refer to Fig. 6 for Delivery of a Lifetsyle System.

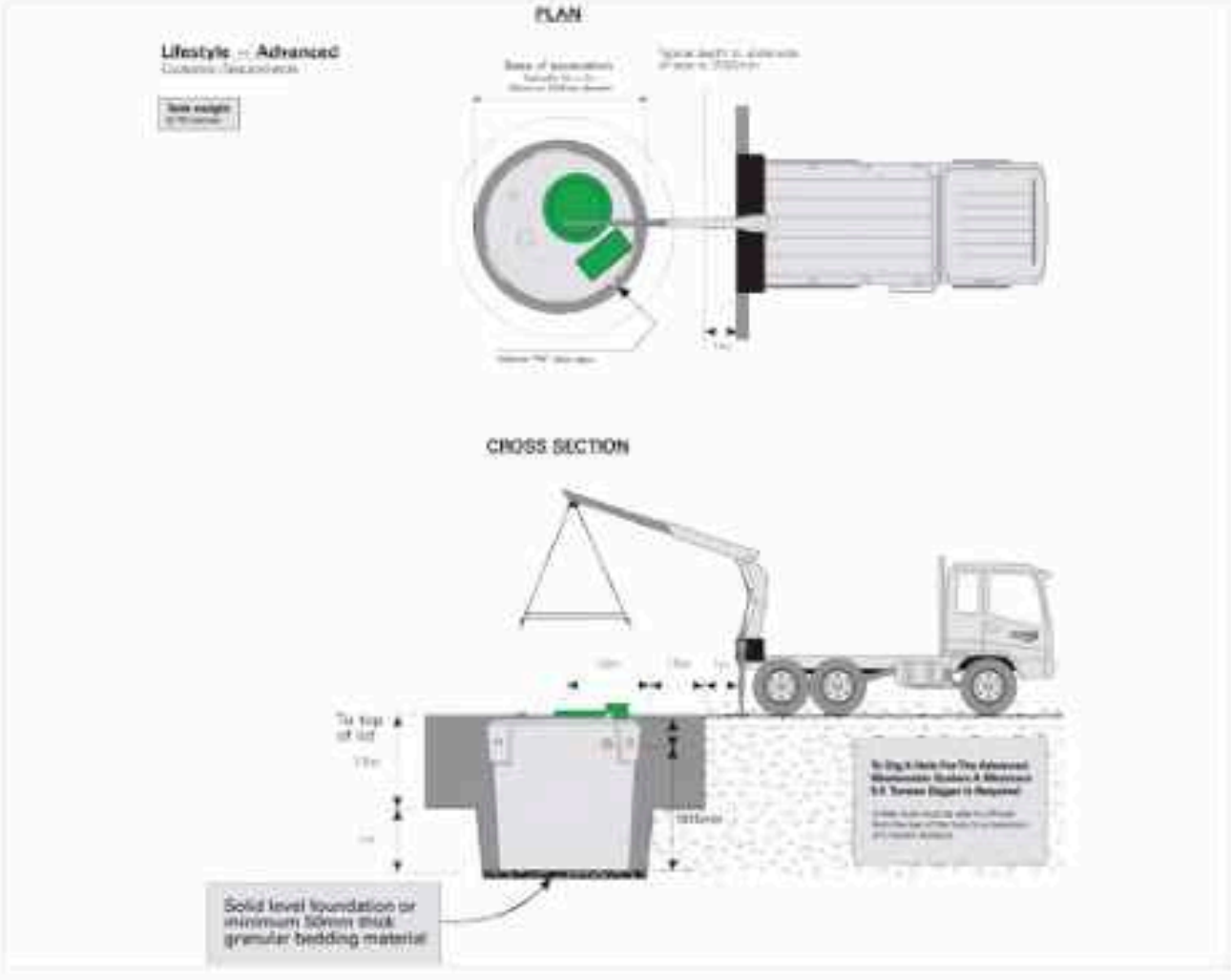

FIG. 6 Delivery of a Lifetsyle System

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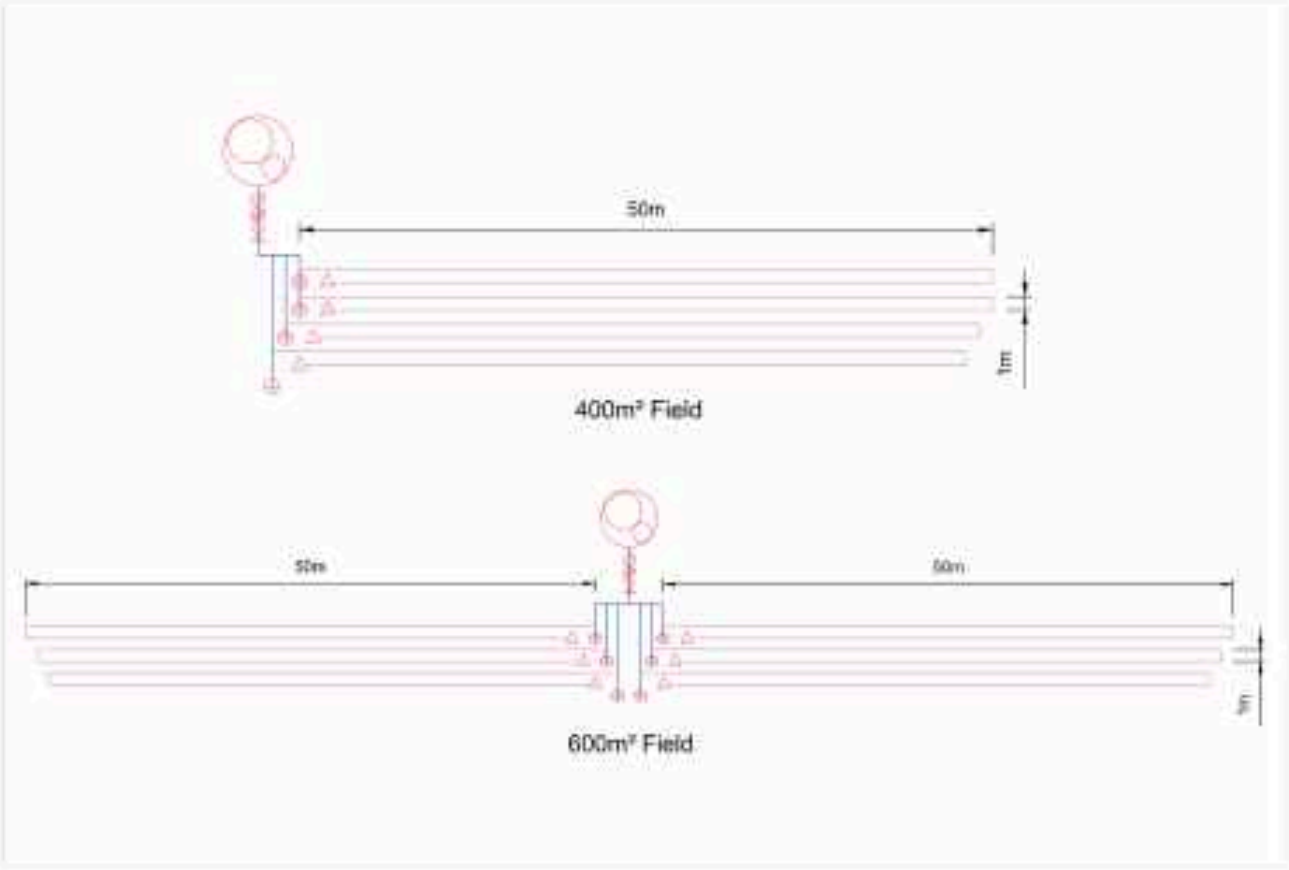

FIG. 8 Typical Layout of Irrigation Field

6.4 Selection of Disposal Field Position

The chosen area of the disposal field should be located to maximise an evapo-transpiration effect. If the field is designated, on and elevated area, the Hynds head loss spreadsheet should be consulted to ensure the correct pump pressure is adequate.

Specific irrigation design should be made with consideration to future maintenance of the field (flushing of lines and repair).

The field must be designated in a position separate from any recreational or animal grazing areas, or gardens used for planting vegetables for consumption. The field must be located the appropriate distance from neighbouring boundaries, watercourses and ground water sources as specified by the local regulatory authority.

6.5 The Disposal Field

The Lifestyle wastewater system is supplied with a fully compensated dripline emitter system.

The disposal field should be designed and installed to maximise the evapo-transpiration potential which is a combination of plant transpiration and surface evaporation.

Refer to www.hynds .co.nz for examples of landscaped systems.



The Hynds irrigation system incorporates a 130 micron irrigation filter and a combination of flushing valves, air release valves, and check valves to ensure that the disposal field performs at an optimum level and compensation.

The application rate of the treated effluent for each site must be determined by performing a site investigation and referencing TP58 or the ASNZS 1547, for relevant LTAR design values.

The length of the drip-line and the layout of the disposal field will be configured according to the site shape and by following the basic principles detailed in Fig.5 (Consult your Hynds Technical Representative for further information).

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Irrigation Design Criteria

- Appropriate choice of rising main diameter.
- Appropriate choice of drip-line spacing and output rates.
- Appropriate choice of trench spacing.
- Appropriate drip-line length (max 100m).
- Appropriate placement of field either in – bush block with natural vegetation cover – or in bark/mulch garden 150mm depth - or trenching in shallow trench (of typical trench cross section 50 – 100mm depth and width);
- Frost prone areas should be buried up to 150mm.
- Optional bedding material of sandy loam topsoil where conditions require.
- Placement of drip-lines must be laid following the contour on a slope.
- Ensure that the field is pressurised above 2m head at the top of the field to allow the emitters to maintain compensation.
- Use of air valves at the highest point of the irrigation field.
- Flush values installed at the end of each line (max 100m).
- Install all flush and air valves in valve boxes for future identification and for the purpose of servicing.

See drawing for typical layout of irrigation field.

6.5 Maintenance Contract (as per Council requirements)

A Hynds Service Contract should be specified within your design summary to ensure regular inspection and programmed servicing of the system occurs (6 monthly).

For maintenance of the irrigation, the below fittings must be installed:

- In-line disc filter
- Air valve at highest point of field.
- Flushing valves at the end of each line must be installed
- Inline check valves when vertical falls are greater than 4m. These valves are installed to prevent the emitters emptying in localised zones which may result in pending;
- A disposal field with a total irrigation area of greater than 500sqm² or 10m elevation may require a higher specified irrigation pump, and a distribution valve (K Rain) which may automatically dose to set regions.
- All service access lids are to be installed at ground level.

RECOMMENDED PLANT SPECIES

Species	Common Name
Agathis Australis	Kauri
Alectryon Excelsus	Titoki
Arthropodium Cirratum	Renga Renga Lily
Beilschmiedia Taraire	Taraire
Carex Grasses	Sedge
Coprosma Repens	Taupata
Cordyline Australis	Cabbage Tree, Ti Kouka, Palm Lilly
Corokia Buddleioides	Korokio
Corynocarpus Laevigatus	Karaka
Cyathea Medularis	Black Tree Fern
Dacrycarpus Dacrydioides	Kahikatea, White Pine
Dodonaea Viscosa	Akeake
Hoheria Populnea	Lacebark
Knightia Excelsa	Rewarewa
Leptospermum	Manuka, Tea Tree, Kahikatoa
Meryta Sinclairii	Puka
Metrosideros Excelsa	Pohutukawa
Phormium Tenax	NZ Flax
Pittosporum Eugenioides	Lemonwood
Plagianthus Regius	Ribbonwood
Psuddopanax	Five Finger
Pseudopanax	Lancewood
Rhopalostylis Sapida	Nikau Palm
Sophora Tetraptera	Kowhai
Vitex Lucens	Puriri



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7.1 Irrigation Filter

When installing pressure compensated drip irrigation, an irrigation filter of 130 micron is supplied with a Lifestyle system and must be installed prior to the disposal field. The filter should be a disc-mesh type which filters fine particles in suspension following treatment. This filter allows simple maintenance.



8. Treatment Performance

The expected treatment performance of a Lifestyle system should be consistent with the OSET tested performance registered on *https://www.waternz.org.nz/*
(Search - On-Site Effluent Testing OSET - Trial Results)

A correctly designed and operated Lifestyle system receiving normal domestic effluent at 20°C will produce a treated effluent with the following characteristics:

- Average BOD_5 of 20 mg/l with no samples greater than 30 mg.
- Non-filterable residue of 20 mg/L average value with no samples greater than 45 mg/L (suspended solids).
- For domestic system requiring low nitrogen to protec environmetally sensitive areas, specification of the Hynds System performing to < 15mm/L should be made.

For domestic systems requiring a high reduction in Coliforms, a disinfection option can reduce an E-coli count not greater than 200 E-coli per 100ml. The free residue chlorine value generally does not exceed 0.5mgl after 30 minutes of detention at peak flows of 650 litres per 2 hours.

For systems continuously operating outside standard parameters, the treatment quality is expected to decrease resulting in high frequency filter cleaning.

8.1 Controls

The performance levels of a wastewater treatment system are dependent on a number of controlling factors which may affect the performance of a system. Correct design and usage is critical to meet the expected parameters of the system.

- Daily Input flows.
- Concentration of effluent to be treated (as a level of BOD_5 initially in wastewater).
- The volume of surge entering the system.
- Adequate disposal field size.
- Avoidance of "foreign" non-biological substances.
- Continual system maintenance.

9. Monitoring System

The Lifestyle wastewater system is self monitoring by an electronic control system. A remote alarm plate is located inside the dwelling and contains an audible and visible alarm, activating whenever a fault occurs.
(Refer to Hynds website for Advanced Electrical Controller) for schematic electrical wiring diagrams for the Lifestyle Advanced system.

10. Tank Construction

The Lifestyle tanks are constructed of 40mpa concrete in a unique homogeneous casting process providing a robust tank with no leaking seams. The tanks are manufactured under ISO 9002 process.

11. Installation of a System

Lifestyle systems are only installed by trained and approved installers who have undertaken specific training.
A free site visit is provided for each Lifestyle system prior to installation.
The Lifestyle tank must be filled with water to the normal operating level immediately following installation to prevent potential floatation.
The Lifestyle tank will be installed into an excavated hole with a leveled foundation. The tanks will be bedded in a suitable granular material (minimum of 50mm thickness) as a bedding support.
Wiring of the alarm board within the dwelling is to be performed by a registered electrician for the Lifestyle schematic electrical wiring diagram.
(Refer to page 12 for electrical plan)

12. Commissioning

Commissioning of a Lifestyle system may only be performed by a Hynds approved installer or technical Representative. The commissioning is completed following the tank installation and once electrical power has been made available. A commissioning report is completed for all systems.

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13. System Requirements

The following must be observed to ensure problem-free operation:

- Do not switch the system off once commissioned.
- Ensure all household cleaning products are biodegradable or suitable for use in a septic tank.
- Spread wash loads over the week to prevent peak surge-loading.
- Fix all / leaking faucets.
- Ensure that no rain or surface water can enter the tank from gullies, drainage network, or poor ground conditions.
- Never make adjustments to the system or controller.

Note: *A comprehensive list of products that may affect the performance of a system are provided in the Homeowners Operation Manual.*

14. System Servicing

Lifestyle systems come with a Maintenance Servicing Contract which ensures that the system is monitored and continues to function efficiently.

Servicing must be performed by trained a trained Technical Representatives. Servicing includes:

- All filters cleaned
- Irrigation lines flushed
- Electrical equipment tested
- Vacuum of residual bacteria if required
- Flush irrigation network
- Check aeration setting

All services are recorded on a Service Report with a copy supplied to the homeowner, and logged onto a database. An additional copy is sent to the Local Regional Authority officer if required.

If a system is not running at optimum efficiency, the Servicing Technician will detail this for the system owner's attention.

15. Product Warranties

Hynds offer a 15-year warranty on the concrete tank. All electronic componentry have a 24-months replacement warranty.

Warranties have specific limitations and are not valid in situations of abuse or misuse.

For any further information please contact Hynds Pipes **09 274 0316** or visit ***www.hyndsenv.co.nz*** for:

- Technical specifications
- Electrical diagram
- Homeowner Operation Manual
- Filter cleaning
- Irrigation designs
- Plant species
- Headloss chart
- Oset tests

15. Do's and Dont's

Items that should not be inserted into a wastewater treatment system.

- Harsh or excessively used cleaning products (use plant based cleaning chemicals)
- Sanitary towels, nappies, baby wipes
- Coffee grounds
- Pharmaceutical drugs
- Dyes
- Fatty or oily substances
- Food scraps
- Cigarette stubs
- Paints
- Acids
- Pesticides, herbicides
- Solvents
- Oil, lubes, thinners, spirit, paints
- Dressings
- Paper towel

Helpful hints

- Complete your washing over several periods during the week to prevent surge loading.
- Have a compost bin for food scraps.
- Put toxic items in above list in an appropriate disposal facility.
- Buy environmentally friendly labelled products such as Eco Store from your supermarket.
- Clean your irrigation filter on a regular basis (see operation manual for instructions).
- Ensure no foreign water from rain, ground water, swimming pool or low gullys enter the plant.
- Never dispose of food letovers through the toilet or kitchen sink.
- No garbage grinders.

The Hynds Lifestyle Wastewater Treatment System is an electrically powered unit that treats all household waste. The system needs to be turned on at all times.

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Domestic Wastewater Treatment System

Irrigation Filter Cleaning

Hynds Lifestyle Wastewater Treatment Systems are fitted with an IP rated control and alarm system that alerts the homeowner to any service requirements or potential problems.

As a blocked irrigation filter is usually the cause of an alarm activation, the first step if the alarm is activated is to clean the system's irrigation filter by simply following the steps below. If the alarm is still activated 30 minutes after the irrigation filter has been cleaned out, please call your local service technician.

To keep the irrigation filter performing efficiently, we recommend that the homeowner clean the filter every 6-8 weeks.

1. Turn power off to tank at main board. This should be identified by your electrician.



2. Go to Lifestyle tank.



3. Slowly remove irrigation cap *(unscrew anti- clockwise)*. It is important to unscrew slowly to allow any built up pressure to be relieved. NB: Filter housing can be orientated in any position.



4. Remove internal filter disc.



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5. Loosen disc by unscrewing top off in an anti-clockwise direction.



6. Wash out disc with garden hose or similar. Be sure to seperate discs and clean in between.



7. Tighten up disc filter by hand until securely tightened. Place back into filter body *(will fit either way)*



8. Screw up top of filter housing by hand until securely tightened.



9. Wash hands with anti-bacterial soap.

10. Turn power back on.





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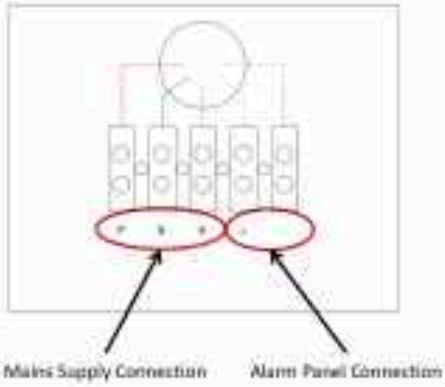
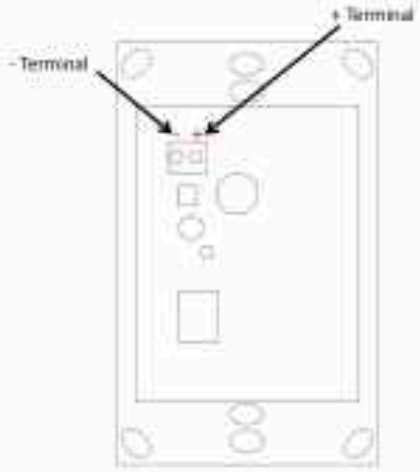
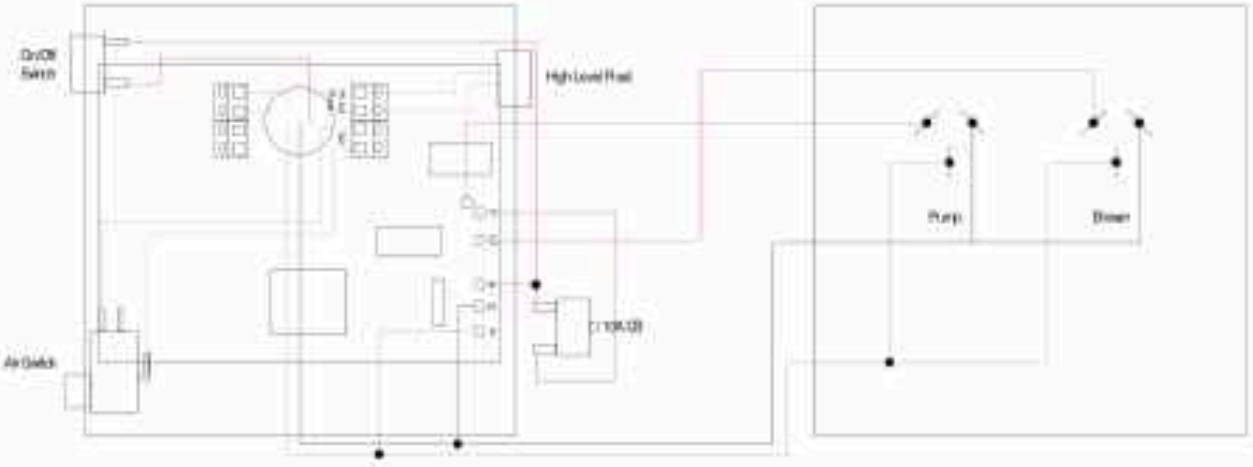
Wiring Diagram



Junction Box Layout



Alarm Panel Layout



Disclaimer: While every effort has been made to ensure that the information in this document is correct and complete, users of Hynds Environmental products or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified. If critical to a particular installation, no warranty, either expressed, implied, or statutory, made by Hynds Environmental unless expressly stated in a separate agreement executed by an officer of Hynds Environmental and the user.

HYNDS ENVIRONMENTAL

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Technical Support Sheet

Homeowners Manual

The Hynds Lifestyle Wastewater System is a technologically advanced wastewater treatment system.

The Hynds Lifestyle Wastewater System is a technologically advanced wastewater treatment system.

When using aeration technology, naturally forming organisms are accelerated and enhanced to convert household waste into clear odorless liquid which can be used for irrigating landscaped garden, bush or trees.

1 Introduction

This manual contains important information on how to care for your system. Reading this manual will assist you to understand your systems operation, and how you may be involved to ensure the plant operates at its optimum performance.

2 Important Information

You have an alarm plate located in your house or garage which will indicate if or when you have a power or air fault with your wastewater system.

If an alarm is activated:

1. Check and clean your irrigation filter to ensure it is not blocked and causing an over high level setting off the alarm.
2. Check that the air or electricity supply to the system is operating *(you should be able to hear the blower working in the blower box on top of the tank)*.

If you are unable to identify or remedy the problem, please call your local service agent.

3 Intended Use

The Hynds Lifestyle treatment plant is designed to treat wastewater from a domestic dwelling only.

- The Lifestyle Advanced and Ultimate systems are designed for a maximum daily flow of 1800 litres of domestic wastewater.
- The Lifestyle Elite system is designed for a maximum daily flow of 3000L of domestic wastewater.

The operational safety of the supplied treatment plant can only be guaranteed if it is used for the intended purpose. Any operation outside its intended design may result in damage to the plant, a person or the environment.

Any additional volume beyond the designed use will be deemed to be contrary to the intended purpose and design. The manufacturer assumes no liability for damages resulting from this.

3.1 Harmful Products

The treatment system relies on the performance and health of the microbiological bacteria that live in the wastewater treatment tank. All waste that is inserted into the system should be considered for its potential harmful effect on the friendly bacteria that effectively work inside the tank to provide clear odourless water.

By observing your waste disposal habits you will assist your plant to operate at maximum performance.

Below is a list of harmful products which may affect the performance of your system and should not be inserted into the tank.

- Harsh or excessive cleaning products
- Bleach
- Toilet Bluo or similar sanitiser

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3.1 Harmful Products Continued

- Coffee Grounds
- Medications or pharmaceutical products
- Hair or fabric dyes
- Fatty or oily substances
- Food scraps
- Sanitary towels and tampons
- Nappies
- Baby wipes
- Cigarette stubs
- Paints
- Fibres and cloth
- Photographic processing chemical
- Acids and Solvents
- Pesticides or herbicides
- Oil, lubes, thinner, spirits,
- Dressings, paper towels, plaster

Helpful Hints

- Use only plant based cleaning products, such as Ecostore (available at supermarket)
- Complete your washing over several periods during the week to prevent daily surge loading
- Have a compost bin for food scraps
- Put any toxic items in above list in an appropriate disposal facility
- If the tank is taking a while to develop an odour trapping crust, you may purchase live bacteria
- Septic Tank Starter from Ecostore

Note: *It is recommended to use products that are labelled bio-degradable*

4 Technical data

Treatment Plant

Description: Hynds Lifestyle Domestic Treatment Plant

Designer: Hynds Environmental

Manufacturer: Hynds Environmental

Maximum flow:

- Advanced 1.8 m^3 per day – single dwelling
- Ultimate 1.8m^3 per day – single dwelling
- Elite 3000m^3 per day – maximum two dwellings

Electrical Componentry

Air blower

- Manufacturer: Rietschle
- Type: LP80HN
- Connection: 230 V, 50 Hz
- Power: 0.12 kW
- Number: 1 unit

Irrigation Pump

- Manufacturer: Davey
- Type: D42 A/B
- Connection: 220-240 V, 50 Hz
- Power: 0.6 kW
- Number: 1 unit
- Max. total head 32 m

Filters

- Primary Filter – Manufacturer: Taylex – T100 disc dam biological filter (4mm scree)
- Irrigation Filter Manufacturer: Amiad – 25mm (130 micron screen)



FIG. 1 Biological Disc Filter

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5.0 Maintenance and Repair Work

Only the manufacturer or an approved contractor may carry out maintenance and repair work (except filter cleaning) on the treatment system. A service contract should be made with an authorised service agent. Any work carried out by unauthorised organization or person may result in the warranties for the Hynds system becoming invalid.

5.1 Owner Responsibility

The plant runs automatically and requires no special knowledge on the part of the owner/user. However, typically an irrigation filter may require cleaning on a routine basis (e.g. monthly). See filter cleaning guide page 6.

The owner should have a contract with an authorised service agent to service their system.

The system must remain turned on at all times.

6.0 Safety Information

There are potential risks when working on or around the treatment system:

- Inflammations or infections
- Falling into the empty or filled tank chamber if the lid is not located and secure
- Suffocation from gas inside the tank
- Electrocution

6.1 Personal Care

Wastewater may contain harmful bacteria such as infectious pathogens. When carrying out any maintenance or servicing of the system the following should be observed.

- Thoroughly clean your hands with water and soap or hand cleansing paste and disinfect after any contact with wastewater.
- Always wear rubber gloves.
- Wear separate protective and work clothing and keep them apart from your normal clothing. Take off and wash your clothing immediately after you have finished work.
- Poliomyelitis, tetanus, hepatitis A and B inoculation should be sought.
- If eye or mouth contact occurs, flush with plenty of water and seek medical advice.

6.2 Falling

Beware of the danger of falling into the empty or full tank if the tank lid has been removed for servicing.

To avoid falling into a tank stay clear from the tanks when servicing operation is in progress.

6.3 Danger of Suffocation

Do not enter the inside of the tank under any circumstances.

The production of toxic and explosive gases in sewage treatment plants can occur which can cause suffocation. If the tank is to be entered by a contractor, standard confined space procedures must be followed and the relevant safety equipment must be utilised (includes gas detector, breathing apparatus, tripod and winch).

No smoking in the vicinity of the sewage treatment plants.

6.4 Risk of Electrocution

Before handling any part of the sewage treatment plant, making contact with the water or working on or near any of the electrified equipment, make sure that the power to the tank is switched off at the isolation switch at the tank, or at the mains in the house.

7.0 Treatment Process

The treatment process occurs through a series of chambers and filters before disposal via a self-compensating drip irrigation system.

The Treatment Systems have the ability to process:

- Advanced
- Ultimate – 1,800 litres per day
- Elite – 3,000 litres per day

Performance:

As tested and approved at OSET NTP

- 20mg/L BOD5
- 30mg/L Suspended Solids

This performance is guaranteed for a system that is designed and installed to the correct parameters as per specified in Hyds Technical and Installation Manual, and is serviced as specified in this document.

(ref clause: 8.0, 8.2, 8.4)

7.1 Primary Chamber (Anaerobic)

The primary, or anaerobic, chamber is designed to filter and retain indigestible solids, allowing them to settle on the floor of the chamber for further biological breakdown or eventual pump-out.

A scum layer forms on the top of the liquid matter in this chamber, trapping in the naturally forming gaseous Hydrogen Sulphide. It is important for a tanks scum layer to quickly form to prevent odours and poor digestion. Overloading, peak surging or wash chemical overdose can affect this process.

Within the anaerobic waste naturally occurring anaerobic organisms immediately form to begin the digestive breakdown process of the biological matter.

A large biological filter is located on the outlet of this chamber to prevent any large solids entering the aeration process.

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7.2 Biological Disc Filter

The biological filter is installed at the outlet of the pre-treatment tank to reduce surge action, provide flow control, and retain the indigestible solids in the primary chamber.

7.3 Submerged Aerated Filtration Chambers (Aerobic Digestion) – Stage 1 & 2)

The submerged aerated filtration chamber is a two-stage process. Wastewater is infused with oxygen into two separate by an electric blower (stored in a chamber on the tank lid) the oxygen is infused by a fine bubble diffuser system attached to a network of pipes near the base of the tank. A Biomass high surface media block is suspended above the diffusers where naturally occurring aerobic organisms rapidly multiply, die off and regenerate on the surface of this material. Suspended organisms rapidly digest the waste particle in these chambers.

7.4 Clarification Chamber & Sludge Return System

From the aeration chamber the liquid enters an up-flow clarification chamber where any remaining fine particles pass over a sloped plate separator. This material drops down to a tapered hopper at the base of the chamber separator tank to be picked up by a venture suction system and carried back to the primary chamber, ingesting fast acting bacteria to a normally slow process. Returning activated sludge dramatically reduces pump out frequency.

7.5 Irrigation Pump Chamber

The irrigation chamber offers a storage buffer to cope with the daily and surge loads placed on the system. The chamber houses a submersible pump which feeds the disposal field, operated by a float switch.

The standard Lifestyle wastewater system has been designed to allow a specified 'balance' between the irrigation chamber volume and the pump to handle the design input. Increased pump sizing is required for irrigation fields positioned higher than 2 metres above the top of the dome lid.

7.6 Disinfection Option

Disinfection to reduce wastewater coliforms in an environmentally sensitive environment can be specified with the Lifestyle wastewater systems. Disinfection reduces pathogenic coliform organisms present in the treated wastewater. This option may be considered by Council for areas where the disposal field is close to drinking aquifers, high pedestrian or traffic areas, high water tables or where aerial spray irrigation is allowed.

The disinfection system option requires additional maintenance to ensure the lamps and filters are kept to optimum performance.

7.7 Irrigation

The irrigation pump will deliver the treated waste out into the irrigation field on your land. The area for of the irrigation has been designed and selected specifically for your



property. The location of the irrigation was chosen for its suitability to provide for all elements of, optimum soakage into soil, transpiration into plant life and evaporation from the sun and wind. The network of pipe has valves installed which allow future flushing at service periods. These are in small valve boxes which must be kept accessible. Irrigation pipes should be protected from UV by burying under mulch or bark. Bark should be No.4 and applied minimum 100mm deep. Suitable plant species enjoy the feeding of high nutrient liquid and provide evapotranspiration into their root and leaf structure to assist with the uptake of the liquid.

Avoid machinery driving over the irrigation which could potentially crush the small pipes.

Stock must not be allowed to access this area.

8 Maintenance

Maintenance on all septic and wastewater treatment systems is necessary to maintain their performance.

Please note: Hynds Environmental Technicians will require foot access to your Lifestyle system every **six months**. The green lids on the tank will need to be removed and it is therefore essential that access is not restricted due to excess landscaping by the landowner.

8.1 Preventative Maintenance

The Hynds Lifestyle Domestic Wastewater Treatment system operates automatically, with little maintenance required by the homeowner. A treatment system requires preventative maintenance to ensure the system continues to perform efficiently.

The home occupier will be required to clean an irrigation filter on a regular basis (minimum frequency bi-monthly).

The procedure for this operation is included in Appendix B.

8.2 General Servicing

The treatment system requires specialised periodic servicing, performed by a suitably trained technician (6 monthly). This is required to ensure the system maintains its warranty and optimum performance.

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Version: 1, Version Date: 05/05/2026

Received as Further Information on 21/05/18

This information is provided by the Waikato District Council

The general servicing will include, but is not limited to:

- Checking and cleaning biological and irrigation filters
- Checking blower function and replace filter if necessary
- Checking and flushing irrigation lines as per manufacturer's instructions and recording pressure in lines
- Check pump strainers are clear and pump is working to optimum pressure
- Check controller – all alarms and functions are operating effectively
- Check Aeration Tank and pipes for sludge, flushing or vacuuming as required
- Monitor primary sludge build up for potential pump out
- Check irrigation lines for leaks, blockages and compensation efficiency.
- Flush Irrigation lines
- General inspection of site condition for wet spots, bark and planting
- Take samples for testing (if applicable)

On completion of the service, a service report is completed and sent to both the homeowner and the required council(s).



8.3 Trouble Shooting and Call Outs

The Hynds electronic controller is designed to assist in identifying a power, pump or air fault. If a fault does occur, an alarm will audibly and visually activate on the alarm plate located in or near the dwelling to draw the attention of the user to the type of fault. If a pump has failed, there will be 24 hours emergency storage for the fault to be remedied.

The homeowner should clean his irrigation filter as this is often the cause for an alarm.

If the fault is not easily identified or rectified by the homeowner, phone your local service agent.

8.4 Tips and Advice

The Hynds domestic treatment systems are designed for only domestic wastewater treatment use.

A tank with objectionable odours will be the direct consequence of incorrect use. To ensure good performance:

- Have serviced by an approved service technician 6 monthly.
- Avoid placing harsh chemicals or toxic substances into the system
- Occupancy overloading or peak surging by multiple appliances.
- Ensure all drainage to the system is wastewater only
- Rainwater should not be able to enter the treatment system from poor or low ground contours
- All house gullys should be to regulation height to prevent ground water ingress
- Backflush from swimming pool should not be connected to the treatment system
- Downpipes should not be connected to the treatment system
- Never dispose of food leftovers through the toilet or kitchen sink.
- Distribute your washing machine load over the week. (Not all on Saturday morning)
- Use the correct measure of cleansing, rinsing and washing agents.

Ignoring this advice will result in la diminished performance of the micro-organisms which complete the digestion function inside the tank.



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This information is provided by the Waikato District Council

Domestic Wastewater Treatment System

Irrigation Filter Cleaning

Hynds Lifestyle Wastewater Treatment Systems are fitted with an IP rated control and alarm system that alerts the homeowner to any service requirements or potential problems.

As a blocked irrigation filter is usually the cause of an alarm activation, the first step if the alarm is activated is to clean the system's irrigation filter by simply following the steps below. If the alarm is still activated 30 minutes after the irrigation filter has been cleaned out, please call your local service technician.

To keep the irrigation filter performing efficiently, we recommend that the homeowner clean the filter every 6–8 weeks.

1. Turn power off to tank at main board. This should be identified by your electrician.



2. Go to Lifestyle tank.



3. Slowly remove irrigation cap *(unscrew anti- clockwise)*. It is important to unscrew slowly to allow any built up pressure to be relieved. NB: Filter housing can be orientated in any position.



4. Remove internal filter disc.



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Version: 1, Version Date: 05/05/2026

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5. Loosen disc by unscrewing top off in an anti-clockwise direction.



6. Wash out disc with garden hose or similar. Be sure to seperate discs and clean in between.



7. Tighten up disc filter by hand until securely tightened. Place back into filter body *(will fit either way)*



8. Screw up top of filter housing by hand until securely tightened.



9. Wash hands with anti-bacterial soap.

10. Turn power back on.





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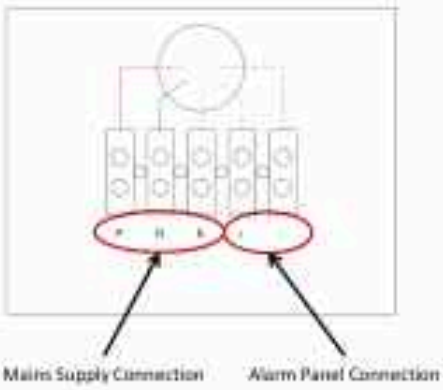
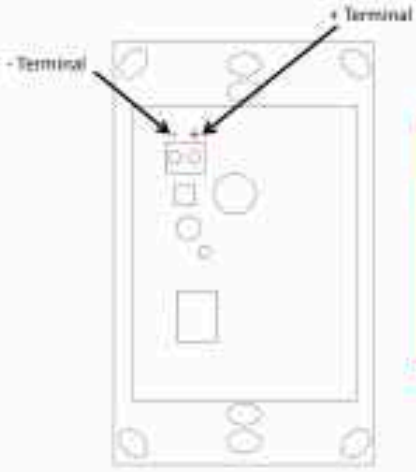
Wiring Diagram



Junction Box Layout



Alarm Panel Layout

Waikato District Council
Building Consent Number
BLD1331/18

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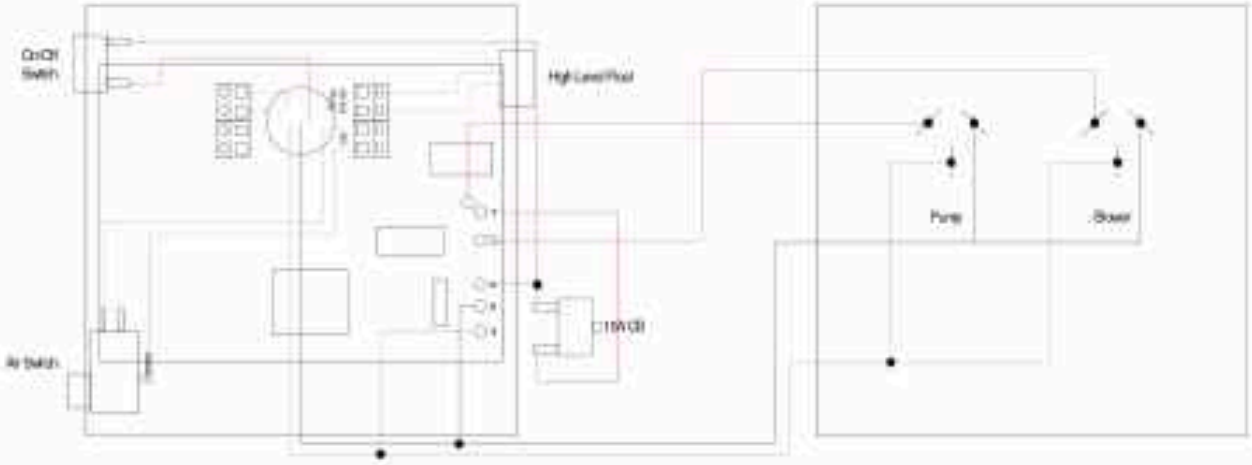

HOMEOWNERS OPERATION MANUAL - LIFESTYLE TANK | RURAL | PG 8

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds Environmental products or processes within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and installation will vary according to particular circumstances. No warranty, either expressed, implied, or statutory is given by Hynds Environmental unless expressly stated in any sale and purchase agreement entered into between Hynds Environmental and the user.

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Waikato District Council
Building Consent Number
BLD1331/18

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PROPOSED RESIDENCE FOR

Mark & Lisa Gasson,

380 Churchill East Road,
Rangiriri.

No.	Sheet	APPENDIX
1	SITE PLAN	GIB - CONSTRUCTION DETAILS
2	DRAINAGE PLAN	GIB - CONSTRUCTION DETAILS
3	FLOOR PLAN	GIB - GS1-N & BL1-H DETAILS
4	ELEVATIONS-03May2018	GIB - AQUALINE TILED WALLS & CEILING NOTES
5	FOUNDATION	GIB - AQUALINE TILED SHOWER WALLS & BASE
5A	S1	GIB - AQUALINE BATH TILED UPSTAND & KITCHEN/LAUNDRY
5b	S2	ARDEX - WPM002 WATERPROOFING DETAILS
6	ROOF	ARDEX - WPM002 WATERPROOFING DETAILS
7	LINTEL/FIXINGS	ARDEX - WPM002 WATERPROOFING DETAILS
8	BRACING	ARDEX - WPM002 WATERPROOFING DETAILS
9	SECTIONS	LUMBERLOK LINTEL FIXINGS
10	PORTAL FRAME	LUMBERLOK STUD TO TOP PLATE FIXING
11	PORTAL FIXING DETAILS	LUMBERLOK PURLIN FIXING
12	EAVES, BARGE DETAIL, RIDGE BEAM	
12a	Council Letter 03May2018	
12b	Council Letter 03May2018	
13	WINDOW FLASHING - BRICK	
14	E2 - DOOR SILLS, RIDGE/HIP	
15	E2 - RIDGE, BARGE	
16	E2 - STOPENDS, VALLEY	
17	E2 - PIPE PENETRATION ROOF & WALLS	
18	E2 - CAVITY NOTES	
19	E2 - METER BOX, GENERAL WINDOW/DOOR CAVITY FIX	
20	E2 - VENEER NOTES, WEATHERBD. EXT. CNR	
21	E2 - WEATHERBD. INT. CNR, WB WINDOW FLASHINGS	

Received as Further Information on: 21/05/18

DJS Draughting Services Ltd. has undertaken this work on the instruction of the Client or their Representatives.
In doing this design any alterations made were on the instruction of the Client or their Representatives.
All drawings must be thoroughly checked by the Project Manager / Main Contractors to ensure drawing accuracy.
DJS Draughting Services Ltd has no instruction or obligation to inspect or supervise any of the work which is to be undertaken.
DJS Draughting Services Ltd accepts no liability for such work which is beyond our control to rectify or make good should this be necessary.
It is the responsibility of the Project Manager / Main Contractor to ensure workmanship for all trades is in accordance with accepted trade practice, relevant standards & Local Authority requirements. It is the responsibility of the Project Manager / Main Contractor to ensure all necessary Council & Third Party inspections are carried out during and on completion of all works.
Producer Statements are required as directed by the Local Authority from each trade on completion of works.
DJS Draughting Services Ltd accepts no liability for any building documents, town planning requirements or accuracy supplied by any Third Parties in this project preparation.

DJS DRAUGHTING
SERVICES LTD.
PO Box 682,
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e: david@djsdraughting.co.nz

PROJECT NUMBER: 88118

DATE: April 2018

Document Set ID: 1965498
Version: 3, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

NOTES -
1) ALL LEVELS TO BE CONFIRMED ON SITE BEFORE COMMENCEMENT OF WORK

2) CHECK ALL SETOUT DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORK

3) LOCATE AND CONFIRM ALL PUBLIC DRAINS AND CONNECTIONS ON SITE BEFORE COMMENCEMENT OF WORK

4) DETERMINE DRAINAGE LINE LOCATIONS FOR SUFFICENT FALL BEFORE COMMENCEMENT OF WORK - ADJUST DRAINAGE LAYOUT TO SUIT - PLUMBER/DRAINLAYER TO DETERMINE FINAL LAYOUT ON SITE

Waikato District Council
Building Consent Number
BLD1331/18

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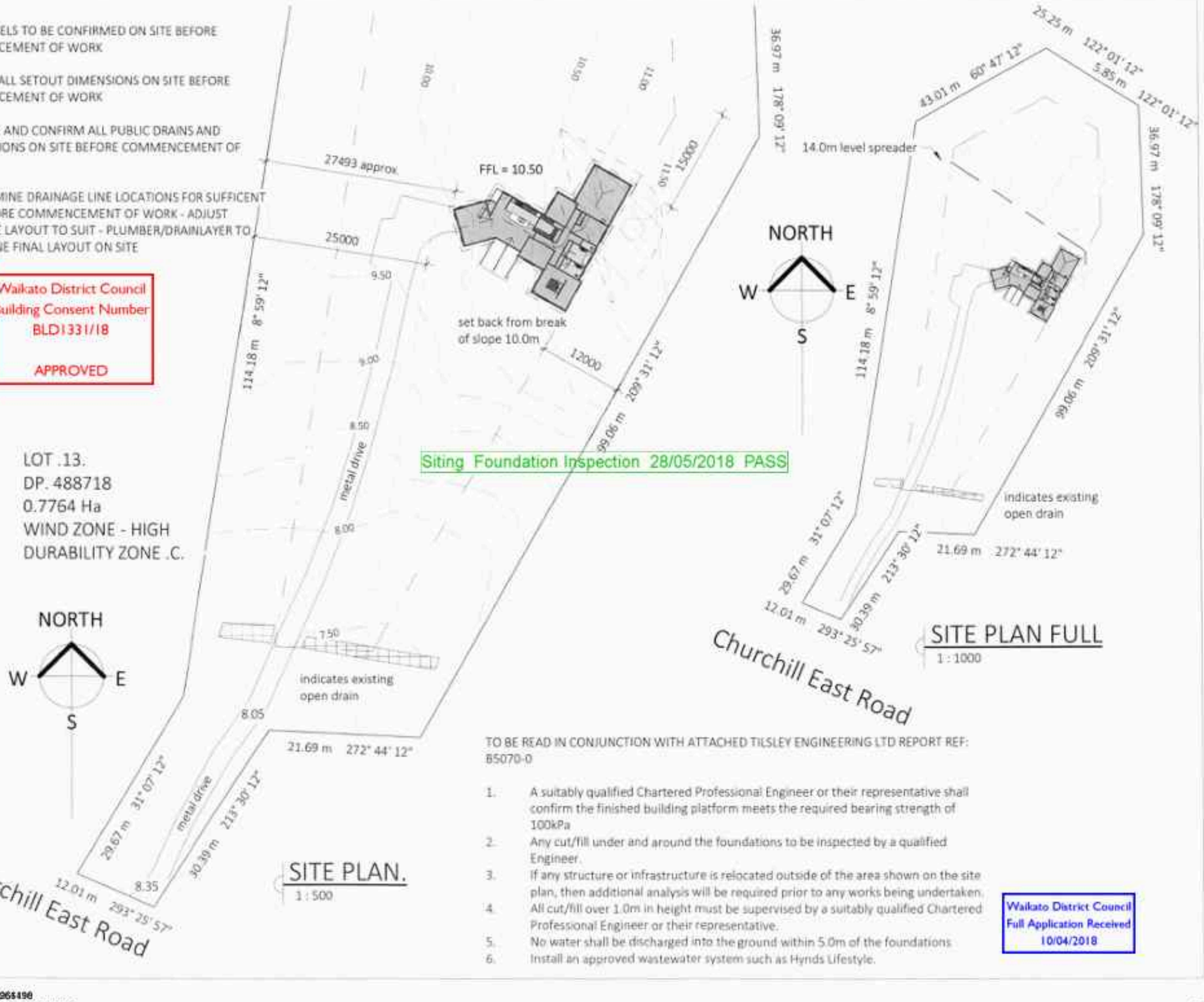
LOT .13.
DP. 488718
0.7764 Ha
WIND ZONE - HIGH
DURABILITY ZONE .C.



SITE PLAN.
1 : 500

SITE PLAN FULL
1 : 1000

TO BE READ IN CONJUNCTION WITH ATTACHED TILSLEY ENGINEERING LTD REPORT REF: 85070-0

1. A suitably qualified Chartered Professional Engineer or their representative shall confirm the finished building platform meets the required bearing strength of 100kPa
2. Any cut/fill under and around the foundations to be inspected by a qualified Engineer.
3. If any structure or infrastructure is relocated outside of the area shown on the site plan, then additional analysis will be required prior to any works being undertaken.
4. All cut/fill over 1.0m in height must be supervised by a suitably qualified Chartered Professional Engineer or their representative.
5. No water shall be discharged into the ground within 5.0m of the foundations
6. Install an approved wastewater system such as Hynds Lifestyle.

Waikato District Council
Full Application Received
10/04/2018

DJS DRAUGHTING SERVICES LTD.
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Registered Member: DANZ
(Design Association of NZ)

BP111742 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE

ALL MEASUREMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK

REFER TO ATTACHED EJ AND MANUFACTURER SPECIFIC DETAILS

ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson,
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND:	
SCALE AS SHOWN	
SHEET	1

Document Set ID: 7965496
Version: 3, Version Date: 08/06/2018

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1331/18

APPROVED

Received as Further Information on: 21/05/18

NOTES -

1) INSTALL ALL FLASHINGS TO MANUFACTURES SPECIFICATIONS AND TO LOCAL BODY REQUIREMENTS.

2) ALL MATERIAL TO BE SUITABLE FOR DURABILITY ZONE .C.

3) ALL CONNECTING BRACKETS/FIXINGS TO BE APPROVED FOR SITUATION AS PER MANUFACTURES RECOMMENDATIONS AND LOCAL BODY REQUIREMENTS
ALL EXPOSED FIXINGS TO BE TYPE 304 STAINLESS STEEL MINIMUM.

4) ALL DRAINAGE AND WASTE PIPES TO COMPLY WITH AS/NZS3500.2. 2015

5) LOCATE ALL PUBLIC SERVICES AND CONNECTIONS BEFORE EXCAVATION - USE EXISTING CONNECTIONS WHERE POSSIBLE

114.18 m 8° 59' 12"

NORTH

W

S

E

LOT .13.
DP. 488718
0.7764 Ha

25000

Building Setback 25.0m restriction line

EXCAVATION:
shaded area indicates excavated & battered area.
245 m2 x 0.6 = 147 m3 cut approx.

Hynds wastewater system
"Hynds Lifestyle Domestic"

E.D. Reserve field

E.D. field - install 207m of dripper lines at 1.0m cts. install in accordance with Manufactures instructions. 3.0m from buildings, 1.5m from boundaries

DP
FFL = 10.50
DP
DP
cesspit
kitchen sink to run into ORG
ORG
max. 50m2 sealed drive area - fall to cesspit
DP
DP
vent
DP

Ø100 sealed SW line to level spreader

provide orifice controlled outlet giving 3.8m3 of attenuation

2 x 25,000 litre water tanks

15000

12000

WASTE PIPE SCHEDULE

BASINS - Ø32 UPVC (1:40)
TUB - Ø40 UPVC (1:40)
KITCHEN SINK - Ø50 UPVC (1:40)
WC - Ø80 UPVC (1:60)
SHOWER - Ø40 UPVC (1:40)
BATH - Ø40 UPVC (1:40)

ALL UNITS TO HAVE AAV VALVE FITTED WHERE REQUIRED TO AS3500 STANDARD

ALL UNDERFLOOR WASTE PIPES TO BE Ø100

DOWNPIPES - Ø80
0° - 25° up to 85 m2
25° - 35° up to 70 m2
35° - 45° up to 60 m2
45° - 55° up to 50 m2

STORMWATER GRADIENT = 1:120
SEWER LINE GRADIENT = 1:60

install approved sedimentation control fencing, to remain untill completion of project

99.06 m 209° 31' 12"

DRAINAGE PLAN
1 : 200

Amendment:
1) indicated the Hynds wasterwater system to be used

DJS DRAUGHTING SERVICES LTD.
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BP111742 - DESIGN 2

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ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson,
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	Apnl 2018
JOB NO.	88118
AMMEND	Council Letter 04 May 2018
SCALE AS SHOWN	
SHEET	2

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Version: 1, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1331/18

APPROVED

WET AREA FLOORS TO BE SEALED USING "ARDEX WPM 002" SUPERFLEX WATERPROOFING MEMBRANE AND APPLIED TO MANUFACTURES SPECIFICATIONS.

BATHROOM & ENSUITE SHOWER ENTRANCE TO HAVE A TILED UP UPSTAND.

GLAZED SHOWER SURROUNDS TO BE GRADE .A. SAFETY GLASS

FLOOR PLAN.

1 : 100

FLOOR AREA	o/all Brick	o/all Frame
	227.40m2	219.57m2

ELEVATIONS

Pre-Floor Plumbing Inspection Completed 28/05/2018 PASS

INSTALL APPROVED MECHANICAL VENTILATION FROM INTERNAL WET AREA TO EXTERIOR SOFFIT OR WALL LINE - MIN. 20 L/S AIR MOVEMENT

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PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	3

Waikato District Council
Full Application Received
10/04/2018

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Version: 3, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

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Waikato District Council
Building Consent Number
BLD1331/18

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ELEVATION .1.

1 : 100



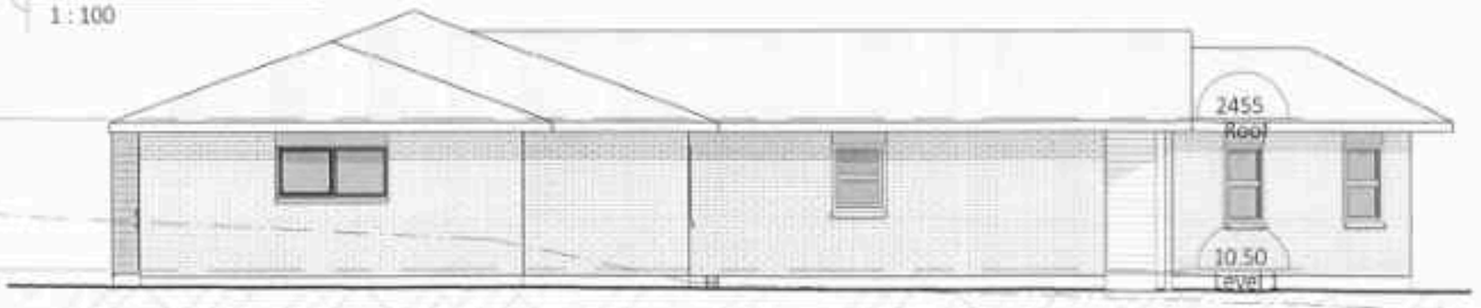
ELEVATION .2.

1 : 100



ELEVATION .3.

1 : 100



ELEVATION .4.

1 : 100

20° coloursteel roof
600 o/hang from frame
70 series brick exterior, timber BB weatherbd.
conc. floor
2400 wall height

Elevation Insulation			
Elev.	Bearing	Walls m2	Joinery m2
1	East	34.6 m²	4.4 m²
2	South	44.6 m²	16.3 m²
3	West	34.9 m²	11.7 m²
4	North	38.6 m²	4.2 m²

ALL NEW WINDOW/DOOR ALUMINIUM JOINERY IS TO BE TO NEW ZEALAND STANDARDS FOR MANUFACTURE AND INSTALLATION, NO IMPORTED JOINERY IS TO BE USED.
NZS3504: 1979, NZS4284: 2008, NZS4211: 2008 & E2/VM1 1.2f

H1 ENERGY EFFICENCY
INSULATION TO COMPLY WITH H1/AS1 - ZONE .1.
SEE FULL CALCULATIONS IN SPECIFICATIONS

MINIMUM "R" VALUES - ZONE .1. - REFERENCE ONLY

CEILING / ROOF = R2.9
EXTERIOR WALLS = R1.9
FLOOR = R1.3
VERTICAL GLAZING = R0.26

GARAGE EXCLUDED FROM CALCULATIONS -
INSULATE WALL SEPERATING GARAGE FROM DWELLING

VERTICAL GLAZING REQUIREMENT:

EAST (E1), WEST(E3), SOUTH(E2) = 32.4M2 / 114.1 M2 = 28%
NORTH (E4) = 4.2 M2 / 38.6 M2 = 11%
TOTAL INCLUDING NORTH = 36.6 M2 / 152.7 M2 = 24%

INSULATION VALUES REQUIRED FOR PROJECT
TOTAL GLAZING IS UNDER 30% - USE SCHEDULE METHOD.
(R VALUES AS PER PINK BATTS INSTALLATION GUIDE)
CEILINGS/ROOF = R2.4 PINK BATTS CLASSIC
EXTERIOR WALLS = R3.2 PINK BATTS CLASSIC
FLOOR = R1.3 (CONC. SLAB)
VERTICAL GLAZING = R0.26 (USE DOUBLE GLAZING)

Waikato District Council
Full Application Received
10/04/2018



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BP111742 : DESIGN 2

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Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	4

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Version: 3, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

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Waikato District Council
Building Consent Number
BLD1331/18

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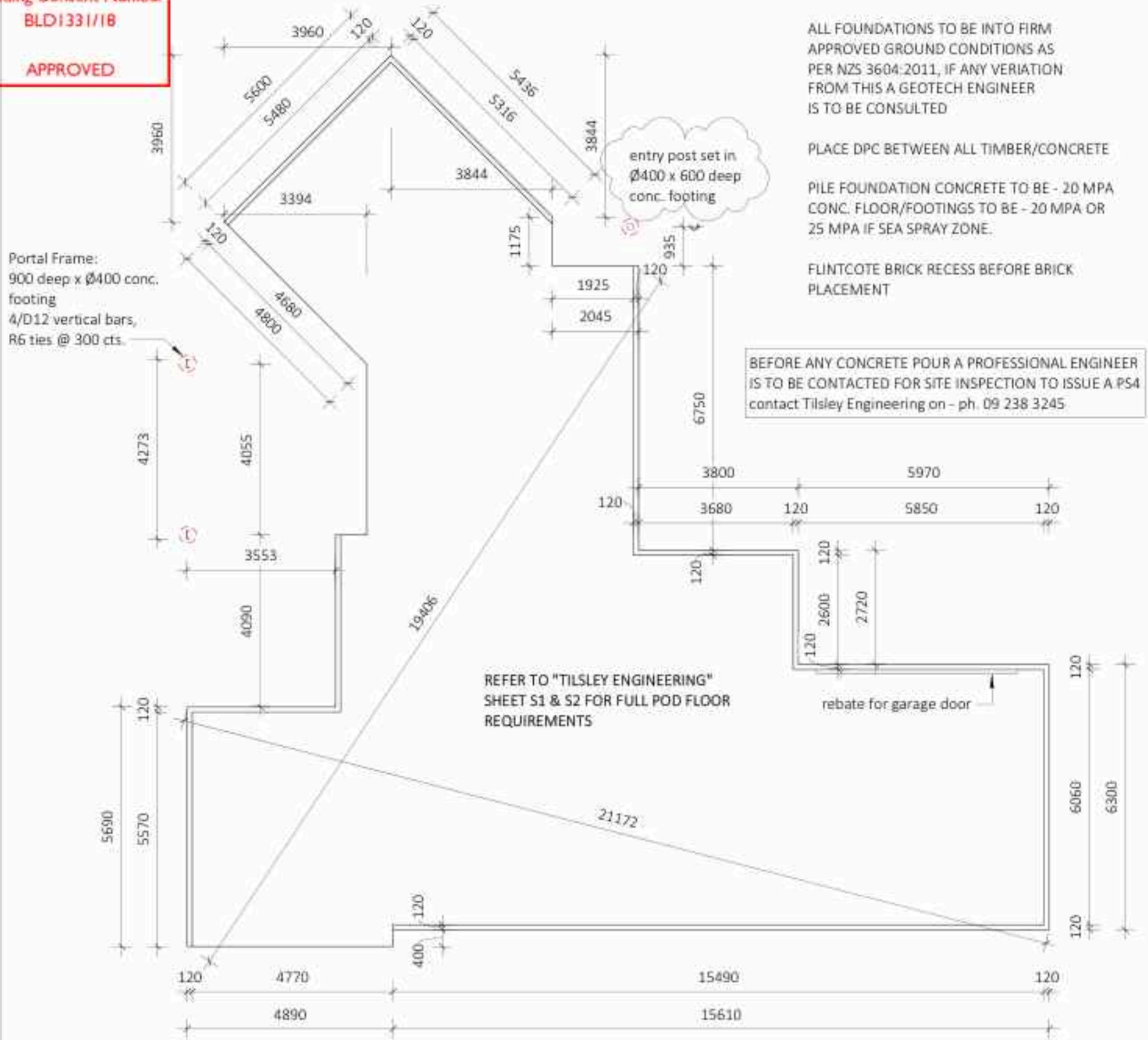

FOUNDATION PLAN.

1 : 100

ALL FOUNDATIONS TO BE INTO FIRM APPROVED GROUND CONDITIONS AS PER NZS 3604:2011, IF ANY VERIATION FROM THIS A GEOTECH ENGINEER IS TO BE CONSULTED

PLACE DPC BETWEEN ALL TIMBER/CONCRETE

PILE FOUNDATION CONCRETE TO BE - 20 MPA
CONC. FLOOR/FOOTINGS TO BE - 20 MPA OR
25 MPA IF SEA SPRAY ZONE.

FLINTCOTE BRICK RECESS BEFORE BRICK PLACEMENT

MINIMUM CLEARANCES -
225 MIN. TO UNPAVED AREA
150 MIN. TO PAVED AREA
100MM MIN. CLEARANCE FROM CLADDING EDGE TO PAVED AREA
175MM MIN. CLEARANCE FROM CLADDING EDGE TO UNPAVED AREA

MINIMUM CLEARANCES - BRICK
150 MIN. TO UNPAVED AREA
100 MIN. TO PAVED AREA

BEFORE ANY CONCRETE POUR A PROFESSIONAL ENGINEER IS TO BE CONTACTED FOR SITE INSPECTION TO ISSUE A PS4
contact Tilsley Engineering on - ph. 09 238 3245



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Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO.	88118
AMMEND	Council Letter 03 May 208
SCALE AS SHOWN	
SHEET	5

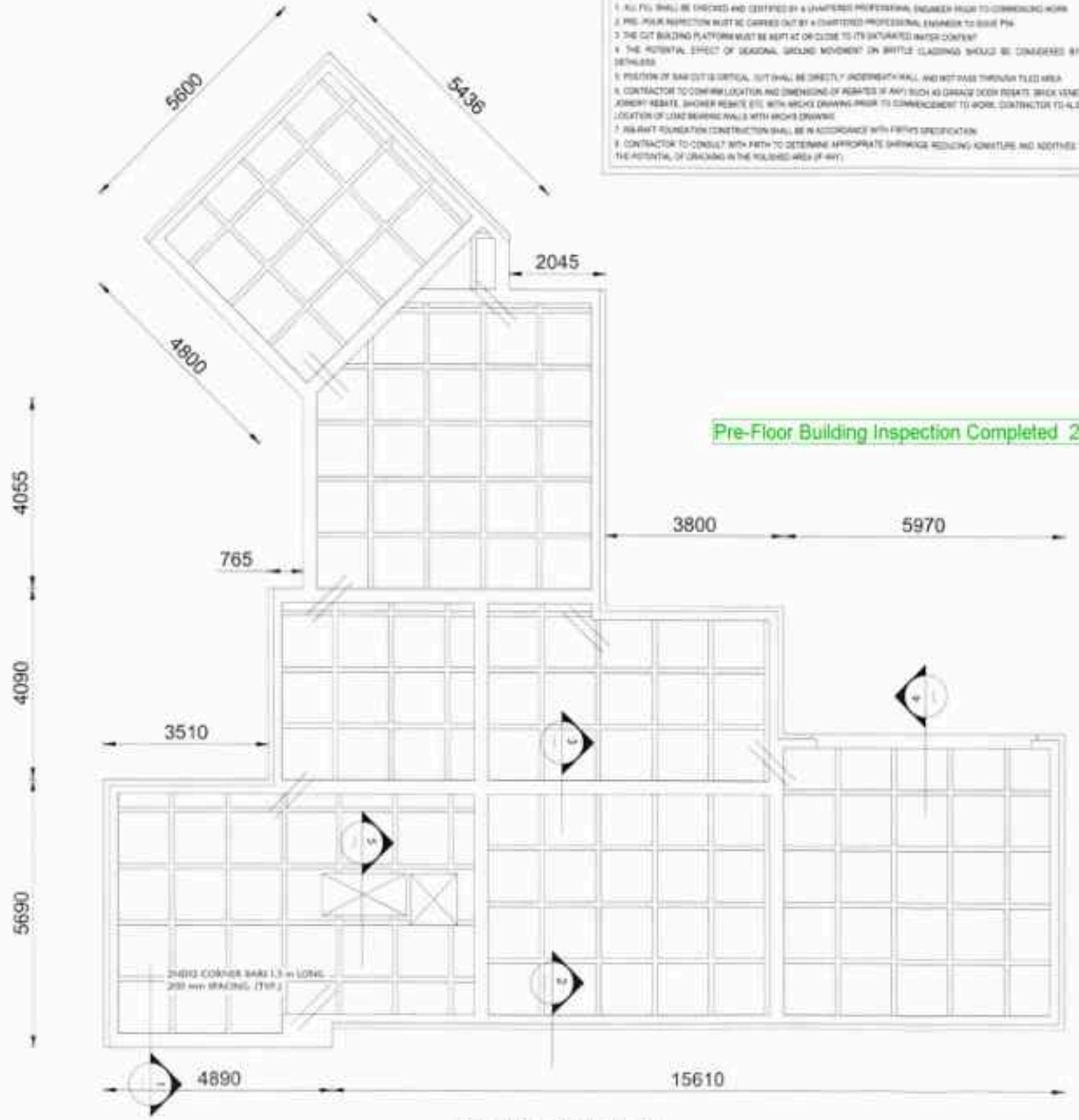
AMENDMENT:
1) added Entry post footing size

Document Set ID: 1966496
Version: 3, Version Date: 08/06/2026

This information is provided by the Waikato District Council

IMPORTANT NOTES:

1. ALL FILL SHALL BE CHECKED AND CERTIFIED BY A CHARTERED PROFESSIONAL ENGINEER PRIOR TO COMMENCING WORK
2. PRE-POUR INSPECTION MUST BE CARRIED OUT BY A CHARTERED PROFESSIONAL ENGINEER TO ISSUE PS4
3. THE CUT BUILDING PLATFORM MUST BE KEPT AT OR CLOSE TO ITS SATURATED WATER CONTENT
4. THE POTENTIAL EFFECT OF SEASONAL GROUND MOVEMENT ON BRITTLE CLADDINGS SHOULD BE CONSIDERED BY CLADDING DETAILERS
5. POSITION OF SAW CUT IS CRITICAL. CUT SHALL BE DIRECTLY UNDERNEATH WALL AND NOT PASS THROUGH TILED AREA
6. CONTRACTOR TO CONFIRM LOCATION AND DIMENSIONS OF REBATES (IF ANY) SUCH AS GARAGE DOOR REBATE, BRICK VENEER REBATE, JOINERY REBATE, SHOWER REBATE ETC. WITH ARCHS DRAWING PRIOR TO COMMENCEMENT TO WORK. CONTRACTOR TO ALSO CONFIRM LOCATION OF LOAD BEARING WALLS WITH ARCHS DRAWING
7. RIB RAFT FOUNDATION CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIRTH'S SPECIFICATION
8. CONTRACTOR TO CONSULT WITH FIRTH TO DETERMINE APPROPRIATE SHRINKAGE REDUCING ADMIXTURE AND ADDITIVES TO REDUCE THE POTENTIAL OF CRACKING IN THE POLISHED AREA (IF ANY)



PODFLOOR FOUNDATION

Waikato District Council
Building Consent Number
BLD1331/18

APPROVED

Pre-Floor Building Inspection Completed 28/05/2018 PASS

Waikato District Council
Full Application Received
10/04/2018

NOTES:

1. Remove topsoil & grass roots, loose soil pockets and clay lumps. Fill up holes with compacted metal to form a level surface.
2. Do not scale from drawing, refer to architectural drawings for overall dimensions.
3. All setout dimensions & levels to be confirmed on site by contractor prior to construction.
4. All plumbing, drainage and service trenching shall to be shown on plan location on architectural drawings.
5. In case of any discrepancy between architectural drawings and this drawing, Tilsley Engineering Ltd must be consulted immediately and no further works shall be undertaken until the discrepancy is addressed.
6. In case of any unexpected ground conditions, contractor must consult a geotechnical engineer immediately.
7. Backfill to be compacted in layers of 200 mm max. Backfill to be minimum 1000 mm into undisturbed ground.
8. Where underfloor heating is required floor topping shall be increased to 110 mm.
9. Concrete must be cured using appropriate curing method(s) for a minimum of seven days.
10. 30 concrete strength shall be 20 MPa or 25 MPa in wet areas.
11. Polystyrene pods shall be 1200x1200x220 mm.
12. Where floor drainage is required, the polystyrene pods (highlighted) shall be reduced to maintain constant slab thickness. Recesses shall be trimmed with 20x10 pt around.
13. Any floor pods have to be carried requests of engineer and construction. They does not affect the structural integrity of the foundations.
14. Steel bars cast against and/or exposed to ground shall have 50 mm cover. Bars with no DPM in ground shall have 75 mm cover.
15. Surface finishes to be in accordance with NZS 3114:1987.
16. Reinforcement grades to NZS 4671:
   - HD: Deformed bars grade 300 MPa
   - D: Deformed bars grade 300 MPa
17. Planting trees should be avoided near the foundation, and must be kept a distance of 1.5 x the mature height of the tree from the building.

Job No:	5071
Drawn By:	M.W.
Approved By:	A.G.

No.	Revision/Issue	Date

TILSLEY ENGINEERING LTD
27 Roulston Street
PO Box 392
Pukekohe
Tel: 09 238 3245
info@tilsleyengineering.co.nz

Alireza Gholamhosseini
No. TSG0095

Project Name and Address
Res - Gasson
350 Churchill East Rd,
R.D.2,
Te Kauwhata

Project: Found.	Sheet: S1
Date: 15/02/2018	
Scale: As Shown	

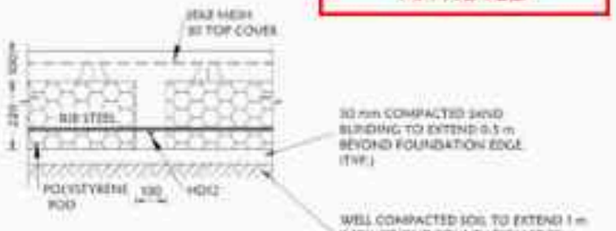
Document Set ID: 7966496
Version: 3, Version Date: 09/05/2026

Print Date: 6 November 2026, 1:26 pm

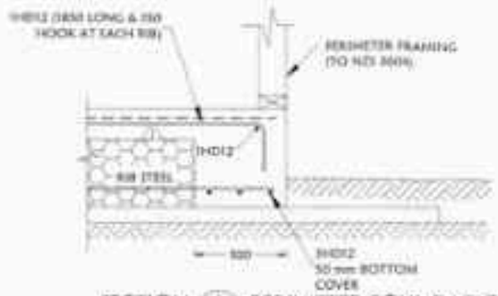
This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1331/18

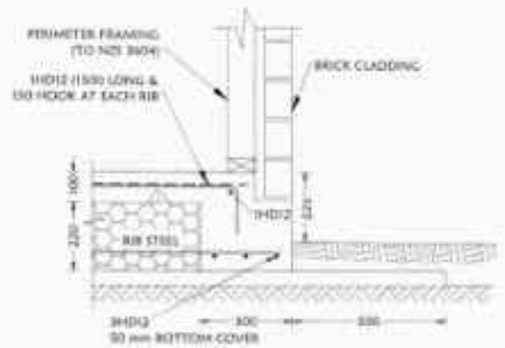
APPROVED



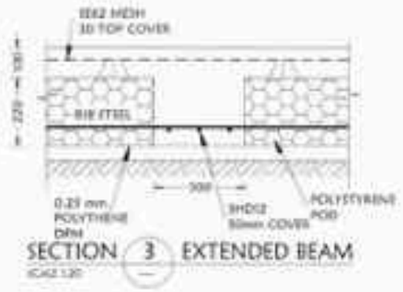
STANDARD RIB DETAIL



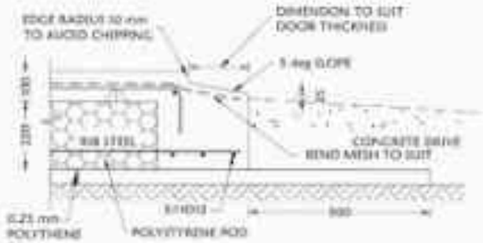
SECTION 1 PERIMETER FOUNDATION



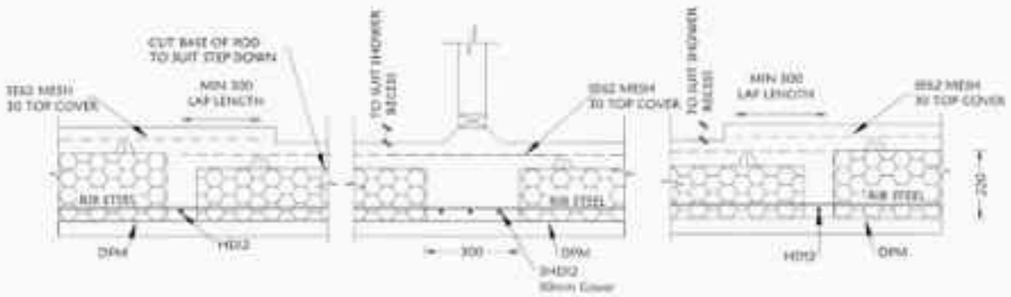
SECTION 2 PERIMETER FOUNDATION



SECTION 3 EXTENDED BEAM



SECTION 4 GARAGE DOOR ENTRANCE



SECTION 5 SHOWER REBATE DETAIL
MAX 50 mm SHOWER REBATE

Pre-Floor Building Inspection Completed 28/05/2018 PASS

Waikato District Council
Full Application Received
10/04/2018

Alireza Gholamhosseini
No. TSG0095

NOTES

1. Remove topsoil & grass roots, loose soil pockets and tree stumps. Fill or trees with compacted metal to form a level subgrade.
2. Do not scale from drawing, refer to architectural drawings for overall dimensions.
3. All setout dimensions & levels to be confirmed on site by contractor prior to construction.
4. All plumbing, drainage and ventilation pipes to be placed as per location on architectural drawings.
5. In case of any discrepancy between architectural drawings and this drawing, Tilsley Engineering Ltd must be contacted immediately and no further works shall be undertaken until the discrepancy is annulled.
6. In case of any unexpected ground conditions, contractor must consult a geotechnical engineer immediately.
7. Backfill to be compacted in layers of 200 mm max. backfill to be extended 1000 mm min beyond perimeter.
8. Where underfloor heating is installed floor topping shall be increased to 110 mm.
9. Concrete must be cured using appropriate curing method(s) for a minimum of seven days.
10. All concrete strength shall be 20 MPa or 25 MPa in wet areas.
11. Polythene slab shall be 0.25mm thick.
12. If weeds from the shower is required, the polythene over thickness shall be reduced to maintain constant slope. Reverses shall be trimmed with 3HD12 at around.
13. Ex-Rail may crack due to various reasons of ambience and construction. This does not affect the structural integrity of the foundations.
14. Steel bars used against ground shall be placed to ground with min 65 mm cover. Bars with no DPM in ground shall have 75 mm cover.
15. Surface finishes to be in accordance with NZS 3114:1987.
16. Reinforcement grades to NZS 4671:
HD: Deformed bars grade 300 MPa
D: Deformed bars grade 300 MPa
17. Planting trees should be avoided near the foundation and must be kept a distance of 1.5 x the mature height of the tree from the building.

Job No	5071
Drawn By	M.W.
Approved By	A.G.

No.	Revision/Issue	Date

TILSLEY ENGINEERING LTD
27 Roulston Street
PO Box 392
Pukekohe
Tel: 09 238 3245
info@tilsleyengineering.co.nz

Project Name and Address
Res - Gasson
380 Churchhill East Rd
R.D.2.
Te Kauwhata

Project	Sheet
Found.	S2
Date: 15/03/2018	
Scale: As shown	

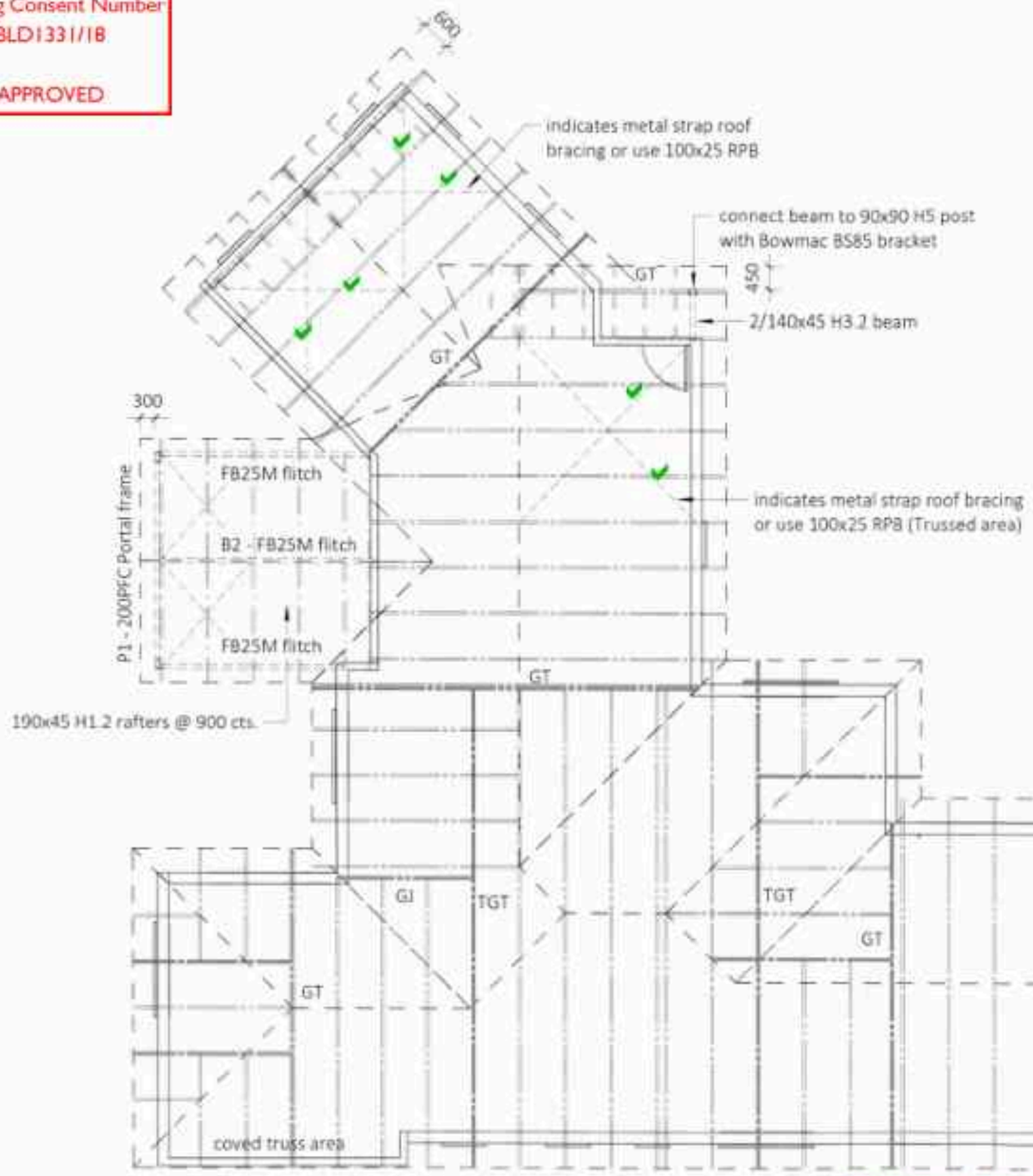
Document Set ID: 7266496
Version: 3, Version Date: 09/06/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1331/18

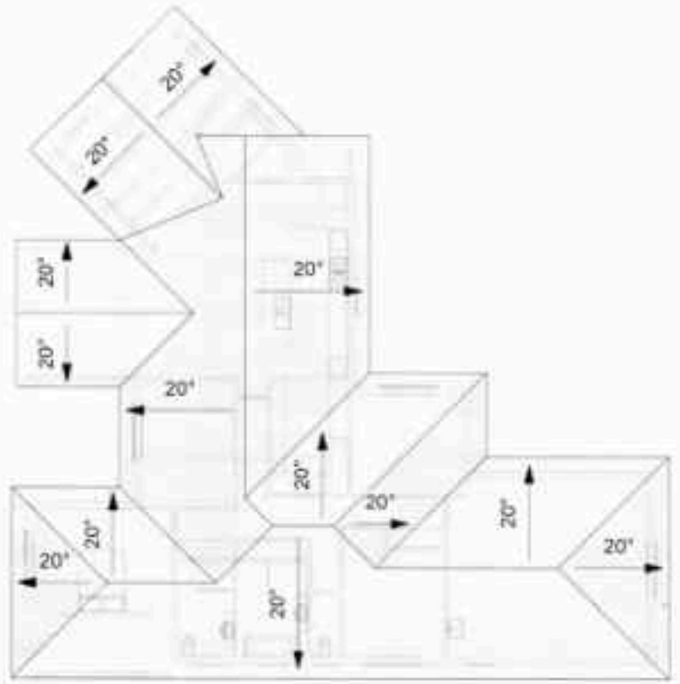
APPROVED



ROOF PLAN.
1 : 100

ROOF FRAMING NOTES -
ALL TRUSS DESIGN NUMBERS TO BE SUPPLIED TO LOCAL AUTHORITY BEFORE COMMENCEMENT OF WORK

ALL TRUSS/ROOF FRAMING FIXING TO BE TO MANUFACTURES DETAILS AND NZS 3604:2011



ROOF FALLS
1 : 200

Structural Pre-Wrap Inspection Completed 15/06/2018 PASS

Waikato District Council
Full Application Received
10/04/2018

DJS DRAUGHTING SERVICES LTD.
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T 09 238 3777
e david@djsdraughting.co.nz

Registered Member: DANZ
(Design Association of NZ)

BP111742 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE.

ALL MEASUREMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

REFER TO ATTACHED E2 AND MANUFACTURER SPECIFIC DETAILS

ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMENDS	
SCALE AS SHOWN	
SHEET	6

Document Set ID: 7264496
Version: 3, Version Date: 08/05/2026

Print Date: 6 November 2026, 1:26 pm

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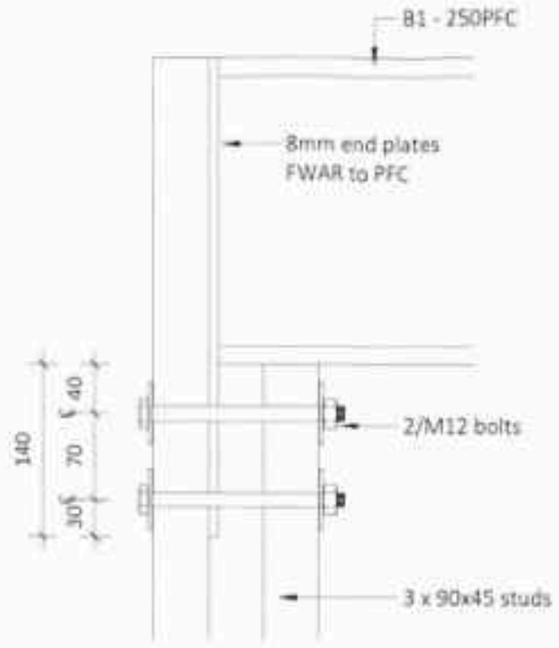
Waikato District Council
Building Consent Number
BLD1331/18

APPROVED



LINTEL/FIXINGS PLAN.

1 : 100



Garage Lintel fixing

1 : 5

FIXINGS TABLE -

BOTTOM PLATE TO CONC. FLOOR:
CONCRETE - RAMSET AS12150GH + RPBA ANCHOR SCREW @ 900 CTS.
OR PROPRIETARY LUMBERLOK BOTTOM PL. FIXING
ANCHOR - FIXINGS @ 900 CTS. & 150 FROM CORNERS.

BRACED WALL AREA'S USE -
RAMSET AS12150GH SCREW ANCHOR
55MM FROM CONC. EDGE @ 900 CTS.

TOP PLATE FIXING TO STUDS:
TYPE .B. - 2/90X3.15 END NAILS &
2 WIRE DOGS OR ALTERNATIVE 4.7 kN FIXING
AS ATTACHED LUMBERLOK FIXING TOP PLATE FIXING CHART
IN APPENDIX.
BRACED WALLS AT RIGHT ANGLES TO FRAMES CONNECTION WITH
METAL PLATE -
BRACING CAPACITY UP TO 3 kN - 3/30 X 3.15 NAILS PER SIDE
BRACING CAPACITY UP TO 6 kN - 6/30 X 3.15 NAILS PER SIDE

FIXING OF LINTELS FOR UPLIFT:
SEE ATTACHED FIXINGS PLAN/DETAILS
LABELED - "LINTEL FIXING TO PREVENT UPLIFT"

FIXING FOR RAFTERS:
RAFTERS @ 900 CTS FIXED WITH 2/90 X
3.15 SKEWED NAILS + 2 WIRE DOGS OR
ALTERNATIVE 4.7kn FIXING

FIXING FOR TRUSS'S:
TRUSSES @ 900 CTS FIXED WITH 2/90 X 3.15
SKEWED NAILS + 2 WIRE DOGS OR 4.7kN FIXING
(MINIMUM FIXINGS TO BE USED)
(TRUSS FABRICATOR FIXING DETAILS ARE TO
TAKE PRESIDENCE OVER ABOVE)

FIXING FOR PURLINS - HIGH WIND:
70X45 PURLINS @ 900 CTS FIXED WITH
1/10 GAUGE SELF-DRILLING SCREW (80MM LONG)
OR ALTERNATIVE 2.4 kN FIXING

Waikato District Council
Full Application Received
10/04/2018



DJS DRAUGHTING SERVICES LTD.
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Pukekohe 2340
T: 09 238 3777
e: dave@djsdraughting.co.nz

Registered Member: DANZ
(Design Association of NZ)

BP111742 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE.

ALL MEASUREMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

REFER TO ATTACHED E2 AND MANUFACTURER SPECIFIC DETAILS

ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	7

Document Set ID: 7958496
Version: 3, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1331/18

APPROVED

Structural Pre-Wrap Inspection Completed 15/06/2018 PASS



BRACING PLAN.
1 : 100

* ALL WORK MUST COMPLY WITH THE NZ BUILDING CODES, NZS 3604:2011 AND ALL APPROVED DOCUMENTATION.
* KITCHEN FACILITIES AS REQUIRED BY NZBC G.3.
* LAUNDRAY FACILITIES AS REQUIRED BY NZBC G.2.
* ALL WET AREA'S MUST COMPLY WITH NZBC E3.
* USE AQUALINE LINING'S IN ALL WET AREA'S.
* FRAMING AND LINTELS TO NZS 3604:2011 - ALL SG8 MINIMUM.
* LINTELS SIZED USING THE "MITEK" GANGLAM AND FLITCH BEAM CHARTS.
* ALL TIMBER MUST COMPLY WITH B2/AS1.
* PLACE APPROVED DPC BETWEEN ALL TIMBER AND CONCRETE.
* ALL FRAMING TO BE H1.2 MINIMUM TREATMENT WITH H3.1 BOTTOM PLATES IN WET AREA'S.
* EXTERNAL TIMBERS (NOT IN GROUND CONTACT) TO BE H3.2 MINIMUM.
* GROUND CONTACT TIMBER TO BE H5 MINIMUM TREATMENT.
* APPROVED BUILDING WRAP TO BE USED AND FIXED TO MANUFACTURES SPECIFICATIONS.
* PROVIDE 1.0M HIGH HANDRAIL BARRIER TO DECK AREA IF OVER 1.0M OFF FINISHED GROUND.
* PROVIDE DOMESTIC SMOKE ALARMS TO COMPLY WITH THE NZ BUILDING CODE.
* ALL FIXINGS TO COMPLY WITH NZS 3604:2011 AND TO SPECIFIC LUMBERLOK/MITEK OR SPECIFIC MANUFACTURES DETAILS.
* ALL INSULATION TO COMPLY WITH H1/AS1 REQUIREMENTS.
* ALL EXTERNAL WINDOWS/DOORS (EXCEPT GARAGE AREA) TO BE "DOUBLE GLAZED" TO PROVIDE H1/AS1 R0.26 RATING & TO NZS 4223: PART 3: 2016 FOR GLAZING STANDARDS (ALL GLAZING WITHIN 700mm OF THE FLOOR OR WET AREA ROOMS TO BE SAFETY GLASS)
* ALL DOUBLE GLAZED JOINERY TO BE INSTALLED TO "WANZ" DETAILS
* ALL EXPOSED FIXINGS TO BE STAINLESS STEEL AS SPECIFIED IN NZS 3604:2011
* LINTEL, STUD & TOP PLATE FIXING AS LUMBERLOK FIXING SCHEDULE CHARTS.

Waikato District Council
Full Application Received
10/04/2018



DJS DRAUGHTING SERVICES LTD.
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e: david@djsdraughting.co.nz

Registered Member DANZ
(Design Association of NZ)

BP111742 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE.

ALL MEASUREMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

REFER TO ATTACHED E2 AND MANUFACTURER SPECIFIC DETAILS

ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	8

Document Set ID: 7965496
Version: 3, Version Date: 08/06/2026

Print Date: 6 November 2026, 1:26 pm

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Waikato District Council
Building Consent Number
BLD1331/18

APPROVED



SECTION 1
1 : 50



SECTION 3
1 : 100



SECTION 2
1 : 50

20° COLOURSTEEL ROOFING ON THERMAKRAFT 215 UNDERLAY
ON 70X45 H1.2 PURLINS @ 900 CTS. ON GANGNAIL H1.2 TRUSSES @ 900 CTS.

HARDIES SOFFIT LINING
COLOURSTEEL FASCIA/GUTTER SYSTEM

GIB BOARD CEILING LINING ON 70X35 BATTENS @ 400 CTS.
R3.2 PINK BATTS CLASSIC CEILING INSULATION

GIB BOARD INTERIOR WALL LINING ON
90X45 H1.2 FRAMING, ALL FRAMING TO BE
TREATED AS PER NZBC ACCEPTABLE SOLUTIONS E2/AS1 & B2/AS1
NOGS @ 800 CTS.
ALL STRUCTURAL TIMBER TO BE MIN. SG8 GRADE
STUDS @ 600 CTS TO 2420 STUD HEIGHT
(WET AREA BOTTOM PLATES TO BE H3.1)

USE GIB "AQUALINE" TO WALLS AND CEILINGS IN ALL WET AREA'S
PRONE TO WATER SPLASH

R2.4 PINK BATTS CLASSIC EXTERIOR WALL INSULATION
RD.26 GLAZING INSULATION (DOUBLE GLAZED)

70 SERIES BRICK VENEER & BB TIMBER WEATHER BOARDS
OVER 20MM H3.1 CAVITY BATTENS
OVER THERMAKRAFT WATERGATE-PLUS BUILDING WRAP

POD FLOOR TO ATTACHED "TILSLEY ENGINEERING" DESIGN -
SEE SHEETS S1 & S2

Waikato District Council
Full Application Received
10/04/2018



DJS DRAUGHTING SERVICES LTD.
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Registered Member: DANZ
(Design Association of NZ)

BP111740 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE

ALL MEASURMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

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ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	9

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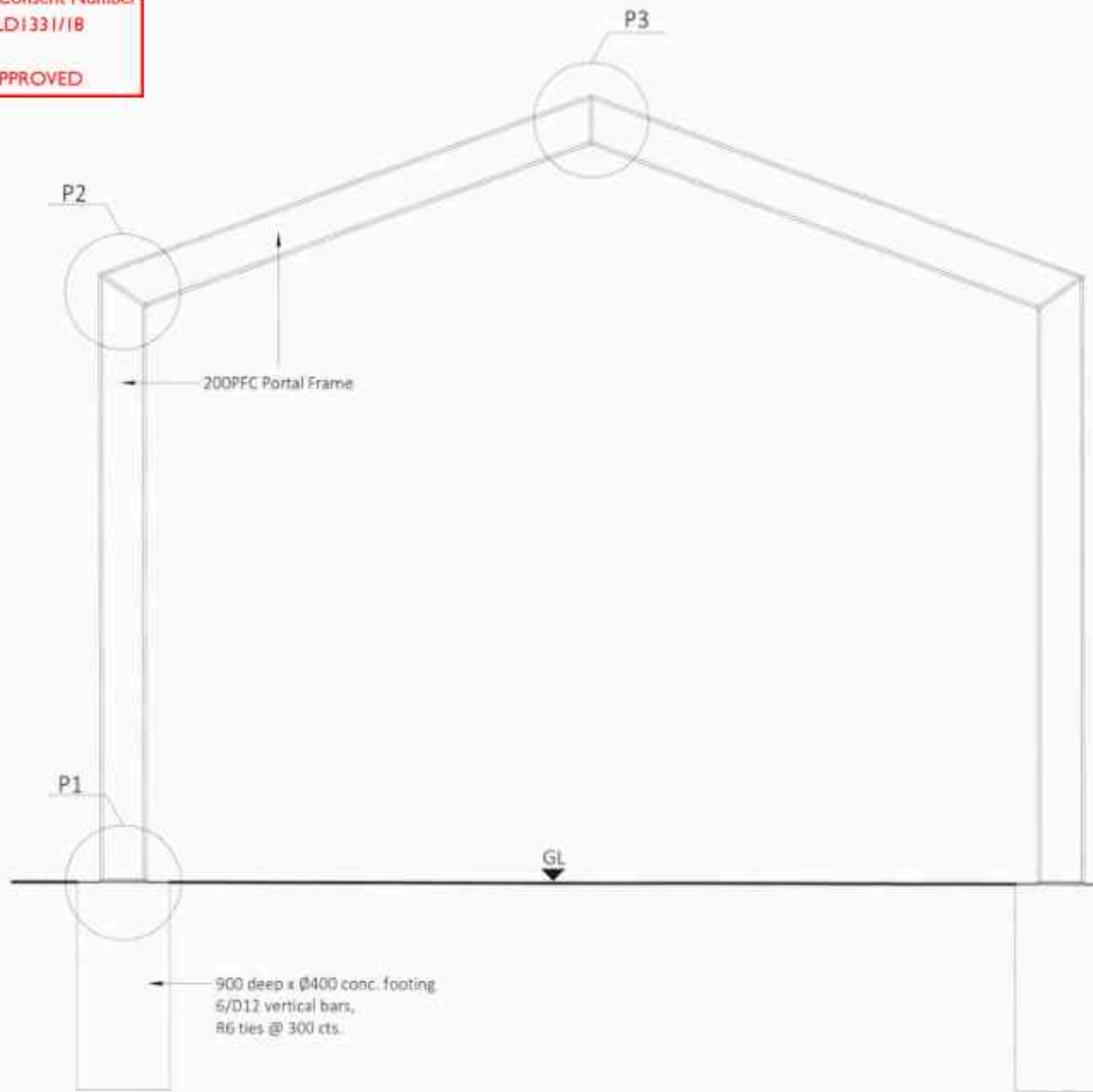
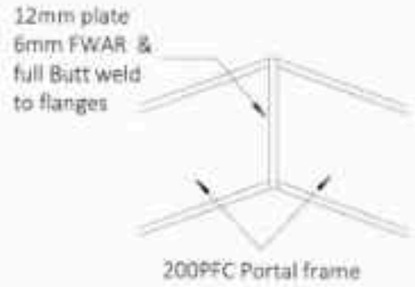


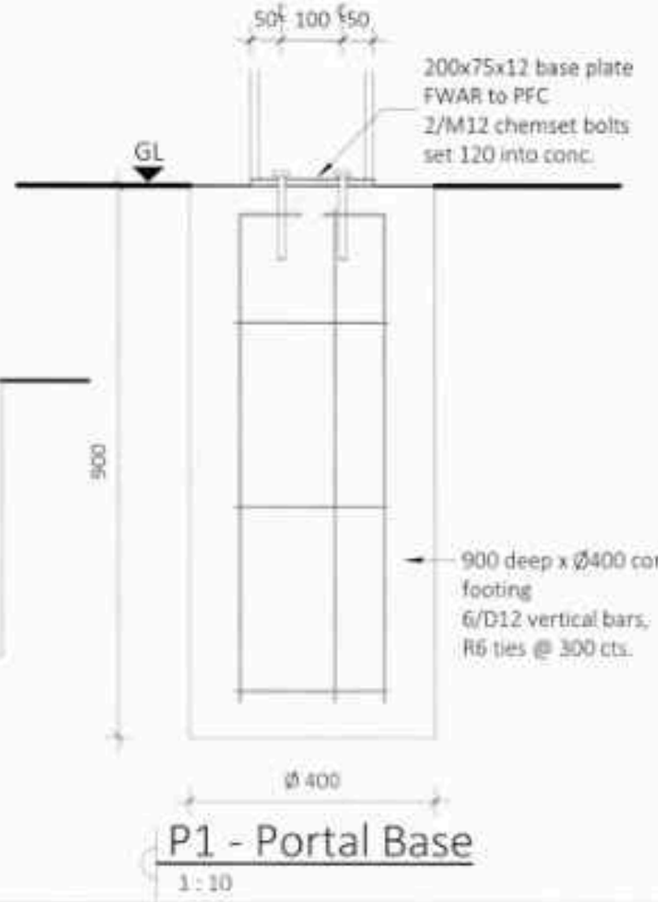
Portal Frame
1 : 20



P3 - Portal Apex
1 : 10



P2 - Portal Knee
1 : 10



P1 - Portal Base
1 : 10

Waikato District Council
Full Application Received
10/04/2018



DJS DRAUGHTING SERVICES LTD.
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Pukekohe 2340
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Registered Member: DANZ
(Design Association of NZ)

BP111742 - DESIGN3

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE.

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ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	10

Document Set ID: 7958496
Version: 3, Version Date: 09/05/2018

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Waikato District Council
Building Consent Number
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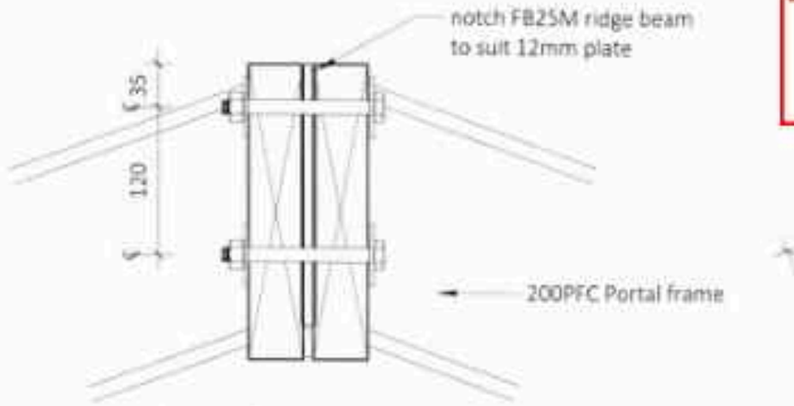
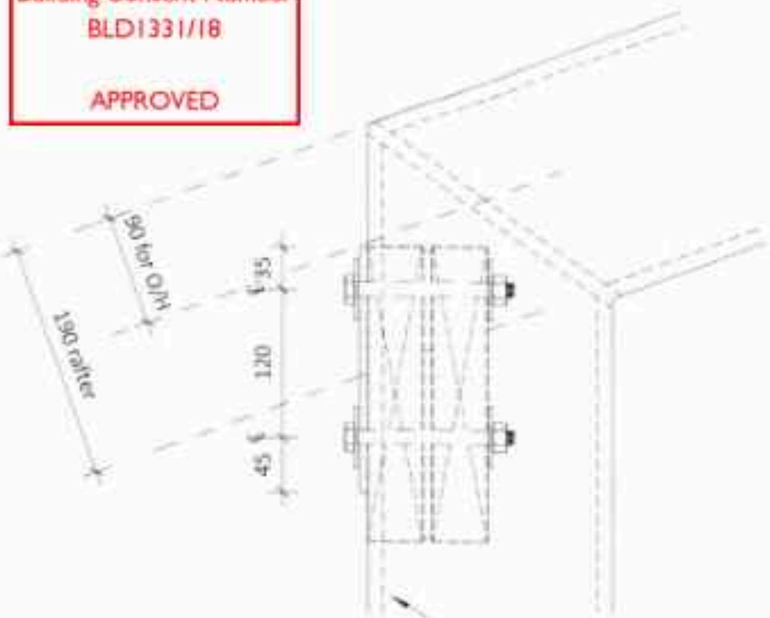
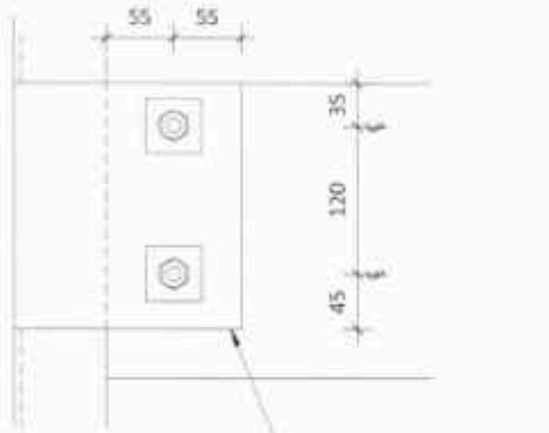
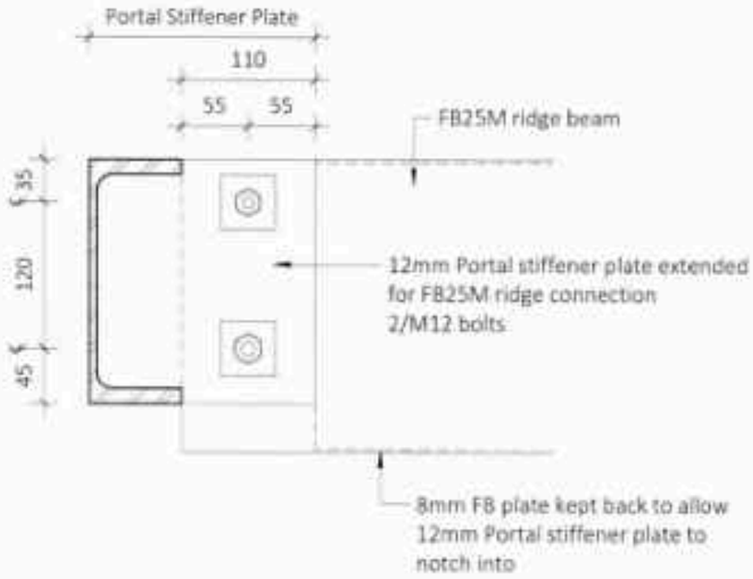
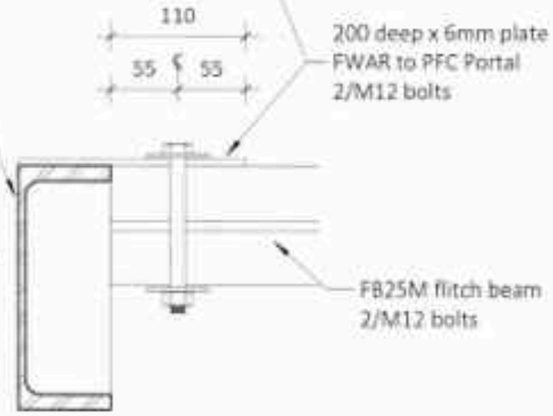








FB25M Ridge Beam to Portal
1:5



FB25M Rafter Beam to Portal
1:5

Waikato District Council
Full Application Received
10/04/2018



DJS DRAUGHTING SERVICES LTD.
P O Box 682,
Pukekohe 2340
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Registered Member: DANZ
(Design Association of NZ)

MP111742 - DESIGN 2

ALL CONSTRUCTION IS TO COMPLY WITH NZS 3604:2011 AND THE NZ BUILDING CODE.

ALL MEASUREMENTS TO BE CHECKED AND VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

REFER TO ATTACHED E2 AND MANUFACTURER SPECIFIC DETAILS

ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
DATE	April 2018
JOB NO	88118
AMMEND	
SCALE AS SHOWN	
SHEET	11

Document Set ID: 7965496
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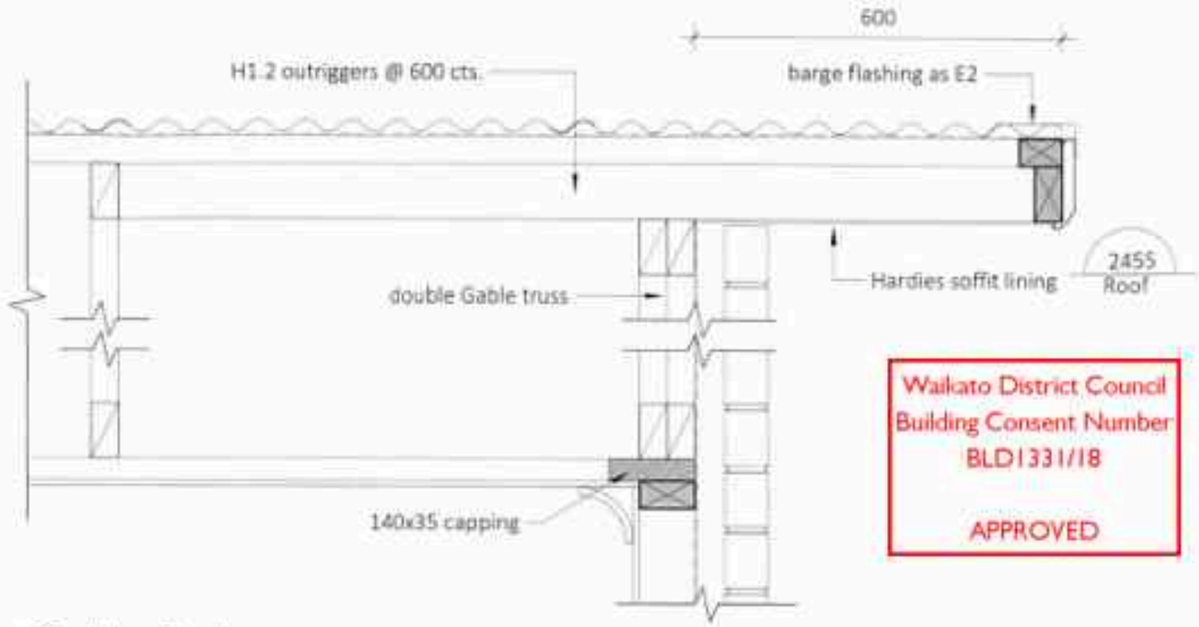
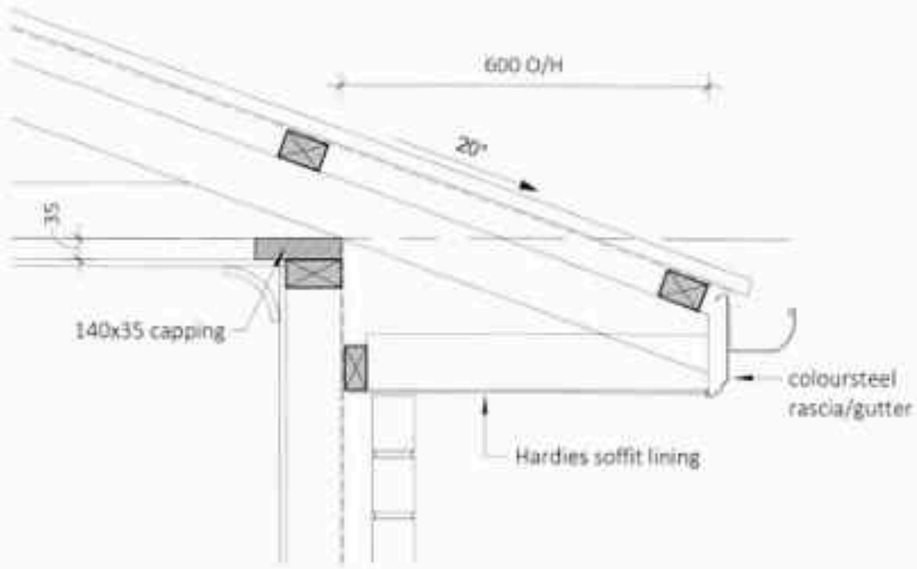


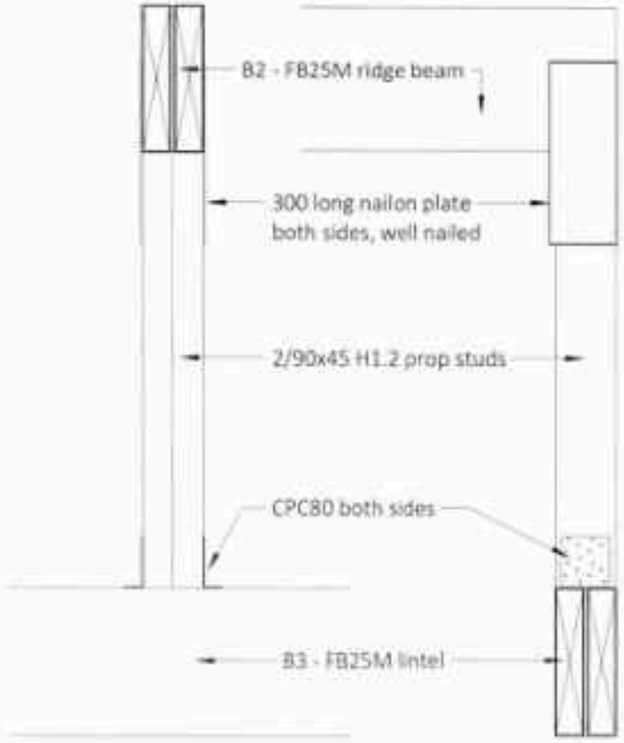
Gable End
1 : 10

Waikato District Council
Building Consent Number
BLD1331/18

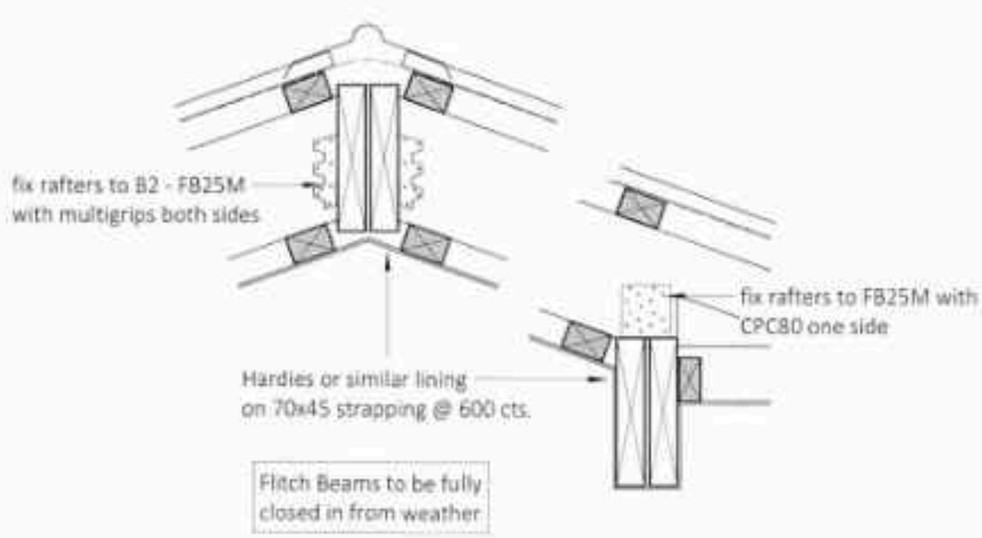
APPROVED



Eaves Detail
1 : 10



Ridge Flitch Beam to Lintel
1 : 10



Rafter to FB25M
1 : 10

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380 Churchill East Rd;
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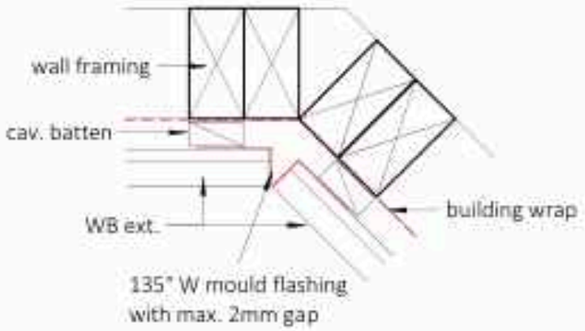
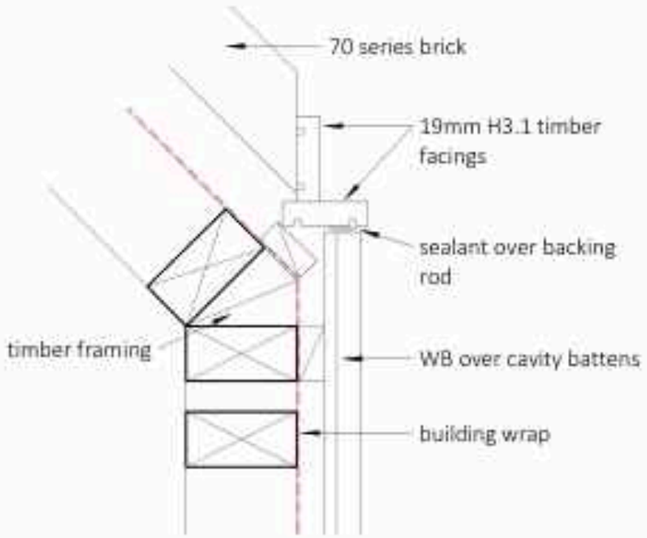
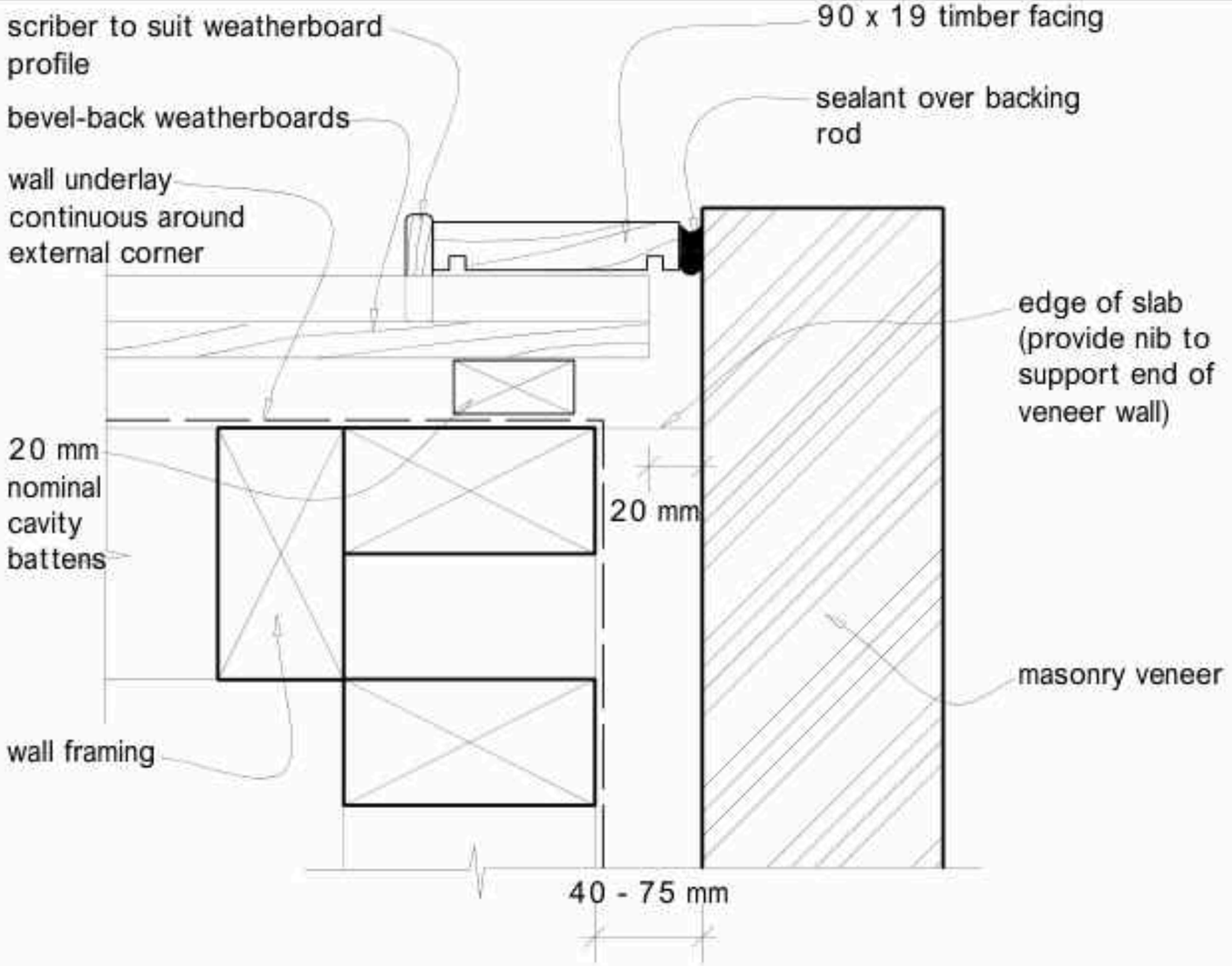


WB Angle Junction
1 : 5



Brick-WB Angle Junction
1 : 5



1.2.17.2 Horizontal bevel-back timber weatherboardmasonry veneer junction - cavity - external corner

Brick-WB Ext Junction
1 : 2

JOINERY NOTES:
Double glazed powdercoated or anodised aluminium joinery. All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or bath enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.
NOTE: If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.

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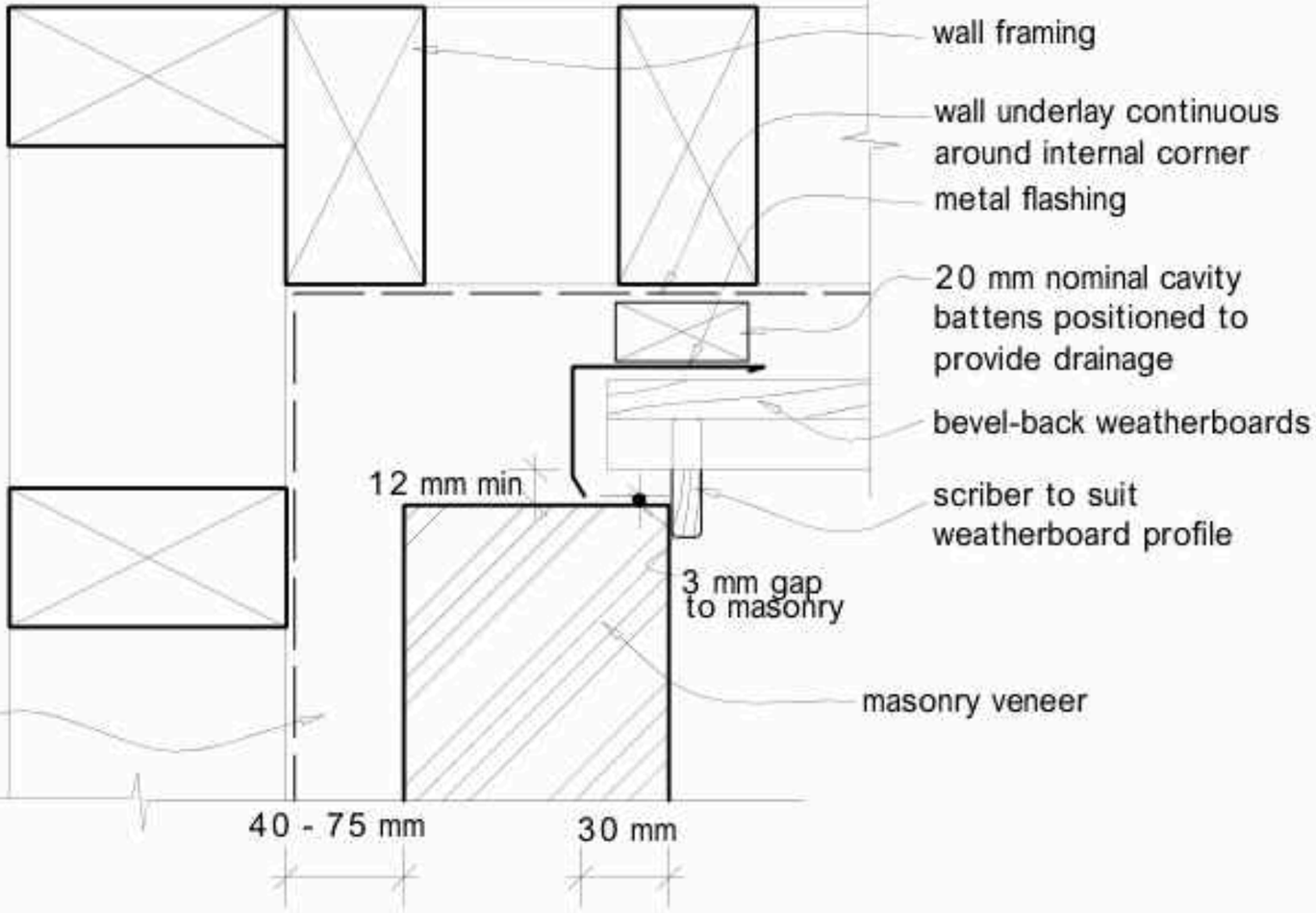

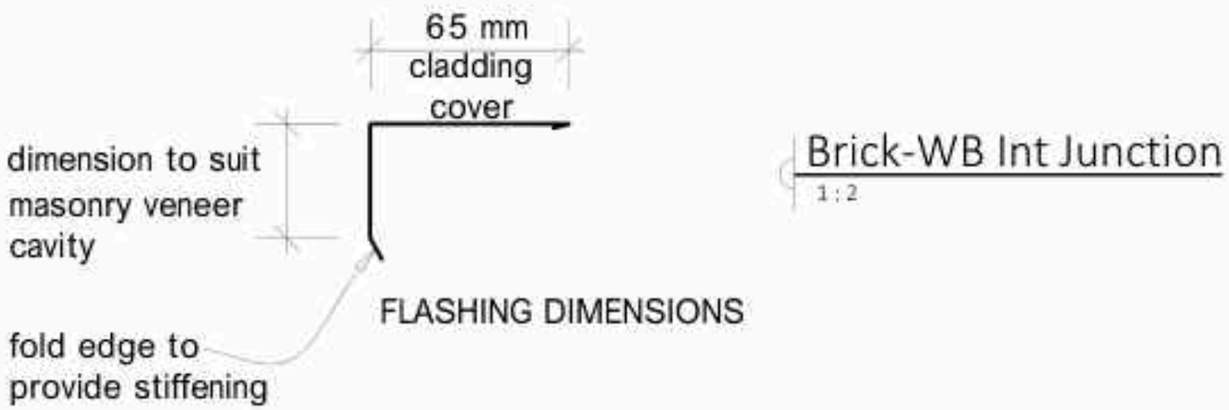

Brick-WB Int Junction
1 : 2

1.2.17.1 Horizontal bevel-back timber weatherboard/masonry veneer junction - cavity - internal corner



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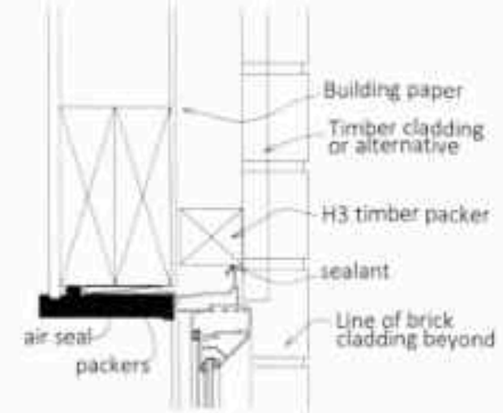
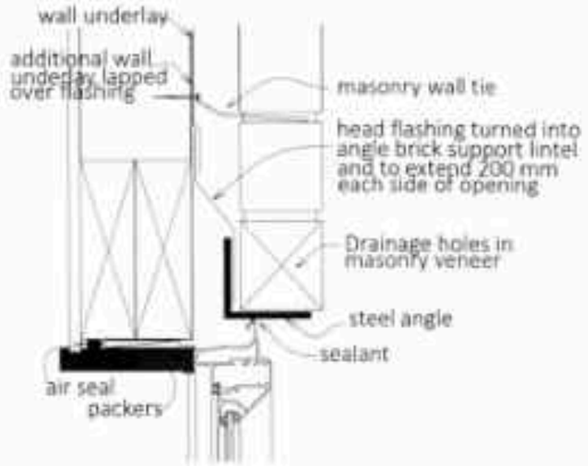
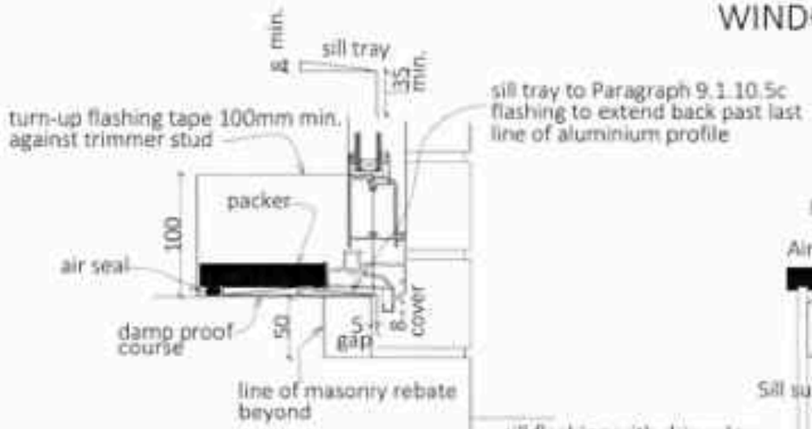


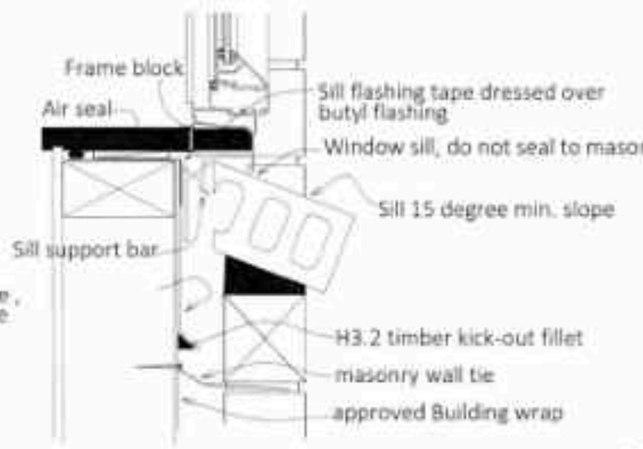
WINDOW HEAD - Aluminium
Timber cladding above



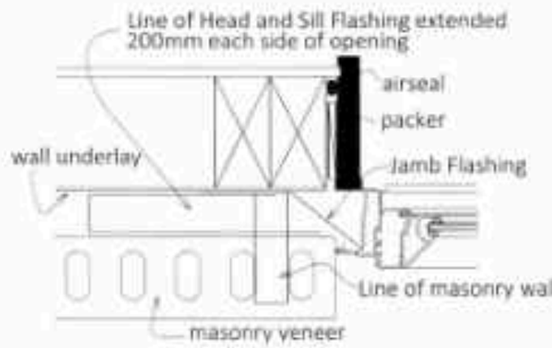
WINDOW HEAD - Aluminium
Brick over



DOOR SILL - Aluminium



WINDOW SILL - Aluminium



WINDOW JAMB - Aluminium

Window Flashing - Brick

1 : 5

MASONRY VENEER VENTILATION REQUIREMENTS -
base & openings - open perpends that are:
minimum 75mm in height x width of vertical mortar joint and at centers not exceeding 800mm (minimum ventilation area of 100 mm2/m wall length) and fitted with vermin proofing where gaps greater than 13mm exist
top - vented as similar to base requirements or a 3mm minimum gap between top of course and soffit lining with a cover bead to outside that maintains a minimum 1 mm gap to masonry
Under openings exceeding 2.4 metres wide vent through gaps in perpend positioned at 1/3 points along the openings except opening ends. Where these vent openings are used, protect from water entry using cantilevered sill bricks.

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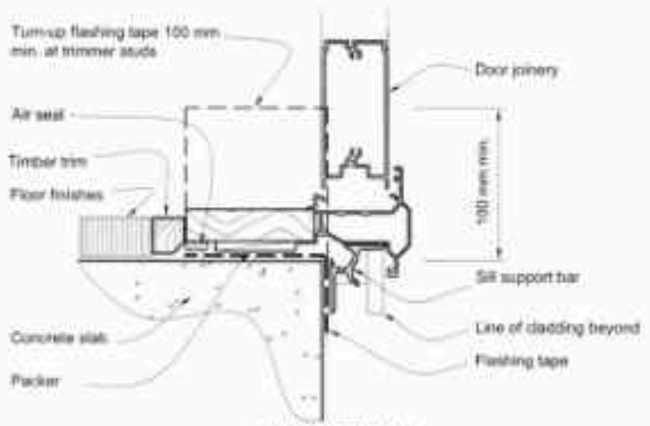
Figure 17C Door sills for cavity construction
Paragraph 9.1.10.5; Figures 70C, 85, 86, 91, 99, 116 and 139



Amend 5 Aug 2011

Amend 2 Jul 2005

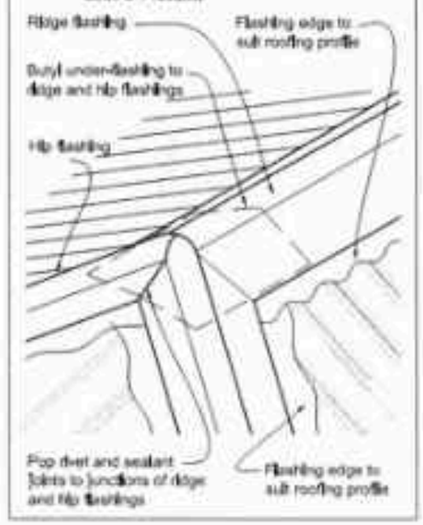
Amend 5 Aug 2011

COMMENT

Reduced cover for barge and apron flashings may be applicable for specifically designed roofs in low wind zones.

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for additional guidance on ridge to hip flashings.

Figure 43 Ridge to hip flashings
Paragraphs 9.4.11 and 9.4.12



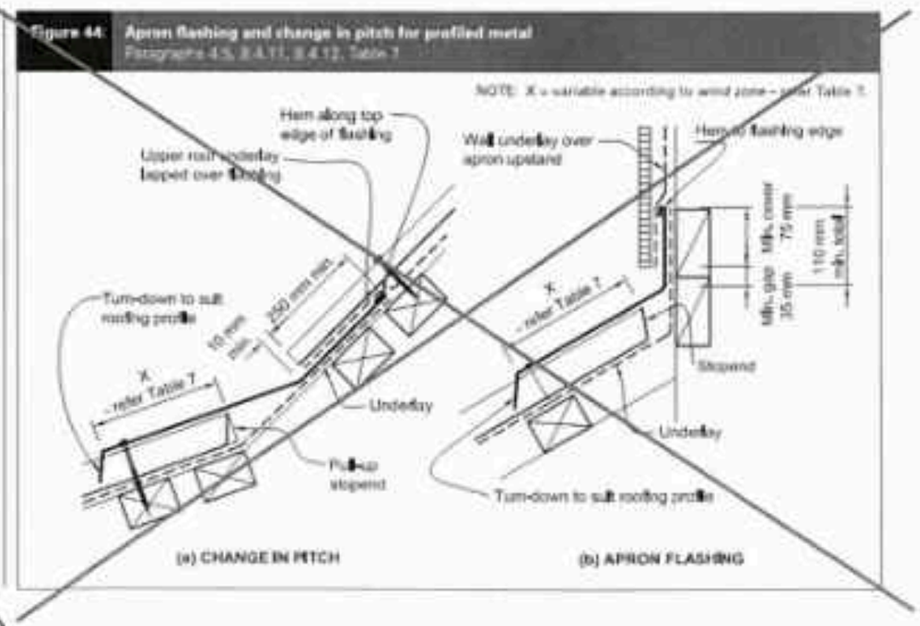
Amend 5 Aug 2011

Amend 2 Jul 2005

Amend 2 Jul 2005

Errata 2 Dec 2011

Figure 44 Apron flashing and change in pitch for profiled metal
Paragraphs 9.5, 9.4.11, 9.4.12, Table 7



Amend 2 Jul 2005

Amend 5 Aug 2011

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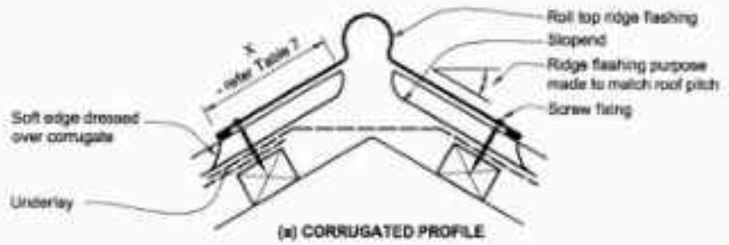
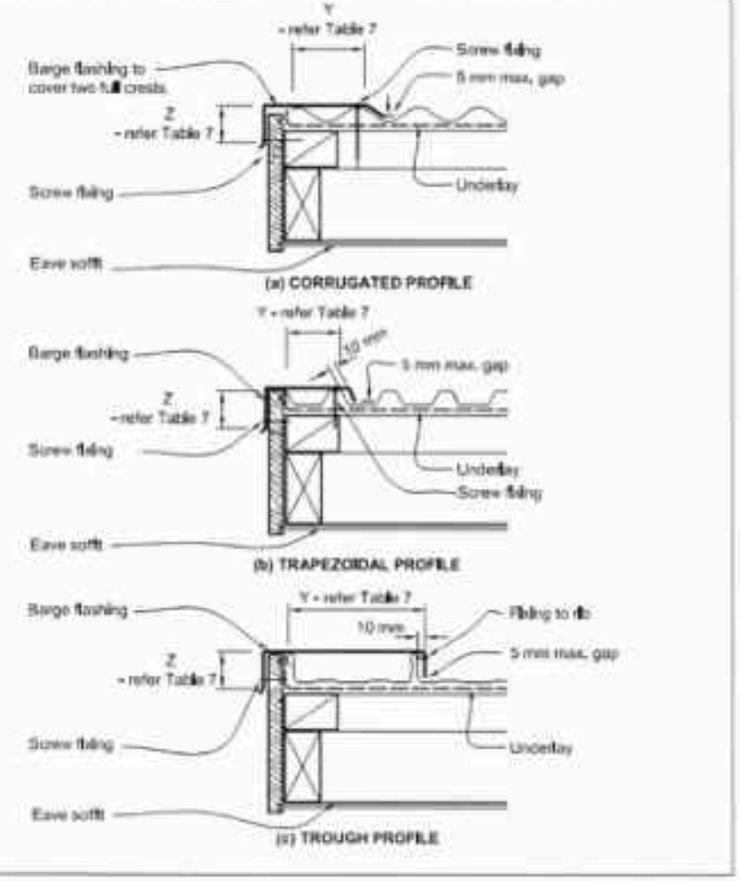
Figure 46: Ridge and hip flashings for profiled metal
Paragraphs 4.4, 4.5, 8.4.11, 8.4.12, Table 7



X = 130mm min.

Figure 47: Barge flashings for profiled metal
Paragraphs 8.4.11, 8.4.12, Table 7



Y = 2 crests, finish in next trough
Z = 50mm min.

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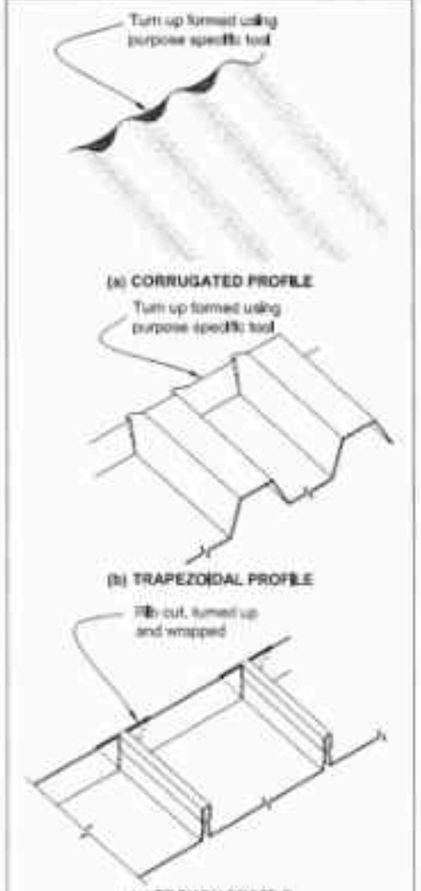
8.4.13 Stopends

The top ends of *profiled metal roof cladding* shall have *stopends* as shown in Figure 49 for *trapezoidal* and *trough profile metal roof cladding*, where:

a) The *roof pitch* is less than 25°, or

b) The *building* is in a High/Very High/Extra High *wind zone*.

Figure 49: Profiled metal stopends
Paragraph 8.4.13, Figure 92



8.4.14 Turn-downs at gutters

The lower ends of *trapezoidal* and *trough profile* roofing shall be turned down at gutters, where the *roof* pitch is less than 10°.

The turn-down shall be 30° from the plane of the sheet.

COMMENT:
Specific tools are available and should be used to turn up or turn down ends. Care should be taken to ensure the sheet does not split.

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for guidance on methods.

8.4.15 Profile closure

Preformed compressible seals shall not be used at the *eaves*.

COMMENT:
Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for guidance.

8.4.16 Hidden, valley and internal gutters

Hidden, *valley* and *internal gutters* shall be in accordance with Paragraph 8.1.6.

8.4.16.1 Hidden gutters

Parallel *hidden gutters* shall be as shown in Figure 50 and Paragraph 8.1.6.2.

8.4.16.2 Valley gutters

Valley gutters shall be in accordance with catchment areas shown in Table 8, and as shown in Figure 51 and Paragraph 8.1.6.2.

COMMENT:
Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for additional guidance on sizing, materials and fixing.

8.4.16.3 Internal gutters

Internal gutters shall be as shown in Figure 52 and Paragraph 8.1.6.1.

Figure 50: Parallel hidden gutter for profiled metal
Paragraphs 4.3, 4.5, 8.1.6.2 and 8.4.16

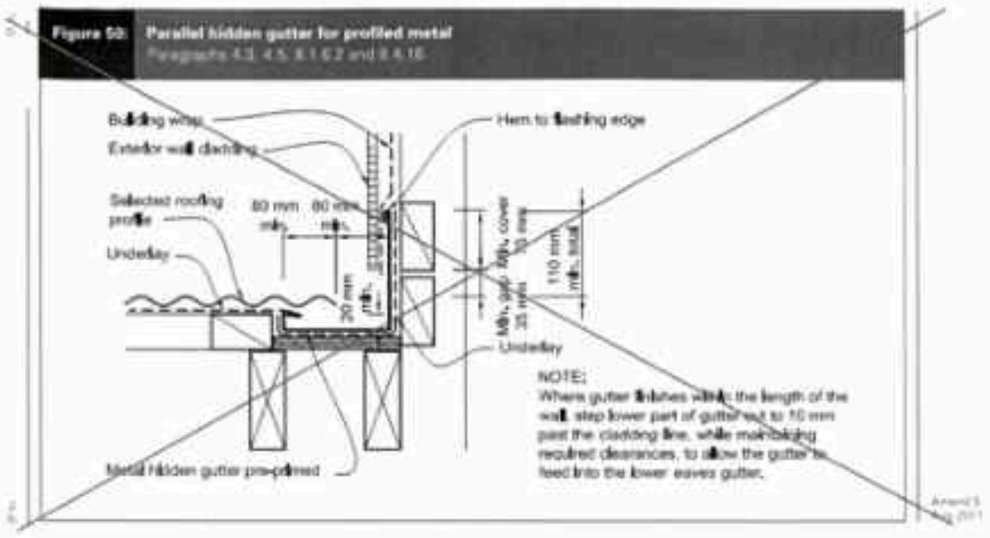


Figure 51: Valley gutters for profiled metal
Paragraphs 4.3, 4.5, 8.1.6.2 and 8.4.16

NOTE: (1) Refer to Table 8 for maximum roof catchment areas for valley gutters.
(2) Minimum width of valley gutter may reduce to 180 mm, providing roof catchment area is in accordance with Table 8. In this case, cover of roof cladding over gutter shall be reduced to 60 mm to provide a clearance gap of 40 mm.

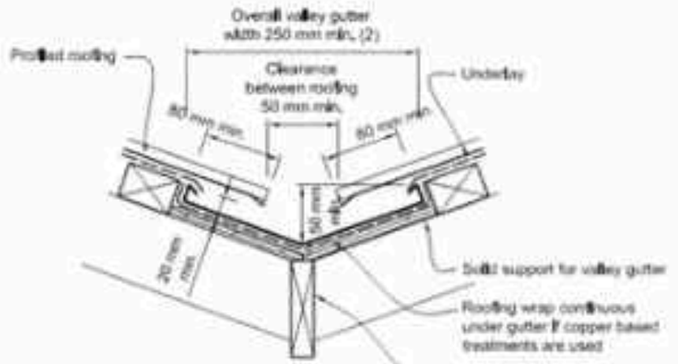


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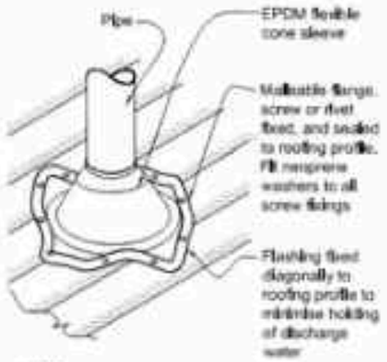
Figure 53: Flashing for small pipes
Paragraphs 9.3.10, 9.4.17, 9.6.8.5 and 9.6.9.6



NOTE:
(1) Max. roof pitch for this flashing 45°, minimum pitch 10° if base of flange covers one or more complete troughs.
(2) For pipes up to 85 mm diameter.

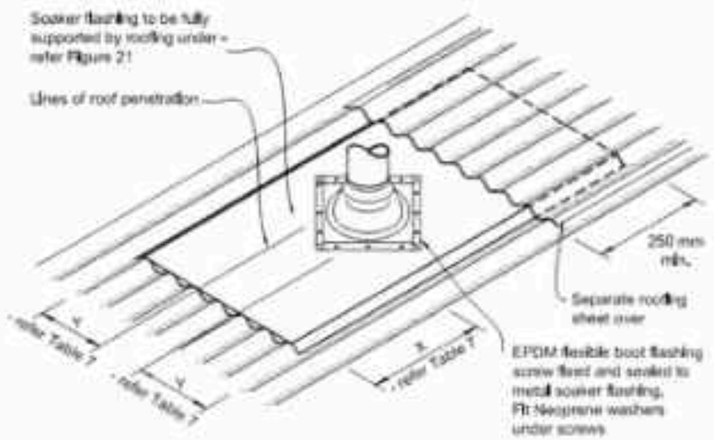
Amend 5 Aug 2011

Figure 54: Soaker flashing for pipe penetrations
Paragraph 9.4.17

Amend 2 Dec 2011

NOTE: (1) Suitable for pipes from 86 mm to 500 mm diameter.
(2) Suitable only for roof pitches of 10° or more.

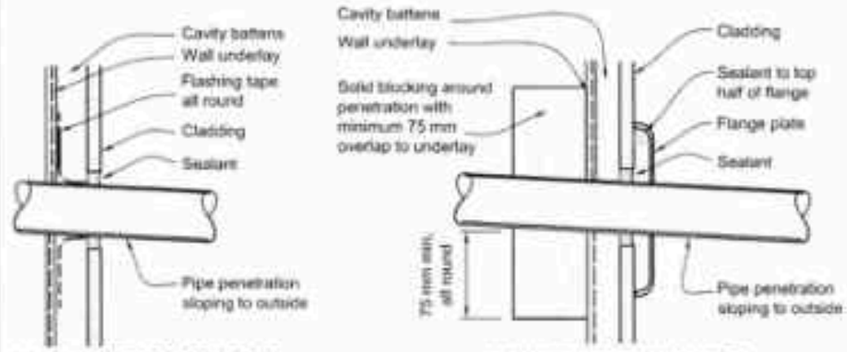
Amend 2 Jul 2009



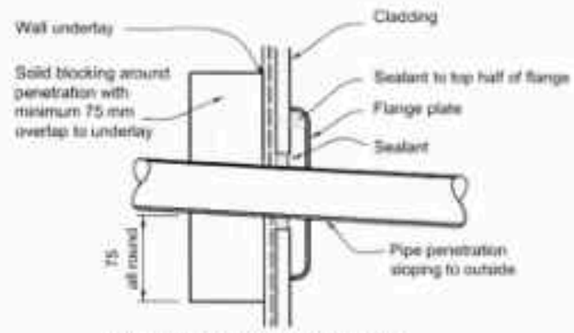
X = 130mm min.
Y = 2 crests, finish in next trough

Amend 5 Aug 2011

Figure 68: General pipe penetration
Paragraph 9.1.9.3; Figure 126



(a) CAVITY WITH FLASHING TAPE (b) CAVITY WITH FLANGE PLATE



(a) DIRECT FIX WITH FLANGE PLATE

Amend 5 Aug 2011

COMMENT:
Where possible, pipe penetrations, meterboxes and similar penetrations should be located in sheltered areas of the building, such as a porch, or be installed behind a weatherproof glazed panel.

Amend 2 Jul 2009

Amend 5 Aug 2011

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COMMENT:
External air pressures in higher *wind zones* can transfer to interior linings, and exceed recommended loadings prescribed by some lining manufacturers. Rigid *underlays* will protect linings from undue air pressure loadings, and help ensure cavity depths are maintained for the proper functioning of the *drained cavity*.

9.1.8 Drained cavities

Based on the *risk score* for an *external wall* calculated as per Paragraph 3.1, a *wall cladding* may require the inclusion of a *drained cavity*. Where a *drained cavity* is required, it shall meet the requirements of Paragraphs 9.1.8 to 9.1.9.4.

COMMENT:
Cavities manage occasional ingress of water past the *cladding*, but should not act as gutters or drains.

9.1.8.1 Limitations

This Acceptable Solution is limited to systems where:

a) *Cavity battens* are fixed, by the *cladding* fixings, to the *wall framing*.

b) *Claddings* are fixed through the *cavity battens* into the *wall framing*, and

c) The *drained cavity* behind *claddings*, except in masonry veneer, is not vented at the top.

Systems where the *cladding* is fixed into the *cavity batten* only are outside the scope of this Acceptable Solution.

9.1.8.2 Requirements

Where a *drained cavity* is required, it shall:

a) Be installed over a *wall underlay*, either flexible or rigid, that:
   i) complies with Table 23, and
   ii) is fixed to *wall framing*.

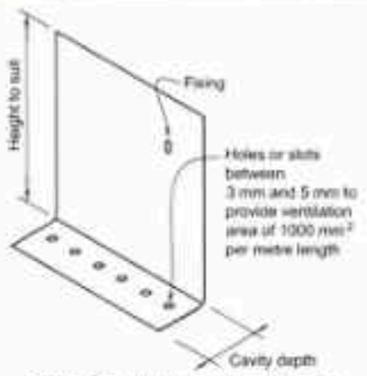
b) Be formed using vertical *cavity battens*,

c) Restrict air movement between the *drained cavity* and:
   i) floor, *wall* and *roof framing*,
   ii) attic *roof* space, and
   iii) subfloor space.

d) Be drained and open to the exterior at the bottom of cavities,

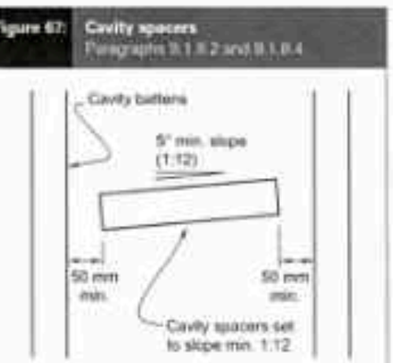
e) Use vermin-proofing at the cavity base as per Paragraph 9.1.8.3 and Figure 66.

Figure 66: Cavity base closer/vermin proofing
Paragraph 9.1.8.2



NOTE: To be used in *drained cavities* at the base of walls and above window head and inter-storey *flashings*.

Figure 67: Cavity spacers
Paragraphs 9.1.8.2 and 9.1.8.4



NOTE: Spacing of *cavity spacers* will vary to suit individual *cladding* fixings.

f) Use *cavity spacers* as shown in Figure 67, where fixing is required between *cavity battens*. Alternative *cavity spacers* to those described in Paragraph 9.1.8.2 are permitted. Refer to Paragraph 9.1.8.4 f).

COMMENT:
Solid horizontal cavity spacers risk obstruction of air flow in cavities and risk bridging moisture across the cavity.

9.1.8.3 Vermin-proofing

Vermin-proofing shall be provided above window and door heads and at the base of the *drained cavity*. Figure 66 provides one example of an appropriate cavity closer.

Aluminium, stainless steel or uPVC in accordance with Paragraph 4.1 shall be used where vermin-proofing material is not readily accessible or replaceable.

Vermin-proofing shall:

a) Provide holes or slots between 3 mm and 5 mm,

b) Provide an area of opening of 1000 mm² per lineal metre of wall, and

c) Be positioned to allow a minimum *drip edge* to the *wall cladding* of:
   i) 10 mm at the base of walls, and
   ii) 15 mm above window and door head *flashings*.

COMMENT:
It is important the openings in vermin-proofing are kept clear and unobstructed in order to maintain draining and venting of the cavity. The closure shown is only one option for vermin-proofing. Provided openings are as specified, other dimensions can vary, so allowing the use of other shapes such as channels and right-angles.

9.1.8.4 Cavity battens and jamb battens

Cavity battens shall:

a) Be nominal 20 mm (between limits of 18 mm and 25 mm in thickness),

b) Be a minimum 45 mm wide,

c) Be fixed, by the *cladding* fixings, through the *wall underlay* into the *framing*,

d) If timber, comply with B2/AS1,

e) If polystyrene, comply with Paragraph 9.9.3.1, and be protected from any incompatible vapours from timber treatment.

Cavity battens and/or cavity spacers that meet E2/VM1 Class 1 testing and B2/AS1, *permit air circulation* are allowed. The Class 1 test must include a horizontal *cladding* joint supported on a cavity spacer batten of a proposed type.

Jamb battens shall:

f) be nominal 20 mm (between limits of 18 mm and 25 mm in thickness), minimum 45 mm wide, and of timber complying with B2/AS1. Refer to Figure 72A.

COMMENT:
The solvents from freshly LOSP-treated timber may melt polystyrene, so these should not be used together.

Solid horizontal cavity spacers risk obstruction of air flow in cavities and risk bridging moisture across the cavity.

Battens will be fixed by the *cladding* fixings, which will penetrate the *wall framing*. Battens will therefore need only temporary fixing until the *cladding* is fixed. Polystyrene battens may be temporarily adhered to the *wall underlay*.

9.1.8.5 Wall framing behind cavities

Dwangs shall be at a maximum of 1350 mm centres generally and maximum 480 mm centres for *direct fixed* vertical weatherboard profiles, and vertical metal corrugated and symmetrical *trapezoidal claddings*.

Where *stud* spacings are greater than 450 mm, and flexible *wall underlays* only are used, an intermediate means of restraining the flexible *wall underlay* and insulation from bulging into the *drained cavity* shall be installed. Acceptable means of achieving this are by using:

a) 75 mm galvanized mesh or wire galvanized in accordance with AS/NZS 4534,

b) Polypropylene tape or galvanized wire at 300 mm centres fixed horizontally and drawn taut, or

c) Vertical cavity battens at 300 mm centres maximum.

9.1.9 Penetrations

9.1.9.1 Penetrations through cavities

Window penetrations through cavities shall meet the requirements of Paragraph 9.2 to Paragraph 9.9.

9.1.9.2 Other cavity penetrations

Where penetrations of the *wall cladding* are wider than the *cavity batten* spacing, allowance shall be made for air flow between adjacent cavities by leaving a minimum gap of 10 mm between the bottom of the vertical *cavity batten* and the *flashing* to the opening.

9.1.9.3 Pipes and service penetrations

Pipes and service penetrations shall be made weathertight by using methods shown in Figures 68 and 69. *Flashing* tape complying with Paragraph 4.3.11, and sealant complying with:

a) Type F, Class 20LM or 25LM of ISO 11600, or

b) low modulus Type II Class A of Federal Specification TT-S-00230C.

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ALL STRUCTURAL TIMBER TO BE SG8 GRADE OR BETTER

PROPOSED RESIDENCE FOR,
Mark & Lisa Gasson
380 Churchill East Rd;
Rangiriri.

DRAWN	DJS
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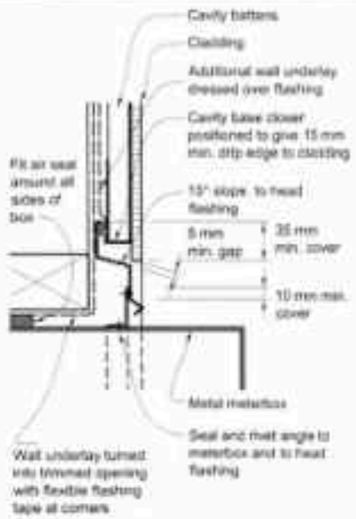
Figure 69: General meterbox and similar penetrations
Paragraphs 9.1.9.3, 9.5.8.5 and 9.5.9.6



NOTE:
(1) Fix angle and seal to all sides of box.
At sides and base, claddings shall overlap angle by 10 mm minimum. Continuously seal cladding against angle.
(2) Suitable for other similar penetrations.

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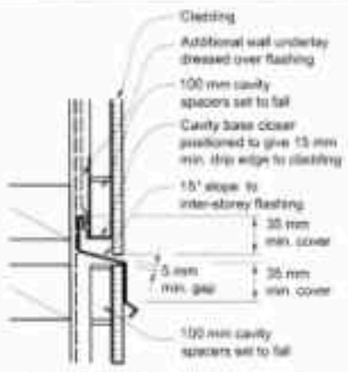
Figure 70: General inter-storey junction
Paragraphs 4.8.1.3, 9.1.9.4, Figure 16



NOTE: To be used to limit continuous cavities to the lesser of 2 storeys or 7 metres.

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9.1.9.4 Inter-storey junctions

Inter-storey junctions in *claddings* over *drained cavities* shall be formed for *walls*:

Amend 5 Aug 2011
a) Up to a maximum of two storeys or 7 metres in height, as shown for the specific *wall claddings* in Paragraph 9.2 to Paragraph 9.9, or

Amend 5 Aug 2011
b) Over two storeys or 7 metres by using an inter-storey *flashing* bridging the *drained cavity* as shown in Figure 70.

Amend 5 Aug 2011
COMMENT:
A drained cavity height is limited to manage the moisture handled by the cavity before it is directed to the outside.

9.1.10 Windows and doors

Windows and doors shall comply with the requirements of NZS 4211, and reveals shall comply with NZS 3602. *Flashings* shall comply with Paragraph 4.0. Window details specific to particular *claddings* are given in Paragraph 9.2 to Paragraph 9.9. Door details shall be based on window details and shown in Figures 17A-D.

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After installation, the flange forming the window or door facing shall have an overlap to the surrounding cladding material or associated back *flashings* of

a) For jambs – 10 mm minimum

b) For sills – 6 mm minimum

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9.1.10.1 Scope

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This Acceptable Solution is limited to aluminium window and door joinery that:

a) Has horizontal window and door heads only

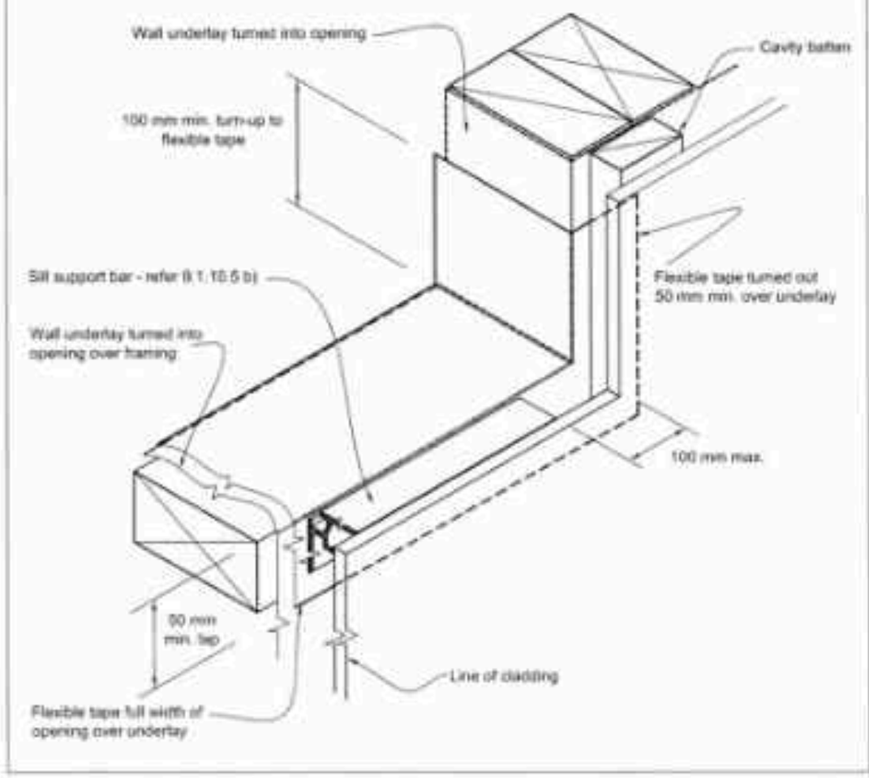
b) Has maximum frame dimensions of 5000 mm wide or 5000 mm high, and a maximum overall frame area, for any one frame, of 13.5 m^2, or

c) For sills to floor level, has maximum width of 6 m and maximum overall frame area is 16 m^2

Amend 2 Jul 2005

Figure 72B: General window and door opening with drainage cavity
Paragraphs 9.1.5, 9.1.9.3, 9.1.10.2, Figures 73C, 76, 85, 86, 91, 99, 116 and 128

NOTE:
(1) Detailed cladding omitted for clarity, refer to specific claddings.
(2) Head to be treated similarly with continuous wall underlay and flexible tape at corners.
(3) Refer individual cladding details for jamb flashings.



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Errata 2 Dec 2011

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Mark & Lisa Gasson
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9.2 Masonry Veneer

9.2.1 Limitations

This Acceptable Solution is limited to masonry veneer cladding attached to timber wall framing outlined in NZS 3604. Masonry veneer is either:

a) Clay brick, or

b) Concrete brick or block.

COMMENT:

Natural stone bricks or blocks may be suitable. However, they are not part of this Acceptable Solution. Refer to the manufacturer's recommendations for specific design information.

Refer to Paragraph 1.5 for qualification of installers.

9.2.2 General

1) The materials and workmanship of masonry veneer shall be in accordance with SNZ HB 4236 and have a maximum mass of veneer of 220 kg/m² and minimum veneer thickness of 70 mm.

2) Masonry units shall be laid-up in running bond.

3) Mortar, materials (cement, sand and admixtures) shall comply with NZS 4210.

(4) Mortar joints less than 24 hours old shall not be subject to vibration, such as would result from the nailing of interior linings.

9.2.3 Installation

Masonry veneer construction shall be as shown in Figure 73B, and have:

a) A maximum height of veneer above adjacent finished ground level of 7 m.

b) A maximum height of veneer of 4.0 m, measured from the top of the concrete masonry wall, foundation wall or slab edge foundation. In the case of a veneer faced concrete block wall or foundation wall height is measured from the top of that wall.

c) A maximum height of veneer of 5.5 m on a gable end wall.

d) A minimum wall or panel width of 230 mm.

Note: The bracing demand for framing supporting masonry veneer is determined from values listed in NZS 3604.

COMMENT:

Refer to Paragraph 1.5 for qualification of installers

9.2.4 Flashings

1) Sill and head flashings shall be as described in Paragraph 4.3 and be either:

a) 1.5 mm butyl rubber– refer to Paragraph 4.3.9

b) 2 ply asphaltic pliable waterproofing membrane – refer to Paragraph 4.3.10

c) Pliable polyethylene minimum 0.5 mm thick complying with DPC/DPM Table 23.

2) Jamb flashings shall be:

d) 2 ply asphaltic pliable waterproofing membrane complying with AS/NZS 2904

e) Pliable polyethylene minimum 0.5 mm thick complying with DPC/DPM Table 23.

COMMENT:

For further information refer to ASTM C1330 for backing rod material performance.

Figure 73A: Vertical control joint
Paragraph 9.2.8

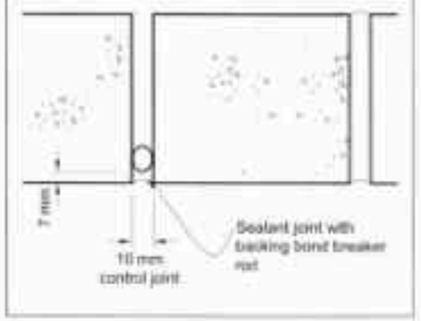

Figure 73: External corners for horizontal weatherboards
Paragraph 9.4.4.4

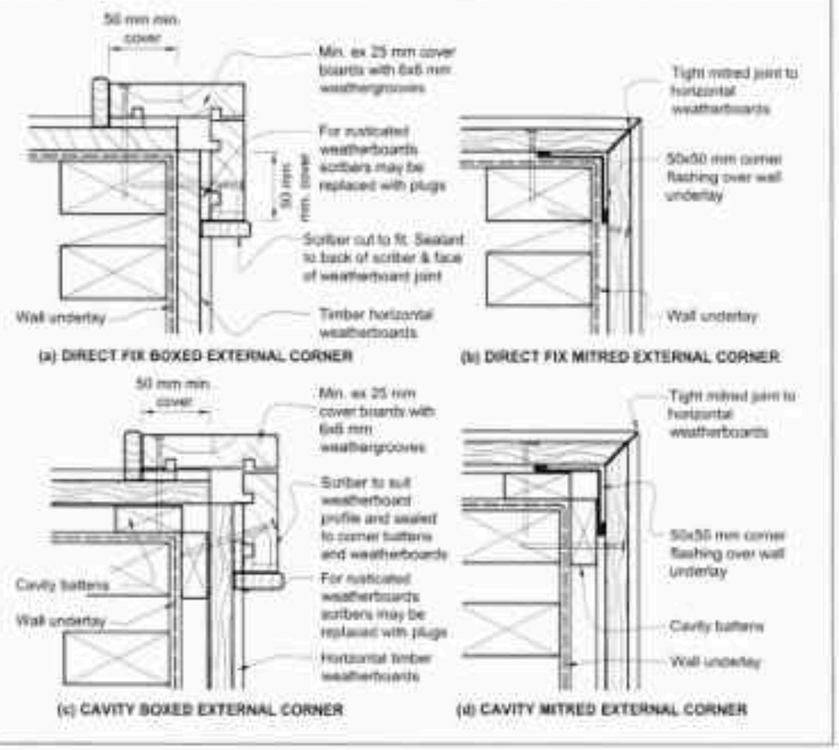

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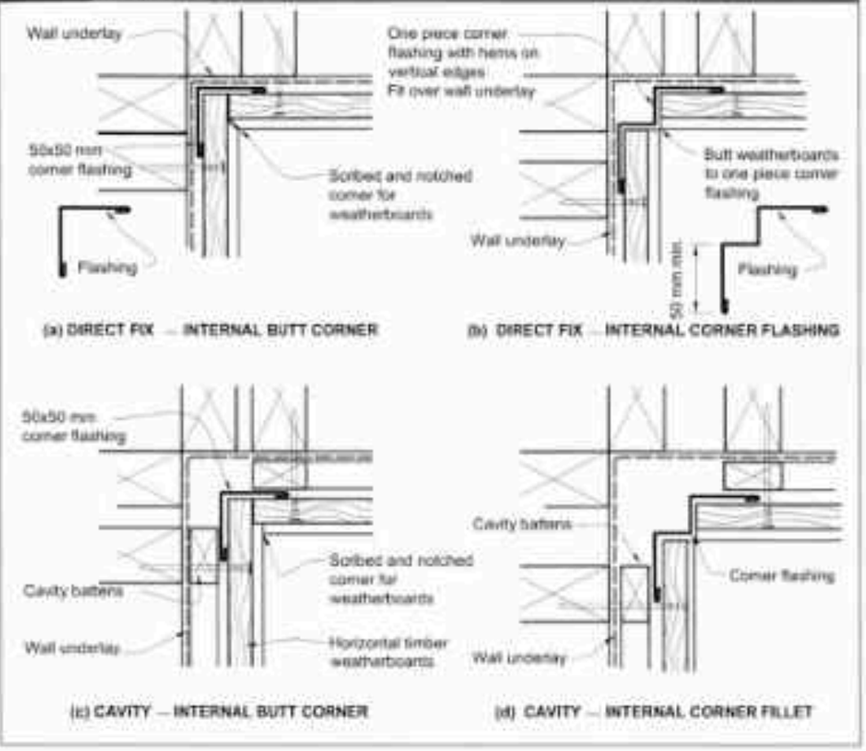
Figure 79: Internal corners for horizontal or vertical weatherboards
Paragraph 9.4.4.5



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9.4.5 Vertical weatherboards

Vertical shiplap and board and batten weatherboards shall be in continuous lengths over a storey height.

9.4.5.1 Laps

a) Vertical shiplap weatherboards shall be fitted with a minimum gap of 2 mm at the overlap between boards.

b) Board and batten weatherboards shall:
   i) be fitted with a 5 mm to 8 mm gap between boards, and
   ii) have weather grooves to boards and battens aligned.

9.4.5.2 Fixings

Vertical weatherboards shall be fixed to dwangs at 480 mm maximum centres in accordance with Table 24.

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9.4.5.3 Corners

a) External corners

External corners shall be weatherproofed by the use of corner facings as shown in Figure 80.

b) Internal corners

A corrosion-resistant corner flashing, as per Table 7 and Figure 79, shall be fitted behind the weatherboards at all internal corners.

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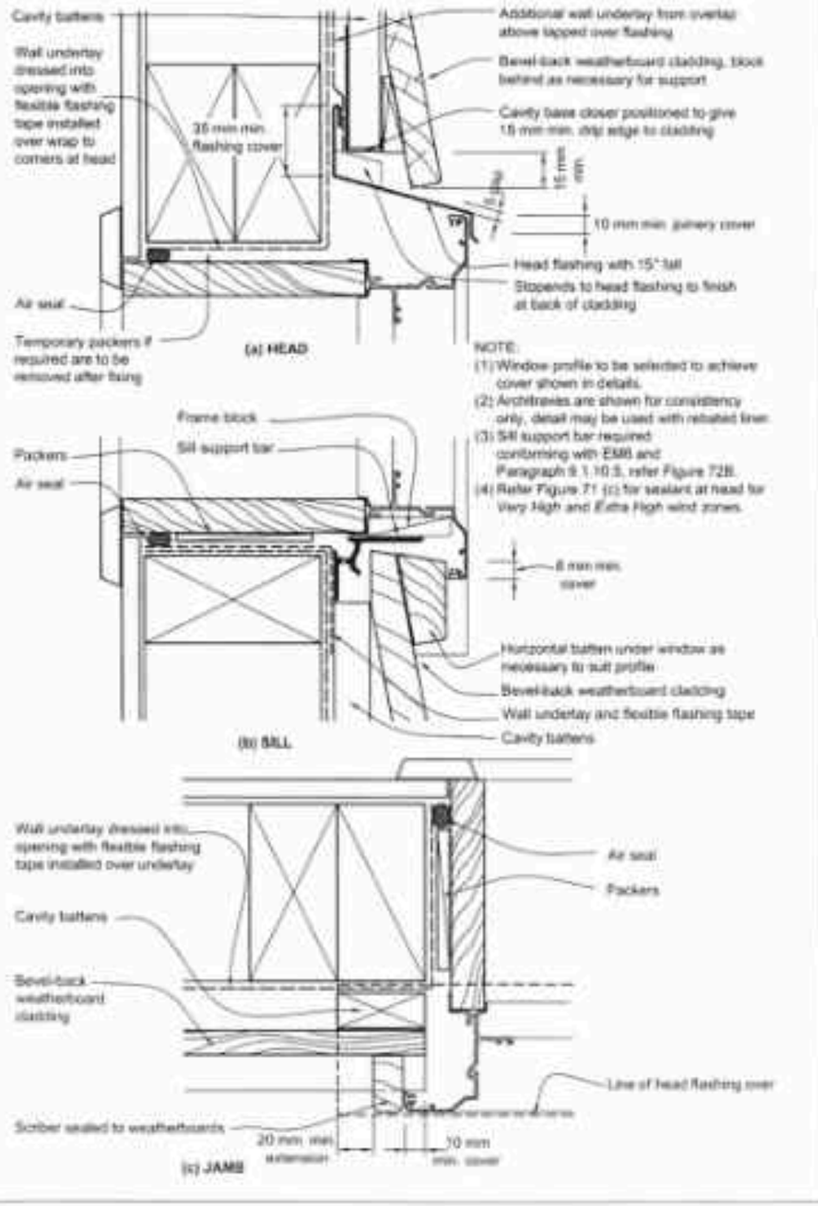
Figure 85: Windows and doors for bevel-back weatherboards on cavity
Paragraph 9.4.7



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Top plate connections

For top plate connections refer to NZS3604:2011 section 8.7.3.

Parapets and gable end walls

Bracing elements must be fixed from top plate to bottom plate. Fixing to a row of nogs is not acceptable unless either:

A continuous member such as an ex 90 x 45mm ribbon plate is fixed across the studs just above a row of nogs at the ceiling line, as shown in figure 16.

or

GIBFix® Angle as shown in figure 17. The angle is fixed to a row of nogs with 30 x 2.5mm galv flat head nails or 32mm x 7g GIB® Grabber® Dual Thread Screws at 300mm centres.

Bottom plate fixing

TIMBER FLOOR
For elements with an 'N' specification use 2/100 x 3.75mm hand or 3/90 x 3.15mm power-driven nails at 600mm centres.

In addition, for elements with an 'H' specification, use GIB HandiBrac® panel hold-down fixings at each end of the bracing element, see p.16.

CONCRETE FLOOR — EXTERNAL WALL BRACING ELEMENTS
For bracing elements with an 'N' specification fix external wall plates in accordance with NZS 3604:2011.

Use GIB HandiBrac® panel hold-down fixings at each end of bracing elements with an 'H' specification and minimum intermediate fixings as required by NZS 3604:2011.

CONCRETE FLOOR — INTERNAL WALL BRACING ELEMENTS
For bracing elements with an 'N' specification fix plates in accordance with NZS 3604:2011 or use 75 x 3.8mm shot-fired fasteners with 16mm discs spaced at 150 and 300mm from end-studs and 600mm centres thereafter.

For bracing elements with an 'H' specification use GIB HandiBrac® panel hold-down fixings at each end of the element and minimum intermediate fixings as required by NZS 3604:2011.

FIGURE 16: PARAPETS AND GABLE ENDS WITH RIBBON PLATE

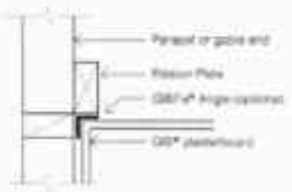
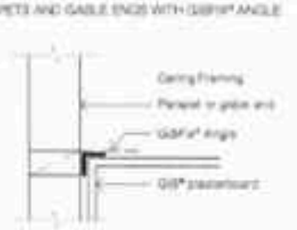


FIGURE 17: PARAPETS AND GABLE ENDS WITH GIBFIX® ANGLE



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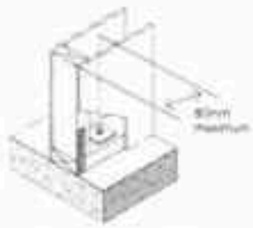
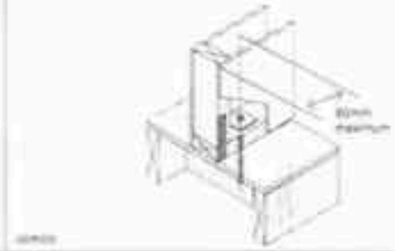
BOTTOM PLATE FIXINGS FOR GIB® BRACING ELEMENTS

Brace type	Concrete slabs		Timber floors
	External wall	Internal wall	External and internal walls
GS1-N	As per NZS 3604:2011. No specific additional fastening required.	As per NZS 3604:2011. Alternatively use 75 x 3.8mm shot-fired fasteners with 16mm discs, 150mm and 300mm from each end of the bracing element and at 600mm thereafter.	Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011.
GS2-N	Not applicable.		
GS2-NOM			
GSP-H BL1-H BLP-H	Intermediate fastenings to comply with NZS 3604:2011 In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated on p.15 and 16.		Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011. In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated on p.15 and 16.
BLG-H	Not applicable	As for GSP-H, BL1-H, BLP-H on concrete slab as illustrated on p.15 and 16.	

Bracing strap installation

Care needs to be taken with the installation of the bracing strap. It should be checked in to be flush with the face of the stud providing a flat substrate for the plasterboard and positioned in such a way that the corner fastenings of the bracing element are not affected by it. Keeping the strap to the edge of the end stud as shown will allow the corner fastenings to be installed without having to penetrate the bracing strap.

Concrete floor	Timber floor
400 x 25 x 0.9mm galvanised strap to pass under the plate and up the other side of the stud. Six 30 x 2.5mm flat head galvanised nails to each side of the stud. Three 30 x 2.5mm flat head galvanised nails to each side of the plate. Hold down bolt with 50 x 50 x 3mm washer to be fitted within 80mm of the end of the element.	
Internal wall	
	
External wall	
	
Note: Where applicable drawings have been produced for CAD design. These are identified by a unique number in the bottom corner of each detail box that can be found at gib.co.nz/library.	2/300 x 25 x 0.9mm galvanised straps with six 30 x 2.5mm flat head galvanised nails to each stud and into the floor joist and three nails to the plate. Block to nog fixed with 3/100 x 3.75mm nails to stud.
	
Hold-down fastener requirements	
Concrete floor	Timber floor
A mechanical fastening with a minimum characteristic uplift capacity of 15kN fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element.	12 x 150mm galvanised coach screw fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element.

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GIB HandiBrac® installation

Developed in conjunction with MiTek™, the GIB HandiBrac® has been designed and tested by Winstone Wallboards for use in GIB EzyBrace® elements that require hold downs. The GIB HandiBrac® is a substitute for bottom plate hold-down straps.

- Quick and easy to fit
- May be fitted at any stage before lining
- Framing face is clear to allow flush lining
- Easily inspected

The GIB HandiBrac® with BOWMAC® blue head screw bolt is suitable for timber and concrete floors constructed in accordance with NZS 3604:2011.



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Concrete floor		Timber floor	
External walls	Internal walls	External walls	Internal walls
			
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate.	Position GIB HandiBrac® at the stud/plate junction and at mid-width of plate.	Position GIB HandiBrac® flush with the outside stud face, as close as practicable to the centre of the boundary joist.	Position GIB HandiBrac® in the centre of floor joist or full depth solid block.
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.		12 x 150mm galvanised coach screw or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.	

GIB HandiBrac® placement with GIBFix® Framing System for concrete floors

Figure 18 shows the preferred positioning of the GIB HandiBrac® panel hold-down brackets within the GIBFix® Framing System layout and where they are required by bracing systems with an 'H' in the specification code.

Note that, in corners and at wall junctions, a single GIB HandiBrac® can serve 'H' type bracing elements in both directions, but additional intermediate concrete anchors may need to be installed to meet the minimum requirements of NZS 3604:2011 for bottom plate fixing.

The GIB HandiBrac® is fixed to the stud which has the GIBFix® Angle.

For bracing elements with sheet material both sides of the wall connect corner studs using 8/90mm gun nails as shown in figure 19.

TIMBER FLOORS
For timber floors bolt fixing in to solid joist or block is required, as shown on p 16.

FIGURE 18: GIB HANDIBRAC® PLACEMENT WITH GIBFIX® FRAMING SYSTEM LAYOUT

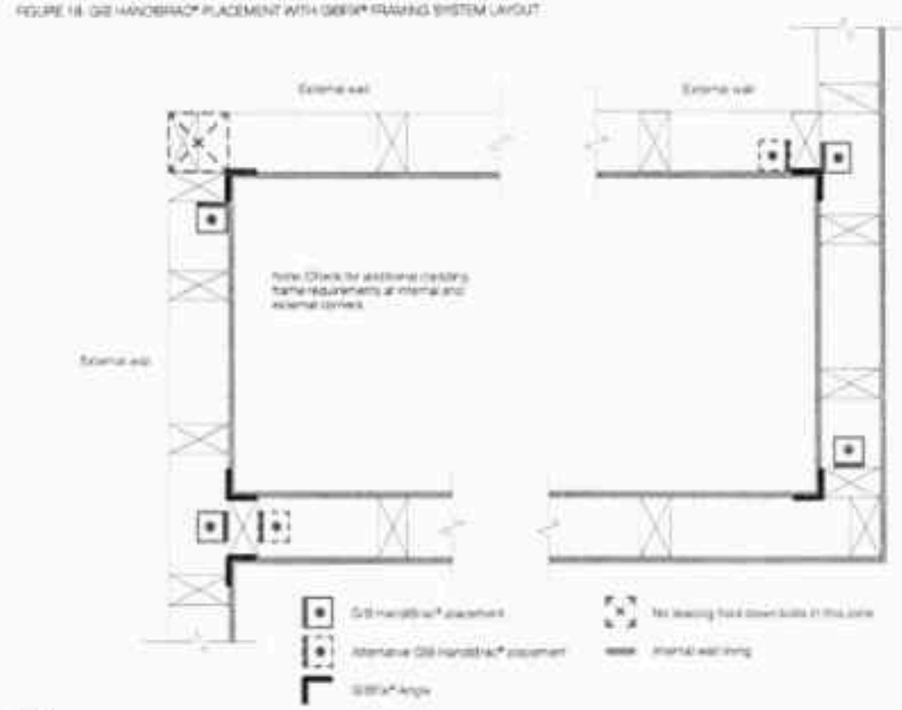
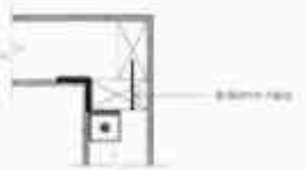


FIGURE 19: STUD CONNECTION FOR 'H' TYPE BRACING ELEMENTS WITH SHEET MATERIAL BOTH SIDES



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GIB EzyBrace® Systems specification GS1-N

Specification code	Minimum length (m)	Lining requirement
GS1-N	0.4	Any 10mm or 13mm GIB® Standard plasterboard to one side only

WALL FRAMING
Wall framing to comply with:

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor
Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 15mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

External Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for external wall bottom plate fixing.

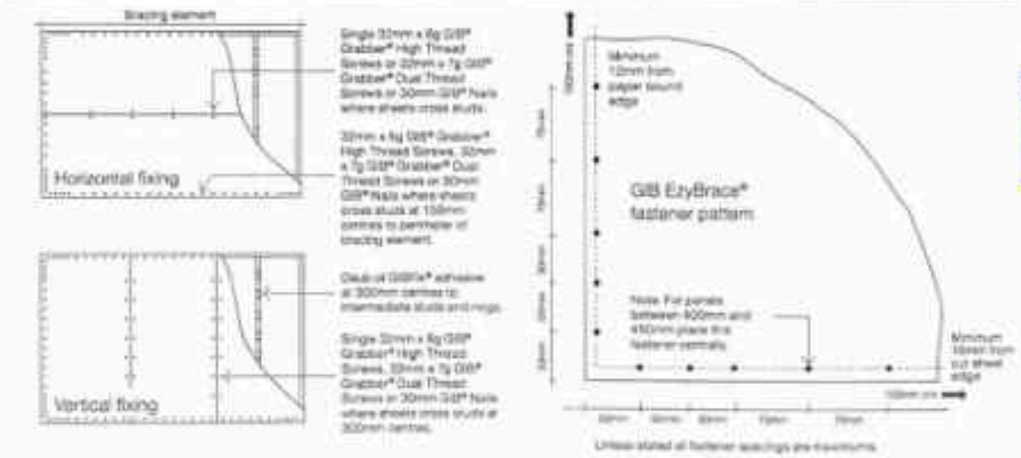
WALL LINING
- Any 10mm or 13mm GIB® plasterboard lining.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Angle use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems.

GIB EzyBrace® Systems specification BL1-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BL1-H	0.4	10mm or 13mm GIB Braceline® to one side only	Hold downs

WALL FRAMING
Wall framing to comply with:

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide.

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or Three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

WALL LINING
- A layer of 10mm or 13mm GIB Braceline®
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws. If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
50,100,150, 225, 300mm from maximum each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to the sheet joint. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.

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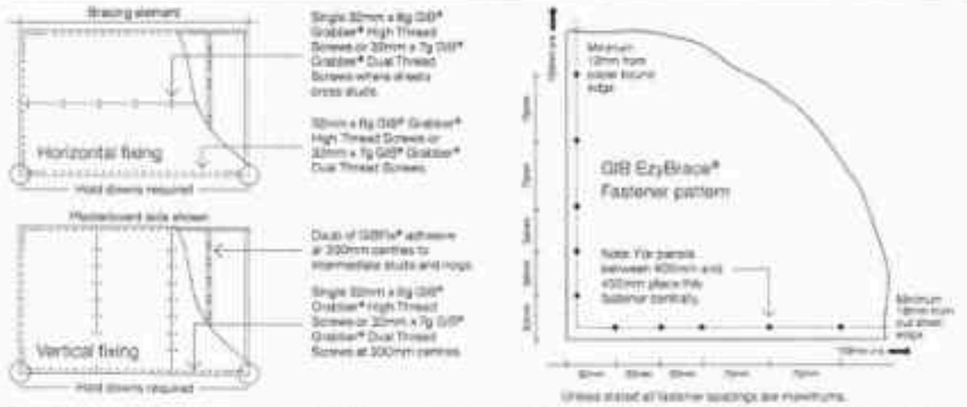

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems.

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Shower – Tiled Walls and Base

MARCH 2017

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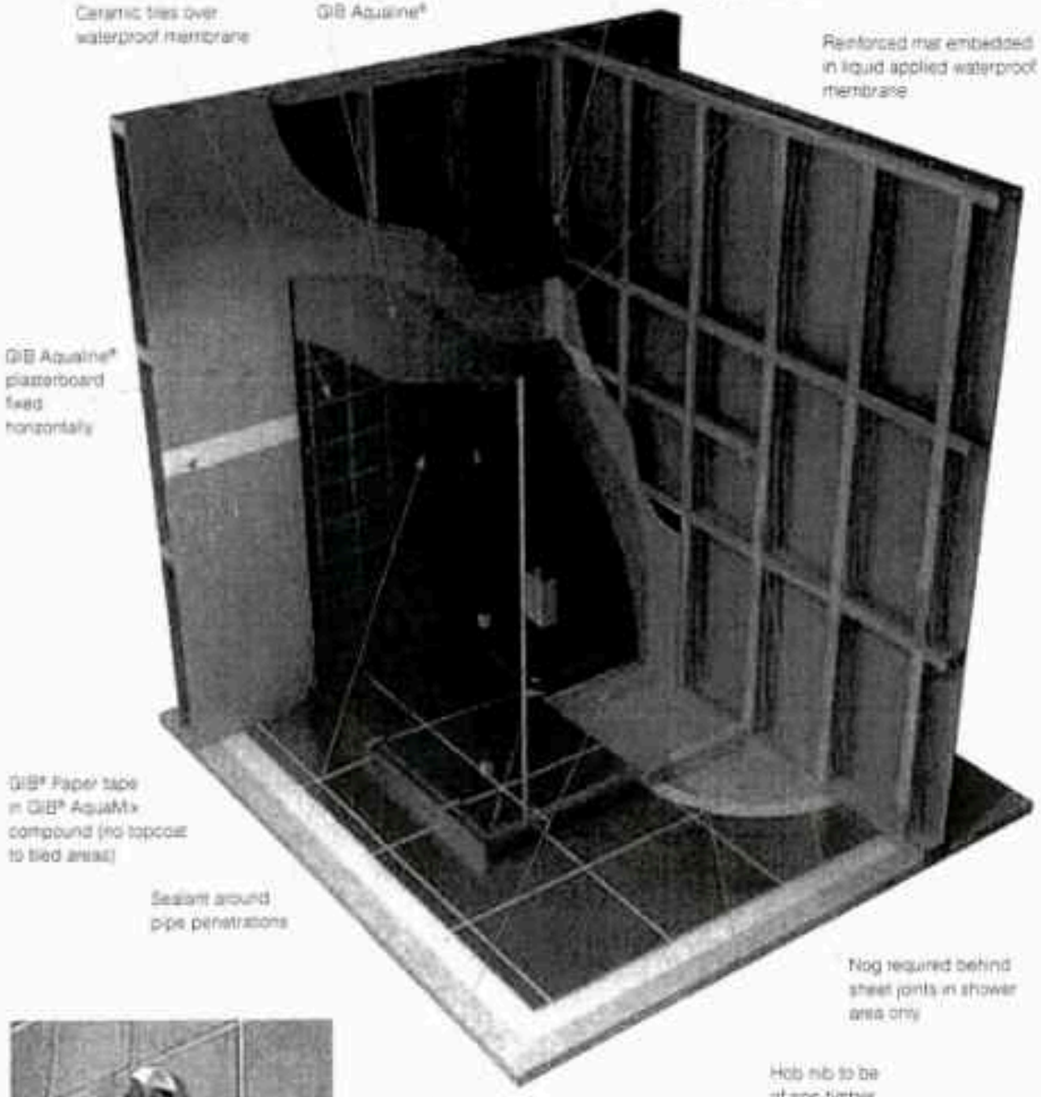




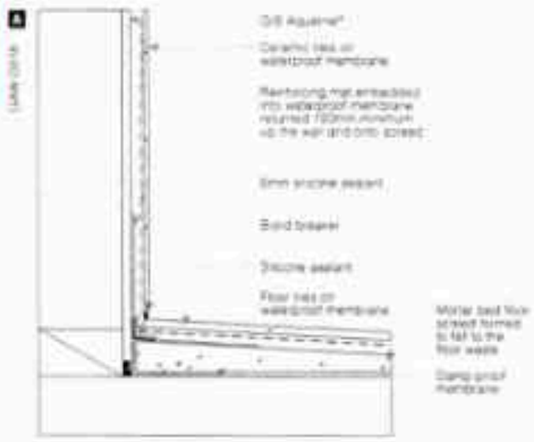
Run a bead of silicone sealant around the mixer unit on the tiles extending below the bottom of the pipe aperture

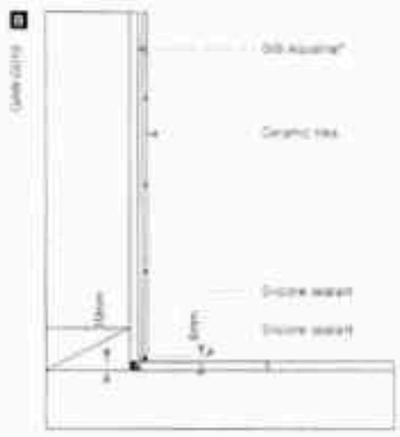
For typical details, see the following pages

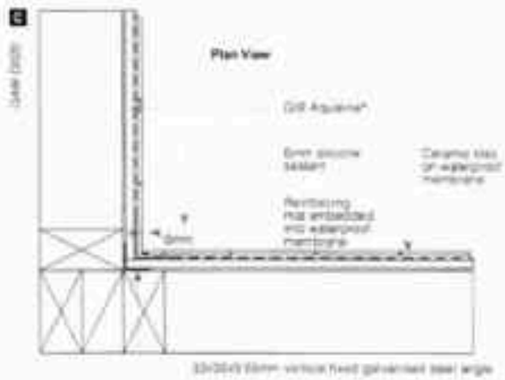
GIB AQUALINE WET AREA SYSTEMS – TYPICAL DETAILS

Shower – Tiled Walls and Base

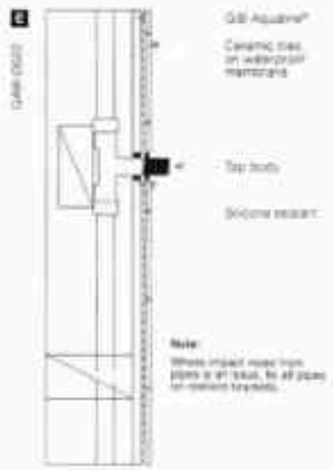
MARCH 2017

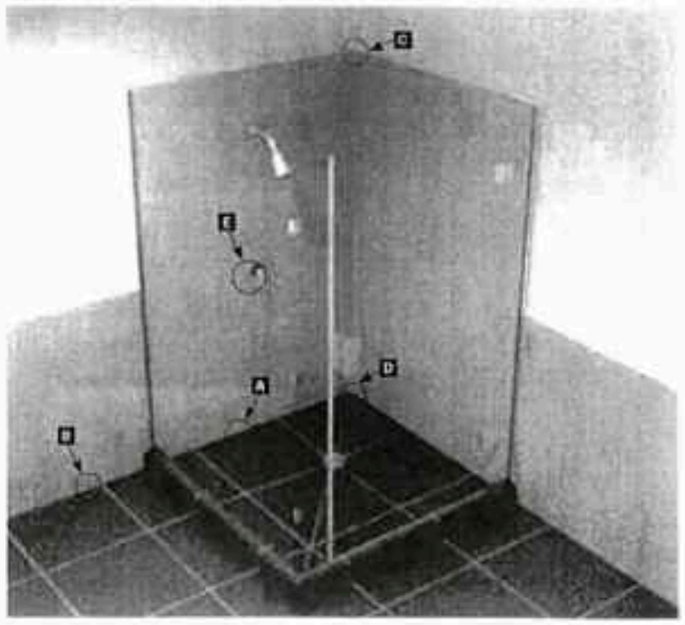












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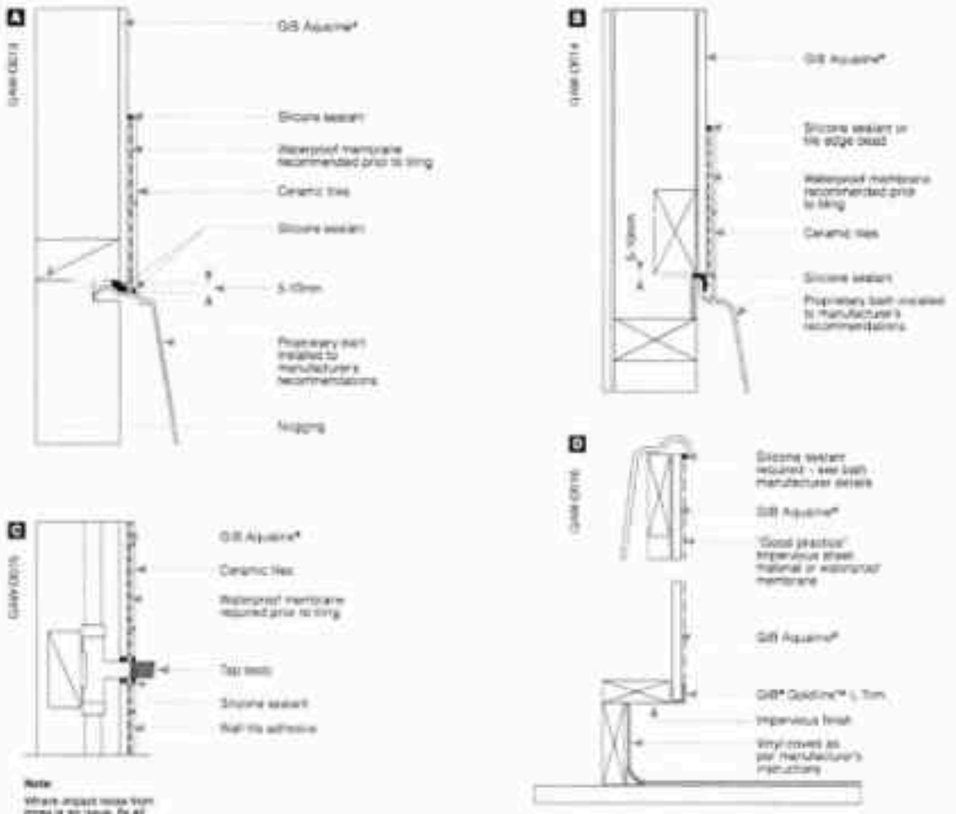
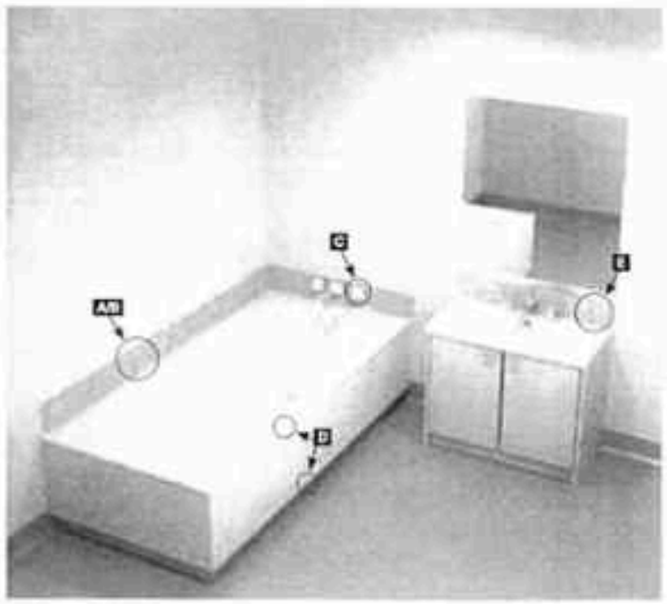
Bath – Tiled Upstand

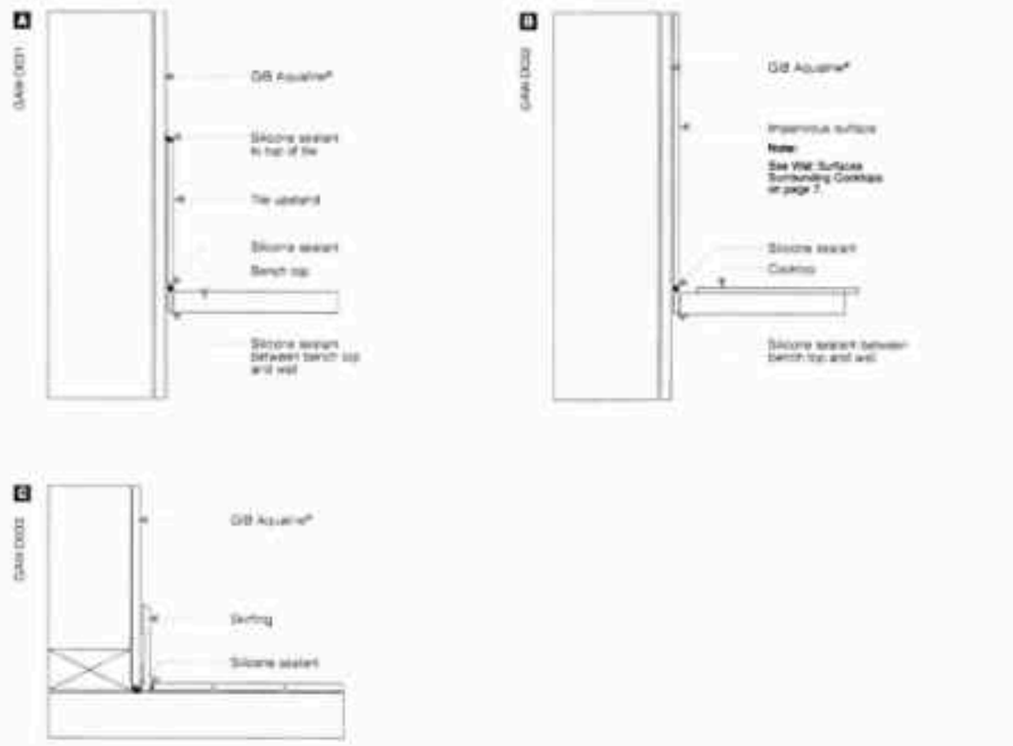
MARCH 2007

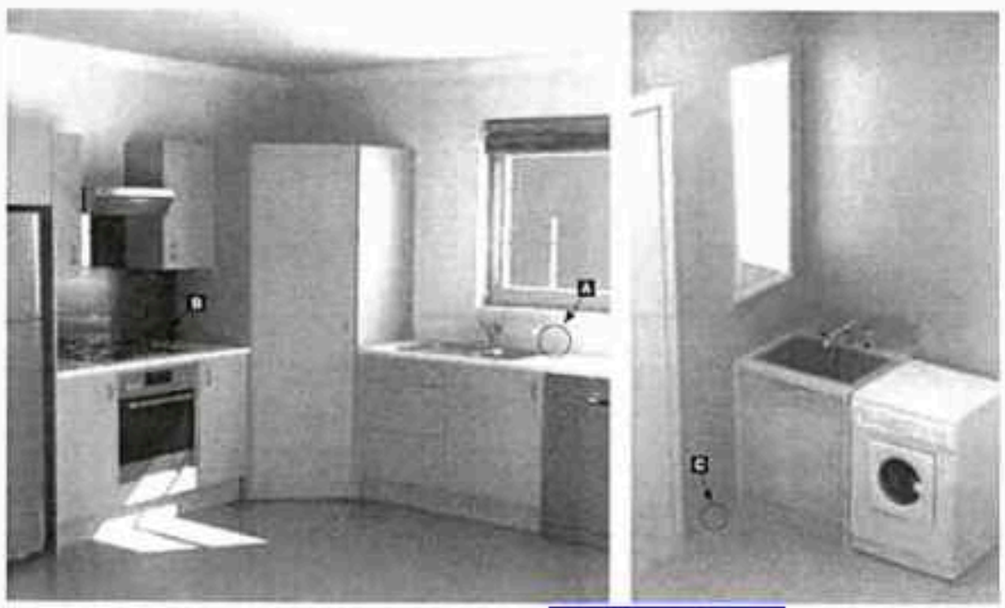




Kitchen and Laundry

MARCH 2007





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Tiled Walls

Important: See page 6 and 7 for waterproof membrane requirements.

Wall Framing
Framing dimensions and spacing must comply with the requirements of NZS 3604:1999 or relevant NZ Standard.
- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum 32 x 32 x 0.55mm galvanised metal angle. Each side of the angle shall be fastened to the framing with 30mm galvanised clouts at 300mm centres.
- Steel stud systems do not generally require nogs except as below:
  - Adjacent to each pipe penetration and behind sink and tub flashings.
  - Between all studs above bath flanges and preformed shower bases.
- For impact protection in shower cubicles or shower over bath situations it is important that all sheet joints are made on solid framing. This may require either vertical fixing of the GIB Aqualine® or the installation of some additional nogs.

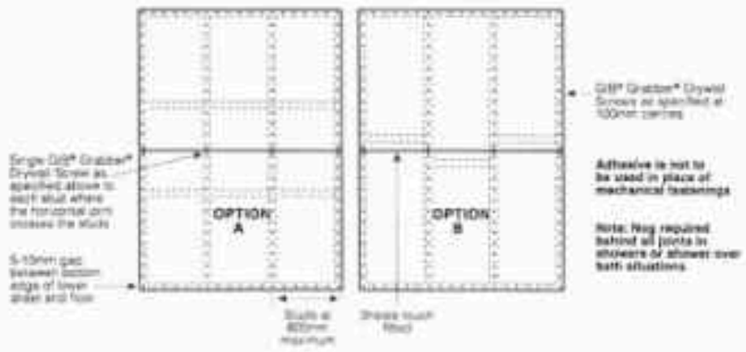
Fasteners
- For 10mm GIB Aqualine® use minimum 25mm x 6g GIB® Grabber® Drywall Screws.
- For 13mm GIB Aqualine® use minimum 32mm x 6g GIB® Grabber® Drywall Screws.

Fastener Centres
- GIB® Grabber® Drywall Screws at 100mm centres to perimeter of wall and to all intermediate studs.
- Adhesive is not to be used in place of mechanical fastenings.

Lining
- 10mm or 13mm GIB Aqualine® is suitable for use on timber framing and for tile weights up to 20kg/m².
- 13mm GIB Aqualine® must be used for tile weights between 20 and 32kg/m² and when light steel framing has been used.
- GIB Aqualine® may be fixed vertically or horizontally.
- Provide a 5-10mm gap at the wall/floor junction.
- Provide a 5-10mm gap between the bottom edge of the GIB Aqualine® and any bath rim or preformed shower base to allow for placement of sealant.
- GIB Aqualine® sheets shall be touch fitted.
- Where the framing or fastener centres required for tiled areas are closer than those specified for GIB® Fire Rated and GIB® Noise Control Systems, the tiling specification shall prevail. Where relevant, check that fastener lengths comply with the requirements of GIB® Fire Rated Systems or GIB® Noise Control Systems.

Jointing
- Jointing shall be carried out in accordance with instructions in the *GIB® Site Guide*.
- Water resistant GIB® AquaMix is recommended for the first two coats.
- No top coat is required.

Fastening the Linings – Horizontal Fixing in Tiled Areas



Note:
GIB Aqualine® is suitable for tiling to full height of walls, but if a wall is to be partially tiled (i.e. half high), only the area of wall under the tiles needs to be fixed as above. The remainder of the wall may be fixed as for non-tiled area (see page 10 & 11).

Ceilings

Ceiling Framing
Framing dimensions and spacing must comply with the requirements of NZS 3604:1999 or relevant NZ Standard.
If bracing, noise control, fire rating considerations exist consult the relevant GIB® publication for appropriate information.

Fasteners
- Steel battens – 25mm x 6g GIB® Grabber® Self Tapping Drywall screws.
- Timber battens or Joists – 32mm x 6g GIB® Grabber High Thread Drywall screws.

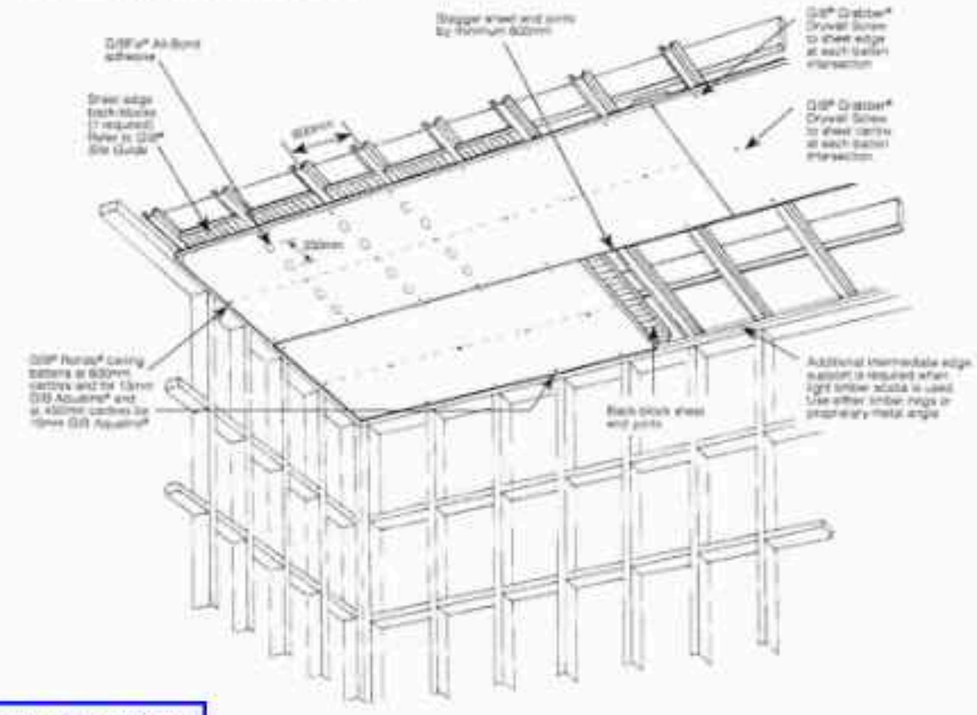
Adhesives
- Steel battens – GIBFix® All-Bond.
- Timber battens – GIBFix® Wood Bond (not suitable for LOSP treated timber).

Fasteners Centres
- Single screws to the edges and centre of the sheets across each batten.
- Screws to be 12mm from sheet edges.
- Dabs of adhesive at 200mm centres between the screws.
- Do not place adhesive at sheet edges or under fasteners, this may lead to screw or nail pops.

Lining
- The lining shall be fixed at right angles to the battens or joists.
- Commence fixing from the centre of the sheets outwards.
- Sheets to be touch fitted.
- Use long length sheets to minimise sheet end butt joints.
- Back-block sheet end butt joints.
- See GIB® Site Guide for sheet edge backblocking requirements.

Batten Spacings
- 13mm GIB Aqualine® plasterboard – 600mm centres max.
- 10mm GIB Aqualine® plasterboard – 450mm centres max.

Jointing
- All sheet joints must be paper tape reinforced and stopped in accordance with instructions in the *GIB® Site Guide*. Water resistant GIB® AquaMix is recommended for the first two coats.
- Do not fix tiles to GIB® plasterboard ceilings.



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ARDEX WPM 002

(Superflex Bathroom and Balcony Two Part)

Two Component Undertile Waterproofing Membrane

Advanced acrylic – will not re-emulsify

Liquid reinforced – eliminates the need for reinforcing mat

Water based – safe to use, low odour and easy cleaning

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Internet: www.ardex.com

Ardex WPM 002

(Superflex Bathroom and Balcony Two Part)
Two Component Undertile Waterproofing Membrane

PRODUCT DESCRIPTION

Ardex WPM 002 (Superflex Two Part) is a tough, fast drying two component waterproofing membrane specifically designed for use under tiles. The product has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. Ardex WPM 002 is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification.

Ardex WPM 002 is flexible, safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. Ardex WPM 002 is one of the fastest drying acrylic membranes on the market – normally ready to tile in 48 hours @ 23°C.

FEATURES/BENEFITS

Fast drying Ardex WPM 002 can be tiled over in 48 hours, or 4 hours @ 23°C/50% RH in non critical areas*.

Features benefits

- Liquid reinforced: Excellent strength, eliminates need for reinforcing mat.
- Flexible: Accommodates normal building movement.
- Advanced acrylic: Will not re-emulsify.
- Designed for tiling – Fully compatible with ABA/Ardex tile systems adhesives.
- Water based, safe to use, low odour and easy cleaning for undertile waterproofing in shower recesses by independent testing authority.
- Excellent exterior.

*Critical areas include areas where the membrane is applied at greater than 0.5mm or over impermeable substances such as over bond breakers or incorporating other reinforcement. Longer drying times are necessary in these areas.

APPLICATION RANGE

Performance levels

Commercial and residential.

Location

Internal and external wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

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Surfaces

Walls and floors.

Substrates

Concrete	Cured for min. 28 days or sealed set with one coat Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet concrete should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.
Renders and screeds	Cured for min. 7 days or sealed when set with one coat Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet render should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.
Fibre cement	Wet area grade only.
Plasterboard	Wet area grade only.
Plywood	Structural plywood (PAA branded) or marine grade or other wet area grade only. Not recommended for external use (refer Ardex).
Particleboard	Wet area grade, internal use only (special preparation is required – contact Ardex). Not recommended for external use (refer Ardex).
Permanent Immersion	In conditions of permanent immersion, it is recommended that WPM 002 must be covered with tiles for full immersion applications.

Contact Ardex for use over existing membranes, covering materials, and any other substrates not listed.

SPECIFICATION CLAUSE

ARDEX WPM 002 (Superflex Two Part)

The waterproofing membrane shall be Ardex WPM 002, a two component cementitious acrylic modified fibre reinforced membrane formulated to provide a tough, long lasting water barrier under tiling systems.

PACKAGING

Two component: 20kg (approx 20 litres) liquid pail/ 2 x 10kg bags powder.

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

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TABLE 1

	Thickness per coat		Total dry film thickness (2 coats)	Theoretical coverage		Per unit
	Dry film	Wet film		Per coat	For 2 coats	
FLOORS	0.6mm	0.9mm	1.2mm	32m²	16m²	40kg unit
WALLS	0.4mm	0.6mm	0.8mm	48m²	24m²	40kg kit

COVERAGE

Two coats are recommended for an effective waterproof membrane.

Coverage will vary depending on the porosity of the surface.

One 40kg unit will cover approximately 18-20m (based on two coats) depending on area requirements between wall and floor surfaces to be treated.

DRYING TIMES

Recoat time

1-2 hours (23°C/50% RH) between first and second coats. Alternatively, if a polyester mat is used between coats then the second coat can be applied whilst the first coat is still wet.

Dry through

The slowest drying areas are those where the membrane has been applied over a silicone bond breaker, eg. wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry.

Ardex WPM 002 membrane is totally dry in 48 hours at 23°C/50% RH but can take up to 72 hours at 10°C / 50% RH in corners or for thick films.

In areas where bond breakers or additional reinforcement are not used, Ardex WPM 002 can be tiled over after 4 hours at 23°C / 50% RH.

Fully cured

The shower should not be used until the membrane has reached its full strength. Normally Ardex WPM 002 membranes are fully cured after 3 days at 23°C, or after 5 days at 10°C.

Drying times will vary depending on humidity, surface temperature and surface porosity.

Do not apply on substrates where the surface temperature is below 10°C or above 35°C.

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine.

PRECAUTIONS

Do not use the product in the following situations:

- Areas subject to negative hydrostatic pressure or rising damp, unless treated with Ardex WPM 300.
- Where the substrate is wet – wet surfaces can be sealed with one coat of Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight.
- Where rain is imminent.
- Where the membrane will be left exposed and subjected to regular foot traffic.
- On glazed, glass or other totally impervious surfaces (eg. areas pre-treated with water repellants).
- Where the surface temperature is below 10°C or greater than 35°C.
- All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed prior to application of the Ardex WPM 002.

For substrates or situations other than those listed contact Ardex.

SAFETY DATA

Ardex WPM 002 is non-toxic. However, the contents should not be swallowed or inhaled. In case of eye contamination, rinse thoroughly with clean water. If irritation continues seek medical advice.

Material Safety Data sheets are available from Ardex upon request.

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Ardex WPM 002

(Superflex Bathroom and Balcony Two Part)
Two Component Undertile Waterproofing Membrane

APPLICATION

Apply Ardex WPM 002 by brush or roller. A medium nap (12–15mm pile) paint roller is recommended. New rollers should be dampened with water before being used for the first time.

For best results with a paint brush use a good quality, 50mm long bristle variety.

To achieve the required dry film thickness per coat application must consist of laying the product onto the surface and light finish the surface. Do not try to apply in the same manner as a building paint. A conventional building paint is normally applied at 25–40 micrometers wet film thickness while Ardex WPM 002 needs to be applied at between 0.6 and 0.9 milimeters per coat depending on product and application (Refer Table 1).

Critical areas:

INTERNAL WET AREAS

1. Construction should be in accordance with Australian/New Zealand Standard 3740.
2. All render and tile bed requirements should be completed before application of the membrane and tiles or other floor coverings should be direct bonded to the membrane.
3. Ensure wall and floor sheets are installed as per sheet manufacturer's recommendations.
4. Ensure suitable brick/concrete hobs are used (do not use timber), and that the top of the hob does not slope outwards.
5. Ensure that falls to the waste are min 1:60 (ie. approx. 30mm in 2mtr) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.
6. Avoid sheet joints in shower recess floor. Ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are sealed with a neutral cured silicone sealant spread approximately 5mm on either side of the joint.
7. Treat nail and screw holes with neutral cure silicone sealant.
8. Seal the perimeters of taps, shower outlets and waste outlets with neutral cure silicone sealant.
9. Apply a bead of neutral cure silicone sealant to all horizontal and vertical corners.
10. Apply a bead of neutral cure silicone sealant to the junction of the hob or angle and walls.
11. Waste outlets shall incorporate a puddle flange or similar in accordance with AS3740 and the top surface shall be set flush with the surface to which the membrane is to be applied. A bead of neutral cure silicone shall be applied across the intersection of the puddle flange and the screed/floor.
12. Apply the membrane to the entire shower recess floor and down into waste or drainage flange. Apply the membrane over the hob and at least 100mm beyond the outside edge of the hob (ideally to entire wet area floor).
13. Apply the membrane 1800mm up the walls or to the height of the shower rose within the shower recess.
14. Install the shower screen to inside edge of the hob.

BALCONIES AND DECKS

1. Ensure that the deck is constructed with falls to edge/drains of min 1:100 (ie. 20mm in 2mtr) or else achieve the fall with a sand/cement screed.
2. Ensure a min set down (step down) of 50mm to the finished floor level (ie. top of tiles).
3. Ensure suitable flashing is installed, ideally prior to the installation of the balcony screen/sliding door.
4. Treat any sheet joints with a neutral cure silicone prior to waterproofing.
5. Prepare and seal all wall/floor junctions with a bead of neutral cure silicone.

Fig.1 – Shower recess – critical areas

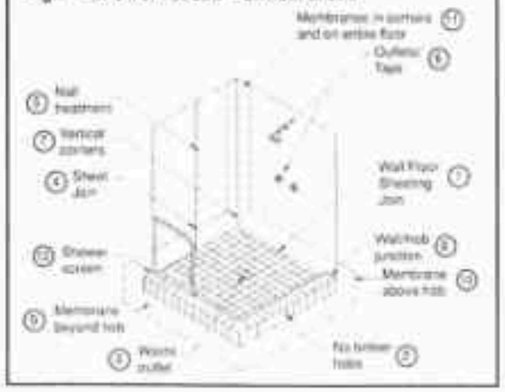
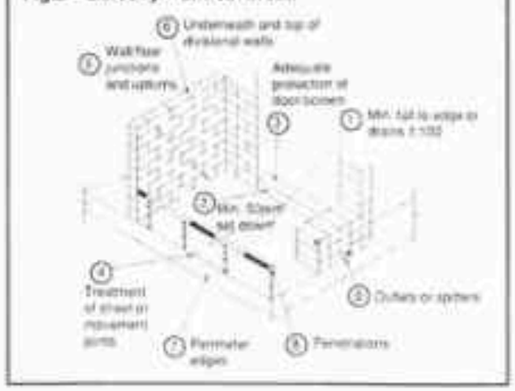


Fig.2 – Balcony – critical areas



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6. Apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door).
7. Where possible, apply the membrane prior to building divisional walls.
8. Apply the membrane to the entire balcony floor and at least 50mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents.
9. Apply the membrane to the top of the parapets and divisional walls, or else install suitable metal capping.
10. Apply the membrane down over the front edge of the balcony onto the drip rail.
11. Carefully seal any gaps around balcony penetrations prior to applying the membrane.
12. Apply the membrane down into outlets and drains, ensuring excess material is removed.
13. Ensure all weep holes are above the membrane application area.

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. The pores of concrete surfaces should be open (absorbent surface). All sheet substrates must be securely fixed in accordance with the manufacturers instructions.
- Falls to outlets of at least 1:60 or approx. 25mm in 2mtr (wet areas) or 1:100 externally, must be achieved prior to tiling.
- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials.
- Damaged concrete should be repaired (levelled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane.
- Remove laitance on concrete or screeds by mechanical means.
- Highly dense (>40MPa) or steel trowelled concrete should be roughened by suitable mechanical means (shot blasting, grinding, etc).

Priming

The primer is a critical part of the waterproofing system. Apply one coat of Ardex WPM 265 water based primer by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to be completely dry prior to the application of the Ardex WPM 002 membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m² per litre. Plastic (eg. PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

GENERAL APPLICATION

Crack preparation

Cracks <2mm:

Clean and remove any loose particles in the crack. Prime the crack and adjacent area carefully with Ardex WPM 265 water based primer and allow to dry before applying two coats of Ardex WPM 002 membrane, in a band at least 200mm wide equidistantly across the crack, along the length of the crack.

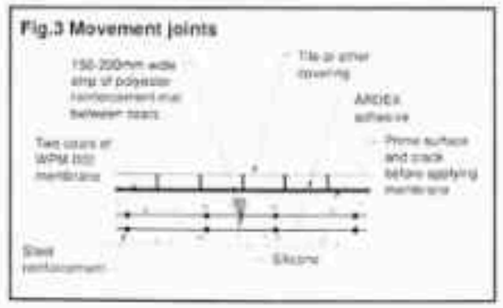
Cracks 2-6mm:

(Refer Fig. 3) prepare and prime the crack as opposite. Apply a bead of neutral cure silicone into the crack and extend it 5mm either side. Apply a 300mm wide band of Ardex WPM 002 equidistantly across the crack along the entire length of the crack. Place a 200mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Cracks >6mm:

Contact your local Ardex representative.

Fig.3 Movement joints



Ardex WPM 002

(Superflex Bathroom and Balcony Two Part) Two Component Undertile Waterproofing Membrane

Movement/construction joints

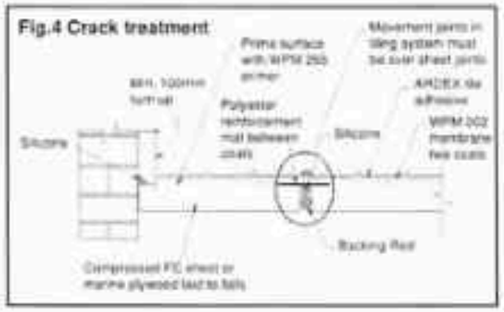
Movement joints (<6mm)

Clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 5mm each side of joint. Apply a 300mm wide band of Ardex WPM 002 (Superflex Two Part) equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Construction joints (>6mm)

Use the same procedure as above, but replace the reinforcing mat with the Ardex Joint Bridging Band. Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig.4)

Fig.4 Crack treatment



Corners and covering areas

After priming with Ardex WPM 265 water based primer and allowing to dry, apply a generous bead (10mm) of neutral cured silicone sealant in coving areas and corners. (Refer Fig.5) Smooth over the silicone so that it extends 5mm up the wall and 5mm over the floor and allow to touch dry.

Apply a first coat of Ardex WPM 002 to the area and allow the membrane to dry.

Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be around 1.0mm) Alternatively, if a polyester reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

WALL/FLOOR JUNCTION

After priming with Ardex Superflex WPM 265 water based primer and allowing to dry, apply a 300mm wide band of Ardex WPM 002 (Superflex Two Part) equidistantly across the crack along the entire length of the crack. Place a 200mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. The Ardex WPM 002 should be applied to at least 100mm up the wall surfaces as per the recommendations for the application of Ardex WPM 002 to floors.

Walls

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 0.5mm.

After priming with Ardex Superflex WPM 265 water based primer and allowing to dry, apply two coats of Ardex WPM 002 (to achieve a minimum dry film thickness of 0.5mm) in two opposite directions. Wall sheets joints should be treated with a neutral cure silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Floors

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 1.0mm. The flooring recommendations should be extended at least 100mm up all perimeter walls.

Prime the surface with Ardex WPM 265 water based primer and allow to dry.

Apply the first coat over the primed surface and allow it to dry (1-2 hours at 23°C, 50% RH) before applying a second coat in an opposite direction. In shower recessas a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone treatment. If a flange is not installed the membrane must be applied down into the pipe. (Refer Fig.5) Allow the membrane to dry completely before tiling. Refer drying times above.

Waste outlet

Prime the surface with Ardex WPM 265 water based primer and allow to dry. Surfaces of outlet flange must be primed with an appropriate primer.

Apply Ardex WPM 002 (Superflex Two Part) over the adjacent floor surface extending down into the waste outlet pipe overlapping the pipe surfaces by at least 30mm. Place Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. (Refer Fig. 5).

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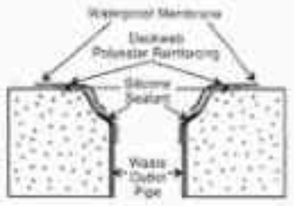
Fig.5 – Waste outlet



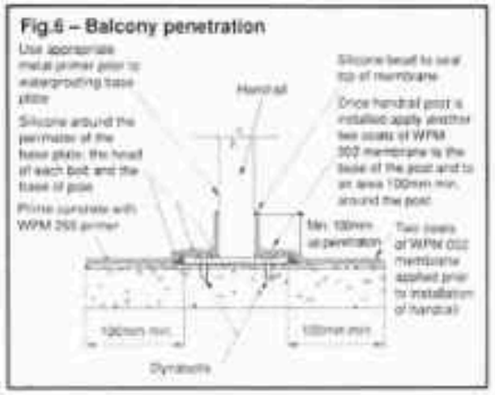
Balcony penetrations (Refer Fig.6)

All upstands are to be mechanically fixed through the membrane, which must be fabricated with a base plate flange.

Prime the metal with an appropriate metal primer such as an epoxy polyamide primer and allow to dry. Apply a 10mm bead of neutral cure silicone around the perimeter of the penetration. Apply the first coat of Ardex WPM 002 on the substrate and the flanged metal.

Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.0mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Fig.6 – Balcony penetration



Tiling systems

It is advisable to conduct a flood test of the shower once the membrane has cured (normally after 72 hours), and before the tiling commences. A broad range of Ardex tile adhesives can be used over Ardex Superflex membranes. Contact Ardex or your nearest Ardex stockist for advice on the most suitable system.

QUALITY PRODUCT

Ardex WPM 002 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

TECHNICAL DATA

Ardex WPM 002
Characteristics of components

Form & Colour	Liquid:	white, medium viscosity
	Powder:	off white

Characteristics of mixed product

Mixing Ratio	1:1 by weight
SG of mixed product	1.44kg/litre
Non Volatile Matter	77±1%
Colour	light grey/green

Characteristics of cured membrane

Shore A hardness ASTM D2240	
– dry film	85 – 90
– wet film	75 – 80
Tensile Strength	
7 days dry AS1145	1.3 MPa
Elongation at Break	
7 days dry AS1145	333%

NOTE: Most of the tests have been carried out in the Ardex laboratory under standard conditions (23±2°C, 50±5% RH)

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program.

Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may affect specific installation recommendations.

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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December 2006

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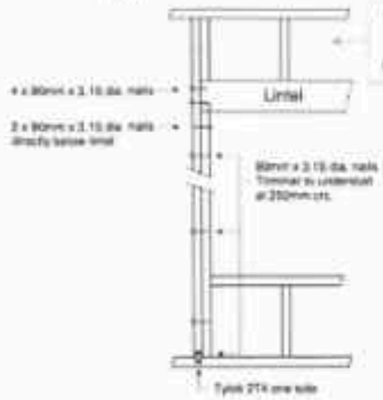
LINTEL FIXING SCHEDULE

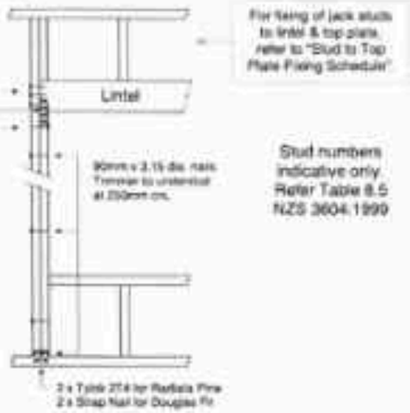
ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:1999

LINTEL FIXING OPTIONS

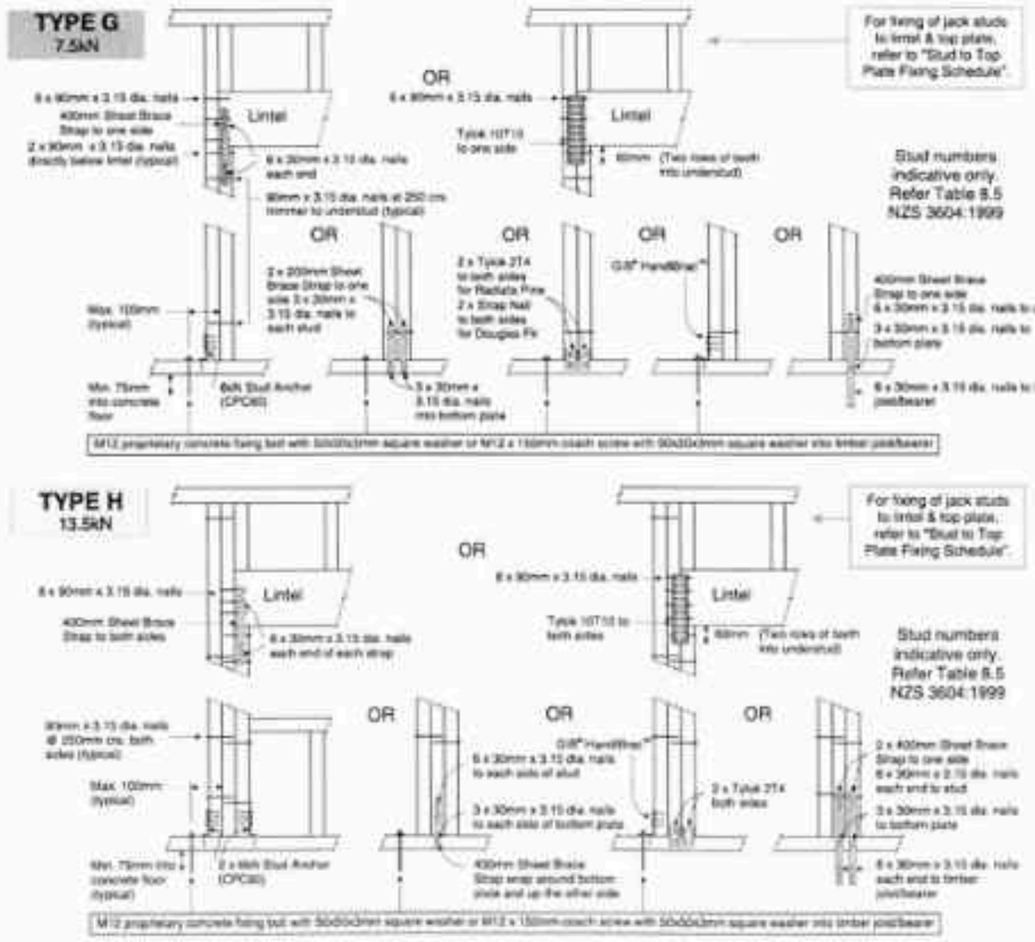
TYPE E
1.4kN



TYPE F
4.0kN



TYPE G
7.5kN



TYPE H
13.5kN

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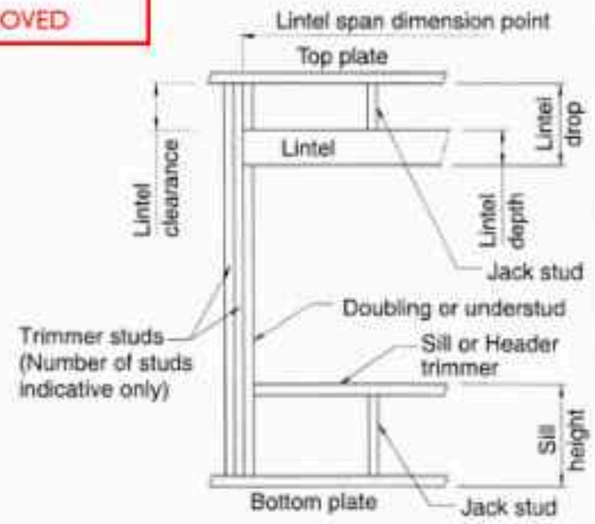
DEFINITIONS



SELECTION CHART FOR LINTEL FIXING

Lintel Span	Loaded Dimension (See Fig. 1.3 NZS 3604:1999)	Light Roof Wind Zone L	M	H	VH	Heavy Roof Wind Zone L	M	H	VH
1.5	2.0	E	E	F	F	E	E	F	F
	3.0	E	E	F	G	E	E	F	G
	4.0	E	F	G	G	E	E	F	G
	5.0	E	F	G	G	E	E	G	G
	6.0	E	F	G	H	E	E	G	G
2.0	2.0	E	F	G	G	E	E	F	G
	3.0	E	F	G	G	E	E	F	G
	4.0	E	F	G	G	E	E	G	G
	5.0	E	G	G	H	E	E	G	H
	6.0	F	G	G	H	E	F	G	H
2.4	2.0	E	F	G	G	E	E	F	G
	3.0	F	F	G	G	E	E	G	G
	4.0	F	G	G	H	E	E	G	G
	5.0	F	G	G	H	E	F	G	H
	6.0	F	G	H	H	E	F	G	H
3.0	2.0	E	F	G	G	E	E	F	G
	3.0	F	F	G	H	E	E	G	G
	4.0	F	G	G	H	E	F	G	H
	5.0	F	G	H	H	E	F	G	H
	6.0	G	G	H	-	E	F	H	H
3.6	2.0	F	F	G	G	E	E	F	G
	3.0	F	G	G	H	E	F	G	G
	4.0	F	G	H	H	E	F	G	H
	5.0	F	G	H	-	E	F	H	H
	6.0	G	H	H	-	E	F	H	-
4.2	2.0	F	F	G	G	E	E	G	G
	3.0	F	G	H	H	E	F	G	H
	4.0	G	G	H	-	E	F	H	H
	5.0	G	H	H	-	E	F	H	-
	6.0	G	H	-	-	E	G	H	-
4.8	2.0	F	G	G	H	E	E	G	G
	3.0	F	G	H	H	E	F	G	H
	4.0	G	G	H	-	E	F	H	H
	5.0	G	H	-	-	E	F	H	-
	6.0	G	H	-	-	E	G	H	-

NOTE:

- All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20 kPa.
- Refer to Table 8.19 NZS 3604:1999 for nailing schedule to resist horizontal loads.
- These fixings assume the correct choice of rafter/truss to top plate connections have been made.
- All fixings assume bottom plate thickness of 45mm maximum. Note: TYLOK options on timber species.
- Wall framing arrangements under girder trusses are not covered in this schedule.
- All timber selections are as per NZS 3604:1999.

NOTES:

Lintels supporting Girder trusses for ALL load cases use:
Fixing Type G where contributary area = 10m²
Fixing Type H where contributary area = 20m²
All cases outside this require specific design.

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STUD TO TOP PLATE FIXING SCHEDULE
ALTERNATIVE TO TABLE 8.18 NZS 3604:1999

NOTE:

- All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20 kPa.
- Refer to Table 8.19, NZS 3604:1999 for nailing schedule to resist horizontal loads.
- These fixings assume the correct choice of rafter/truss to top plate connections have been made.
- Gable end wall top plate/stud connections require only 2 x 90mm x 3.15 dia. nails driven vertically into stud through top plate.
- All fixings assume top plate thickness of 45mm maximum. Note: TYLOK options on timber species.
- Wall framing arrangements under girder trusses are not covered in this schedule.
- All timber selections are as per NZS 3604:1999.

LOADED DIMENSION DEFINITION



External wall
Standard truss



External wall
Internally supported truss



External wall
Rafter roof



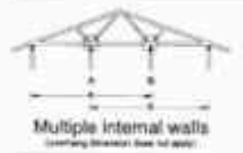
External wall
Jack truss



Internal wall
Internally supported truss

EXTERNAL WALL
LOADED DIMENSION = SUPPORTED SPAN / 2 + O/H

INTERNAL WALL
LOADED DIMENSION = TOTAL SPAN / 2



Multiple internal walls

MULTIPLE INTERNAL WALL
LOADED DIMENSION FOR
WALL A = A/2
WALL B = B/2

FIXING SELECTION CHART

(Suitable for walls supporting roof members at 600, 900 or 1200mm crs.)

Loaded Dimension (m) Stud Centres		Light Roof Wind Zone				Heavy Roof Wind Zone			
400mm	600mm	L	M	H	VH	L	M	H	VH
2.25	1.5	A	A	B	B	A	A	B	B
3.0	2.0	A	B	B	C	A	A	B	B
3.8	2.5	A	B	C	C	A	A	B	C
4.5	3.0	B	B	C	D	A	A	B	C
5.3	3.5	B	B	C	D	A	A	B	D
6.0	4.0	B	C	D	D	A	A	C	D
6.8	4.5	B	C	D	D	A	B	C	D
7.5	5.0	B	C	D	D	A	B	C	D
8.3	5.5	B	C	D	D	A	B	C	D
9.0	6.0	B	C	D	-	A	B	D	D

FIXING OPTIONS

FIXING TYPE A
0.7kN



2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.

FIXING TYPE B
1.7kN



2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.
Plus
1 x Tylok 2T4 (min.) plate for Radiata Pine
1 x Tylok 2T5 (min.) plate for Douglas Fir

FIXING TYPE C
2.7kN



2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.
Plus
2 x Tylok 2T4 (min.) plate for Radiata Pine
2 x Tylok 2T5 (min.) plate for Douglas Fir

FIXING TYPE D
6.0kN

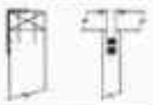
CHOOSE ANY OF THE 4 OPTIONS

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



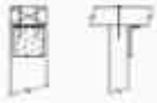
Plus
LUMBERLOK
Stud Tie

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



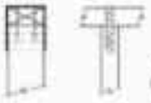
Plus
LUMBERLOK
Stud Strap

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.

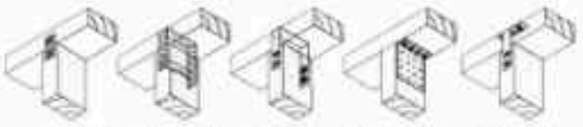


Plus
LUMBERLOK
6kN Stud Anchor

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
Sheet Brace Strap
(Fix 3 x 30mm x 2.15 dia. nails to each stud face.)



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STANDARD FIXING OPTIONS

FIXING DEFINITIONS

NAIL = Either 90mm x 3.15 dia. power driven or 100mm x 3.75 dia. hand driven
SCREW = 80mm x 10 gauge LUMBERLOK BLUE SCREW
WIREDOG = Either left hand or right hand LUMBERLOK Wire Dog

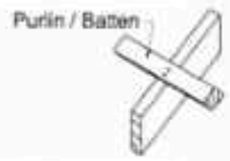
FIXING TYPE A
0.40kN

1 NAIL



FIXING TYPE B
0.70kN

2 NAILS



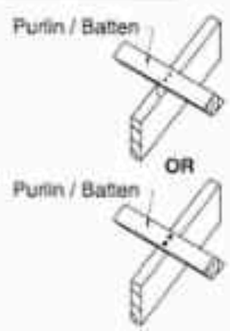
FIXING TYPE C
1.80kN

1 NAIL + 1 SCREW



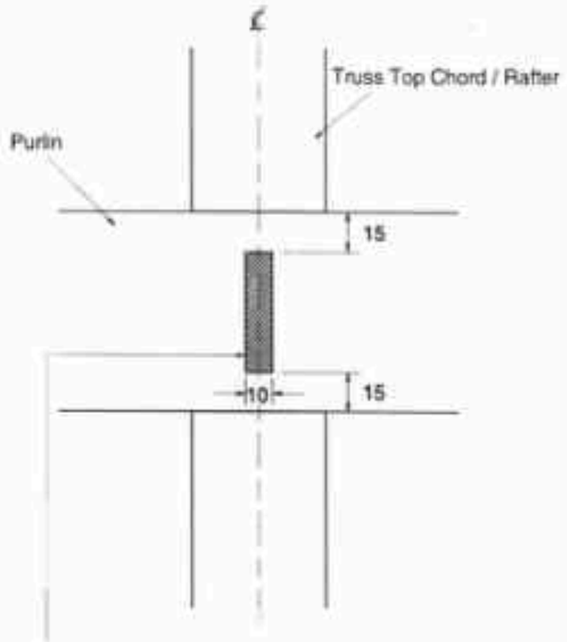
FIXING TYPE D
2.70kN

2 NAILS + 1 WIRE DOG
OR
2 SCREWS



BLUE SCREW FIXING TOLERANCE





NOTE:
Locate fixings within the shaded area.
Care to be taken to avoid over tightening of screws.

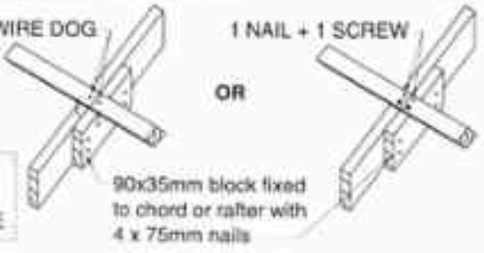
PURLIN / BATTEN SPLICE FIXING OPTIONS

NOTE:
Skew nail when fixing to 35mm rafter or truss.

FIXING TYPE A & B OVER PURLIN SPLICE



FIXING TYPE C & D OVER PURLIN SPLICE



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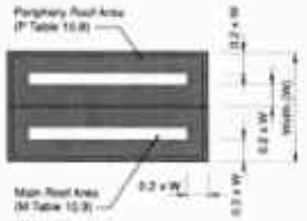
11/2008

LUMBERLOK

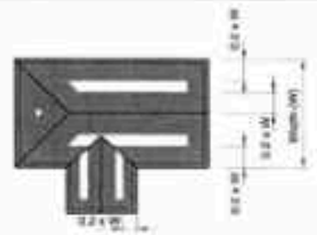
PURLIN & BATTEN FIXING CHART
ALTERNATIVE SOLUTION TO NZS 3604:1999

NOTE:

- Maximum overall roof truss span 12m.
- All purlin and batten sizes as per NZS 3604:1999, incorporating Amendments 1 and 2, May 2006, Table 10.9.
- These fixings assume purlins or battens are fixed on top of truss or rafter.
- This chart is used only when specifying the LUMBERLOK BLUE SCREW. The LUMBERLOK BLUE SCREW is different to the purlin screw quoted in Table 10.10 NZS 3604:1999.
- The LUMBERLOK BLUE SCREW requires a minimum of 30mm penetration into the truss chord or rafter to provide the loads as specified.



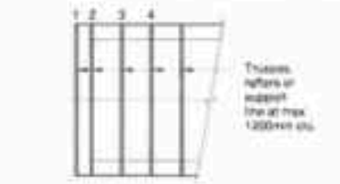
GABLE ROOF



HIP & VALLEY ROOF



PURLIN LAYOUT



LAYOUT ON GABLE END

SELECTION CHART
(minimum fixing requirements)

1. HEAVY ROOFS
All purlins and/or battens use fixing Type A only on roof width (W) up to 12m.

2. LIGHT ROOFS

2.1 BATTENS
- Max. span 1200mm
- Max. crs. 400mm
- Roof width (W) up to 12m

L and M wind loads use Type B fixing on all battens.

H and VH wind loads use Type C on all battens.

2.2 PURLINS - Max. span 900mm, max. crs. 900mm

L and M wind loads use Type C fixing on purlin No. 2 and Type B on all other purlins for all roof widths (W) up to 12m.

H and VH wind loads
1. On roof width (W) up to 8m – use Type D fixing on purlin No. 2 and Type C on all other purlins.
2. On roof width (W) up to 12m – use Type D fixing on purlins No. 2 and 3 and Type C on all other purlins.

2.3 PURLINS AND BATTENS ON GABLE END
- Max. span 900mm, max. crs. 900mm

L and M wind loads use Type B fixing on support line No. 1, Type C on support lines No. 2, 3 and 4 and all other support lines as per Section 2.1 or 2.2 above.

H and VH wind loads use Type C fixing on support line No. 1, Type D on support lines No. 2, 3 and 4 and all other support lines as per Section 2.1 or 2.2 above.

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Waikato District Council
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10/04/2018

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Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

Form 7
CODE COMPLIANCE CERTIFICATE
Section 95 Building Act 2004

The Building

Street address of building:	380 Churchill East Road TE KAUWHATA
Legal description of land where building is located:	LOT 13 DP 488718
Valuation number:	04390/284.06
Property number:	2018152
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A
Current, lawfully established, use:	Outbuildings
Number of occupants per level and per use if more than 1:	N/A
Year first constructed:	2022

The Owner

Name of owner: M B Gasson, L M Gasson
Mailing address: 380 Churchill East Road, RD 2, Te Kauwhata 3782

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the building consent authority

Name: Totalspan Counties Limited
Mailing address: Counter Delivery, Paerata Postcentre, Pukekohe 2336

Phone numbers:

Landline:	N/A	Mobile:	027-2763370
Facsimile number:	N/A	Email address:	charles.k@totalspan.co.nz; dean.y@totalspan.co.nz; andrea.k@totalspan.co.nz

Building Work:

Project: **Shed**
Building consent number: **BLD0508/21**
Issued by: **Waikato District Council**

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent

Signature:



Name: **Anthony Krippner**
Position: Building Inspector
On behalf of: Waikato District Council **Date:** **13 October 2022**

Document Set ID: 2266498
Version: 1, Version Date: 03/10/2028

Print Date: 6 November 2026, 1:26 pm

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Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

Form 5

BUILDING CONSENT NO: BLD0508/21

Section 51, Building Act 2004

ISSUED BY: WAIKATO DISTRICT COUNCIL

The Building

Street address of building:	380 Churchill East Road TE KAUWHATA
Legal description of land where building is located:	LOT 13 DP 488718
Valuation Number: 04390/284.06	Property Number: 2018152
Building name: N/A	
Location of building within site/block number: N/A	
Level/unit number: N/A	

The Owner

Name of owner:	M B Gasson, L M Gasson
Contact person:	Mark
Mailing Address:	380 Churchill East Road, RD 2, Te Kauwhata 3782

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the Building Consent Authority

Full Name of Person:	Totalspan Counties Limited
Mailing Address:	Counter Delivery, Paerata Postcentre, Pukekohe 2336

Phone numbers:

Landline:	09-2387280	Mobile:	N/A
Daytime:	N/A	Fax number:	N/A
Email address:	andrea.k@totalspan.co.nz		

Building Work

The following building work is authorised by this building consent:

Shed

Project type:	Outbuilding	$59,000
Total Value of work:		$59,000

This building consent is issued under Section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Document Set ID: 2959010
Version: 1, Version Date: 03/10/2020

Print Date: 6 November 2026, 1:26 pm

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Waikato District Council
Building Consent No: BLD0508/21

This Building Consent is subject to the following conditions:

Section 90 - Inspections:

When booking your inspections please phone (07) 824 8633 or (0800) 492 452 and quote your building consent number. Whilst we will endeavour to provide inspections in a timely manner, please provide **at least 48 hours notice** prior to any of the following mandatory inspections. You can also request an inspection on-line from our website. *(Click here for more information on Inspections & Certification)*

- Excavation, Siting, Foundation and prefloor (prior to pouring concrete) - *Owner/builder to locate boundary pegs prior to council carrying out a foundation/siting inspection.*

- Final Building (Code Compliance Certificate) to be called for - *Some final inspections require Council to have access into the building. If no-one is onsite to allow access to the interior of the building it is likely the inspection will fail.*

The following documents from third parties need to be provided to the BCA to certify that the building work complies with the plans and specifications and in order for Council to issue a CCC: *(Click here for more information on Producer Statements & Memoranda)*

Certificates / Memorandums / Statements / Letters:

- Code Compliance Certificate application
- Electrical Compliance Certificate (if applicable)

Compliance Schedule:

- A compliance schedule is not required for the building.

Attachments:

Copies of the following documents are attached to this building consent:

✓ Project Advisory Notes

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Version: 1, Version Date: 03/10/2020
Print Date: 6 November 2026, 1:26 pm

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Attachments

Project Advisory Notes:
Please read the following:

- Stormwater shall be disposed of in an approved manner.

Lapsing of a building consent:
A building consent lapses and is of no effect if the building work to which it relates does not commence within:

a) 12 months after the date of issue of the building consent or
b) Any further period that the building consent authority may allow.

The granting of this building consent, with or without a certificate under section 37 of the Building Act 2004, does not remove the need to obtain a resource consent if one is required under the Waikato District Plan.

Code Compliance Certificate will be issued after your final inspection has been carried out and passed and all documentation has been received and approved. (*Click here for your CCC application form).*

Signature:



Name: **Anne Saunders**
Position: **Building Administrator**

On Behalf of: **Waikato District Council**

Date: **13 October 2020**

Document Set ID: 2958010
Version: 1, Version Date: 03/10/2020
Print Date: 6 November 2026, 1:26 pm

Waikato District Council
Full Application Received
21/09/2020

Waikato District Council
Building Consent Number
BLD0508/21
APPROVED

TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Geotechnical Assessment, Effluent Disposal and Stormwater Management Report

Ref: B5070-0

Report Prepared For:

Mr & Mrs Gasson

Site Location:

380 Churchill East Road, Rangiriri

Date:

3 April 2018

Original Copy
V4.2a

All parties must read and understand this report before taking further action

27 Roulston Street, Pukekohe
Ph: 09 238 3245
info@teng.co.nz

Document Set ID: 2658866
Version: 3, Version Date: 09/11/2020
Print Date: 6 November 2020, 1:26 pm

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Waikato District Council
Building Consent Number
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1. INTRODUCTION

The client proposes to construct a new three bedroomed dwelling with separate media room at 380 Churchill East Road, Rangiriri.

Tilsley Engineering Ltd has been engaged to investigate the site and design an effluent disposal system and stormwater management recommendations to suit the soil conditions and other prevailing conditions of the site. The client also requested geotechnical assessment of the building site.

This report addresses this request.

To our knowledge there are no other reports for this site.

1.1 SITE DESCRIPTION

The property is described as Lot 13 Deposited Plan 488718 and is 7,764 m² in area.

1.2 COUNCIL RESOURCE CONSENT CONDITIONS

10809574.1 – 3 requires the floor level shall be at a minimum of 300mm above the 1% AEP flood level (plus allowance for climate change) as determined by a Chartered Professional Engineer.

10809574.1 – 5 requires that a Geotechnical Assessment for the building foundation shall be carried out by a Geo-Professional Engineer.

10809574.1 – 6 requires that a wastewater land application field design shall be carried out by a professional in accordance with AS/NZS 1547 and the Waikato Regional Plan.

10809574.1 – 7 requires that a stormwater retention system design shall be carried out by a Chartered Professional Engineer.

1.3 SITE CONDITIONS

The property is located on the northern side of Churchill East Road and is irregular in shape.

The site for the proposed building has a maximum slope angle of 5° prior to the cutting of the platform. The building platform is located near an area showing signs of minor instability and historic slumping. The maximum slope angle is 16 degrees. Below the site to the south is a small flood prone area. There is also flood prone land to the north and west in excess of 50m from the proposed building platform.

There is a temporary dwelling and water tank on site and a metalled drive has been constructed to access the dwelling and building site.

The site is subject to 1% AEP flood plain. However, the proposed building platform is raised at least 1.5m above any flood plain.

Site plans attached in Appendix A show the location of the proposed dwelling.

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1.4 HISTORIC AERIALS

The historic aerials available from Google Earth and Waikato IntraMaps date from 2008 to 2017. The aerial photographs show that there have been no major slips within the Lot during that time. The aerial photographs show little change to the topography of the site.

An area to the south of the proposed dwelling appears to have poor drainage but the proposed building platform appears to occupy an elevated location.

1.5 SITE VISITS AND TESTS

The site was visited on the 6th of March 2018 and the soil samples and soil profile were taken and logged in 3 hand augered boreholes.

The soil profile was logged to a maximum 1.2m depth. The test results are shown on the attached result sheet. The locations of the boreholes are shown on the site plan.

1.6 PUBLISHED GEOLOGY - SOIL TYPE

The relevant portion of map, Geology of the Auckland Area (© GNS Science 2016) is enclosed.

The soils of the area are designated "Q1a", "eQr" and "Oti". Soils observed in bore holes are most consistent with soils designated "Q1a".

These soils are mainly alluvial sediments described as Taupo pumice alluvium and are of the Tauranga Group. The soils are described as pumice sands, silts and gravels and can be alluvium/colluvium and fan deposits as well as estuarine deposits, lacustrine swamp deposits. They are of the Holicene Period and tend to be less than 20 thousand years old.

The soils are sandy clays and are relatively free draining down to 800mm below the surface.

1.7 PUBLISHED GEOLOGY - FAULT

This site is near a fault as shown on the attached map, Geology of the Auckland Area (© GNS Science 2016). GNS Science does not identify this fault as being active.

1.8 GEOMORPHOLOGY

Observation of the surrounding land forms indicates mostly gently to moderately sloping ground. There is evidence of land instability within the site and on surrounding properties in slopes over 24 degrees or with overland flow paths affecting the soil moisture content.

In the southern part of the Lot there is instability associated with the overland flow path. The building foundations are to be placed no closer than 10m from the break of slope. No further slope stability investigation is required unless development is proposed within this setback.

The land at the designated building platform is considered to be free from subsidence, slippage or inundations on completion of works mentioned within this report.

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2. GEOTECHNICAL INVESTIGATION

The boreholes were sunk on the Lot using a hand auger. The soils strengths were determined by Scala penetrometer testing.

The boreholes indicated a maximum of 200mm of topsoil within the building site area.

The results are shown on the attached bore logs.

The soils obtained from the boreholes show a similar profile, therefore confirming the consistency of soils across the proposed building area and waste water disposal field. No inference on the type of soils or the bearing capacity is made outside the proposed building platform area shown on the site plan.

2.1 BOREHOLES

The location of the boreholes is shown on the attached site plan.

There is 200-250mm of light brown topsoil within the building platform location and waste water disposal field.

Below the topsoil there is a layer of Silt with some clay and minor sand. This soil is representative of an alluvial and volcanic source which fits with the geology of the area. The soils are a grey and brown colour, with orange striations also present. The soils in this layer are well mixed, slightly plastic and medium dense. Allowable bearing strength over 120kPa was observed.

The weakest layer was found at approximately 700mm – 1m where allowable bearing strength of 90kPa was observed. At these depths the soil is structured silt – sand – clay loam.

Between approximately 1.1m and 1.5m the soil is well structured sandy loam with allowable bearing strength in excess of 110kPa. Below 1.5m is a moist silty clay. At 1.75m depth, an allowable bearing strength of 90kPa was observed.

No water was observed down to a depth of 2m.

2.2 SOIL CLASSIFICATION

Assessment and in-house testing of the soils on the Lot provide the soil classification. The building site soil classification is moderately expansive (Class M) based on their shrink/swell index (ref AS 2870). The characteristics movement of the soils are expected to be in the range of 30 to 40 mm.

2.3 SLOPE STABILITY ANALYSIS

The location of the building site is within an area which is not affected by soil instability or subsidence. No further analysis is required for this building site.

Should the building be placed outside approved building site as shown on the attached site plan, then the site will require further slope stability analysis.

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2.4 FLOOD HAZARD INFORMATION

A flood hazard report prepared for 449 Churchill East Road (approximately 500m downstream of 380 Churchill East Road) determined that the 1% flood level is RL 8.79m (Moturiki datum). This level of flooding will not affect the elevated house site which is 1.7m higher at RL 10.5m.

No further flood analysis is recommended.

3. EARTHWORKS

Development of the site will require minor earthworks to create a level building platform. The Lot is acceptable for both concrete 'raft' style and timber pile foundations.

Should any earthworks be undertaken then silt control measures will be necessary due to the close proximity to the overland flow paths and wetland areas. Future earthworks will need to be undertaken in accordance with any applicable Waikato Council guidelines and the following requirements.

All pipe work entering the dwelling must enter the foundation at 90° and shall not run parallel to the foundation within 1m from the building perimeter.

No earthworks shall be undertaken within 8m of the instability feature identified to the south. No fill shall be placed within 8m of the break of slope.

The wetland area and associated instability shall be planted with suitable species such as phormium (flax), cordyline (cabbage tree) and native grasses such as toetoe and carex. A comprehensive list can be found on the Waikato Regional Council website.

The stormwater systems for the building shall be operational as soon as the roof is in place. This is to ensure that the ground stability within the vicinity of the building is not compromised by the negative effects and the potential consequences of soil saturation.

3.1 FILL

In areas where structural fill is to be placed to carry building loads, we recommend that all earthworks procedures and compaction testing are carried out in accordance with NZS4404 and NZS4431.

All un-retained fill batters shall be not steeper than 1V:3H. Fill batter faces shall be compacted as a separate operation or, alternatively, overfilled and cut back. Maximum fill level for this site is 1m in vertical height. All engineered fill shall be assessed, supervised and approved by a Chartered Professional Engineer experienced in Civil Earthworks.

3.2 CUT

All new un-retained cut batters for the dwelling shall be graded at a maximum slope of 1V:3H and shall not be higher than 1m. Any cut deeper than this shall be approved by a Chartered Professional

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Engineer. Cut batters shall be located at a distance of at least the cut batter height from the building platform site.

The cut area shall be compacted and tested to a minimum allowable bearing strength of 100kPa.

Retaining walls over 1m or within the zone of influence for the building or neighbouring properties shall be designed by a structural Chartered Professional Engineer who is familiar with the contents of this report.

3.3 EARTHWORKS LIMITATION

No un-retained cut or fill depths greater than those mentioned above shall be undertaken without the approval in writing of Waikato Council and that of a Chartered Professional Engineer who is experienced in geo-mechanics and is familiar with the contents of this report. This is due to such works disturbing existing equilibrium conditions or surrounding neighbouring properties.

4. FOUNDATIONS

The building site is acceptable for concrete 'raft' style or timber pile foundations. The location of the dwelling shall be placed on a cut/fill building platform.

4.1 CONCRETE RAFT STYLE FOUNDATIONS

The foundations shall be designed to 100kPa bearing pressure. Soil expansivity provided by the subdivisional geotechnical completion report is class 'M'.

4.2 TIMBER PILE FOUNDATIONS

The foundations shall be designed to 100kPa bearing pressure. Timber piles shall be set into natural 'good ground' at a minimum of 600mm to reduce the effect of weaker soils and soil expansion on the foundations. In-situ end-bearing pressure to be 100kPa.

Alternatively, a specific design by a Structural Engineer for foundations shall be appropriate.

4.3 DESIGN PARAMETERS

For general design purposes, we would assess soil parameters as follows.

a) The In-situ shear strength measured onsite was	100kPa
b) Apparent Internal Angle of Friction	ϕ'=30
c) Soil Unit Weight	Υ=18kN/m^3
d) Ultimate Bearing Capacity	q_{ult}= 300kPa
e) Allowable Bearing Capacity (F.O.S = 3)	q_{allow}= 100kPa

For calculation of skin friction, 300mm depth of soil from the EGL should be ignored.

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4.4 ADVERSE AFFECTS ON FOUNDATIONS

Factors that can adversely influence the ground shrinkage and swelling within the vicinity of the foundations are site drainage, excessive watering of gardens, planting of trees and leaking plumbing.

For the life of the foundations no excessive watering shall be undertaken within 5m of the foundations. No trees to be placed within 5m of the foundations or further away from foundations for larger trees. Site drainage and plumbing to be regularly and well maintained.

5. ENVIRONMENTAL ASSESSMENT AND WASTEWATER DESIGN

The proposed dwelling will use an improved septic system that reaches a secondary level of treatment.

In ground pressure compensating dripper line disposal shall also be used and has been designed in accordance with AS/NZS 1547.

The attached site plan shows the available area for wastewater disposal. The effluent disposal field shall be kept at least 20m away from any overland flow path.

Ground water was not encountered in the boreholes and due to the elevated location of the site it is anticipated ground water will be at least 2 metres below ground level. As such, dripper line disposal will not impact on ground water.

There are no trees within 10m or embankments within 20 metres of the disposal field and the slope at the wastewater disposal location is less than 10 degrees.

As such any impact to the environment is considered to be minimal.

5.1 DWELLING WASTEWATER DESIGN

The proposal is to construct a new 3 bedroomed dwelling with media room. It is not considered likely that the media room will be used as a bedroom due to the proximity to the kitchen and dining area. Water will be supplied from stored roof water. It is recommended to install a new AWTS system such as a Hynds Lifestyle Domestic Wastewater System or equivalent with sub surface pressure compensating dripper irrigation. This system has a flow rate of 1600L per day.

No of Bedrooms: 3 Design Occupancy: 5 Water usage per day: 145 litres/day

Total water usage will be: 5 x 145 litres/day = 725 litres/day

It is recommended to install standard water reduction fixtures including dual flush 11/5.5 or 6/3 litre toilet cisterns, shower flow restrictors, aerator faucets and a water conserving automatic washing machine (AS/NZS1547 Table H3, Note 2). A low water use dishwasher should also be used. The soil category is assessed as category 4 as per AS/NZS1547 Table M1 (equivalent to Category 5 soils as per TP58).

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Onsite investigation confirmed the soils as being a sandy clay loam with moderate drainage rates. A loading rate of 3.4mm will be used as per AS/NZS1547 Table M1. This gives a total dripper line length of 207m. Dripper lines to be installed according to manufacturer's recommendations.

The dripper lines shall be laid to the north of the proposed dwelling in the area shown on the site plan. Dripper lines shall be dug 100-150mm into the topsoil layer.

A reserve area of 100% (207m²) shall be maintained on site.

6. STORMWATER MANAGEMENT

The enclosed calculation sheet shows that attenuation built into the proposed water tanks will allow for a 20 year, 5% AEP 10min storm event.

All runoff from roof (proposed dwelling) areas shall be piped and released into at two rain collection tanks for domestic use, attenuation and settling. Attenuated stormwater shall be directed to a level spreader.

All run-off from the impermeable driveway shall be directed to an infiltration trench along the lower periphery. Overflow from the infiltration trench shall be directed to the overland flow path such that there is no detrimental effect to the stability of the building platform or the effluent disposal field.

There is minimal uphill catchment. The 1% AEP 1 in 100 year event is not expected to enter the building if work is carried out to NZ Building Code E1. Finished floor level shall be a minimum of 150mm above ground level.

6.1 DWELLING STORMWATER TANK ATTENUATION

The dwelling has a roof area of approximately 290m². All roof areas shall be piped via a minimum 90mm pipe and released into two linked 25,000 litre rain tanks for attenuation, settling and domestic use. The overflow from these shall be piped to a level spreader.

A stormwater attenuation volume of 3.8m³ is required. If water tanks of standard dimensions are installed, this attenuation may be achieved via a 30mm pipe 0.2m below the overflow outlet allowing flow into the overflow pipe.

6.2 DRIVEWAY

An impermeable driveway of approximately 50m² is proposed. All stormwater runoff shall be collected using either cesspits or an infiltration trench 1m deep by 0.5m wide along the lower edge of the driveway. The outlet for the cesspit or trench shall be directed to the overland flow path.

6.3 LEVEL SPREADER

The level spreader shall be located on a slope of less than 10 degrees close to the flood prone area near the north west boundary. The level spreader shall be 14m long and shall be installed to contour to ensure that overflow water is dispersed evenly along its length.

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Level spreader to discharge at least 10m away from any foundations or wastewater field.

6.4 CONSTRUCTION OF STORMWATER

The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and potential consequences of soil saturation.

7. SYSTEM MAINTENANCE

The equipment suppliers will offer training and maintenance support for the system. However, it is the owner's responsibility to carry out all general maintenance procedures in order for the system to function as designed. We recommend that a maintenance contract be entered into with a recognised wastewater maintenance company. Attached in Appendix D are the operation and maintenance forms for both the stormwater and wastewater.

8. RECOMMENDATIONS:

1. **The proposed building area within the property as shown on the site plan is safe and stable in its current state. A suitably qualified Chartered Professional Engineer (CPEng) or their representative shall confirm the finished building platform meets the required bearing strength of 100kPa.**

2. **A specific foundation design by a Chartered Professional Engineer will be required for the building. The building platform is acceptable for both concrete 'raft' (pod floor) style and concrete slab foundations. Design to meet all the requirements and parameters as described within this report. Soil expansivity is class 'M'.**

3. **Any cut/fill under and around the foundations to be inspected by a suitably qualified engineer. Cut/fill to reach minimum bearing pressure as per foundation design. Cut/fill to meet requirements as per the Earthworks section.**

4. **If any structure or infrastructure is relocated outside of the area shown on the attached site plan then additional analysis will be required prior to any works being undertaken.**

5. **All cut/fill over 1.0m in height must be supervised by a suitably qualified Chartered Professional Engineer (CPEng) or their representative.**

6. **No water shall be discharged into the ground within 5m of the foundations.**

7. **Install an improved wastewater system such as Hynds Lifestyle.**

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8. Install 207m of dripper lines in the location shown on the site plan for the wastewater. Dripper line to be kept at 1m centres. Dripper line to be in accordance with manufacturer's instructions. Dripper line must be at least 3m from buildings, and 1.5m from boundaries.

9. Stormwater from the roof of the dwelling shall flow into two 25,000 litre stormwater tanks. An orifice controlled outlet shall provide 3.8m³ of attenuation. Outflow pipes to be connected to a 14m level spreader placed near the flood prone area to the northwest.

10. The stormwater system for the building and impervious areas shall be operational as soon as the roof is in place.

Report written by:

B. Dobbs
BEng (Hons)

Report reviewed and approved by:

R. Tilsley
BE (Civil) CMEngNZ

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9. DISCLAIMER

This report has been prepared solely for the benefit of our client with respect to particular brief given to us, and data or opinions in it may not be used in other contexts, by any other party or for any other purposes. To the maximum extent permitted by law, Tilsley Engineering Ltd disclaims all liability and responsibility (in contract or tort, including negligence, or otherwise) for any loss or damage whatsoever which may be suffered as a result of any reliance by any third party on this report, whether that loss is caused by any fault or negligence on the part of Tilsley Engineering Ltd or otherwise.

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Notice to Reader/ User of this document

Should you be in any doubt as to the applicability of this report and/or its recommendations for the proposed development as described herein, and/or encounter materials on site that differ from those described herein, it is essential that you discuss these issues with the authors before proceeding with any work based on this document.

This is a factual report of field investigations (and laboratory testing). The field investigations have been undertaken at discrete locations and no inferences about the nature and continuity of ground conditions away from the investigation location are made.

Furthermore, the logs are provided presenting descriptions of the soils and geology based on field observations of the samples recovered in the fieldwork and may not be truly representative of the actual underlying conditions.

Ground Bearing Pressures

NZS 3604 States the Ultimate Bearing capacity is to be 300kPa. However, the Definitions (1 April 2007) state the allowable bearing pressure is 100kPa.

Others use the term 'the site should provide an ultimate unfactored bearing capacity of 300kPa or allowable factored bearing capacity of 100kPa for residential type foundations'.

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10. LIST OF APPENDICES

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APPENDIX A – BACKGROUND INFORMATION

LOCALITY PLAN AND GEOLOGICAL MAP



FIGURE 1: NZTOPO MAP AND SITE LOCATION

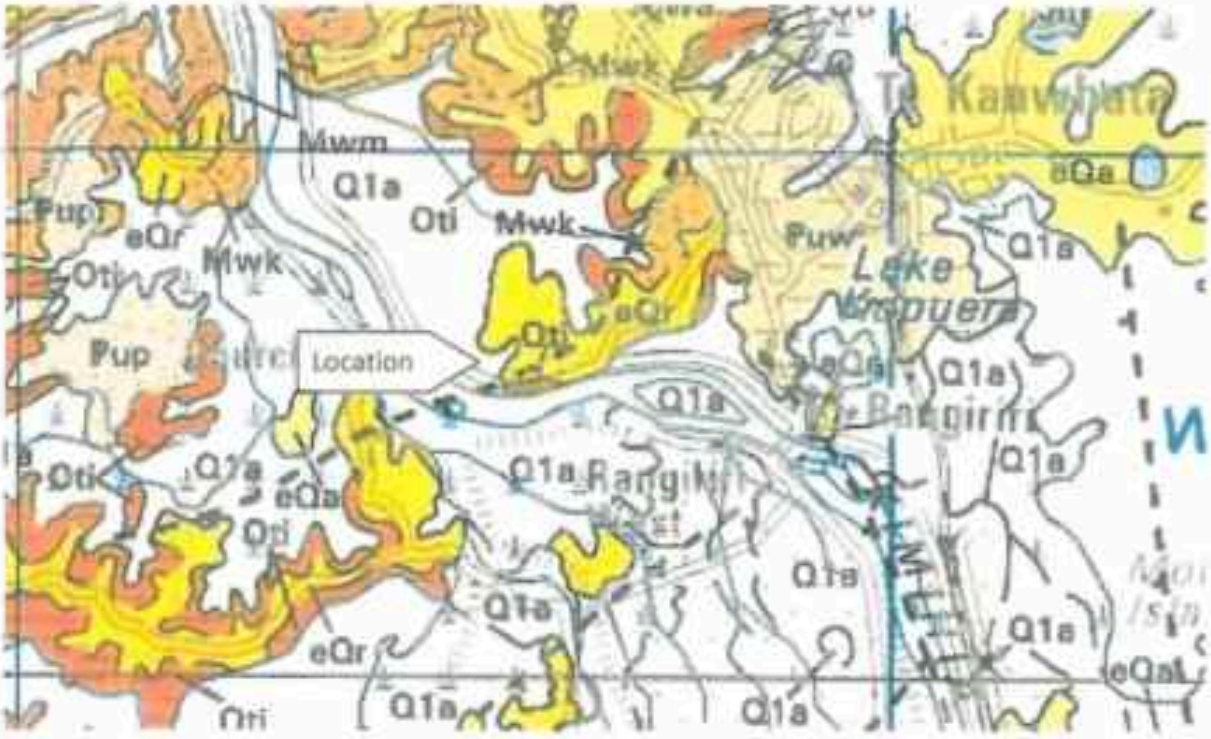

FIGURE 2: GEOLOGY OF THE AUCKLAND AREA ©GNS SCIENCE 2016 SHOWING SITE LOCATION

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

PROPOSED SITE PLAN



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PROPOSED FLOOR PLAN



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NIWA
Taihoro Nukurangi

High Intensity Rainfall System V3

Calculator Help

Results for 380 Churchill East Road

Intensity-Duration-Frequency results (produced on Tuesday 3rd of April 2018)
Sitename: 380 Churchill East Road
Coordinate system: NZMG
Easting: 2695227
Northing: 6417350

Rainfall intensities (mm/h)

		Duration									
ARI (y)	aep	10m	20m	30m	60m	2h	6h	12h	24h	48h	72h
1.58	0.633	54.0	37.5	30.2	20.8	13.0	6.2	3.8	2.4	1.5	1.1
2.00	0.500	58.8	40.8	32.8	22.6	14.1	6.7	4.2	2.6	1.6	1.2
5.00	0.200	76.2	52.5	42.2	29.2	18.2	8.6	5.4	3.4	2.0	1.5
10.00	0.100	90.0	62.1	50.0	34.5	21.6	10.2	6.4	4.0	2.4	1.8
20.00	0.050	105.6	73.2	58.8	40.6	25.4	12.0	7.5	4.7	2.8	2.1
30.00	0.033	116.4	80.1	64.6	44.6	27.8	13.2	8.2	5.1	3.1	2.3
40.00	0.025	124.2	85.8	69.0	47.6	29.7	14.1	8.8	5.5	3.3	2.5
50.00	0.020	130.8	90.0	72.6	50.1	31.2	14.8	9.2	5.8	3.5	2.6
60.00	0.017	136.2	93.9	75.6	52.2	32.5	15.4	9.6	6.0	3.6	2.7
80.00	0.012	145.2	100.2	80.8	55.7	34.8	16.4	10.3	6.4	3.9	2.9
100.00	0.010	153.0	105.6	84.8	58.6	36.5	17.3	10.8	6.7	4.1	3.1

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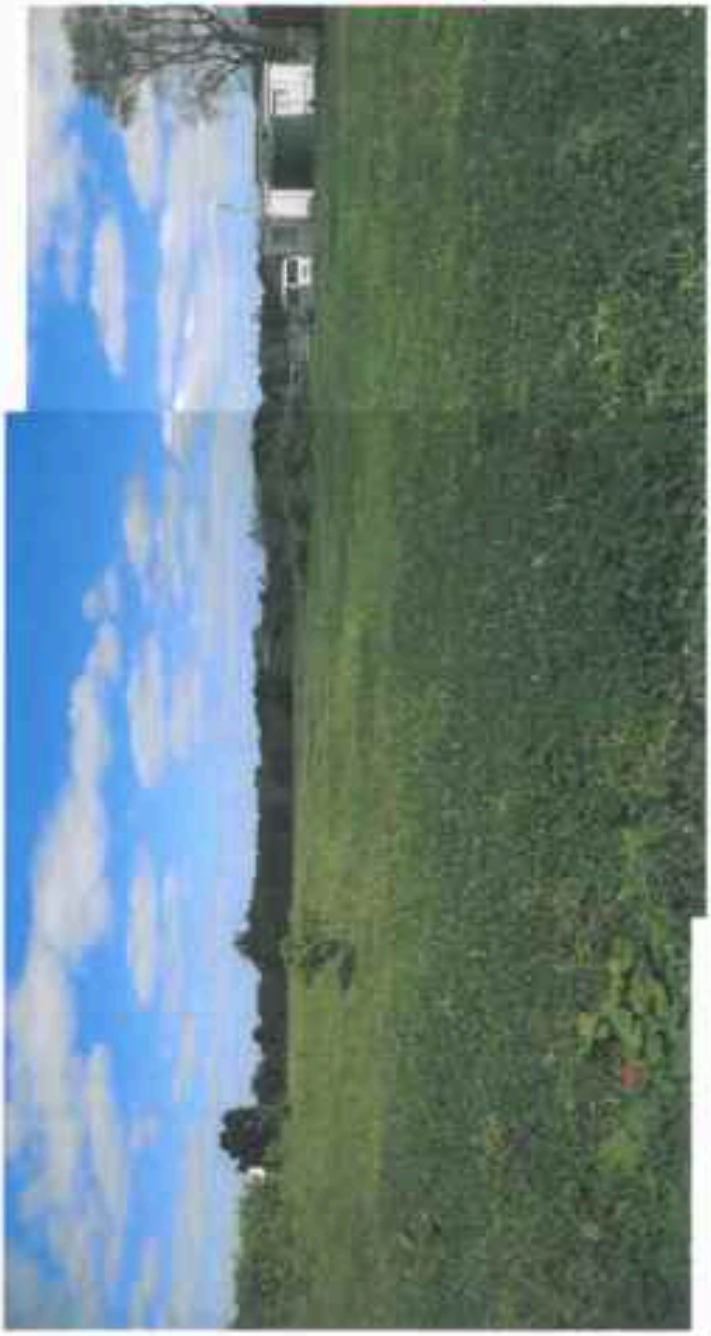

FIGURE 3: VIEW OF PROPOSED BUILDING PLATFORM LOOKING SOUTH

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FIGURE 4: VIEW OF PROPOSED WASTEWATER FIELD LOOKING NORTH



FIGURE 5: VIEW OF TYPICAL SOIL SAMPLE

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CERTIFICATE OF TITLE

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

Identifier	711534
Land Registration District	South Auckland
Date Issued	06 July 2017

Prior References
SA52C/640

Estate	Fee Simple
Area	7764 square metres more or less
Legal Description	Lot 13 Deposited Plan 488718

Proprietors
Mark Bruce Gannon and Lisa Maria Gannon

Interests

10809574.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 6.7.2017 at 4:58 pm

Appurtenant hereto is a right to convey electricity, telecommunications and computer media created by Easement Instrument 10809574.4 - 6.7.2017 at 4:58 pm

The easements created by Easement Instrument 10809574.4 are subject to Section 243 (a) Resource Management Act 1991

10989226.3 Mortgage to Bank of New Zealand - 19.1.2018 at 3:04 pm

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APPENDIX B – RESULTS

BORE LOGS

BORE LOG

TILSLEY ENGINEERING LIMITED 37 Rochdale Street, Pukekohe info@tileng.co.nz PO Box 390, Pukekohe Phone: 09 238 3249	Job number: 85070 Client: Mark & Lisa Gasson Location: 580 Churchill East Road, Rangiriri	Date: 03/04/2018 Time: 11am Augered by: BD Logged by: BD Bore No: BH1

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Hydrochrome	Water	Scala Penetrometer Test (blows/100mm = kPa)	Shear Vane Test = Reform (kPa)
0.1	Topsoil, light, friable.			dry			
0.2	Silt, brown, with silica					7	
0.3						8	
0.4	Silt with clay, light brown, friable, moderately firm, lapilli and silica					6	
0.6						5.5	
0.7	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm			moist		4	
1	Orange sandy clay, grey / orange with mustard yellow, possibly sulphurous inclusions, firm						
1.1	EOB						
1.3							
1.4							
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole.
1

produced by Ellie.Ellis@tileng.co.nz on 03 Apr 2018

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

BORE LOG

TILSLEY ENGINEERING LIMITED
37 Rowleston Street, Pukekohe
info@teng.co.nz
PO Box 340, Pukekohe
Phone: 09 238 3245

Job number: 8502(i)
Client: Mark & Lisa Gerson
Location: 380 Churchill East Road, Rangiriri

Date: 03/04/2018
Time: 11am
Augered by: SD
Logged by: SD
Bore No: BH2

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/100mm = kPa)	Shear Vane Test / Reliance (kPa)
0.1	Topsoil, light, friable.			dry			
0.2	Silt, brown, with silica					3	
0.3							
0.4	Silt with clay, light brown, friable, moderately firm, lapilli and silica					1	
0.6						5	
0.7	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm			moist			
0.9							
1	Orange sandy clay, grey / orange with mustard yellow, possibly sulphurous inclusions, firm					5	
1.1	Sandy loam, silica and fine gravel inclusions					4	
1.2							
1.3						3	
1.4							
1.5	Structured sand / silt mixture, volcanic inclusions, orange streaks, firm			very moist		8	
1.6						7	
1.7							
1.8						4	
1.9	Course silty clay, grey / orange						
2	EOB						

Disclaimer: Soil type and strength only applicable at location of bore hole.

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

BORE LOG

TILSLEY ENGINEERING LIMITED 27 Rautatae Street, Pukekohe info@teng.co.nz PO Box 380, Pukekohe Phone: 09 238 5348	Job number: 85076 Client: Mark & Lisa Gasson Location: 386 Churchill East Road, Rangiari	Date: 03/04/2018 Time: 11am Augered by: SD Logged by: SD Bore No: BH3

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/100mm - kPa)	Shear Vane Test / Reform (kPa)
0.1	Topsoil, light, friable.			dry			
0.2	Silt, brown, with silica						
0.3	Silt with clay, light brown, friable, moderately firm, lapilli and silica						
0.4							
0.5							
0.6							
0.7	Structured sand / silt / clay loam, volcanic inclusions including pumiceous and silica, orange streaks, firm			moist			
0.8							
0.9							
1							
1.1	Orange sandy clay, grey / orange, firm						
	EOB						
1.3							
1.4							
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole.
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APPENDIX C - CALCULATIONS AND DESIGNS

Version 2.1

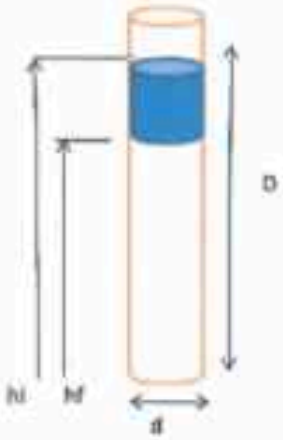
Client Gasson

Address 389 Churchill East Road

Date Apr-18

Soakage Results from 100mm diameter 1.2m deep hole

Time (min)	Accumulative Drop (mm)
0	0
10	78
20	148
30	211
40	257
60	300



Parameters

Hole diameter (d)	10 cm
Hole Depth (D)	150 cm
Head (hi)	120 cm
Depth (hf)	90 cm
time	60 min

Water volume loss $V = \frac{\pi d^2}{4} h$

2356.19 cm³
2.36 litres

Area (water loss through) $V = \frac{\pi d^2}{4} + (d * \pi * averagedepth)$

3377.21 cm²
0.34 m²

percolation rate = water volume loss / Area(water loss through) / last hour
Units = litres/m²/min

percolation rate = litres / m² / 60 mins

0.12 l/m²/min

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CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Stormwater management, soakage via detention

Client	**Geeson**	Version 2.1
Address	**380 Churchill East Road**	
Date	**Apr-18**	

Pre-development Grass Area	290 m²
Modified (C=0.3)	87.0 m²
Developed Roof Area (house)	290 m²
Modified (C=0.9)	261.0 m²
Design Storm	
1 in 20 year (5% AEP), 10min storm NIWA value	105.6 mm/hr
cc. Adjusted for climate change 2.1 degrees	130.9 mm/hr
Quantity of Flow - Pre-development	
Pre-development Grass Area	3.2 l/sec
Quantity of Flow - Developed	
Developed Roof Area	9.5 l/sec
Storage Volume Required	
(developed - pre-developed) flow x 10 x 60	3,797 Litres
	3.8 m³
Attenuation Tank	
Water tank Size	2 25,000 litre
Tank Base Dia (Dewan)	3.5 m
Attenuation depth	0.197 m

Maximum Orifice Size		**Minimum Orifice Size**	
Q release (pre-development)	3.16 l/sec	Q release (24 hour drain)	0.044 l/sec
V = sqrt(2gh)	1.39 m/s	V = sqrt(2gh)	1.97 m/s
Area = Q/V	0.00227 m²	Area = Q/V	0.00002 m²
Dia = sqrt(4 x A/pi)	0.054 m	Dia = sqrt(4 x A/pi)	0.005 m
Diameter of outlet pipe	54 mm	Diameter of outlet pipe	5 mm

Recommended Outlet to be 30mm Acceptable

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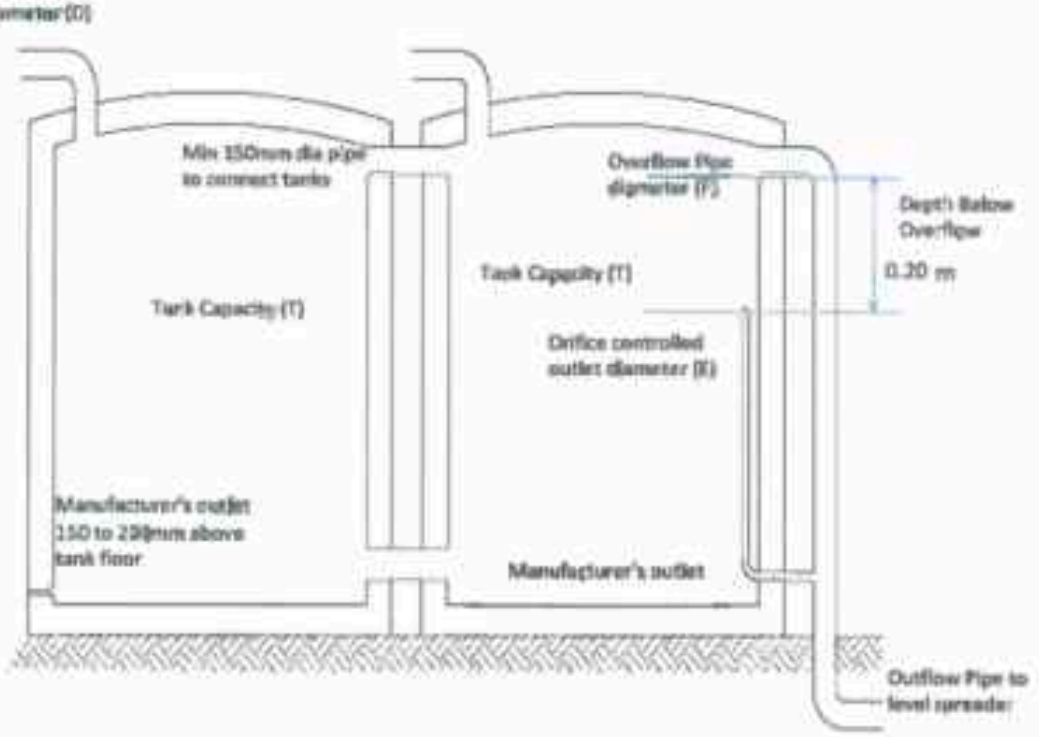
TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Tank design - attenuation Version 2.1

Client Gasson
Address 589 Churchill East Road
Date Apr-18

Detention Tank Detail



Note: Minimum orifice diameter is 20mm. Screening is required for orifice smaller than 25mm

D= 90 to 120 mm
T= 25000 litres (a 3 tanks)
E= 30mm
F= Overflow pipe size to be larger than inflow pipe/s

Capacity to be used for attenuation 3.8 m³

Notes:
1. Orifice controlled outlet 'E' is to use an approved manufacturer's outlet point. This may require an internal PVC pipe connected to a base point
2. If different tank dimensions are used than those specified, the orifice controlled overflow must allow for a minimum attenuation below the overflow pipe of 3.8 m³
3. First flush diverter recommended but not required.
4. Third tank to be connected at top only and used for attenuation.

Tilsley Engineering Ltd

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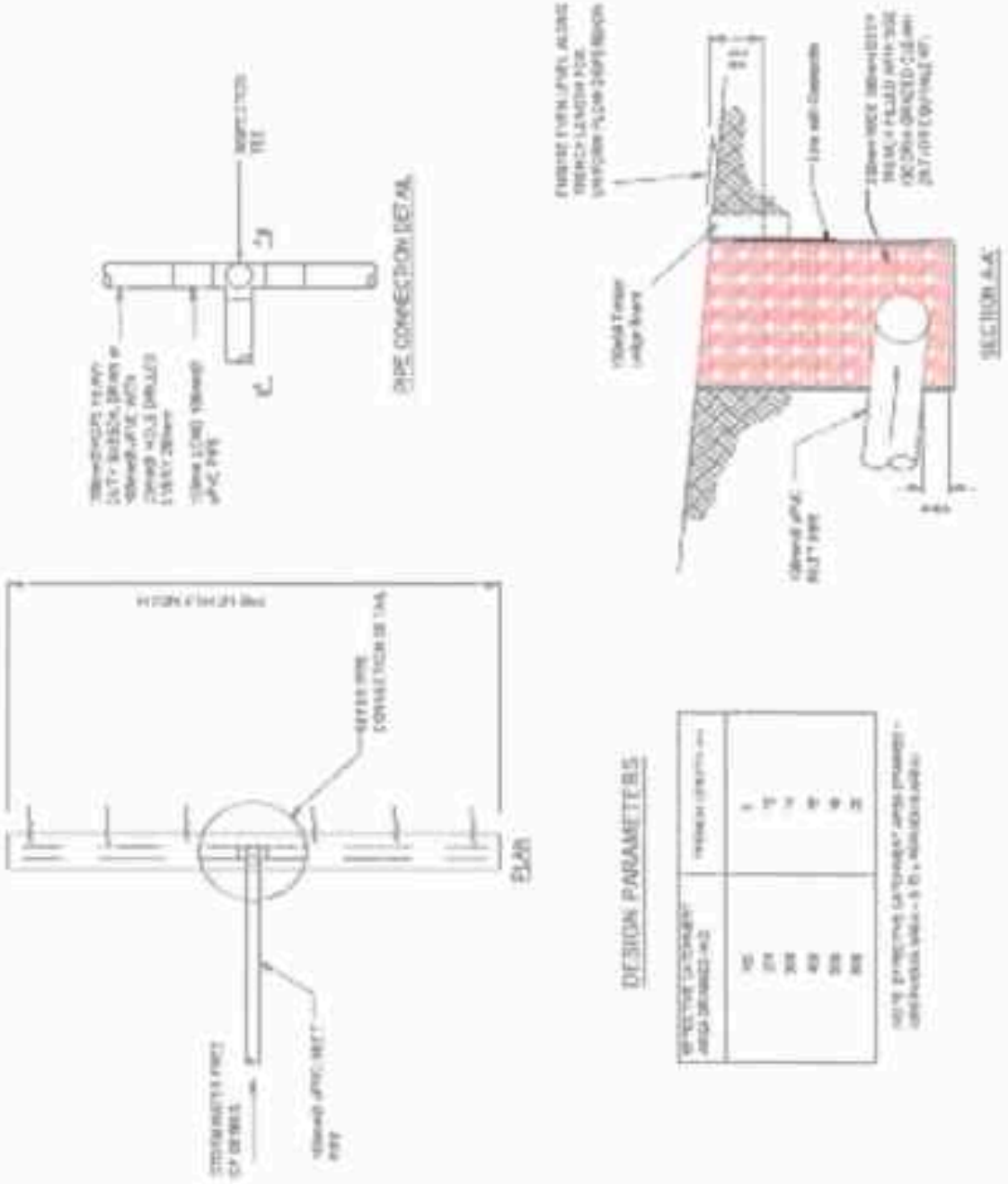
LEVEL SPREADER



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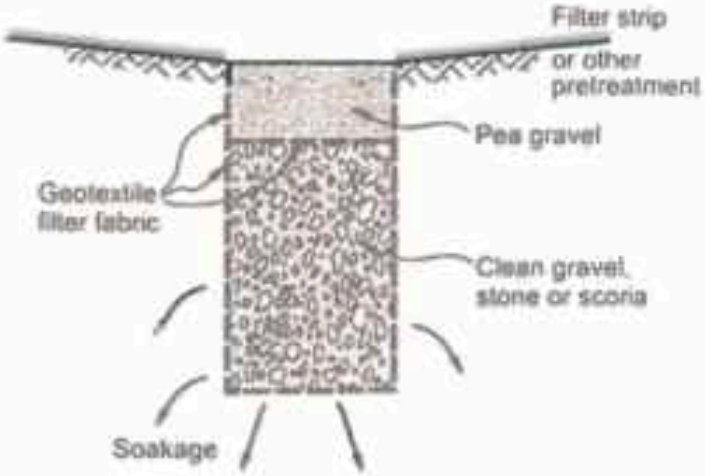
INFILTRATION TRENCH



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APPENDIX D – OPERATIONAL & MAINTENANCE FORM

SOAKHOLE OPERATION AND MAINTENANCE FORM

FORM "OSM-O&M-CERT"

(A) SITE & OSM DEVICE DETAILS:

Site Address: _____

Owners Name: _____

Device(s):

Ref. No	Type	Size (eg m2 or m3)	Date Installed

(B) MAINTENANCE CONTRACTOR'S DETAILS:

Firms Name: _____

Firms Address: _____

Name of Serviceperson: _____

Date(s) of Service: _____

(C) SERVICE DETAILS:

Device Ref. No	Checklist Completed	MAINTENANCE ACTION	
		Item	Action (describe, eg "pipe replaced")
	1	(a)	
		(b)	
		(c)	
		(d)	
	2	(a)	
		(b)	
		(c)	
		(d)	
	3	etc...(continue on a separate sheet)	

* on attached form "Device-Specific O&M Details"

(D) CERTIFICATION:

I/we hereby certify that:

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- The OSM device inspection and maintenance programme has been undertaken in accordance with the provision of Section 11 of the City's "OSM Manual" dated 2002
- The details above and on the attached form(s) are a full and correct record of the work performed
- The OSM device(s) are in sound working order
- The owner has been advised of the problems found (if any) and alerted as to the need to inspect for any recurrences and rectify such promptly

_____ _____

Signed Date

ACE Office Use:

Reference No. _____

Checked by: _____ Date: _____

Entered by: _____ Date: _____

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TILSLEY ENGINEERING LTD
CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Operational & Maintenance form

On-site Wastewater System Management Procedure

(As per ARC Technical Sheet H1)

Property Owner: _____

Date: _____

Property Address: _____

System Designer
Firm Tilsley Engineering phone 09 2383245

Installation
Supplier/installer _____ phone _____

Drainlayer _____ phone _____

Electrician _____ phone _____

Building Consent No: _____

Date Approved _____

Date Installed _____

Territorial Authority _____

Expiry date _____

Max discharge Vol _____

Other conditions (if any) ———

_____

_____

_____

_____

_____

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Client

Address

ROUTINE MAINTENANCE CHECKLIST - ONSITE WASTEWATER

Annually	2- yearly	5- yearly	Action
	NA		**Grease Trap** - pump out frequency
		X	**Septic Tank** - visual check for leaks & rectify - pump out frequency
X			Filter: visual check, hose off any solids
	X		**Pump & Alarm**: Check to see if functioning by electrician
	NA		**Trench System** - Vegetation maintenance, inspect vent, check irrigation area for wet ground
	NA		**ETS Beds / Mounds** - inspect vents, maintain plant growth, remove weeds, surface water diversion in place
X			**AWTS** - specific maintenance contract by supplier
			Any ongoing maintenance to be carried out by the owner and suitably qualified
			maintenance contractor

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APPENDIX E – AS/ANZ 1547 CHECKLIST

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Appendix E

Australian/New Zealand Standard®

On-site Wastewater Disposal Site Evaluation Investigation Checklist

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ON-SITE WASTEWATER DISPOSAL SITE EVALUATION INVESTIGATION CHECKLIST

AS/NZS 1547 2012 STANDARDS

1.0 COUNCIL OR AUTHORITY

1.1 Location details

Locality			Rangiriri		
Applicant name, company and address			Mark & Lisa Gasson		
Land owner name and address			Mark Bruce Gasson and Lisa Maria Gasson 380 Churchill East Road		
Lot no#	13	DP no#	488718	CT no#	711534
Site plan ref. no. or description			B5070		

1.2 Consultant/ Site evaluator

Consultant	Tilsley Engineering Ltd
Site evaluator name	Bridget Dobbs
Postal address	27 Roulston Street Pukekohe PO BOX 392
Phone number	09 238 3245
Name of contact person	Bridget
E-mail address	info@teng.co.nz

2.0 EXISTING CONDITION OF SITE

Site and soil check (SSC)

2.1 Climate

Annual rainfall (as per NIWA rainfall)	1,200 – 1,400mm

2.2 Water supply

Public Supply		Rainwater	✓	Bore/well/dam	

2.3 Desk study

Has a desk study been undertaken for this property	Yes
If yes, specify findings	Neighbouring properties' systems working well.

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2.4 Slope Stability or geotechnical investigation

Yes	✓	No	

If yes

Author of report	Bridget Dobbs
Company	Tilsley Engineering Ltd
Brief overview of findings	Avoid effluent disposal to south of proposed dwelling

3.0 CONDITIONS DURING ASSESSMENT

3.1 Soil and terrain

Type of terrain	Gentle
Current land use	English grasses
Existing structures onsite	Temporary dwelling
Geology	'Q1a'
Soil and landscape drainage	West
Slope	< 10 degrees
Geomorphology (as per figure C2, slope configuration and surface drainage)	Linear divergent
Ground cover	English grasses
Overland flow path present	Yes. 20m setback achieved

3.2 Site constraints (show details on the site plan)

	Tank	Field
Property boundary	>1.5m	>1.5m
Distances to watercourses, water bodies, wells, bores, or drainable lines downhill	>20m	>20m
High water table (permanent, seasonal, episodic)	Ground water >1.5m	Ground water >1.5m
Downstream embankments, barriers or other impendences to drainage	>3m	>3m
Buildings	>3m	>3m
Unstable soils	>3m	>3m
Recreational areas (children's play areas, swimming pools, etc)	>5m	>5m
In-ground water tank	5m	5m
Other (specific)		

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4.0 SOIL INVESTIGATION

4.1 Soil profile determination

Test Pit		Depth(m)		No. of test pits	
Bore Hole	✓	Depth(m)	1.2	No. of bore holes	3

4.2 Soil Category (as per table 5.1, Determination of soil category)

Soil category	Soil texture	Structure	Indicative permeability (K_{sat}) (m/d)	
1	Gravels and sands	Structureless (Massive)	>3.0	
2	Sandy loams	Weakly structured	>3.0	
		Massive	1.4 – 3.0	
3	Loams	High/Moderate structured	1.5 – 3.0	
		Weakly structured or massive	0.5 – 1.5	
4	Clay loams	High/moderate structured	0.5 – 1.5	✓
		Weakly structured	0.12 – 0.5	
		Massive	0.06 – 0.12	
5	Light clays	Strongly structured	0.12 – 0.5	
		Moderately structured	0.06 – 0.12	
		Weakly structured or massive	<0.06	
6	Medium to heavy clays	Strongly structured	0.06 – 0.5	
		Moderately structured	<0.06	
		Weakly structured or massive	<0.06	

4.3 Wastewater discharge calculations (As per table J1, All-waste septic tank operational capacities)

Number of bedrooms	3	
Design Occupancy	5	(Number of people)
Per capita wastewater production (as per Table H3)	145	(Litres per person per day)
Total daily wastewater production	725	(Litres per day)

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4.4 Is total daily waste production greater than 1300L

Yes		No	✓

If yes, is discharge consent required?

Yes		No	✓

If no, why?

4.5 Recommended land application system (using table K2 as a guide)

Type of tank	Improved system – Biocycle
Capacity of tank	4,000 litres minimum
Special features (tertiary treatment, pump chamber etc.)	Pump chamber, minimum 725 litres

4.6 Recommendations for future monitoring

As per report, system maintenance

4.7 Recommended land disposal method (As per appendix L of AS/NZS 1547:2012)

Surface Dripper Irrigation	
Sub-surface Dripper Irrigation	✓
Standard Trench	
Mound	
Evapo-transpiration Beds	

4.8 Please identify the loading rate you propose for the recommended land disposal method.

Loading rate (table M1)		3.5	mm/day
Disposal area	Areal	207	m^2
	Lineal	207	m
Explanation			

4.9 What is the available reserve area for wastewater disposal area

Reserve disposal area (m^2)	207
Percentage of Primary Disposal area	100

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5.0 ENVIROMENTAL FACTORS

Priority level for heathy rivers project	This property is 2ha or less.
Is nitrogen, phosphorous or E.coli contamination to tributaries likely?	No

6.0 DECLARATION

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true, complete and adheres to the requirements of AS/NZS 1547 2012.

Name	Robert Tilsley	Signature	
Position	Principal	Date	27/03/2018

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Building Code Clause(s) E1 & G13

PRODUCER STATEMENT – PS1 _ DESIGN

(Guidance notes on the use of this form are printed on the reverse)

ISSUEDBY: Tilsley Engineering Ltd (27 Roulston St. Pukekohe)
(Design Firm)

TO: Mr & Mrs Gasson
(Owner/Developer)

TOBE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: On-site stormwater and effluent treatment and disposal system
(Description of Building Work)

AT: 380 Churchill East Road, Rangiriri
(Address)

LOT 13 **DP** 488718 **SO**

We have been engaged by the owner/developer referred to above to provide Design of on-site stormwater and effluent treatment & disposal system according to Tilsley Engineering Ltd calculations services in respect of the requirements of
(Extent of Engagement)

Clause(s) G13 and E1 of the Building Code for

~~All or~~ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

Compliance Documents issued by Department of Building & Housing G13/AS2/VM4 and E1
(verification method / acceptable solution)

or

Alternative solution as per the attached schedule AS/NZS1547

The proposed building work covered by this producer statement is described on the drawings titled B5070 and numbered Proposed Site Plan

together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions

(ii) All proprietary products meeting their performance specification requirements;

I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, Robert Tilsley am: CPEng 85675 #
(Name of Design Professional)

Reg Arch

I am a Member of : IPENZ ~~NZIA~~ and hold the following qualifications: BE (Civil) MIPENZ CPEng

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.

SIGNED BY Robert Tilsley ON BEHALF OF Tilsley Engineering Ltd
(Design Firm)

Date 03/ 04/ 2018 *(signature)*

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

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380 Churchill East Road, Rangiriri

Stormwater Management Report

M & L Gasson
Job No: B 14470
5 November 2020

Received Council information on: 9/11/20
Document Set ID: [illegible]
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380 Churchill East Road, Rangiriri

Stormwater Management Report

Client: M & L Gasson

Prepared by

TILSLEY ENGINEERING LTD, NEW ZEALAND
27 Roulston Street, Pukekohe 2340, PO Box 392, New Zealand
T +64 9 238 3245 www.tilsleyengineering.co.nz
Info@teng.co.nz

5 November 2020

Job No: B 14470

Quality Information

Rev	Revision Date	Details	Authorised	
			Prepared by	Reviewed by
0	05-Nov-2020	Issued to Client	Bridget Dobbs BEng(Hons) Consulting Engineer	R Tilsley CMEngNZ, CPEng Director sig # 0823

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1.0 INTRODUCTION

1.1 Project overview

Tilsley Engineering Ltd has been engaged by the client to provide stormwater management recommendations for a proposed development at 380 Churchill East Road, Rangiriri. The scope of this report encompasses stormwater management recommendations in support of future resource and building consent applications to Council. The report provides sufficient stormwater management guidance for interested parties such as the builder, earthworks and civil contractors. This report includes a summary of the investigations undertaken and provides an assessment of:

- Ground conditions.
- Ground water conditions.
- Stormwater management recommendations.
- Other constraints and issues identified with the site.

The site location is shown in Figure 1 below. Contours at 20m intervals.



Figure 1 Site location

2.0 SITE INFORMATION

2.1 Site Description

The property is described legally as Lot 13 Deposited Plan 488718 and is 7,764m² in area. The site is located on the northern side of Churchill East Road. The Lot is bounded on all sides by similar pasture. The Lot details and extent of the project are presented in Figure 2. Site photographs are presented in Appendix A.

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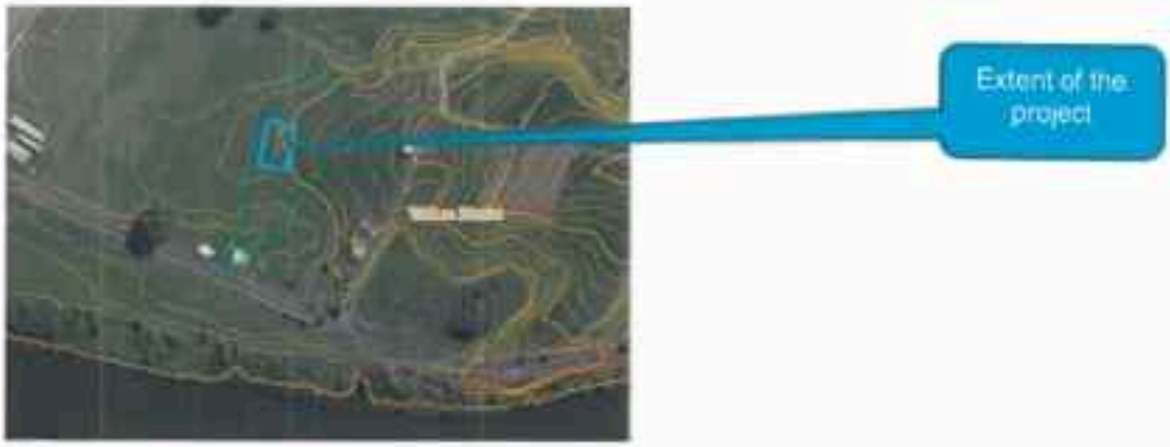

Figure 2 Extent of the Project

2.2 Proposed site development

One new shed is to be constructed on the site. Plans are attached in the appendices.

3.0 DESKTOP STUDY

Reference has been made to "Geotechnical Assessment, Effluent Disposal and Stormwater Management Report", reference B5070, dated 3 April 2018 prepared by Tilsley Engineering Ltd.

Aerial photographs available from Google Earth dating from 2008 to 2019 were studied to observe the site over time and assess the geomorphological setting. Based on the review of historical aerial images and the site visit, there have not been any ground movements or soil instabilities at the location of the building platform.

3.1 Published Geology

From the geological map of Auckland (Institute of Geological & Nuclear Sciences Ltd, 1:250000) in Figure 3 together with our experience of the surrounding areas, we infer the soils are mainly alluvial sediments designated 'Q1a', described as Taupo pumice alluvium and are of the Tauranga Group. The soils are described as pumice sands, silts and gravels and are alluvium/colluvium. They are of the Holicene Period and tend to be less than 20 thousand years old.

The soils are sandy clays and are relatively free draining down to 800mm below the surface.

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Figure 3 Extract from the published GNS geological map

4.0 SITE INVESTIGATION

4.1 Field Investigation

On 2 November 2020, Tilsley Engineering Ltd conducted investigations for the project area, which consisted of the following:

- A detailed walkover inspection of the site.
- Assessment of performance and condition of existing stormwater management

4.2 Site Subsurface Conditions

Subsurface conditions are described fully in "Geotechnical Assessment, Effluent Disposal and Stormwater Management Report", reference B5070, dated 3 April 2018 prepared by Tilsley Engineering Ltd.

Topsoil. Topsoil covers the site generally to depths of around 0.2 - 0.25m below existing ground level. It is described as light and friable.

Fill. No fill was encountered.

Residual soil deposit. Residual soils deposits were encountered underlying the topsoil. The alluvial soils typically comprised SILT with some clay and minor sand.
Ground water. No ground water was encountered in any auger holes.

4.3 Geomorphology

According to observation and the topographical and council GIS contour map shown above in Figures 1 and 2, the site occupies the toe of a broad, gentle spur running down from east to

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west. Land to the north, west and south are low lying and the Waikato River is approximately 200m to the south.

4.3.1 Site surface water features

Surface water drains west to the flood plain on the neighbouring properties. This drains to the Waikato River.

4.3.2 Flooding

There is a low risk of flooding due to the elevated location of the proposed shed. The building platform occupies the end of a gentle spur and surface water naturally follows the slopes to the north and to the south rather than across the building platform. There is, therefore, insignificant uphill catchment (less than 0.2ha). The 1% AEP event is not expected to enter the building if work is carried out to NZ Building Code E1. Finished floor level shall be a minimum of 150mm above ground level.

5.0 STORMWATER MANAGEMENT

The enclosed calculation sheet shows that attenuation built into the water tank for the proposed shed on the Lot will allow for a 1 in 20 year 5% AEP 10min storm event with allowance for 2.1 degrees climate change. Niwa HIRDS data gives a value of 106mm/h for a 10-minute storm event giving 124mm/h with climate change allowance.

Although the storm water system is designed to cater for rain events up to a 5% AEP 10-minute storm event, redundancies are built into the design with a 'worst case scenario' adopted. The storm water system is therefore expected to have capacity for larger storm events.

All runoff from the roof area of the new dwelling shall be piped and released into a 25,000L water tank for settling, domestic use and attenuation. Overflow from the tank will be directed into a controlled outfall.

The existing driveway is permeable metal. Existing stormwater management is working adequately and minor changes are proposed.

There is no infrastructure on the Lot or neighbouring Lots which will be adversely impacted by the proposed stormwater management design.

5.1 Roof

The proposed shed will have a roof area of approximately 112m^2.

The volume of stormwater attenuation required is 1.4m^3. This can be achieved by using a 25,000L stormwater tank. A 25mm diameter orifice placed 144mm below the overflow will

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allow water to flow into the overflow pipe. This orifice will drain the detention volume within 24 hours. All fixings in the water tank shall use the manufacturer's approved outlet points. The overflow shall be directed to a controlled outfall.

5.2 Controlled Outfall

The overflow pipe from the water tanks will have a minimum diameter of 100mm and will be connected to the existing 14m level spreader. The location of the level spreader is shown on the site plan.

The existing level spreader was generously sized for robust design. The stormwater from the proposed shed may be directed to the existing level spreader without any changes required. The ground slopes very gently and there is no evidence of scouring.

5.3 Driveway

A permeable driveway extension of approximately 70m² is proposed.

If an impermeable driveway is constructed, all stormwater runoff shall be collected using either cesspits or an infiltration trench 1m deep by 0.5m wide along the lower edge of the driveway. The outlet for the cesspit or trench shall be directed to the overland flow path.

5.4 Construction of Stormwater System

The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and potential consequences of soil saturation. The stormwater system shall comply with NZBC clause E1.

6.0 SYSTEM MAINTENANCE

The equipment suppliers will offer training and maintenance support for the system. However, it is the owner's responsibility to carry out all general maintenance procedures for the system to function as designed. Attached in Appendix are the operation and maintenance forms for the stormwater.

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7.0 RECOMMENDATIONS

- Stormwater runoff from the roof area of the proposed shed shall be piped and released into a 25,000L water tank for settling, use and attenuation. The volume of stormwater attenuation required is 1.4m³. The attenuation shall be provided by a 25mm diameter orifice placed 144mm below the overflow allowing water to flow into the overflow pipe. The overflow pipe shall be 100mm in diameter and shall be directed to the existing level spreader.

- The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and potential consequences of soil saturation.

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8.0 LIMITATIONS

This report has been prepared solely for the benefit of our client with respect to a particular brief given to us, and data or opinions in it may not be used in other contexts, by any other party or for any other purposes. To the maximum extent permitted by law, Tilsley Engineering Ltd disclaims all liability and responsibility (in contract or tort, including negligence, or otherwise) for any loss or damage whatsoever which may be suffered as a result of any reliance by any third party on this report, whether that loss is caused by any fault or negligence on the part of Tilsley Engineering Ltd or otherwise.

Council is able to rely on this report for processing the resource or building consent only for the site mentioned within this report. It may not be used for any other use or purpose without permission from Tilsley Engineering Ltd.

Hard copies and electronic copies of this document are available from Tilsley Engineering Ltd. Any copies/reproductions of this document must be in the original format and in colour. Any copies must be reproduced in its entirety.

Notice to Reader/ User of this document

Should you be in any doubt as to the applicability of this report and/or its recommendations for the proposed development as described herein, and/or encounter materials on site that differ from those described herein, it is essential that you discuss these issues with the authors before proceeding with any work based on this document.

The recommendations and opinions contained in this report are based upon site observations of the investigation area. Inferences about ground conditions over the site are made using geological principles and engineering judgment, however, it is possible that conditions over the site may vary and therefore it is not possible to guarantee the continuity of ground conditions away from investigation locations and visible areas.

Furthermore, the logs are provided presenting descriptions of the soils and geology based on field observations of the samples recovered in the fieldwork and may not be truly representative of the actual underlying conditions.

Recommendations and opinions in this report are based on data obtained from the investigations and site observations as detailed in this report. The nature and continuity of subsoil conditions at locations other than the investigation bores and tests are inferred and it shall be appreciated that actual conditions could vary from the assumed model.

It is recommended that construction activity shall be undertaken in the dry season. If construction activities are undertaken in wet seasons there is a potential risk of reduction of soil strength. Tilsley Engineering Ltd is not responsible for the reduction in soil strength due to construction activities.

Ground conditions can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions that existed at the time of subsurface exploration, decisions shall not be based on a report whose adequacy may have been affected by time. Tilsley Engineering Ltd to be advised how time may have impacted on the project.

This report is based on the assumption that the site conditions as revealed through investigation stages are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore this report recommendations can only be regarded as preliminary. Only Tilsley Engineering Ltd, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes shall be considered as the project develops. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Tilsley Engineering Ltd cannot be held responsible for such misinterpretation.

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APPENDIX A

BACKGROUND INFORMATION



Proposed building platform, also existing house and water tanks



Location of existing level spreader

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APPENDIX B

STORMWATER DESIGNS

Client	M & L Gasson	Version 3.1
Address	380 Churchill East Road	
Date	Nov-20	

Stormwater management, controlled outfall via detention

Pre-development Grass Area	112 m²
Modified (C=0.3)	33.6 m²
Developed Roof Area (shed)	112 m²
Modified (C=0.9)	100.8 m²
Design Storm	
1 in 20 year (5% AEP), 10min storm NIWA value	106.0 mm/hr
cc. Adjusted for climate change 2.1 degrees	124.0 mm/hr
Quantity of Flow - Pre-development	
Pre-development Grass Area	1.2 l/sec
Quantity of Flow - Developed	
Developed Roof Area	3.5 l/sec
Storage Volume Required	
(developed - pre-developed) flow x 10 x 60	1,389 Litres
	1.4 m³
Detention Tank	

	# of Tanks		
Water tank Size	1	25,000	litre
Tank Base Dia		3.5	m
Attenuation depth			0.144 m

Maximum Orifice Size		Minimum Orifice Size	
Q release (pre-development)	1.16 l/sec	Q release (24 hour drain)	0.016 l/sec
V = sqrt(2gh)	1.19 m/s	V = sqrt(2gh)	1.19 m/s
Area = Q/V	0.00097 m²	Area = Q/V	0.00001 m²
Dia = sqrt(4 x A/pi)	0.035 m	Dia = sqrt(4 x A/pi)	0.004 m
Diameter of outlet pipe	35 mm	Diameter of outlet pipe	4 mm
Recommended Outlet to be	25 mm	OK	

Received as Further Information on: 9/11/20

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Waikato District Council
Building Consent Number
BLD0508/21

APPROVED

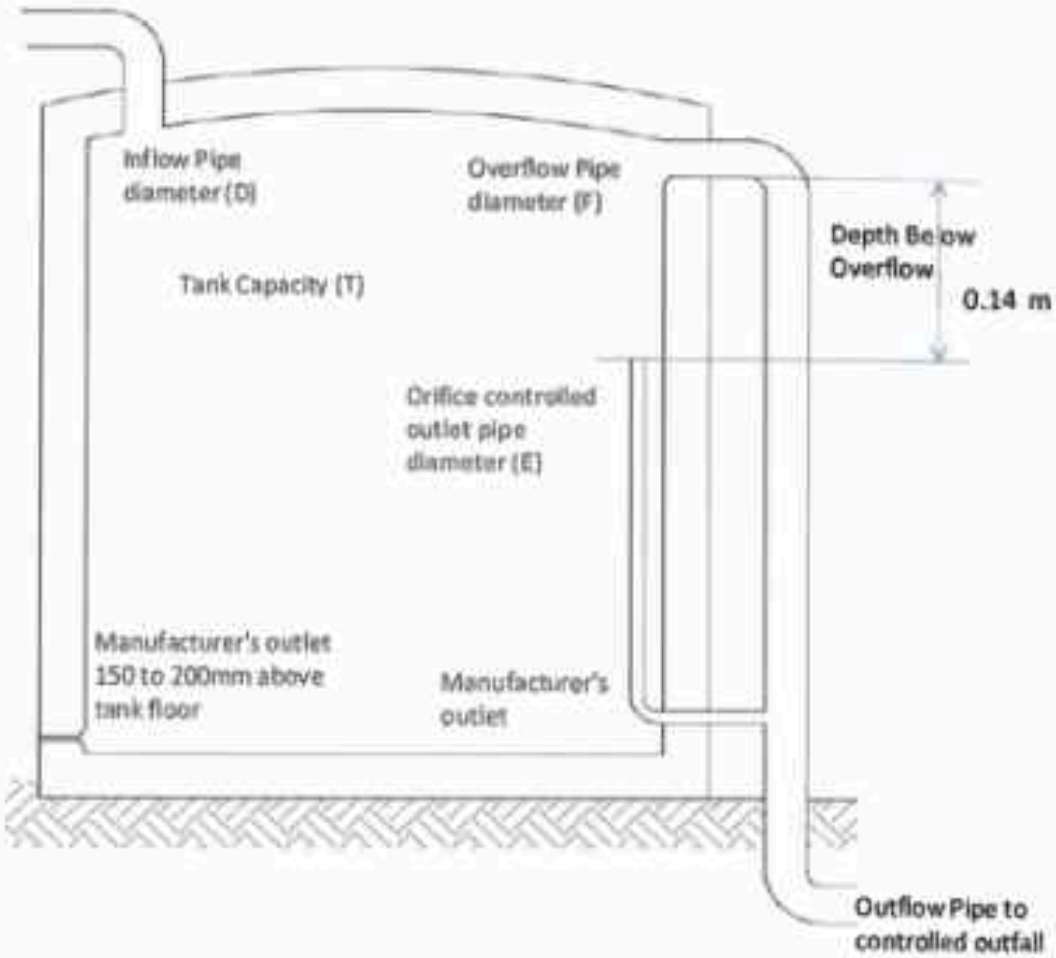
Tank design - attenuation Shed Version 3.1

Client M & L Gasson

Address 380 Churchill East Road

Date Nov-20

Detention Tank Detail



Note: Minimum orifice diameter is 20mm. Screening is required for orifice smaller than 25mm

D=	90 mm
T=	25,000 litres (x 1 tank)
E=	25 mm
F=	100 mm

Capacity to be used for attenuation 1.4 m^3

Notes:

1. Orifice controlled outlet 'E' is to use an approved manufacturer's outlet point. This may require an internal PVC pipe connected to a base point.
2. If different tank dimensions are used than those specified, the orifice controlled outlet must allow for a minimum attenuation below the overflow pipe of 1.4 m^3
3. First flush diverter recommended but not required.

Received as Further Information on: 9/11/20

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Building Consent Number
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APPENDIX C

STORMWATER OPERATION & MAINTENANCE FORMS

Received as Further Information on: 9/11/20

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD0508/21

APPROVED

FORM "OSM-O&M-CERT"

(A) SITE & OSM DEVICE DETAILS:

Site Address: _____

Owners Name: _____

Device(s):

Ref. No	Type	Size (eg m2 or m3)	Date Installed

(B) MAINTENANCE CONTRACTOR'S DETAILS:

Firms Name: _____

Firms Address: _____

Name of Serviceperson: _____

Date(s) of Service: _____

(C) SERVICE DETAILS:

Device Ref. No	Checklist Completed	MAINTENANCE ACTION	
		Item	Action (describe, eg "pipe replaced")
	1	(a)	
		(b)	
		(c)	
		(d)	
	2	(a)	
		(b)	
		(c)	
		(d)	
	3	etc... (continue on a separate sheet)	

* on attached form "Device-Specific O&M Details"

(D) CERTIFICATION:

I/we hereby certify that:

Received as Further Information on: 9/11/20

Document Set ID: 3249575
Version: 3, Version Date: 09/11/2020

Print Date: 6 November 2026, 1:26 pm

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Building Consent Number
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- The OSM device inspection and maintenance programme has been undertaken in accordance with the provision of Section 11 of the City's "OSM Manual" dated 2002
- The details above and on the attached form(s) are a full and correct record of the work performed
- The OSM device(s) are in sound working order
- The owner has been advised of the problems found (if any) and alerted as to the need to inspect for any recurrences and rectify such promptly

_____ _____

Signed Date

ACE Office Use:

Reference No. _____

Checked by: _____ Date: _____

Entered by: _____ Date: _____

Received as Further Information on: 9/11/20

Document Set ID: 2855858
Version: 3, Version Date: 09/11/2020

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD0508/21

APPROVED

APPENDIX D

PRODUCER STATEMENT, PS1

Building Code Clause(s): E1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on the reverse)

ISSUED BY: Tilsley Engineering Ltd (27 Roulston St, Pukekohe)
(Design Firm)

TO: Mr & Mrs Gasson
(Owner/Developer)

TO BE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: On-site stormwater management
(Description of Building Work)

AT: 380 Churchill East Road, Rangiriri
(Address)

LOT 13 DP 465716 SO

We have been engaged by the owner/developer referred to above to provide Design of on-site stormwater and effluent
treatment & disposal system according to Tilsley Engineering Ltd calculations services in respect of the requirements of
(Name of Engineer)
Clause(s) E1 of the Building Code for
—All of— Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:
Compliance Documents issued by Department of Building & Housing G13/AS2/VM4 and E1
(Verification method / Acceptable solution)

or

Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled
B14470 and numbered Proposed Site Plan

together with the specification, and other documents set out in the schedule attached to this statement.
On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions

(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, Robert Tilsley (Name of Design Professional) am: CPEng 85675 #
Reg Arch

I am a Member of: IPENZ —NZIA and hold the following qualifications: BE (Civil) MIPENZ CPEng

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*

SIGNED BY Robert Tilsley ON BEHALF OF Tilsley Engineering Ltd
(Design Firm)

Date 09/ 11/ 2018 (signature) Sig # D823

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

This form is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent.

Received as Further Information on: 9/11/20

Document Set ID: 2388168
Version: 3, Version Date: 09/11/2020

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD0508/21

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APPENDIX E

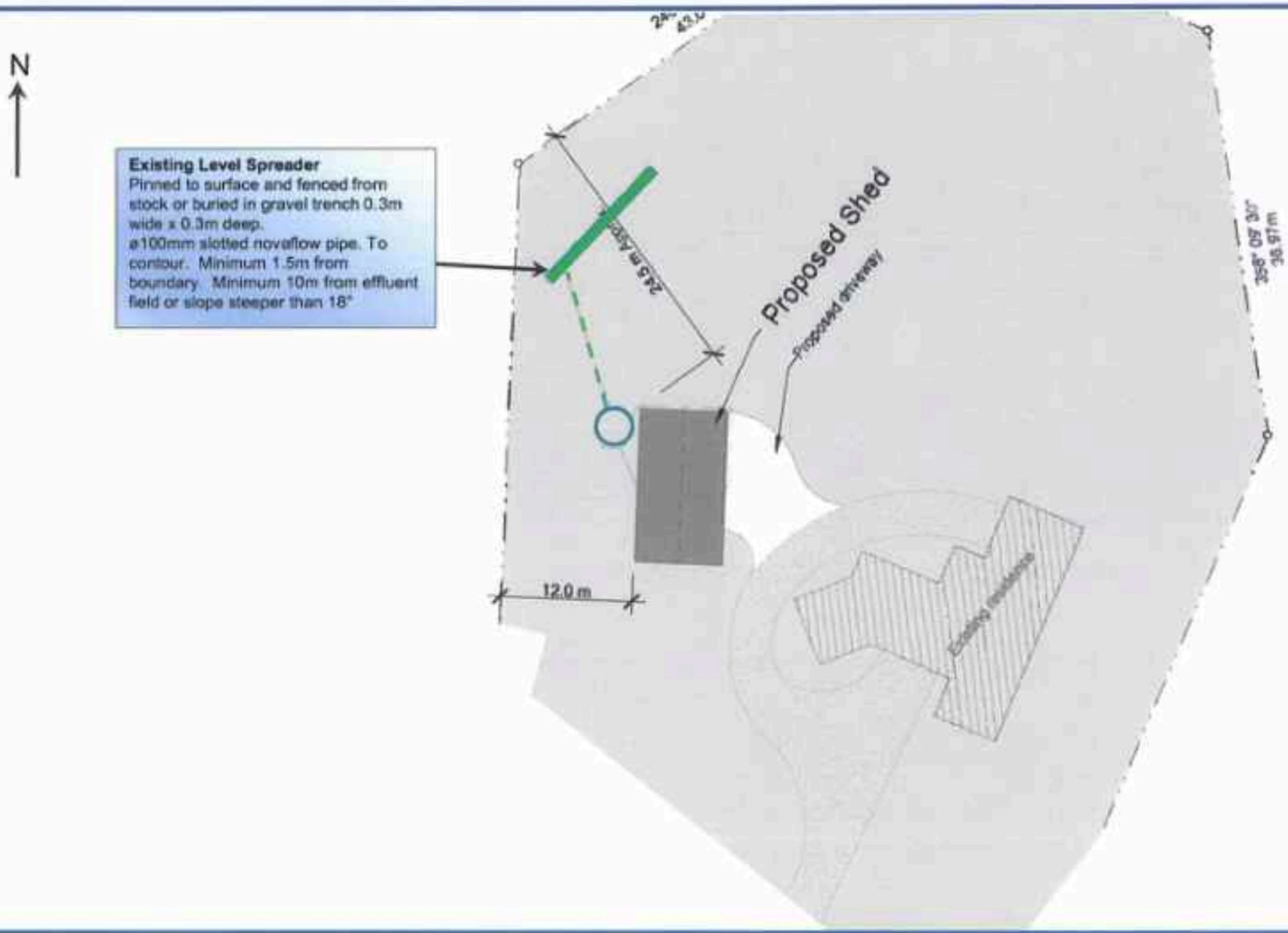
PROPOSED STORMWATER SITE PLAN

Received as Further Information on: 9/11/20

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD0508/21

APPROVED



SW Plan
380 Churchill East Road, Rangiriri

Reference: B14470

Date: 20/10/2020

Scale 1:500 @ A3

Reviewed and approved by: R Tilsley

Sig # D823

Drawn by: Bridget Dobbs

TILSLEY ENGINEERING LIMITED
27 Roulston Street, Pukekohe
PO Box 392, Pukekohe
Tel: 09 238 3245
info@teng.co.nz

Received as Further Information on: 9/11/20

Document Set ID: 2888858
Version: 3, Version Date: 09/11/2020

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council
Waikato District Council
Full Application Received
21/09/2020

Waikato District Council
Building Consent Number
BLD0508/21

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TOTALSPAN®

STEEL BUILDINGS

WHO CAN? TOTALSPAN!

Gable Range
Producer Statement and Structural Details
(IL1 Non-Habitable, Unlined, Closed)

INDEX:

1	Contents
2	Producer Statement / Specifications
3	Durability Statement
4	Site Plan
5-8	Engineering Tables
9	Foundation Details SD-F01
10-11	Foundation Details SD-F02
12	Frame Details SD-P01
13	Frame Details SD-P03
14	Major Openings SD-M01
15	Minor Door Openings SD-M05
16	Bracing Details
17	Flashing Details
18	Flashing Details SD-E04

CLIENT:

Mark Gasson
380 Churchill East Rd
Rangariri
3782

BUILDING:

TRS Project Ref:	2066511
Location:	Lat: -37.4271098671545 Lng: 175.091997385025
Wind Speed: Vdes Θ:	38.01 m/s
Snow Loading:	Sg = None
Span:	8.000m
Length:	14.000m
Knee Height:	3.000m
Bay Size:	4x3.500m
Roof Details:	15° pitch, 6 Rib 0.40mm
Cladding Details:	7 Rib 0.35mm
Downpipe Size:	80mm Dia PVC
Floor Type:	Concrete Slab (No Calculations)
Area:	112.000m²

Flag 43: Box the head girt of the PA door on side wall if required.

Upgrade the foundation due to expansive soil M.

NOTES :

1 - Contractor to confirm all dimensions on site at time of construction
2 - These drawings must not be reproduced without express permission from Spanbild New Zealand Limited.

TOTALSPAN
A Division of Spanbild New Zealand Ltd
112 Waterloo Road, Hornby
P.O.Box 11-013, Christchurch Details

SPANBILD
DESIGN. MANUFACTURE. BUILD.

Gable Range - Design
Contents
Sheet 1 of 18

This information is provided by the Waikato District Council

Waikato District Council
Full Application Received
21/09/2020

Waikato District Council
Building Consent Number
BLD20508/21
APPROVED

Building Code Clause(s) B1

PRODUCER STATEMENT - PS1 - DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: Calibre Consulting Ltd
(Design Firm)

TO: Totalspan Counties
(Owner/Developer)

TO BE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: 8m span x 14m IL1 Non-Habitable, Unlined portal building; DL=5Dyrs
(Description of Building Work)

AT: 380 Churchill East Rd, Rangariri, 3782, New Zealand
(Address)

..... **LOT:** ..... **DP:** ..... **SO:** .....

We have been engaged by the owner/developer referred to above to provide Structural Design

.....
(Extent of Engagement)

services in respect of the requirements of Clause(s) B1 of the Building Code for:

☑ All or ☐ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☑ Compliance Documents issued by the Ministry of Business, Innovation & Employment B1/VM1, B1/VM4 or
(verification method / acceptable solution)

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled

Gable Range and numbered Sheets 1-2, 5-15,
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions Class M soils as per TEL report B5070-0 dated 3 April 2018
(ii) All proprietary products meeting their performance specification requirements;

I **believe on reasonable grounds** that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I ~~also recommend the following level of construction monitoring/observation:~~

~~☐ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Casebook) or ☐ as per agreement with owner/developer (Alternative)~~

I, John McCurran (Name of Design Professional) am: ☑ CPEng 48451 # ☐ Reg Arch ..... #

I am a member of : ☑ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE (civil)
The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*
The Design Firm is a member of ACENZ: ☑

SIGNED BY John McCurran (Signature)

ON BEHALF OF Calibre Consulting Ltd (Design Firm) Date 18 September 2020

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

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SPECIFICATIONS

GENERAL NOTES

1. IMPORTANT DESIGN LIMITATIONS
   - 1.1. Design limitations apply to any item or alteration not specifically stated or clearly represented within the scope of these engineering specifications. This is a CAD drawing which must not be altered by manual methods, exceptions to this are:
     - 1.1.1. The documentation clearly states where "generic" items can be crossed out, or the applicable detail circled to provide clarity.
     - 1.1.2. Additional specific design has been carried out by a CPENG engineer with a PS1 supplied covering "part" design works for any ammedment/alterations. Alternative/Additional drawings shall be supplied or these specifications must be clearly marked up in red pen and accompanied by the PS1 engineer's signature on each drawing altered which is covered by the additional specific design, as above.
     - 1.1.3. A letter has been supplied in writing, signed by the original engineer(s) covering "minor" ammedments/alterations or clarifications to varying interpretations of the design drawings.
   - 1.2. Habitable/Lined Buildings are not covered within this scope of work.

2. GENERAL
   - 2.1. All work shall conform to the New Zealand Building Code
   - 2.2. B2 Durability shall be covered by respective product/manufacturers durability statements

3. LOADINGS
   - 3.1. Buildings are designed to AS/NZS 1170
     - 3.1.1. Refer Schedule for Windspeed, Vdes8 in m/s
     - 3.1.2. Refer Schedule for Ground Snow Load if applicable in kPa.
     - 3.1.3. The roofing is not designed for point loads of 1.1kN, these are Surfaces (including transparent surface) over which supports (e.g., boards or ladders) are required to be laid to support actions incidental to maintenance (e.g., people).
     - 3.1.4. Earthquake loads, except for "near fault" locations due to the light-weight structure are not critical for unlined, Importance Level 1 & 2 standard structures with cladding as specified below only.
     - 3.1.5. Habitable/Lined or Importance Level 3 and greater structures require specific design engineering in addition to this specification covering the scope of works. (Importance Level 2 structures have been designed to resist "structural damage" deflections only).
     - 3.1.6. Any loads exceeding the above shall require specific design engineering in addition to this specification covering the scope of works.

4. FOUNDATIONS
   - 4.1. Ground shall have a safe bearing capacity of at least 75kPa (225kPa Ultimate) and Class M as per Geotechnical Report.
     - 4.1.1. This is achieved by meeting "good ground", safe bearing capacity of at least 100kPa in accordance with NZS 3604 (i.e. exceeds the above) OR:
     - 4.1.2. Safe bearing capacity of at least 75kPa by Site Specific Geo-Technical Report (as NZS 3604 has no means of determining a minimum safe bearing of 75kPa).

5. CONCRETE
   - 5.1. Designed to NZS 3101
   - 5.2. Remove vegetation and loose material from the building footprint, backfill with compacted hard-fill if required and lay sand blinding to the underside of the concrete slab. Ensure the surface of the slab will be at least 100mm above the highest level of cleared ground around the slab.
   - 5.3. Concrete shall have a maximum aggregate size of 20mm and minimum 20MPa compression strength at 28 days.
   - 5.4. Refer Foundation Details for further details.
   - 5.5. Lesser Ductile Mesh is allowed to be used for Importance Level 1 structures only
     - 5.5.1. Refer NZS 3101 Clause 5.3.2.7 (a)

6. STEELWORK & COMPONENTS
   - 6.1. All Steelwork & Components shall (where applicable) conform to:
     - 6.1.1. AS/NZS 4600 - Cold-formed steel structures
     - 6.1.2. AS/NZS 1252 - High strength steel bolts with associated nuts and ...
     - 6.1.3. AS/NZS 1365 - Tolerances for flat-rolled steel products
     - 6.1.4. AS/NZS 4506:2013 - Garage doors and other large access doors
     - 6.1.5. AS 1110 - ISO metric hexagon bolts and screws
     - 6.1.6. AS 1112 - ISO metric hexagon nuts...
     - 6.1.7. AS 1397 - Continuous hot-dip metallic coated steel sheet and strip
     - 6.1.8. AS 1580 - Paints and related materials - Methods of test
     - 6.1.9. AS 3566 - Self-drilling screws for the building and construction industries
     - 6.1.10. ... and ...
     - 6.1.11. IFI-114(Imperial) / IFI-505(Metric) - Bresk Mandrel Blind Rivets

7. CLADDING
   - 7.1. Steel only. Alternative claddings (excluding glass reinforced panel), require an independent specific design certificate for the scope of work.
   - 7.2. Fixing pattern as per E2/AS1 or NZ MRM - NZ Metal Roof and Wall Cladding Code of Practice.
   - 7.3. Flashings shall be fixed as per manufacturers recommendations/instructions.

8. SERVICES
   - 8.1. Penetrations through framing members
     - 8.1.1. Typical hole diameter(s) shall not exceed 29mm (1 ⅛ inch)
       - 8.1.1.1. A single 44mm (1 ¾ inch) hole per C150, C250 or C300 section only is allowed to accommodate an up to 40mm waste water pipe
     - 8.1.2. Distance between holes along the section shall be no less than 1000mm
     - 8.1.3. Holes shall be located:
       - 8.1.3.1. Central in the web, (within the centre 1/3 of the web depth)
       - 8.1.3.2. At least 200mm from the end of a member
     - 8.1.4. Rubber grommets to be applied to un-swaged service holes
     - 8.1.5. Larger and more frequently spaced holes are allowed, however please consult with an engineer first for written approval to ensure compliance with AS/NZS 4600.

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066011

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Mark Gasson
380 Churchill East Rd
Rangariri 3782
0275735775

Gable Range - Design

Producer Statement / Specifications

Document Set ID: 2888968
Version: 2, Version Date: 03/11/2020

Print Date: 6 November 2020, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Full Application Received
21/09/2020

Waikato District Council
Building Consent Number
BLD0508/21
APPROVED

MANUFACTURERS STATEMENT - DURABILITY

Cladding

To satisfy the requirements of Clause B2:"Durability" of the NZBC and to ensure the cladding material meets a 15-year durability life and a 50 year intended working life (design life), the following provisions must apply:

Cladding Range of Product and Use

- Coating Type: Zinc/Aluminium & Painted (Coloured Steel).
- Steel thickness range: 0.35mm - 0.55mm BMT
- Steel grade range: G300 - G550
- Application: Standard Totalspan Roof and Wall Cladding
- Profile: Totalspan 7 Rib, Totalspan 6 Rib, Totalspan Corrugate

Requirements, Limitations and Exclusions

- Fixing and installation of the cladding must be done exactly in accordance with Totalspan Buildings instructions and specifications.
- Normal and regular maintenance must be carried out on the exterior surface of the cladding and the following guide must be followed to ensure the durability requirements are met.

Regular Maintenance

- Normal Maintenance to be completed in accordance with Durability - Acceptable Solution B2/AS 2.1.3
- Corrosion Zones B and C.. (*Reference NZS 3604:2011 Corrosion Zone Figure 4.2)

  Rain-washing only required on exposed (open to airborne salts and rain wetting) material. Sheltered (open to airborne salts, but not rain washed) or protected areas such as under spouting, top-cladding sheets and tops of doors require washing every 3 months.

- Sea Spray Zone D (Includes all off-shore islands, the area within 500m of the coastline of New Zealand, and those areas shown in white - *Reference NZS 3604:2011 Figure 4.2) and areas of Geothermal Activity (*Reference NZS 3604:2011 4.2.4 (c)).

  Rain-washing only required on exposed (open to airborne salts and rain wetting) areas. Sheltered (open to airborne salts, but not rain washed) and protected areas such as under spouting, top cladding and tops of doors require washing down every month and whenever corrosive salts are present.

Extended Maintenance, Painting or Repainting

Extended Durability

Once the metallic coating or the paint system has weathered away, signs of red rust for bare material or signs of the metallic coating for painted material, painting of the entire surface is required to extend the life of the product. Paint manufacturers recommendations are to be followed for surface preparation and paint type to be used.

Evident Corrosion

- Areas that show signs of white or red rust/corrosion (typically in unwashed areas) require cleaning back with a stiff brush and cleaner to remove all dust, surface contaminants and corrosion products and present a sound substrate for painting. Priming of the surface and application of two coats of paint as per the Paint Manufacturer's recommendations is then required.
- Particular attention needs to be paid to laps (side, end, flashing etc) where earlier corrosion may start due to moisture and dirt entrapment.

  If evident corrosion is not treated quickly rapid deterioration of the sheet may occur which could result in perforation. At this stage replacement of the affected sheet is the best option.

Steel Framing

To satisfy the requirements of Clause B2:"Durability" of the NZBC and to ensure the structural framing material meets a 50-year durability life the following provisions must apply:

Steel Framing Range of Product and Use

- Coating Type: Galvanised
- Steel thickness range: 0.75mm – 2.4mm BMT
- Steel grade range: G450 – G550
- Application: Standard Totalspan Purlins, Girts, Portal Frames, Door Jambs, Wall Uprights, Bridging
- Profile: C Sections – 80x40, 150x64, 220x64, 250x85
  Z Sections – 100x53, 150x65
  Tophat Sections – 100x163, 120x170, 150x183

Awnings/Garaports attached to Base Buildings

- Where sections are exposed to or located in salt marine, corrosive industrial or unusually high corrosive environments the below Regular Maintenance must be adhered to.
  Please contact the manufacturer for specialist advice if unsure of requirements.This also applies to all Steelwork that is exposed to the wind but is protected from the rain located in an open sided structure such as carports, awnings or structures closed in on one side only.
  Maintenance is necessary when the Galvanised coating ceases to provide sacrificial protection to the steel base, or where the appearance is no longer aesthetically acceptable. Rust staining or the growth of rust spots usually indicates the breakdown of Galvanised coating. At the first sign of breakdown, the surface should be treated with an appropriate maintenance coating system. All maintenance should be carried out in accordance with AS/NZS 2312: 2002 (Incorporating Amendment No. 1) [c] and New Zealand Steelwork Corrosion Coatings Guide (HERA Report R4-133) [d].

  Regular inspections of the steel work and maintenance at the first signs of a problem will extend the durability of the sections. If any of the structure components show signs of corrosion during normal maintenance these are also easily accessible and simple to replace.

Regular Maintenance

- Normal Maintenance to be completed in accordance with Durability - Acceptable Solution B2/AS 2.1.3
  Corrosion Zones B and C. (*Reference NZS 3604:2011 Corrosion Zone Figure 4.2)

  Rain-washing only required on exposed (open to airborne salts and rain wetting) material.
  Sheltered (open to airborne salts, but not rain washed)or protected areas such as under spouting. top-cladding sheets and tops of doors require washing every 3 months.

- Sea Spray Zone D (Includes all off-shore islands, the area within 500m of the coastline of New Zealand, and those areas shown in white - *Reference NZS 3604:2011 Figure 4.2) and areas of Geothermal Activity (*Reference NZS 3604:2011 4.2.4 (c)).

  Rain-washing only required on exposed (open to airborne salts and rain wetting) areas
  Sheltered (open to airborne salts, but not rain washed) and protected areas such as under spouting, top cladding and tops of doors require washing down every month and whenever corrosive salts are present.

References

1. NZBC – Compliance Document – Clause B2 - Durability
2. NZS 3604, Clause 4, Durability*

* - Totalspan Buildings acknowledges and understands that NZS 3604 is a Timber Framed Building standard. Totalspan Buildings has used NZS 3604 as a reference only to identify Corrosion Zones, Sea Spray Zones and areas of Thermal activity.

Totalspan Buildings
112 Waterloo Rd
Sockburn
CHRISTCHURCH

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066011

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Mark Gasson
380 Churchill East Rd
Rangiriri 3782
0275735775

Gable Range

Durability Statement

Sheet 3 of 16

This information is provided by the Waikato District Council

CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO STARTING • ALL DIMENSIONS IN MM UNLESS STATED

Received as Further Information on: 11/11/20 at 10.29am

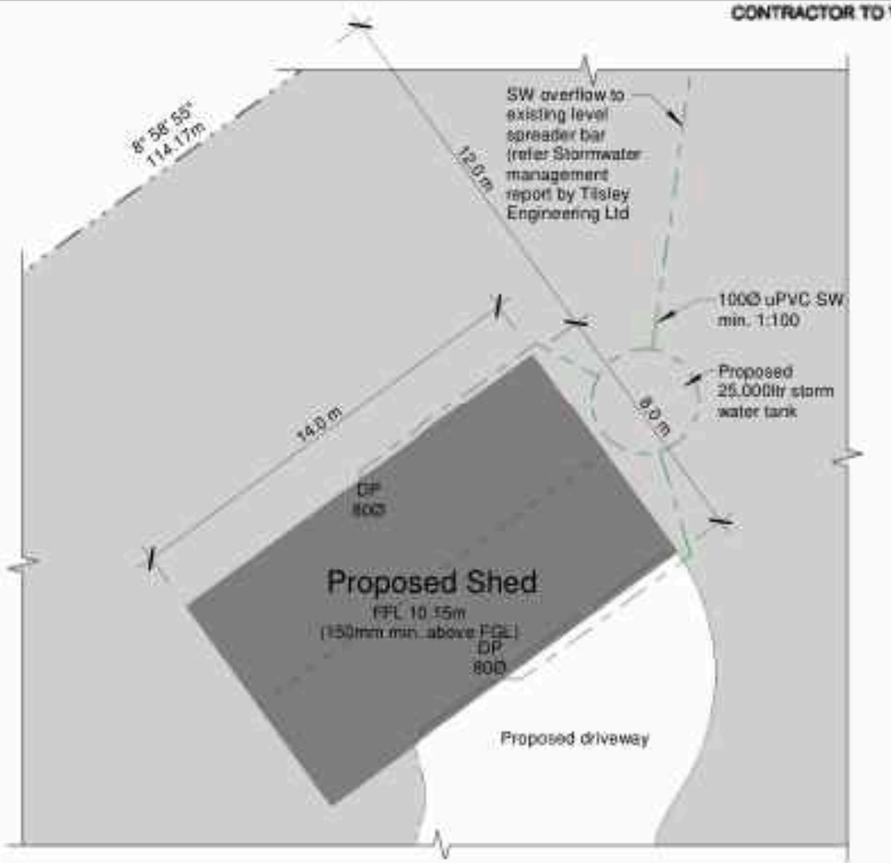
Waikato District Council
Building Consent Number
BLD0508/21

APPROVED

Legal Description :

Local Authority :	Waikato Council
Street Address :	380 Churchill East Road, Rangariri
Lot No. :	13
DP No. :	488718
CT No. :	711534
Land Use Zone :	Rural Zone
Wind Zone :	Very High
EQ Zone:	1
Exposure Zone:	B
Area :	0.7764ha

NOTE:
Smoke alarms installed along escape routes within 3.0m of every bedroom to existing Residence.



2 Partial Site Plan

1 : 200

SCALE 1 : 200
0 2000 4000 8000 12000 mm

N.B. For indicative use only

1 Overall Site Plan

1 : 500

SCALE 1 : 500
0 5000 10000 20000 30000 mm

N.B. For indicative use only

NOTES:

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TOTALSPAN
STEEL SHEDS & BUILDINGS
WHO CAN? TOTALSPAN!

PHONE: 0800 TOTALSPAN 0800 868 857

BUILDING PROPOSED FOR: M GASSON	DRAWING TITLE: OVERALL & PARTIAL SITE PLANS	SCALE: 1:500/1:200 DRAWN: NCGI	DATE: 06/11/2020 FILE: 20076
		SHEET: A01	OF:

Document Set ID: 2888968
Version: 2, Version Date: 03/11/2020

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD0508/21
APPROVED

CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO STARTING • ALL DIMENSIONS IN MM UNLESS STATED

Legal Description :

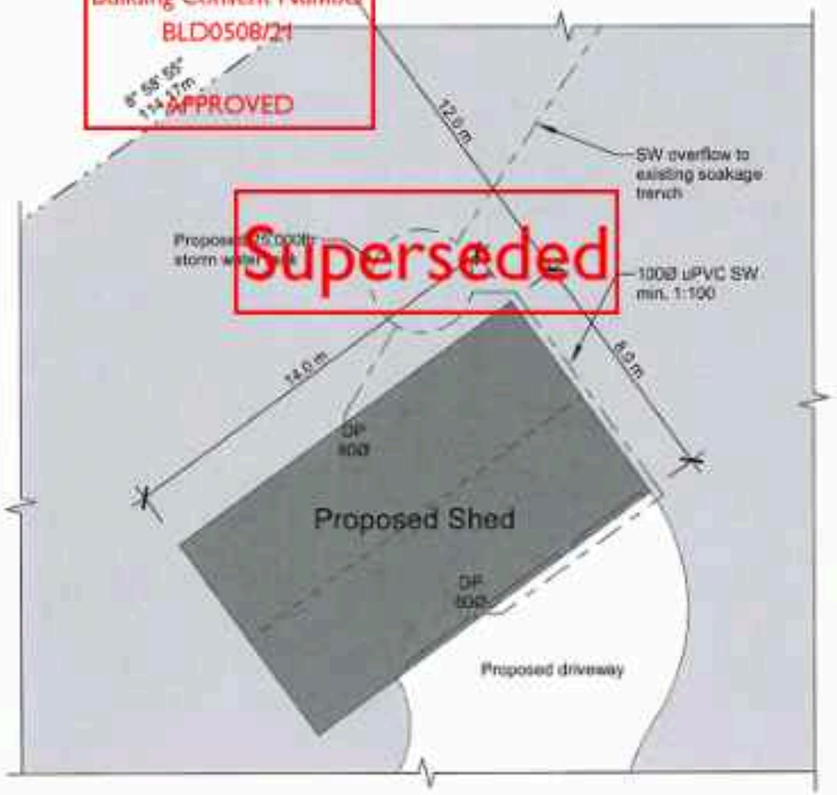
Local Authority :	Waikato Council
Street Address :	380 Churchill East Road, Rangiriri
Lot No. :	13
DP No. :	488718
CT No. :	711534
Land Use Zone :	Rural Zone
Wind Zone :	Very High
EQ Zone:	1
Exposure Zone:	B
Area :	0.7764ha

BRO Revision Received
Date Received
06.10.20

SITE SAFETY
Works to comply with F5/AS1 of the NZBC, the OSH publication Approved Code of Practice for Demolition and the Health and Safety in Employment Act 1992

NOTE:
Smoke alarms installed along escape routes within 3.0m of every bedroom to existing Residence.

Superseded



2 Partial Site Plan
1 : 200

SCALE 1 : 200
0 2000 4000 8000 12000 mm
N.B. For indicative use only

Superseded

1 Overall Site Plan
1 : 500

SCALE 1 : 500
0 5000 10000 20000 30000 mm
N.B. For indicative use only

NOTES:

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TOTALSPAN.
STEEL SHEDS & BUILDINGS
WHO CAN? TOTALSPAN!

PHONE: 0800 TOTALSPAN
0800 868 857

BUILDING PROPOSED FOR:
M GASSON

DRAWING TITLE:
OVERALL & PARTIAL SITE PLANS

SCALE: 1:500/1:200
DATE: 17/09/2020
DRAWN: NCGI
FILE: 20076

SHEET: A01
OF:

Document Set ID: 2888969
Version: 3, Version Date: 03/11/2020

Print Date: 6 November 2020, 1:26 pm

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Waikato District Council
Full Application Received
21/05/2020

ROOF (BAYS 4-1)

Waikato District Council
Building Consent Number
BLD0508/21
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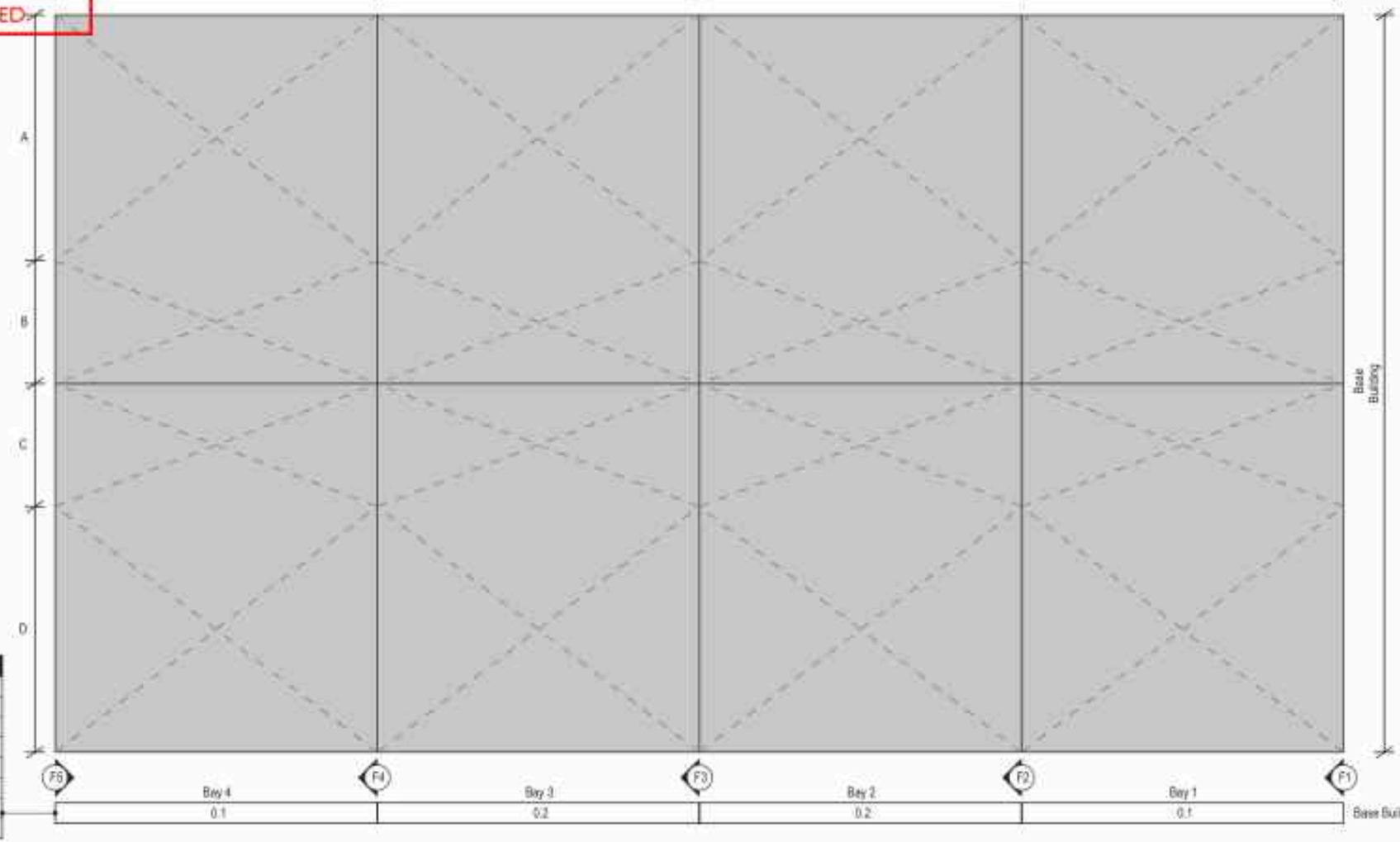
B	S1:1 - 5.48kN S1:1 - 6.50kN	S1:1 - 5.50kN S1:1 - 6.51kN	S1:1 - 5.50kN S1:1 - 6.51kN	S1:1 - 5.48kN S1:1 - 6.50kN
C	S1:1 - 6.50kN S1:1 - 5.48kN	S1:1 - 6.51kN S1:1 - 5.50kN	S1:1 - 6.51kN S1:1 - 5.50kN	S1:1 - 6.50kN S1:1 - 5.48kN



BRACING kN (Totals)

Location	Required	Achieved
A	9.85 kN	21.95 kN
B	5.79 kN	26.03 kN
C	5.79 kN	26.03 kN
D	1.74 kN	21.95 kN

FRAMING SECTION TABLES

Base Building - 0.1	
Design	Closed
Purlin (Bridge Count)	C80-65(2)
Purlin Centres	0.628m
Base Building - 0.2	
Design	Closed
Purlin (Bridge Count)	C80-65(1)
Purlin Centres	0.628m

BRACING DESIGN NOTES

All bracing must be connected to main structural members i.e. Portal Legs, Portal Rafters, End Wall, Uprights & Main Access Door Jambs. Bracing shall not be solely connected to intermediate members such as Girts, Purlins, Minor Access Door Jambs & PA Door Jambs.

BRACING LEGENDS

S1:1
Mitek Strip-Brace 27x0.6mm G550, configured as a single cross.

VIEWS
2
3 1
4

TOTALSPAN STEEL BUILDINGS

Project Ref: 2066611

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Rangiriri 3782
0275735775

Gable Range - Design

Engineering Tables

Document Set ID: 2888968
Version: 2, Version Date: 03/11/2020

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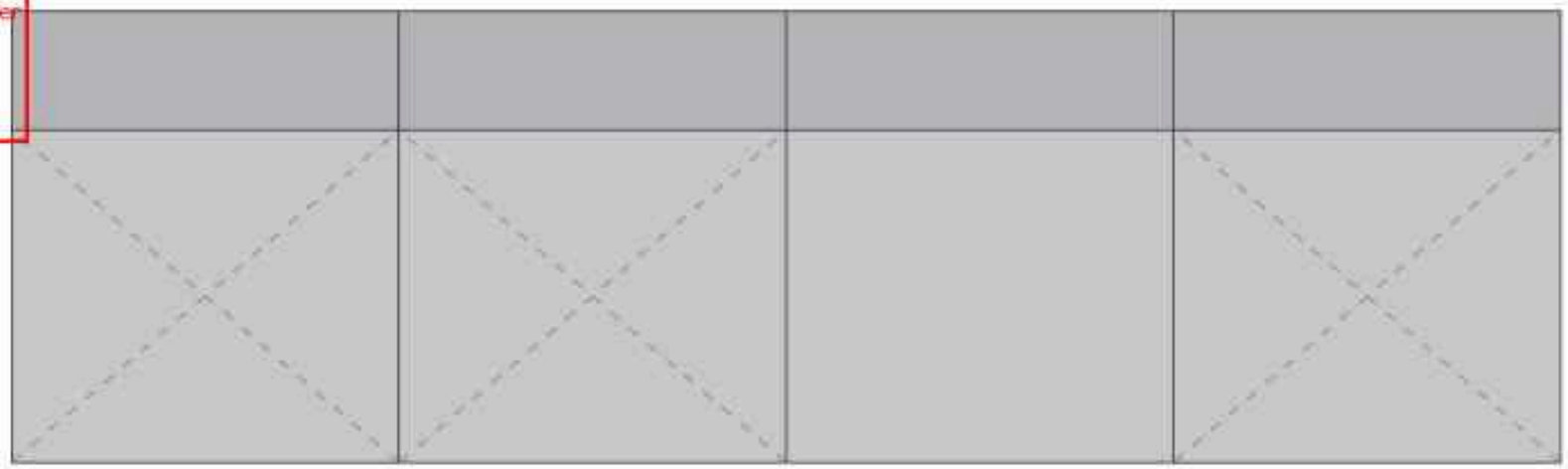
VIEW 2 - BUILDING SIDE (BAYS 1-4)

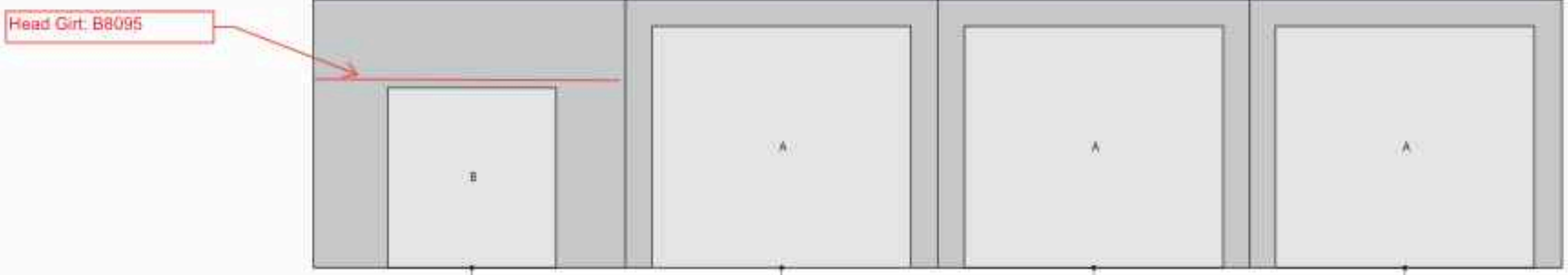


FRAMING SECTION TABLES	
Base Building - 2.1	
Design	Closed
Girt (Bridge Count)	C80-95(1)
Girt Centres	0.960m

	Bay 1	Bay 2	Bay 3	Bay 4
	2.1	2.1	2.1	2.1
	S1:1 - 5.28kN	S1:1 - 5.31kN		S1:1 - 5.28kN

BRACING kN (Totals)	
Required	11.59 kN
Achieved	10.60 kN

VIEW 4 - BUILDING SIDE (BAYS 4-1)



OPENING SECTION TABLES	
Opening - A	
Jambs	C150-15
Head Beam	C150-10
Opening - B	
Jambs & Head Beam	C80-95

FRAMING SECTION TABLES	
Base Building - 4.1	
Design	Closed
Girt (Bridge Count)	C80-95(1)
Girt Centres	0.960m

	Bay 4	Bay 3	Bay 2	Bay 1
	4.1	4.1	4.1	4.1

BRACING kN (Totals)	
Required	5.79 kN
Achieved	0.00 kN
Transferred to Opposite Wall	5.79 kN

VIEWS
2
3 1
4

TOTALSPAN STEEL BUILDINGS

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21 FRAME F1

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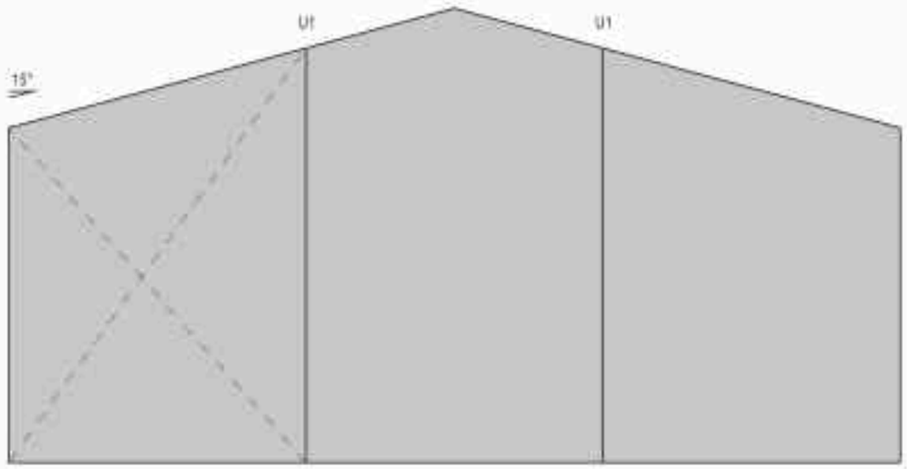
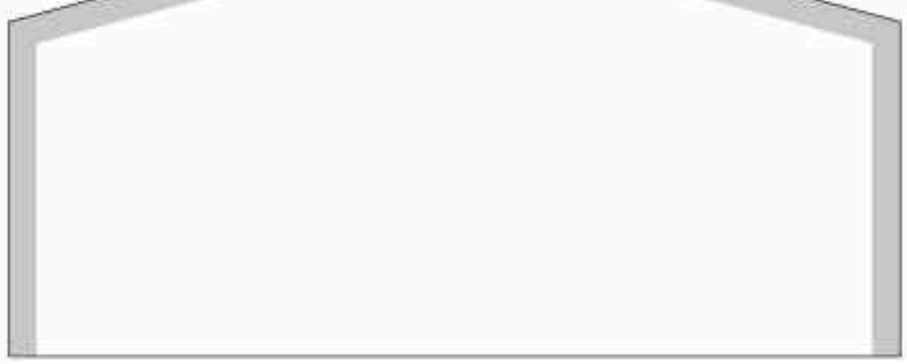


FRAMING SECTION TABLES	
Base Building - B.1	
Design	Closed
Leg & Rafter	C150-15
Upright - U1	C150-12
Girt (Bridge Count)	C80-75(1)
Girt Centres	0.967m

Base Building	
B.1	
Structual Moment Resistance - 0.00kN	
S1:1 - 4.08kN	

BRACING kN	
Required	3.31 kN
Achieved	4.08 kN

FRAME F2,F3,F4



FRAMING SECTION TABLES	
Base Building - B.2	
Design	Closed
Leg & Rafter	C250-15

Base Building
B.2

VIEWS
2
3 1
4

TOTALSPAN STEEL BUILDINGS	Project Ref: 2066611 © Copyright 2017 Spanbild NZ Ltd. All rights reserved.	Mark Gasson 380 Churchill East Rd Rangiriri 3782 0275735775	Gable Range - Design Engineering Tables Sheet 7 of 16

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21 FRAMED F5

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Building Consent Number
BLD0508/21

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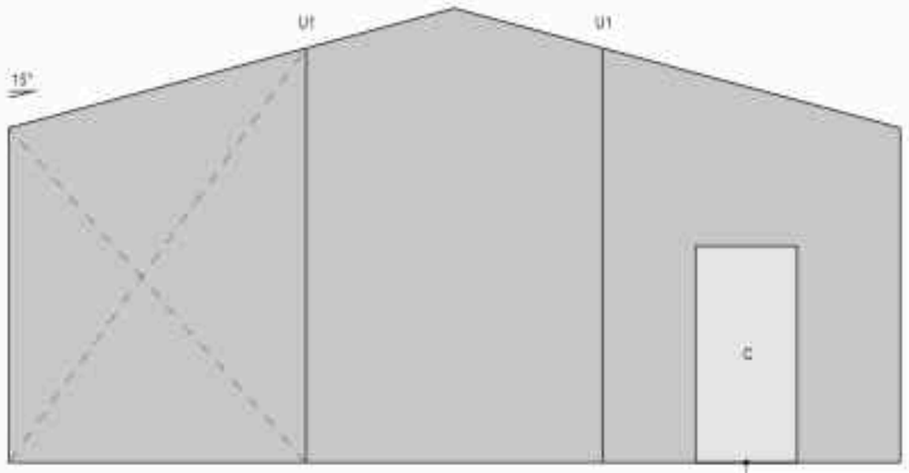

FRAMING SECTION TABLES	
Base Building - B.1	
Design	Closed
Leg & Rafter	C150-15
Upright - U1	C150-12
Girt (Bridge Count)	C80-75(1)
Girt Centres	0.667m

Base Building
B.1
Structual Moment Resistance - 0.00kN
S11 - 4.08kN

OPENING SECTION TABLES	
Opening - C	
Jambs & Head Beam	C80-75
Upper Support Girt	S80-75(1)

BRACING kN	
Required	3.31 kN
Achieved	4.08 kN

VIEWS
2
3 1
4

TOTALSPAN STEEL BUILDINGS

Project Ref: 206611

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Cable Range - Design

Engineering Tables

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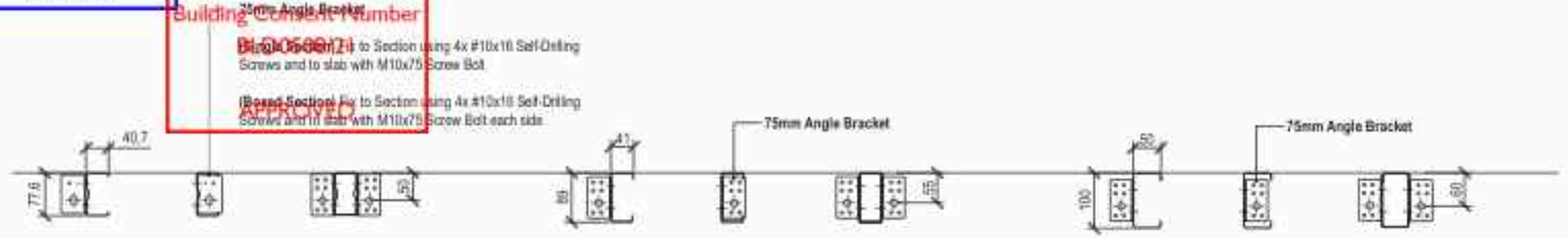
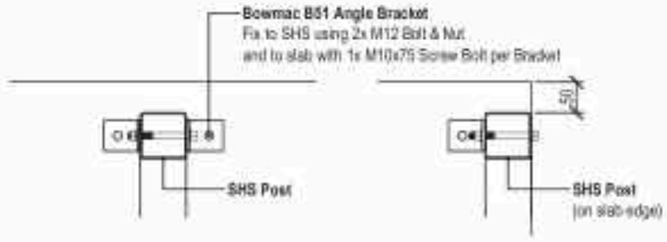


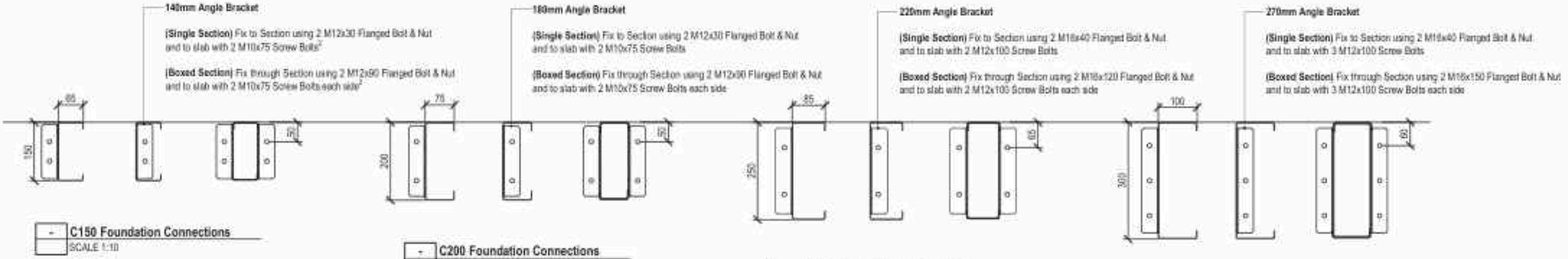
C80 Foundation Connections
SCALE 1:10

C90 Foundation Connections
SCALE 1:10

C100 Foundation Connections
SCALE 1:10



SHS Foundation Connections
SCALE 1:10



C150 Foundation Connections
SCALE 1:10

C200 Foundation Connections
SCALE 1:10

C250 Foundation Connections
SCALE 1:10

C300 Foundation Connections
SCALE 1:10

Important Notes

1 Recommended edge distances are listed above, brackets may be repositioned slightly +/- 3mm however concrete edge distance to bolt centre shall not be less than be 50mm

2.**C/B150-15 & C/B150-19 Portal Legs** shall have a M10x38mm Square Washer to M10x75 Screw Bolts (otherwise, not required.)

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066511

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Gable Range - Design

Foundation Details SD-F01

Sheet 9 of 18

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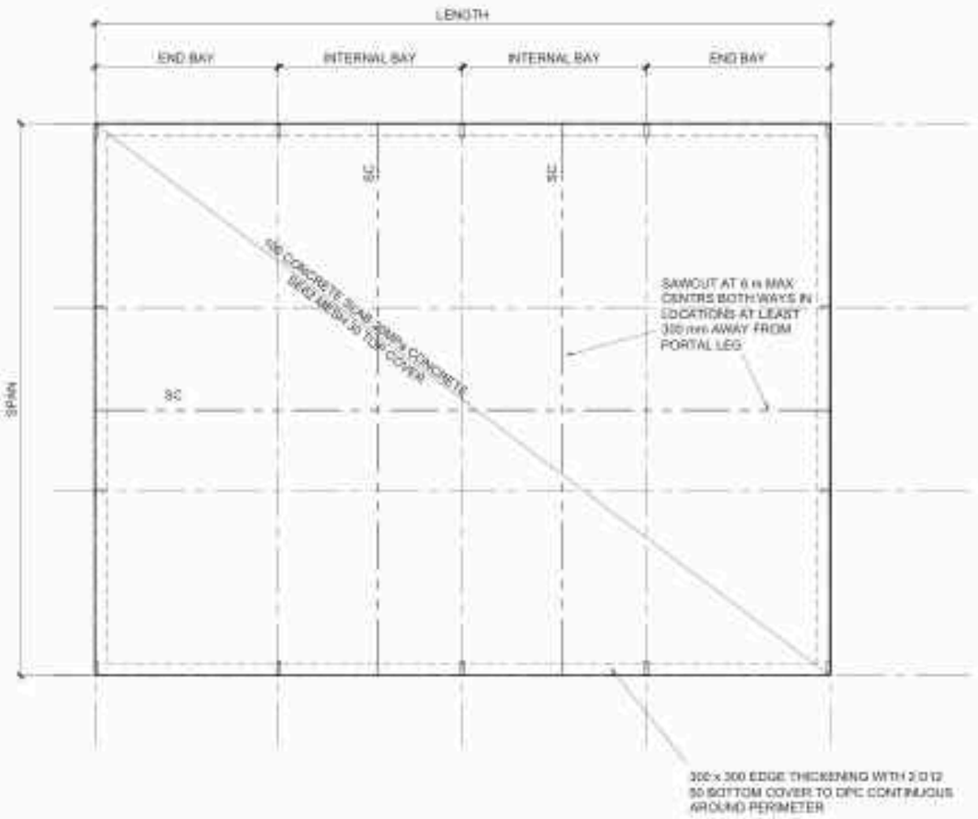

NOTES:
1. REFER TO TABLE FOR SLAB PLAN LAYOUT, BAY NUMBERS AND DIMENSIONS.
2. FOR IL1 BUILDINGS ONLY
3. FOR EXPANSIVE SOIL **CLASS M** ONLY AS DEFINED IN AS 2870:2011
4. REFER TO AS 2870:2011 CL 3.1.5 FOR SITE CLASS REDUCTION.
5. REFER TO AS 2870:2011 FIGURE 3.1 FOR STANDARD DESIGN (CLAD FRAME, CLASS S)

TYPICAL CONCRETE SLAB PLAN
NTS

PROJECT #: 2066511
REVISION: 0
DATE: 14/09/2020

TOTALSPAN
A Division of Spanbild New Zealand Ltd

112 Waterloo Road, Hornby,
P.O. Box 11-105, Christchurch

Mark Gasson
380 Churchill East Rd
Rangariri 3782
0275735775

PORTAL BUILDING

FOUNDATION PLAN

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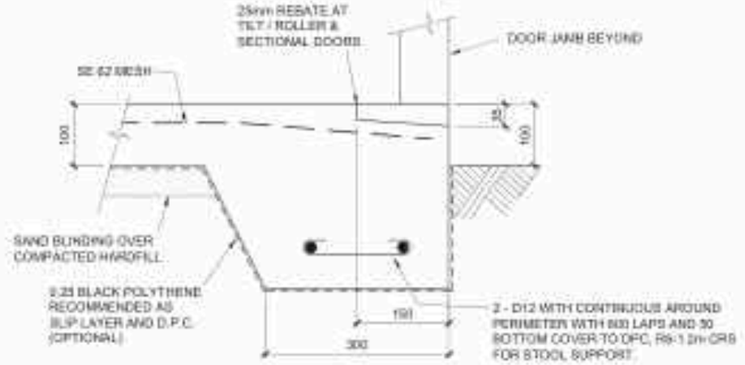
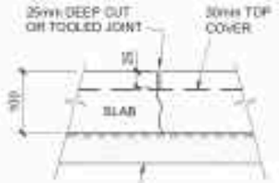
FOUNDATION EDGE BEAM
(TYP.)



DOOR ENTRY SLAB EDGE DETAIL (TYP.)



SAWCUT DETAIL (TYP.)

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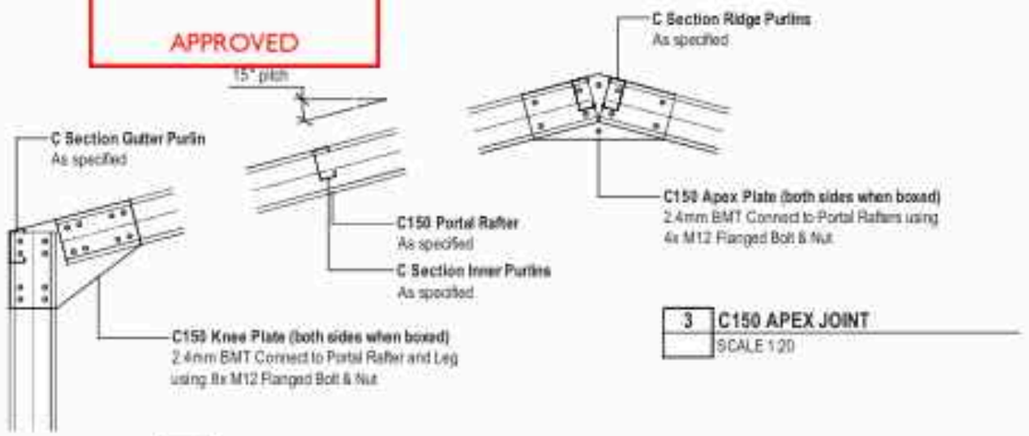
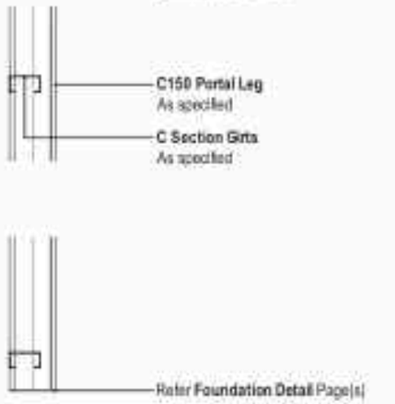
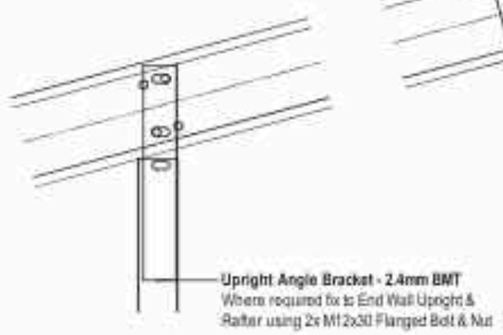


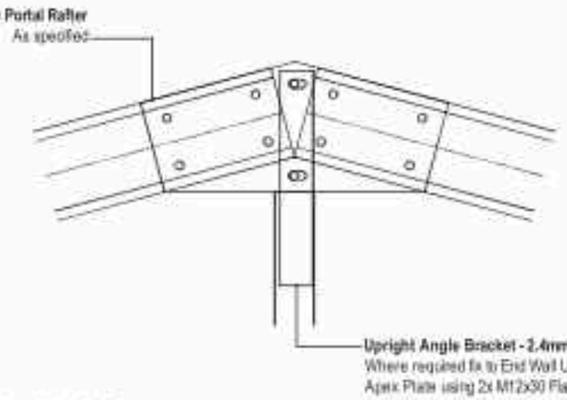
3 C150 APEX JOINT
SCALE 1:20

2 C150 KNEE JOINT
SCALE 1:20



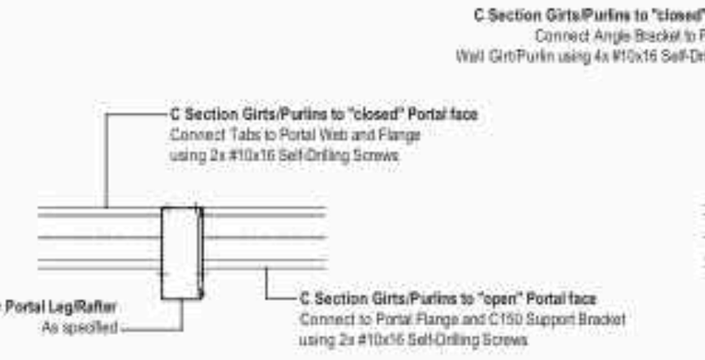


5 UPRIGHT TO RAFTER CONNECTION
SCALE 1:10

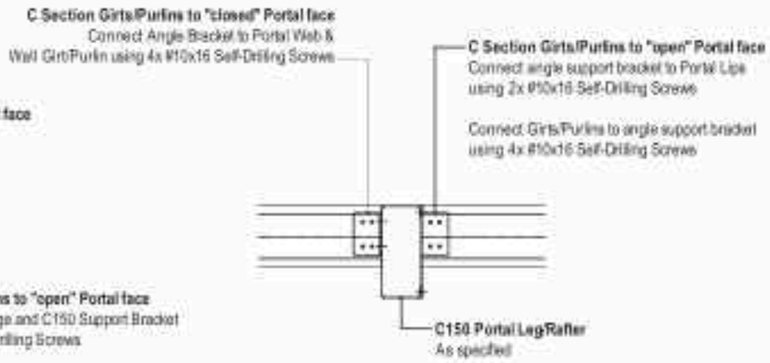


4 UPRIGHT TO APEX CONNECTION
SCALE 1:10

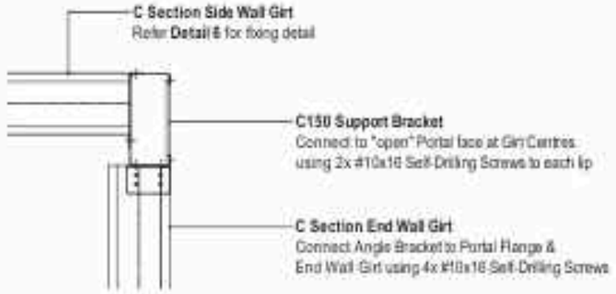
- C SECTION PROFILES (INCL. BOXING)
SCALE 1:20



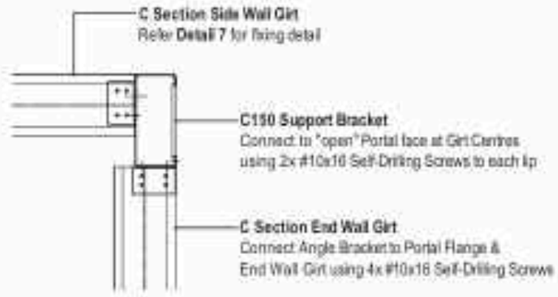
6 GIRT/PURLIN TABBED CONNECTION
SCALE 1:10



7 GIRT/PURLIN BRACKET CONNECTION
SCALE 1:10



8 END WALL GIRT CONNECTION
SCALE 1:10



9 END WALL GIRT CONNECTION
SCALE 1:10

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066511

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Gable Range - Design

Frame Details SD-P01

Sheet 12 of 18

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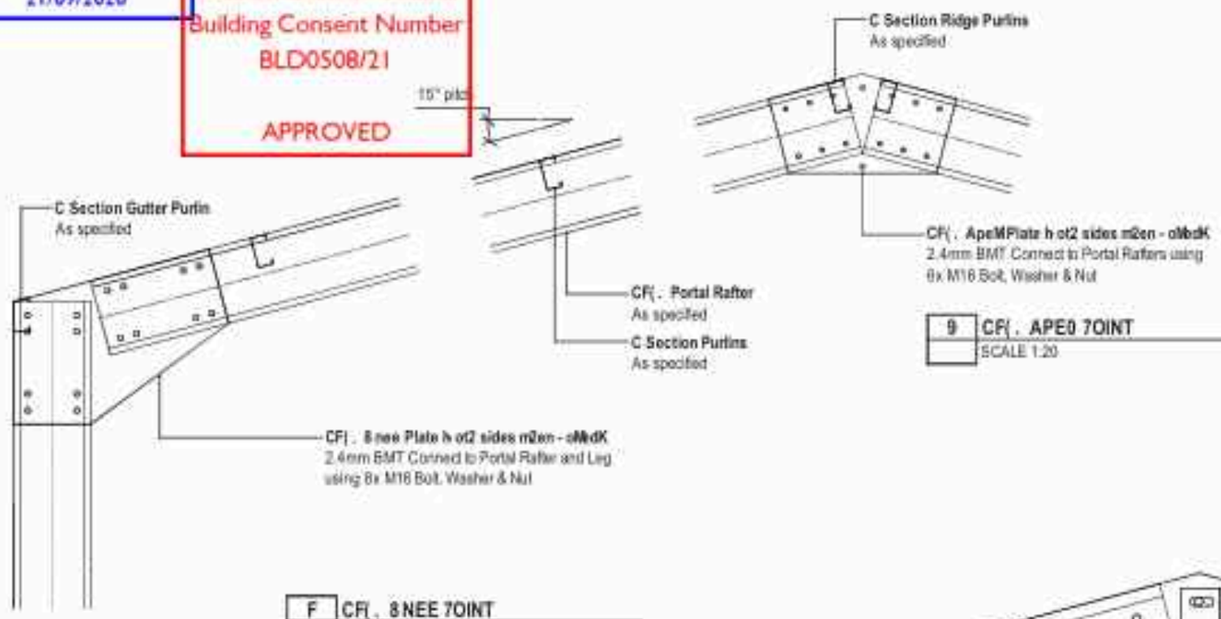

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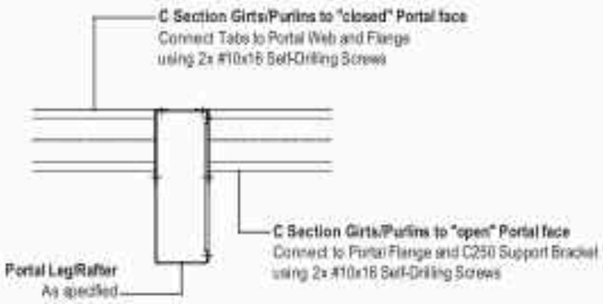

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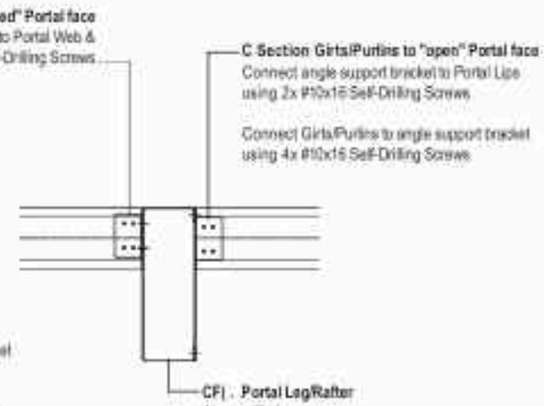

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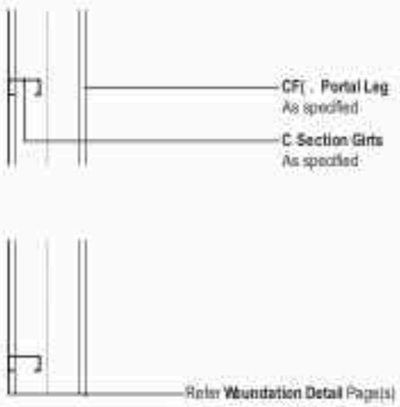
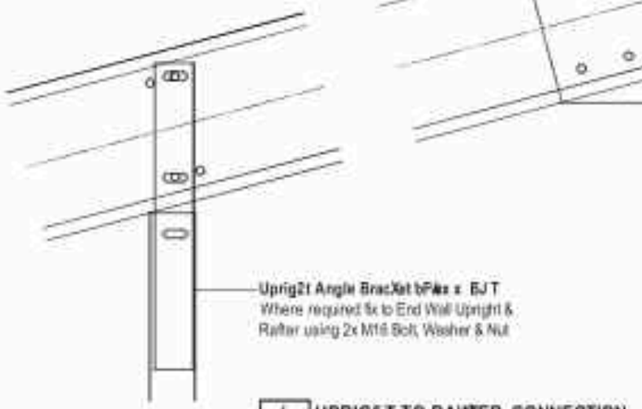
SCALE 1:20





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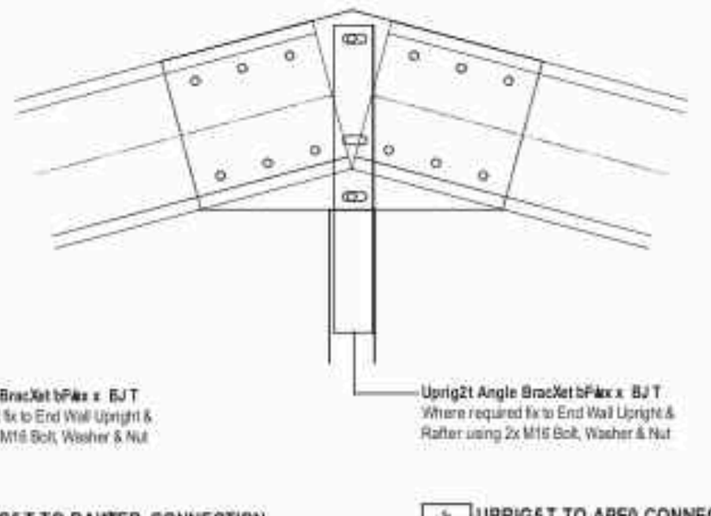
SCALE 1:10



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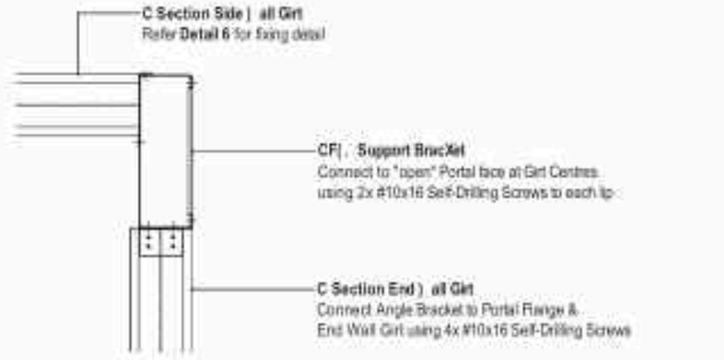
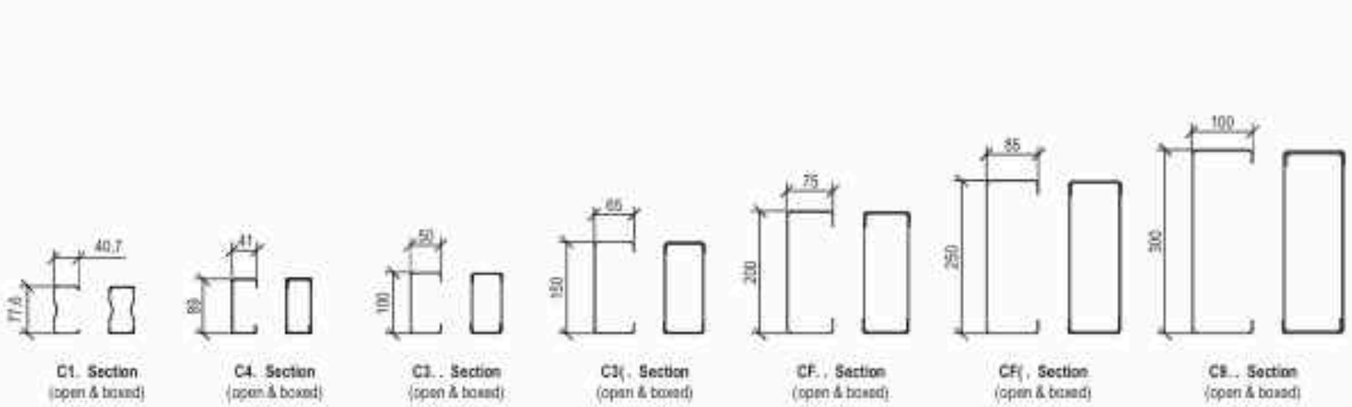
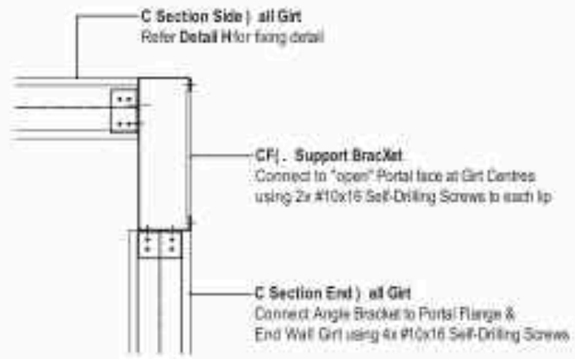


1 END) ALL GIRT CONNECTION
SCALE 1:10



b C SECTION PROWLES !INCLwBO0INGK
SCALE 1:20



4 END) ALL GIRT CONNECTION
SCALE 1:10

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Gable Range - Design

Frame Details SD-P00

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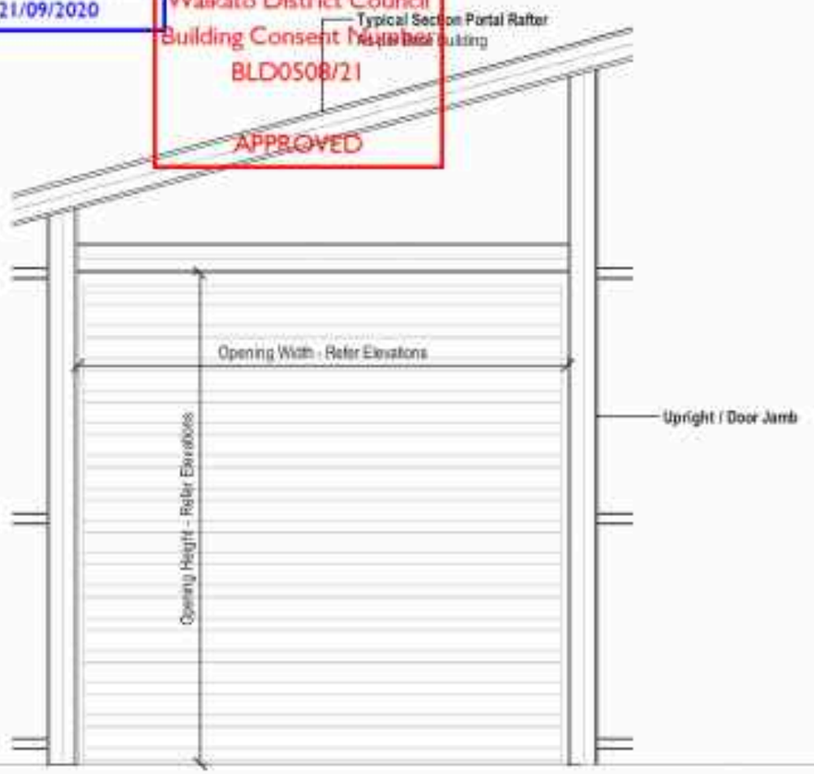
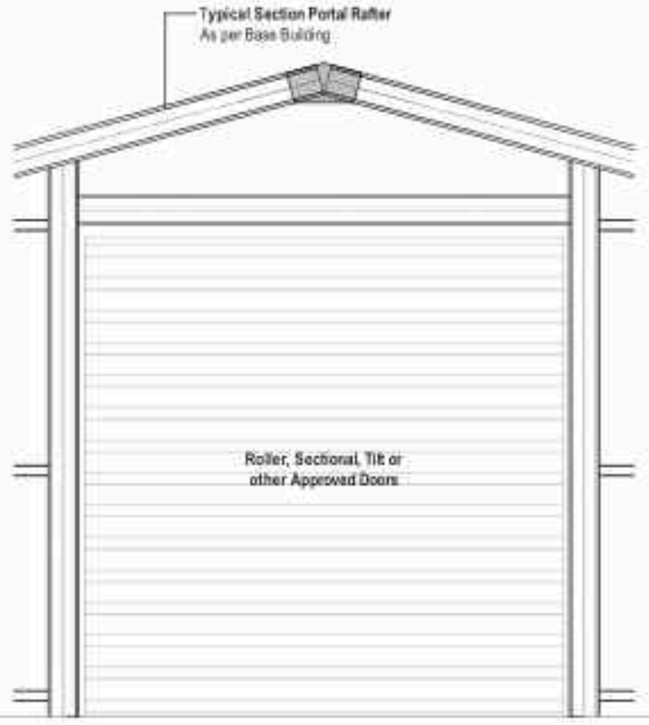
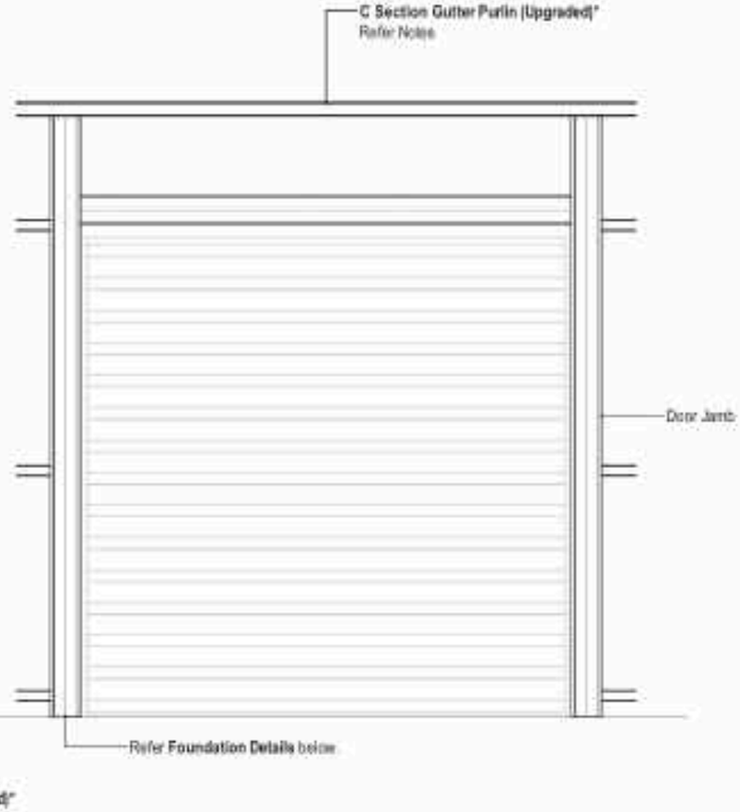
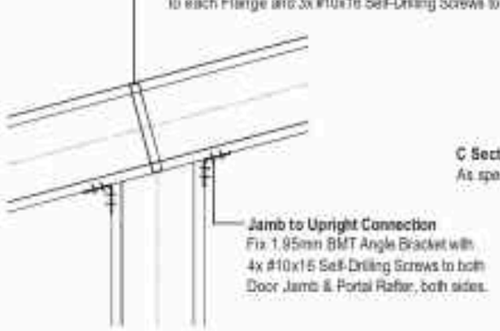
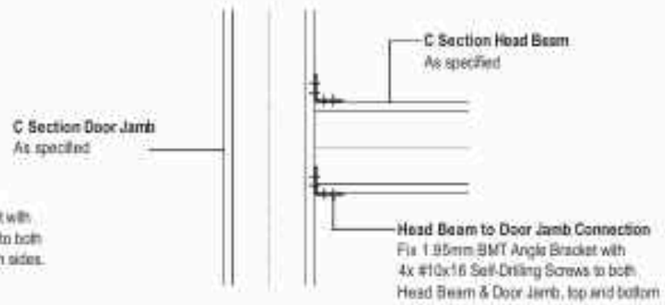




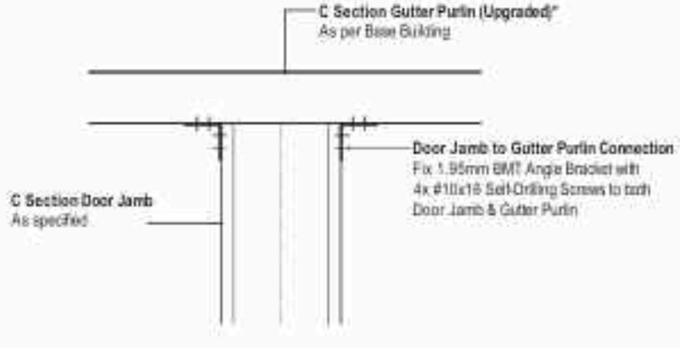




- DOOR JAMB/UPRIGHT TO RAFTER CONNECTION
SCALE 1:10



- HEAD BEAM TO DOOR JAMB CONNECTION
SCALE 1:10



- HEAD BEAM TO GUTTER PURLIN CONNECTION
SCALE 1:10



- GIRT TO DOOR JAMB CONNECTION
SCALE 1:10



C150 Section Door Jambs
(open or boxed options)

- C150 Jamb to Foundation Connections
SCALE 1:10

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066511

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Mark Gasson
380 Churchill East Rd
Rangiriri 3782
0275735775

Gable Range - Design

Major Openings SD-M01

Sheet 14 of 18

Document Set ID: 2888968
Version: 2, Version Date: 03/11/2020

Print Date: 6 November 2020, 1:26 pm

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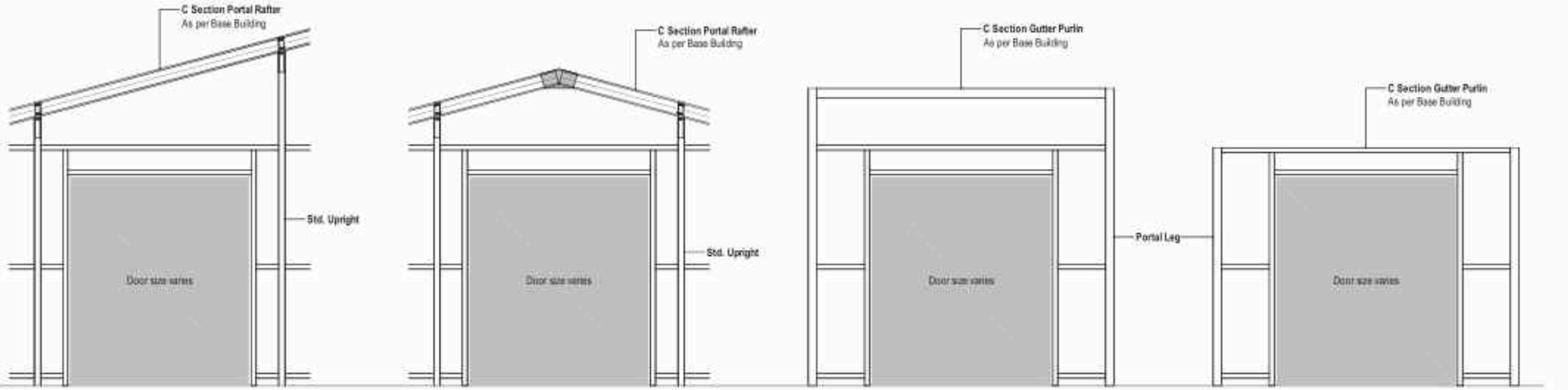
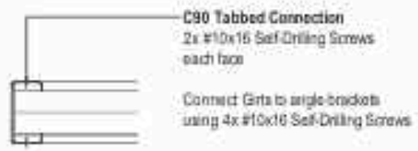
Full Application Received
21/09/2020

Waikato District Council
Building Consent Number
BLD0508/21

APPROVED







-	C SECTION TABBED CONNECTION
	SCALE 1:10

-	C SECTION NOTCHED CONNECTION
	SCALE 1:10

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066511

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0275735775

Gable Range - Design

Minor Door Openings SD-M05

Sheet 15 of 18

Document Set ID: 2888968
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Waikato District Council
Building Consent Number
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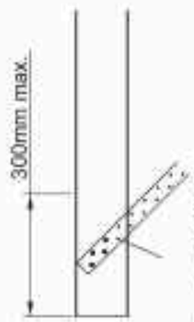
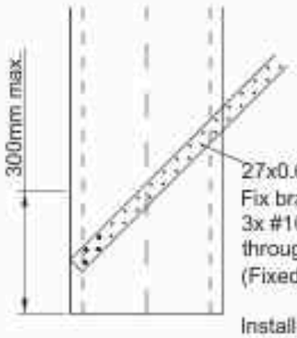


27x0.6mm G550 Strip Brace
Fix bracing to C Section web using
3x #10 Self-Drilling Screws each end
through braces pre-punched holes
(Fixed anywhere within specified region)

Install OptionaStrip Brace Tensioner (not shown)
as per manufacturer recommendations

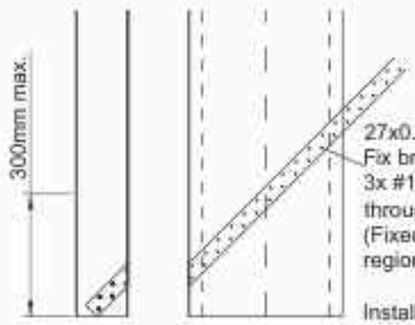
\- SINGLE STRIP BRACE FIXING
SCALE 1:10



27x0.6mm G550 Strip Brace
Fix bracing to C Section web using
3x #10 Self-Drilling Screws each end
through braces pre-punched holes
(Fixed anywhere within specified region)

Install OptionaStrip Brace Tensioner (not shown) as per manufacturer
recommendations

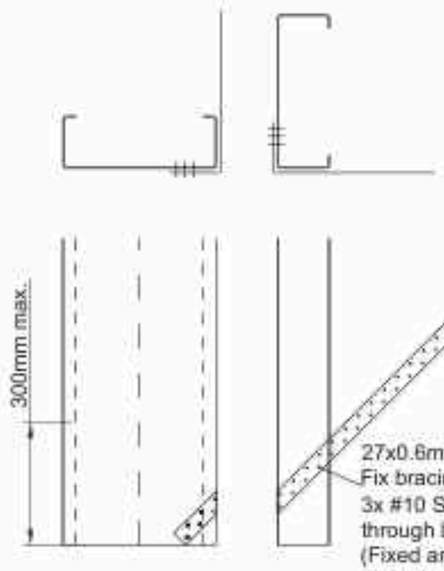
\- SINGLE STRIP BRACE FIXING
SCALE 1:10



27x0.6mm G550 Strip Brace
Fix bracing to C Section web using
3x #10 Self-Drilling Screws each end
through braces pre-punched holes
(Fixed anywhere within specified region)

Install OptionaStrip Brace Tensioner
(not shown) as per manufacturer
recommendations

\- SINGLE STRIP BRACE FIXING
SCALE 1:10



27x0.6mm G550 Strip Brace
Fix bracing to C Section web using
3x #10 Self-Drilling Screws each end
through braces pre-punched holes
(Fixed anywhere within specified region)

Install OptionaStrip Brace Tensioner (not shown) as per manufacturer
recommendations

\- SINGLE STRIP BRACE FIXING
SCALE 1:10

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066011

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Mark Gasson
380 Churchill East Rd
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0275735775

Gable Range - Design

Bracing Details

Sheet 16 of 18

Document Set ID: 2888968
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Building Consent Number
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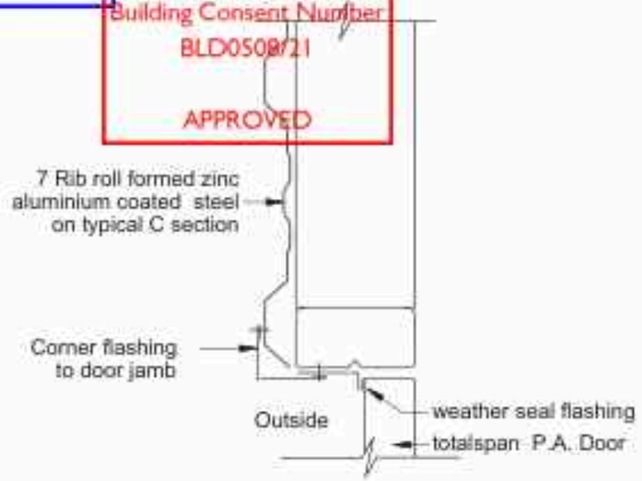
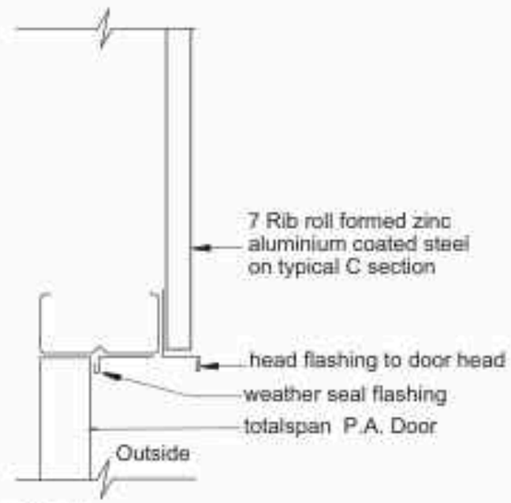
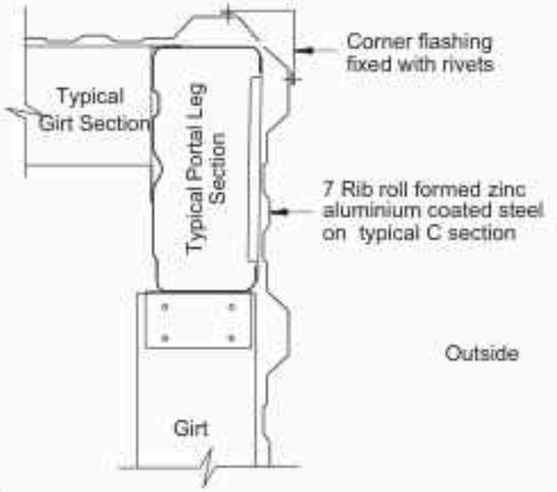


- P.A. Door Jamb Detail
SCALE: NTS



- P.A. Door Head Detail
SCALE: NTS



- External Corner
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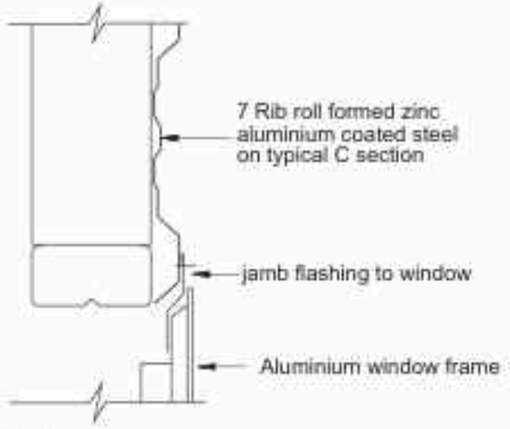
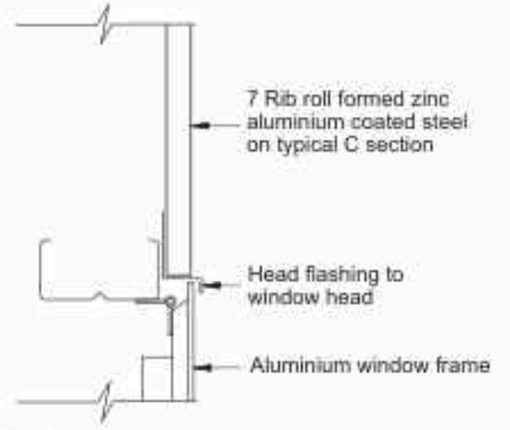
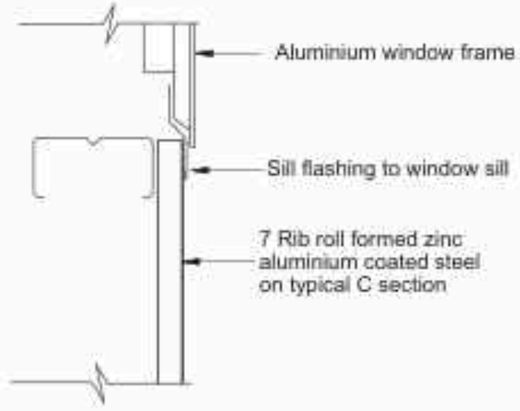


- Window Jamb Detail
SCALE: NTS



- Window Head Detail
SCALE: NTS



- Window Sill Detail
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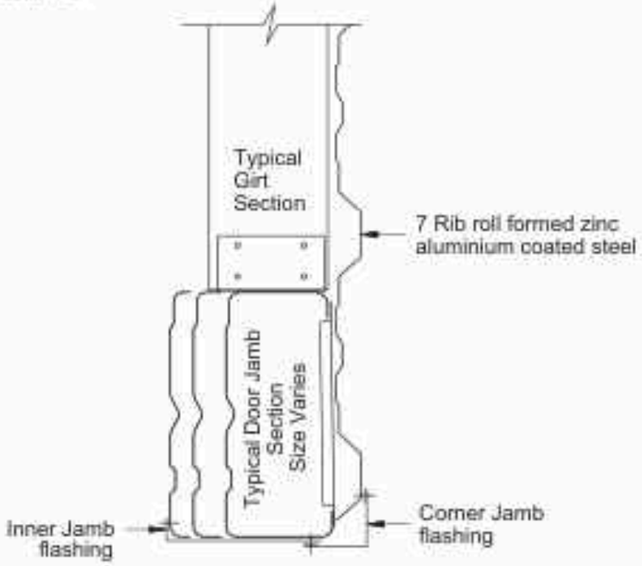
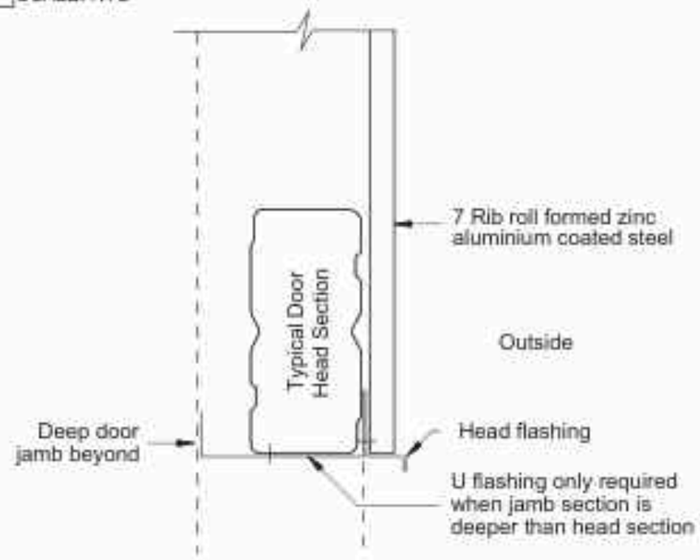


- Main Access Door Jamb Detail
SCALE: NTS



- Main Access Door Head Detail
SCALE: NTS

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066011

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0275735775

Gable Range

Flashing Details

Sheet 17 of 18

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Building Consent Number
BLD0508/21

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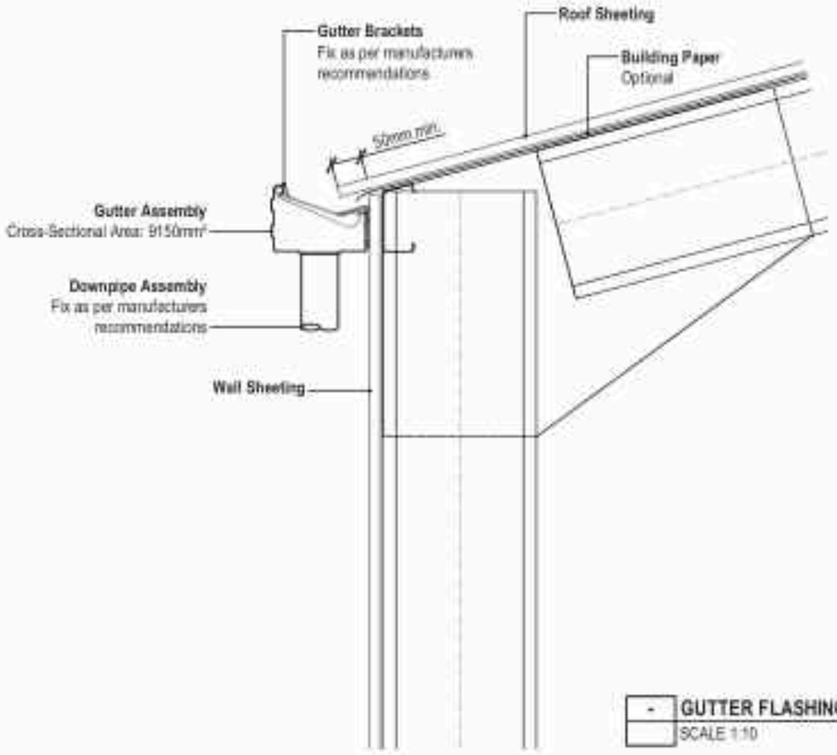
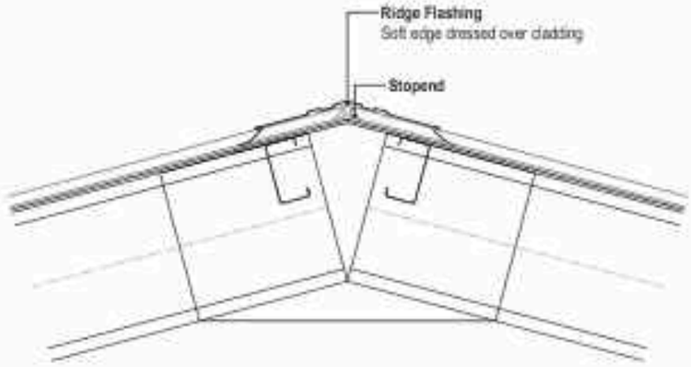
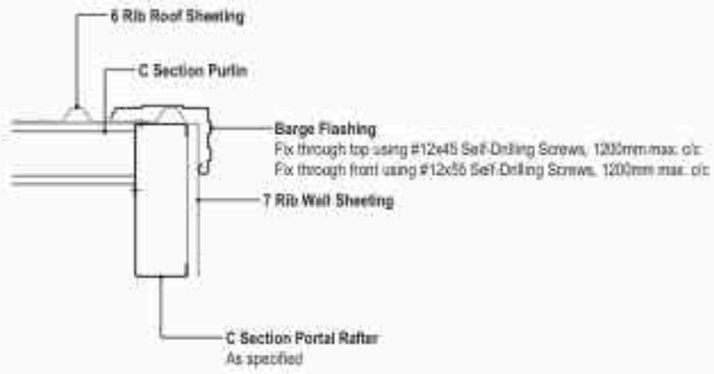


- GUTTER FLASHING DETAIL
SCALE 1:10



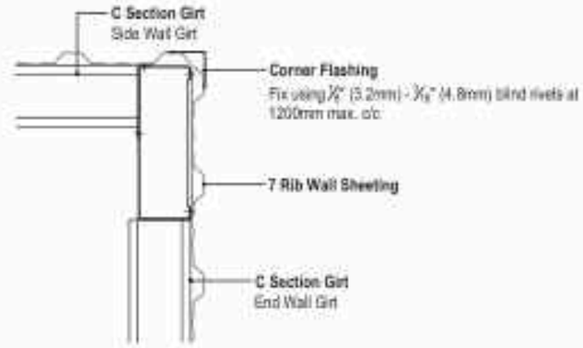
- RIDGE FLASHING DETAIL
SCALE 1:10



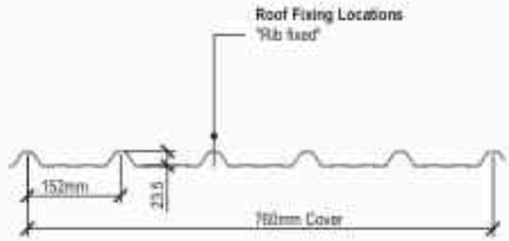
- BARGE FLASHING DETAIL
SCALE 1:10

Important Design Notes

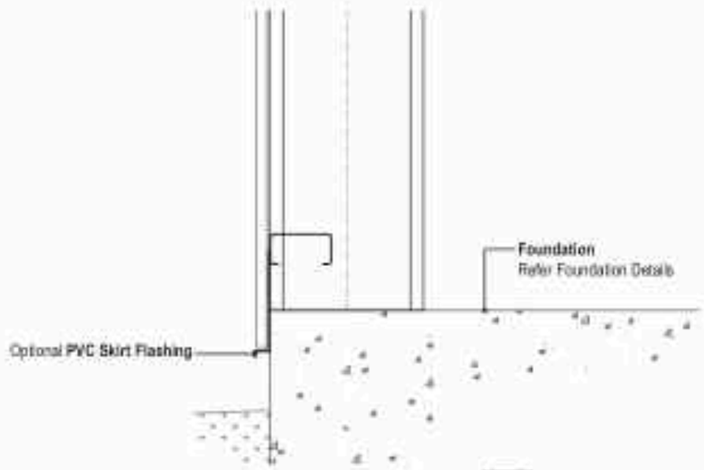
1. Roof and Wall Sheeting shall be 0.35 - 0.55 B.M.T. AZ150 Coating, G550 Steel only. Alternative claddings (excluding light-weight translucent panel i.e. Ampelite), require an independent specific design certificate for the scope of work.
2. Wall Cladding to have minimum 50mm cover and 40mm min. clearance to ground level
3. Fixing pattern as per E2/AS1 or NZ MRM - NZ Metal Roof and Wall Cladding Code of Practice
4. Flashings shall be fixed as per manufacturers recommendations
5. Additional options may include:
   - 5.1. Snow straps for gutters
   - 5.2. Gutter purlin flashing
   - 5.3. Building paper in walls



- CORNER FLASHING DETAIL
SCALE 1:10



- 6 RIB ROOF CLADDING PROFILE
SCALE 1:10



- SKIRT FLASHING DETAIL
SCALE 1:10



- 7 RIB WALL CLADDING PROFILE
SCALE 1:10

TOTALSPAN
STEEL BUILDINGS

Project Ref: 2066511

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Gable Range

Flashing Details SD-E04

Sheet 18 of 18

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Building Consent Number
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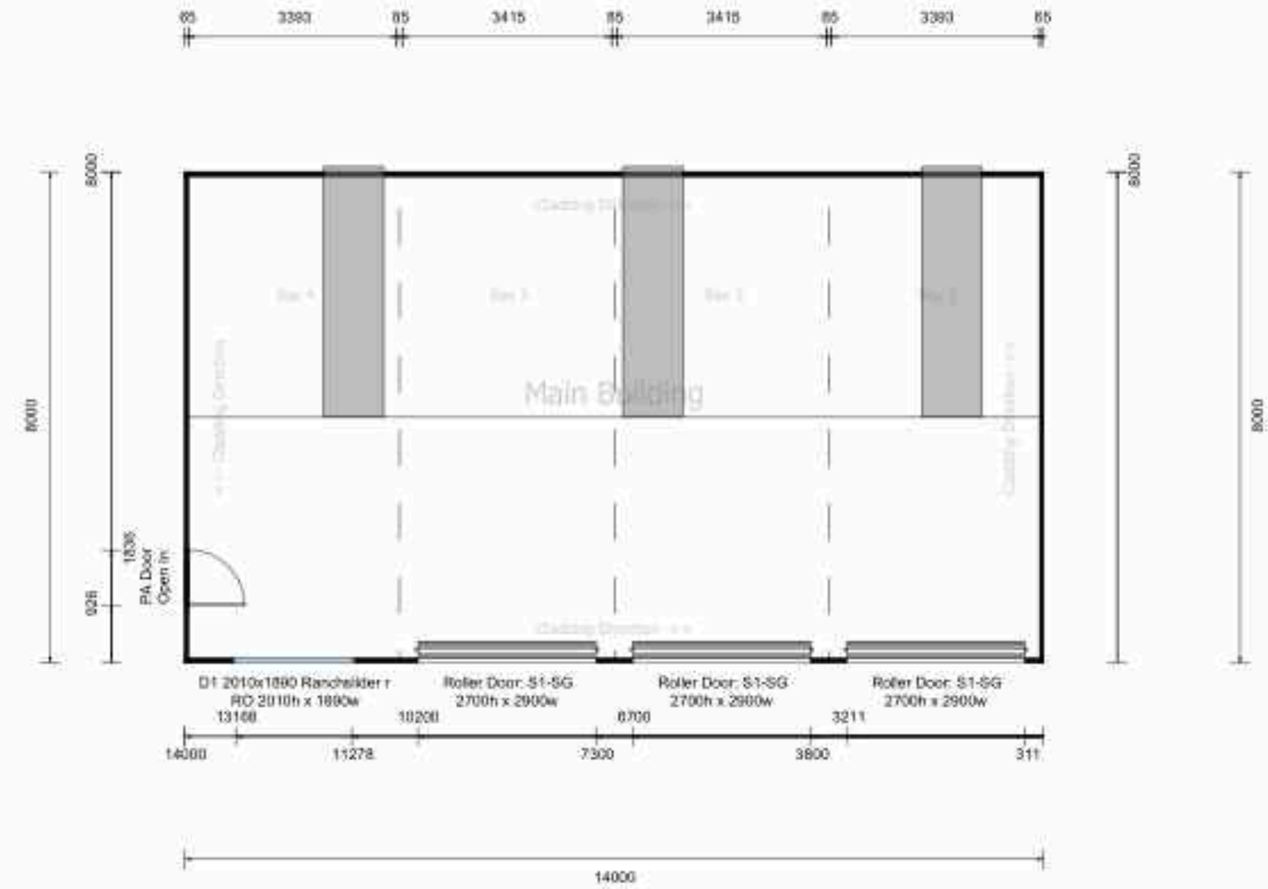

SBC
Right
Rear
Front
Left

VIEWS
2
3
1
4

Project No.: 2066511

TOTALSPAN
STEEL BUILDINGS
WHO CANT TOTALSPAN!

Totalspan Counties
Paerata Post Centre, Pukekohe 2336
09 238 7280
counties@totalspan.co.nz

For: Mark Gasson
landmgasson@gmail.com
Rangariri
3782

Scale: 1:100

ARCHITECTURAL DETAILS
FLOOR PLAN

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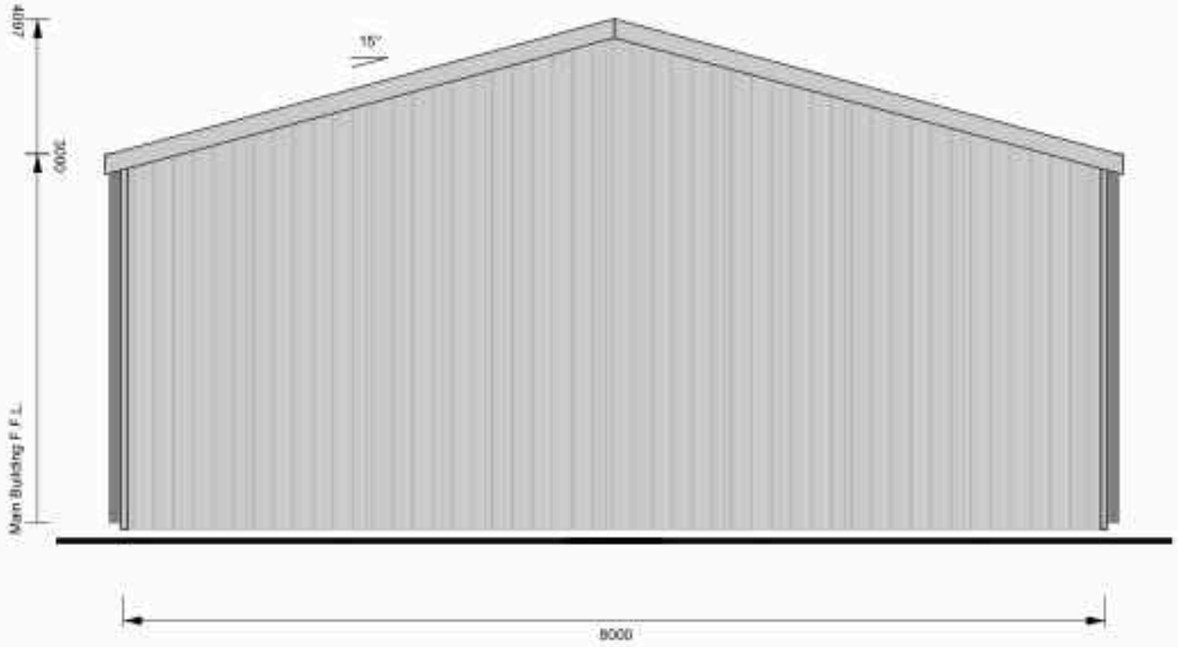
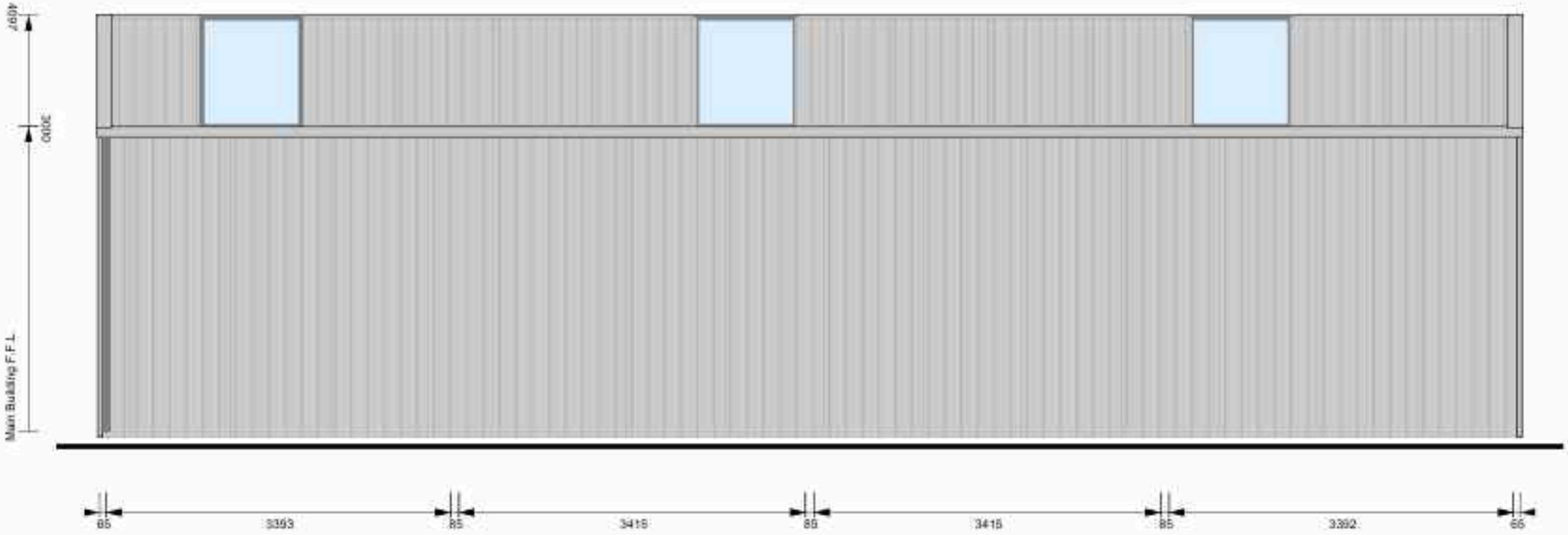
VIEW 1



VIEW 2



Project No.: 2066511

Totalspan Counties
Paerata Post Centre, Pukekohe 2336
09 238 7280
counties@totalspan.co.nz

For: Mark Gasson
landmgasson@gmail.com
Rangariri
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Building Consent Number
BLD0508/21

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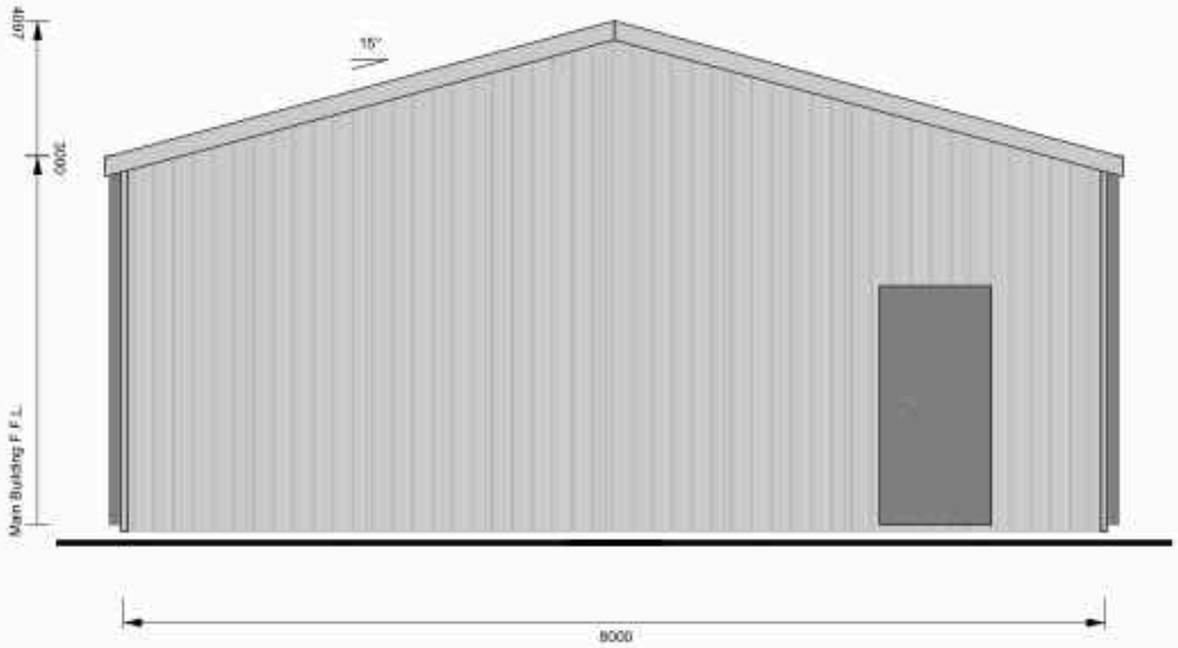
VIEW 3



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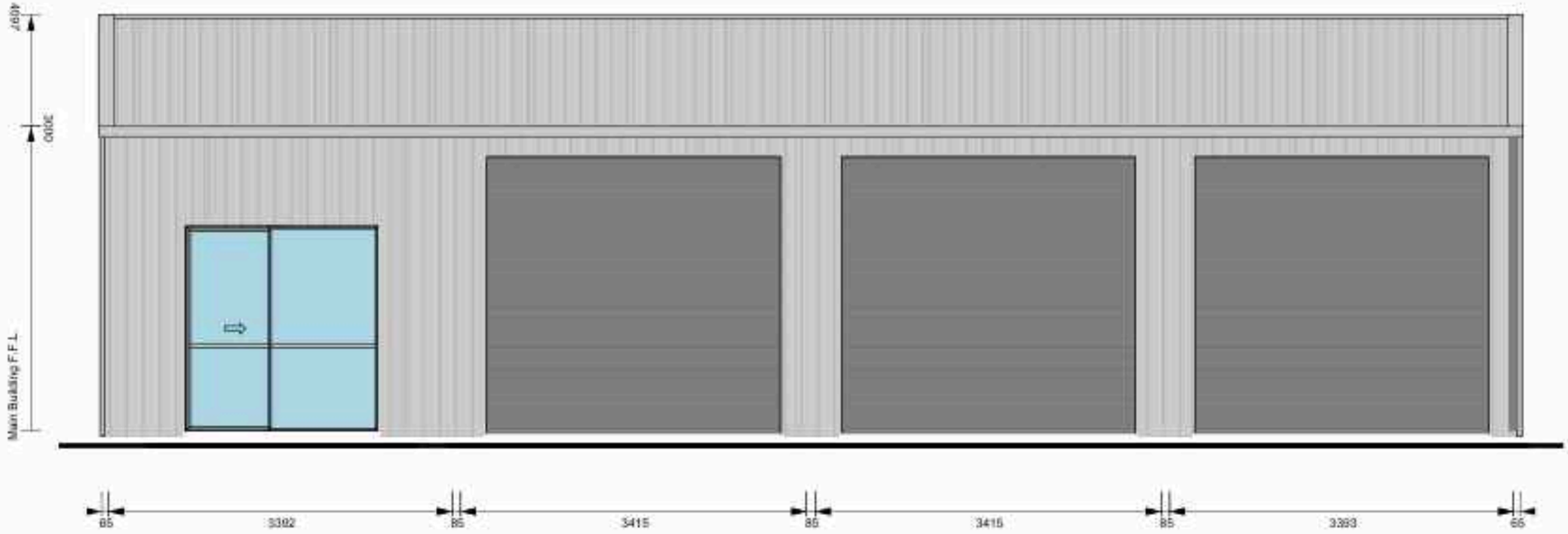

Project No.: 2066511

TOTALSPAN
STEEL BUILDINGS
WHO CANT TOTALSPAN!

Totalspan Counties
Paerata Post Centre, Pukekohe 2336
09 238 7280
counties@totalspan.co.nz

For: Mark Gasson
landmgasson@gmail.com
Rangariri
3782

Scale: 1:50

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Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

Form 7
CODE COMPLIANCE CERTIFICATE
Section 95 Building Act 2004

The Building

Street address of building:	380 Churchill East Road TE KAUWHATA
Legal description of land where building is located:	LOT 13 DP 488718
Valuation number:	04390/284.06
Property number:	2018152
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A
Current, lawfully established, use:	Detached Dwellings
Number of occupants per level and per use if more than 1:	N/A
Year first constructed:	2025

The Owner

Name of owner: M B Gasson, L M Gasson
Mailing address: 380 Churchill East Road, RD 2, Te Kauwhata 3782

Street address/registered office: N/A

Phone numbers:

Landline:	N/A	Mobile:	027-5735775
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the building consent authority

Name: Bennett Draughting
Mailing address: PO Box 75529, Manurewa, Auckland 2243

Phone numbers:

Landline:	N/A	Mobile:	027-2746127
Facsimile number:	N/A	Email address:	rhbennett@xtra.co.nz

Building Work:

Project:	**Minor dwelling**
Building consent number:	**BLD1107/25**
Issued by:	**Waikato District Council**

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent

Signature:



Name: **Gareth Roberts**
Position: Building Inspector
On behalf of: Waikato District Council **Date:** **29 September 2025**

Document Set ID: 6856860
Version: 1, Version Date: 09/09/2025

Print Date: 6 November 2026, 1:26 pm

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Waikato DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

Form 5
BUILDING CONSENT NO: BLD1107/25
Section 51, Building Act 2004
ISSUED BY: WAIKATO DISTRICT COUNCIL

The Building

Category: RES1

Street address of building: 380 Churchill East Road TE KAUWHATA
Legal description of land where building is located: LOT 13 DP 488718
Valuation Number: 04390/284.06
Property Number: 2018152
Building name: N/A
Location of building within site/block number: N/A
Level/unit number: N/A

The Owner

Name of owner: M B Gasson, L M Gasson
Mailing Address: 380 Churchill East Road, RD 2, Te Kauwhata 3782
Street address/registered office: N/A
Phone numbers:

Landline:	N/A	Mobile:	021-744453
Daytime:	N/A	After hours:	N/A
Facsimile number:	N/A	Email address:	landmgasson@gmail.com
Website:	N/A		

First point of contact for communications with the Building Consent Authority

Full Name of Person: Bennett Draughting
Mailing Address: PO Box 75529, Manurewa, Auckland 2243
Phone numbers:

Landline:	09-2966369	Mobile:	027-2746127
Daytime:	09-2966369	Fax number:	N/A
Email address:	rhbennett@xtra.co.nz		

Building Work

The following building work is authorised by this building consent:

Minor dwelling

Project type:	Dwelling	$180,000
Total Value of work:		$180,000

This building consent is issued under Section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Document Set ID: 8256466
Version: 1, Version Date: 03/06/2025
Print Date: 6 November 2026, 1:26 pm

Waikato District Council
Building Consent No: BLD1107/25

This Building Consent is subject to the following conditions:

Section 90 - Inspections:

When booking your inspections please phone (07) 824 8633 or (0800) 492 452 and quote your building consent number. Whilst we will endeavour to provide inspections in a timely manner, please provide **at least 48 hours notice** prior to any of the following mandatory inspections. *(Click here for more information)*

- Excavation, Siting and Foundation (prior to pouring concrete) - *Owner/builder to locate boundary pegs prior to council carrying out a foundation/siting inspection.*
- Pre-floor building (prior to pouring concrete)
- Pre-wrap / Structural Framing (pre-wrap)
- Exterior Cladding
- Pre-line
- Post-line
- Drainage
- Final Building Inspection Domestic (Code Compliance Certificate) to be called for - *Some final inspections require Council to have access into the building. If no-one is onsite to allow access to the interior of the building it is likely the inspection will fail.*
- CCC Final Document Review

The above inspections have been charged for in advance. If you exceed the amount of charged inspections, any additional inspections will be collated and charged for at the conclusion of the job.

The following documents from third parties need to be provided to the BCA to certify that the building work complies with the plans and specifications and in order for Council to issue a CCC: *(Click here for more information on Producer Statements & Memoranda)*

Producer Statements:

- Sand pad / Sub grade (PS 4)
- Wastewater disposal system (PS 3 and PS 4)
- Stormwater disposal system (PS 3 and PS 4)

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Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Certificates / Memorandums / Statements / Letters:

- Code Compliance Certificate application
- Record of Works
  - Foundation Specialist
  - Carpenter
  - Roofer
- Waterproofing systems (internal)
- Thermal performance certificate from joinery manufacturer for thermally broken aluminium joinery
- Electrical Compliance Certificate
- Plumbing pressure test
- As laid drainage plan

Copies of all the above documentation with accompanying site reports/records must be provided to the Building Consent Authority. Please email all required documents to building.enquiries@waidc.govt.nz in one pdf document in preparation for the final CCC inspection.

All required documents are to be submitted and approved prior to final inspection being passed.

Compliance Schedule:

- A compliance schedule is not required for the building.

Attachments:

Copies of the following documents are attached to this building consent:

✓ Project Advisory Notes

☐ Development contribution notice

Document Set ID: 8256466
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Attachments

Project Advisory Notes:
Please read the following:

- Owner/Builder MUST locate boundary pegs prior to Council carrying out a foundation inspection.
- Plumbing preline inspection shall be required.
- A backflow preventor is to be installed to comply with G12 AS1 Table 2.
- Please supply Plumbers and Drainlayers name.
- Installer of the wastewater treatment system to provide a Producer Statement Construction / Construction Review.
- Stormwater shall be disposed of in an approved manner.
- Domestic smoke alarms must be installed before a final inspection is requested. The number of alarms required and their location in the dwelling is to be in accordance with the New Zealand Building Code.

Lapsing of a building consent:
A building consent lapses and is of no effect if the building work to which it relates does not commence within:

a) 12 months after the date of issue of the building consent or
b) Any further period that the building consent authority may allow.

The granting of this building consent, with or without a certificate under section 37 of the Building Act 2004, does not remove the need to obtain a resource consent if one is required under the Waikato District Plan.

Code Compliance Certificate will be issued after your final inspection has been carried out and passed and all documentation has been received and approved. (*Click here for your CCC application form).*

Restricted Building Work:

- This Building Consent involves Restricted Building Work that must be undertaken or supervised by a Licensed Building Practitioner that holds the appropriate license class.
- If you have not already done so, you are required to notify Council in writing, the name of every Licensed Building Practitioner who is going to be engaged to carry out the Restricted Building Work prior to work commencing. *LBP notification forms can be found on www.buildwaikato.co.nz – Application Forms & Checklists.*
- You will not be able to book inspections for Restricted Building Work until written notification regarding the Licensed Building Practitioners has been received and approved by Council.

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This information is provided by the Waikato District Council

- You are required to obtain a Record of Building Work Memorandum from all the Licensed Building Practitioners involved, detailing the Restricted Building Work they have completed. The Record of Building Work Memorandum is to be attached to the application for the Code Compliance Certificate.

Signature:



Name: **Anne Saunders**
Position: **Building Administrator**

On Behalf of: **Waikato District Council**

Date: **30 June 2025**

Document Set ID: 8256466
Version: 1, Version Date: 03/06/2025
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INSPECTION - Producer Statement / Memoranda / Certificates Checklist

ASSESSMENT OF DOCUMENTATION RECEIVED **BC Number:BLD1107/25**

Key for statement types: As-laid drainage (ALD) Cladding (CL) Electrical Cert (EL) Electrical Plan (EP) Engineer / Designer (PS4)
Gas Cert (GS) Glazing (GL) Insulation (IN) Pressure test (P) Smoke alarm (SM) Sprinklers (SP)
Surveyors confirmation of height / siting (SV) Waterproofing (WP) Solar systems (S) Truss layout (TR) Under floor / tile heating (H)
Other (O) *[specify]*:.....

Record the Author's Name *(Not the company name). If author is providing more than one document, list and assess each document)*	Statement type / Header **See key above**	**Decision Regarding Document Contents** (✓ / Y / P = Pass × / N / F = Fail I / - / NA = Not Applicable)						**Decision Regarding Author Registration** (Check registers on line & attach printout)					**Reason for decision** ✓ / Y / P = content adequate / author approved / other reason × / N / F = content inadequate / author not approved / other *[specify other reasons below #]*	**Outcome of decision** Accept document OR Reject document
		Site Address / Legal description	Insurance	Date	B. Code (parts)	Work Identified	Name & signature	CPEng register (Engineers)	NZRAB register (Reg. Architects)	EWRB register (Energy work)	PGD register (Plumbers, Drainlayers)	Cluster register		
Roger Tapp	PS3	P	NA	P	P	P	P	NA	NA	NA	NA	NA	P	P
Surasat Boongapim	PS3	P	NA	P	P	P	P	NA	NA	NA	NA	NA	P	P
S Stephens	GAS	P	NA	P	P	P	P	NA	NA	NA	P	NA	P	P
S Stephens	PS3	P	NA	P	P	P	P	NA	NA	NA	P	NA	P	P
Bruce Gasson	P	P	NA	P	P	P	P	NA	NA	NA	P	NA	P	P
S Stephens	ALD	P	NA	P	P	P	P	NA	NA	NA	P	NA	P	P
Martin Carr	EL	P	NA	P	P	P	P	NA	NA	P	NA	NA	P	P

 # Reason for decision *(Use this area for "other" statement types, or for giving reasons for decisions where a statement is not complete or an author is not registered, but you are accepting their statement)*

(NOTE: Electrical Certificates: Is it signed and dated?)

Document Set ID: 8858890
Version: 1, Version Date: 08/09/2025
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Technokolla Waterproofing and Tiling System

WATERPROOFING PRODUCT WARRANTY

PROJECT	PROPERTY ADDRESS	380 Churchill East Road
	BUILDING CONSENT	Residential
	APPLICATORS NAME	Surasit Toongapim
APPLICATOR	COMPANY	SB Tiling
	PHONE NUMBER	022-3136591
	EMAIL ADDRESS	surasitb27@hotmail.com
	TECHNOKOLLA APPLICATOR NO.	3014
	(IF APPLICABLE) COUNCIL AUTHOR NO.	
	INSTALLATION DATE	3/09/2025

PRODUCTS USED ON PROJECT	
TECHNOKOLLA RASOGUM BRANZ Appraisal 942	☑
TECHNOKOLLA RASOLASTIK ADV BRANZ Appraisal 941 & 942	☐
TECHNOKOLLA RASOLASTIK EVO BRANZ Appraisal 941 & 942	☐

AREAS WATERPROOFED (Please specify which products were used in each area)

Applied two top coats in shower area.

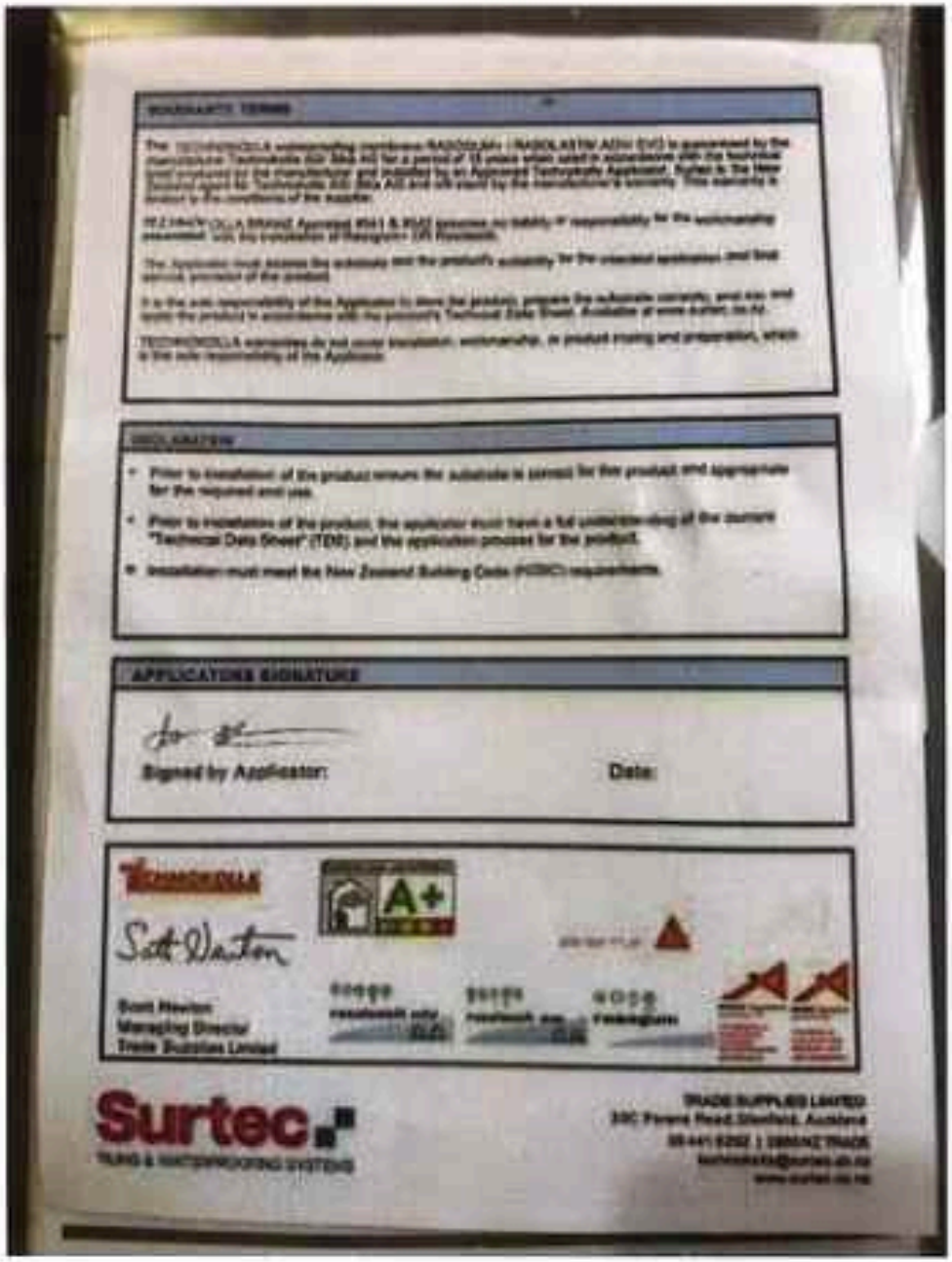
TRADE SUPPLIES LIMITED

Document Set ID: 7256410
Version: 1, Version Date: 03/11/2025

Print Date: 6 November 2026, 1:26 pm

Document Set ID: 6492090
Version: 1, Version Date: 25/09/2025

This information is provided by the Waikato District Council



WARRANTY TERMS

The TECHNOSEAL waterproofing membrane RADOLAY / RADOLAY® ADH SYS is guaranteed by the manufacturer Technokolla (NZ) 2004 Ltd for a period of 10 years when used in accordance with the technical specifications for the manufacturer and installed by an Approved Technokolla Applicator. Refer to the New Zealand agent for Technokolla (NZ) 2004 Ltd and the warranty from the manufacturer's warranty. This warranty is subject to the conditions of the supplier.

TECHNOKOLLA (World Approved 2001) & (NZ) assumes no liability or responsibility for the workmanship associated with the installation of Radolay® / SR Membrane.

The Applicator must assess the substrate and the product's suitability for the intended application and final service condition of the product.

It is the sole responsibility of the Applicator to store the product, prepare the substrate correctly, and use and apply the product in accordance with the product's Technical Data Sheet. Available at www.surtec.co.nz

TECHNOKOLLA warranties do not cover installation, workmanship, or product mixing and preparation, which is the sole responsibility of the Applicator.

DECLARATION

- Prior to installation of the product ensure the substrate is correct for the product and appropriate for the required end use.
- Prior to installation of the product, the applicator must have a full understanding of the current "Technical Data Sheet" (TDS) and the application process for the product.
- Installation must meet the New Zealand Building Code (NZBC) requirements.

APPLICATORS SIGNATURE

Signed by Applicator:

Date:

TECHNOKOLLA

Scott Weston

Scott Weston
Managing Director
Trade Supplies Limited

Surtec
TILING & WATERPROOFING SYSTEMS

TRADE SUPPLIES LIMITED
330 Penrose Road Stonefield, Auckland
09 441 8202 | 0800NZ TRADE
www.surtec.co.nz

Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

Document Set ID: 6492090
Version: 1, Version Date: 25/09/2025

This information is provided by the Waikato District Council

Customer	Mark and Lisa Gasson	**Certificate Number**	COCPSC0000063
Installation Location	380 Churchill East Road, Rangiriri, 3782, Te Kauwhata	**Job ID**	Sleep out and Garage

Certificate of Compliance

Date work commenced:
Wed 06 of Aug 2025

Date work completed:
Fri 12 of Sep 2025

Description of Work: 18 x power outlets and 19 x lights

Risk:
The work is General Risk

This work has been done in accordance with:
Part 2 of AS/NZS 3000

Supply system this work is suitable for:
230/400V MEN system

Has this work been done in accordance with a certified design?	✖
Was a Supplier's Declaration of Conformity relied on this work?	✔
Were Manufacturer's Instructions relied on in this work?	✖
Has an Earthing System that is correctly rated	✔
Contains fittings which are safe to connect to a power supply	✔
Satisfactorily tested in accordance with Electricity (Safety) Regulations 2010	✔
The entire installation is safe to connect.	

Supervised workers **Martin Carr**

I confirm that I am satisfied that the work detailed in this Certificate of Compliance has been done lawfully and safely, and that the information contained in this certificate is correct and accurate.

Certificate issued by: Martin Carr
Registration number: E7281
Date: Wed 17 of Sep 2025

THIS IS AN INPORTANT DOCUMENT AND SHOULD BE RETAINED

This information is provided by the Waikato District Council

Customer	Mark and Lisa Gasson	**Certificate Number**	COCESC0000063
Installation Location	380 Churchill East Road, Rangiriri, 3782, Te Kauwhata	**Job ID**	Sleep out and Garage

Electrical Safety Certificate

The entire installation is safe to connect.

Date work connected:	Fri 12 of Sep 2025
Description of work:	18 x power outlets and 19 x lights

I confirm that the part installation described in this Electrical Safety Certificate is connected to a power supply and is safe to use.

Certificate issued by:	Martin Carr
Registration number:	E7281
Date:	Wed 17 of Sep 2025

THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

This information is provided by the Waikato District Council

Document Set ID: 6482090
Version: 1, Version Date: 26/09/2025



Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

nulook HUNTLY windows & doors

window & glass association nz member

Statement of Thermal Performance for Windows & Doors

Date of Issue 31.8.25

Name, Address, and Email contact of Manufacturer / Supplier

Aluminium Industries Ltd T/a Nulook Huntly

402 Great South Road

Huntly 3700 email: nulookhuntly@xtra.co.nz

Project / Site Details - including Address

Bruce Gasson -380 Churchill Road East-Rangiriri

Consent No. 1107/25 **Climate Zone** 2

I / We declare that the following,

- [x] 1) Glazed windows & doors, **and/or**
- [ ] 2) Opaque doors, **and/or**
- [ ] 3) Skylights.

supplied by us to this Project / Site, achieve a **Construction R-value** as stated below,

Construction R-value = **R** 0.46 $m^2.K/W$

*(**Note** – The Construction R-value shall be no less than the value specified within the Consent listed above.)*

This R-value has been determined using one of the following methods,

- [x] i) The Schedule Method and/or Selected from Table E.1.1.1,
- [ ] ii) Derived using a WEERS calculator,
- [ ] iii) Calculated in accordance with H1/ ____. *(Confirm H1/AS2, VM1, or VM2)*

(Supporting documentation for methods will be supplied on request.)

Name Roger Tapp **Signature** Roger Tapp

Window & Glass Association Membership No. 226

Document Set ID: 8858090
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Copy of Table E.1.1.1 from H1/AS1, Fifth Edition, Amendment 1...

TABLE E.1.1.1: Construction R-values (R_{window}) of selected generic vertical windows and doors

Paragraph E.1.1.1 a)

Type of glazing	U_g [1]	Spacer type [2]	Example IGU [3] [4] (informative)	R_{window} (m²·K/W) for different frames			
				Aluminium frame	Thermally broken aluminium frame	uPVC frame	Timber frame
Double pane	2.63	Aluminium	Glass: Clear/Clear Gas: Air	R0.26	R0.32	R0.40	R0.44
	1.90	Aluminium	Glass: Low E_s/Clear Gas: Argon	R0.30	R0.39	R0.50	R0.56
	1.60	Thermally improved	Glass: Low E_s/Clear Gas: Argon	R0.33	R0.42	R0.56	R0.63
	1.30	Thermally improved	Glass: Low E_s/Clear Gas: Argon	R0.35	R0.46	R0.63	R0.71
	1.10	Thermally improved	Glass: Low E_s/Clear Gas: Argon	R0.37	R0.50	R0.69	R0.77
	0.90	Thermally improved	Glass: Low E_s/Clear Gas: Krypton	R0.40	R0.54	R0.76	R0.85
Triple pane	1.89	Thermally improved	Glass: Clear/Clear/Clear Gas: Air		R0.38	R0.50	R0.56
	1.20	Thermally improved	Glass: Low E_s/Clear/Clear Gas: Argon		R0.48	R0.66	R0.74
	1.00	Thermally improved	Glass: Low E_s/Clear/Clear Gas: Argon		R0.52	R0.73	R0.81
	0.70	Thermally improved	Glass: Low E_s/Low E_s/ Clear Gas: Argon		R0.59	R0.86	R0.95
	0.60	Thermally improved	Glass: Low E_s/Low E_s/ Clear Gas: Argon		R0.62	R0.91	R1.01

Notes:

(1) Thermal transmittance of the glazing determined using BS EN 673. Where the U_g-value of the proposed glazing is different from the values included in the table, R_{window} shall be determined based on the nearest U_g-value in the table that is greater than the U_g-value of the proposed glazing.

(2) 'Thermally improved' refers to a spacer that meets the definition of thermally improved spacer in ISO 10077-1 Annex G.

(3) The examples provided are informative descriptions only of the insulated glazing unit (IGU) types that might be used to deliver the nominated U_g-values. When using this table, R_{window} shall be determined based on U_g, spacer type and frame type.

(4) The properties of each of the glass panes within the IGU are provided and separated by '/'. 'Clear' refers to clear float glass. 'Low E_s', 'Low E_s', 'Low E_s' and 'Low E_s' refer to glass with low-emissivity coatings at different performance levels.

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Document Set ID: 8858090
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This information is provided by the Waikato District Council

GASFITTING CERTIFICATE OF COMPLIANCE – GAS SAFETY CERTIFICATE

Certificate of Compliance:

Client Name: M Gosser

Reference / Job #: GAS65113 **ICP (if known):**

Address of work: Lot 13, 380 Churchill East Road,

Suburb: TE KAUWHATA **Town / City:** Waikato

Description of gasfitting work: (If different gasfitting work was done by different people, state who did what gasfitting.)

Gas fitting run from LPG bottle to a Rinnai A26 gas water heater outside and to a Artusi gas hob in the kitchen.

Gas supply pressure 2.75 kPa **Risk classification** (tick one) ☐ Low-Risk ☑ General ☐ High-risk

Gas type (tick one) ☐ Natural gas ☑ LPG ☐ Biogas ☐ Other (specify)

The work has been done in accordance with a certified design: ☐ Yes ■ No

If yes – identify the certified design including name, date and version. Also attach a copy of the certified design to this certificate.
(Or provide reference to readily accessible electronic format, eg Internet link.)

Identify:
Link:

The work relies on manufacturer's instructions: ■ No ☐ Yes:

If yes – identify the instruction manual including name, date and version. Also attach a copy of manufacturer's instructions to this certificate.
(Or provide reference to readily accessible electronic format, eg Internet link.)

Identify:
Link:

The work has been done in accordance with means of compliance (specify):

☑ Yes – AS/NZS 5601.1 sections 3 to 6 ☐ Yes – AS/NZS 5601.2 sections 3 to 9 ☐ No

Were any other standards or gas code of practice required for compliance?

☐ Yes (specify) ☑ No

Parts of the gas installation to which this certificate relates that are safe to connect to a gas supply?

☑ All ☐ Parts (specify)

Date(s) on which the work was done: 16/09/2025

Name and registration number of anyone who carried out work under supervision:

By signing this document I confirm that I am satisfied that the work described in this certificate of compliance has been done lawfully and safely, and that the information on this certificate is correct.

Certifier name: Sean Stephens **Registration number:** 10973

Certifier Signature:  **Date:** 19/09/2025

Gas Safety Certificate:

By signing this document I confirm that the work described in this Gas Safety Certificate, and the installation or part installation, is connected to a gas supply and is safe to use.

Name of person authorised to certify the connection: Sean Stephens

Registration number: 10973 **Date of completion or connection** 16/09/2025

Certifier Signature:  **Date:** 19/09/2025

This Gas Safety Certificate confirms that the gasfitting work complies with the building code for the purposes of Section 19(1)(a) of the Building Act 2004.

This information is provided by the Waikato District Council

Producer Statement Construction (PS3) / Memorandum of Completion and Compliance

Issued by: (Construction Reviewer) **Plumbcraft Limited**

Building Consent number: BLD1107/25

Company Name: **Plumbcraft Limited**

To: ☐ Hamilton City Council ☐ Hauraki District Council ☐ Matamata-Piako District Council ☐ Otorohanga District Council ☐ Thames-Coromandel District Council ☐ Waikato District Council ☐ Waipa District Council ☐ Waitomo District Council

Waikato Building Consent Group Reg. No.: Expiry Date: Other No. (specify):

Owner:

Project Address: 380 Churchill East Road Te Kauwhata

Lot: DP: Lot 13 DP488718

Description of Building Work: Install drainage and irrigation field for the minor house

Scope of work covered by statement: Install drainage and irrigation field

System / Product used (if applicable):

I (Construction Reviewer's name): **Sean Stephens – Plumbcraft**

have been engaged by (owner/developer/contractor):

In respect of (tick applicable):

☐ The requirements of the Building Regulations 1992, Clause(s): (Please be specific e.g. E2.3.5)

☐ Alternative Solution(s):

for the building work described by the drawings and specifications prepared by the design firm titled:

numbered: ☐ Copies attached

authorised amendments(s): (If applicable) ☐ Copies attached

☐ I have sighted the Building Consent and read the Advisory Notes. I can confirm that the building works have been carried out in accordance with the requirements of the New Zealand Building Code, the Building Consent, the design drawings and specifications, and in accordance with the listed amendments (if any).

☐ I confirm that all work I have undertaken has been within the scope of my skills, knowledge, and experience. I have remained within the scope of works set for me by the Waikato Building Consent Group Producer Statement Author register (if applicable).

☐ I understand that this Statement, if accepted, may be relied upon for the purpose of establishing compliance with the Building Code and the Building Consent.

☐ I am satisfied the building work complies with the requirements of the Building Consent and the New Zealand Building Code.

Signed by (Construction Reviewer):

Name of Constructor (Print clearly):

Date: 19/09/2025 Address: 189 Great South Road, Takanini, Auckland

Ph: 092967070 Mb: Fx: Email: admin@plumbcraft.co.nz

Qualifications / Experience:

*The Waikato Building Consent Group Producer Statement Author register is held by the Building Unit Hamilton City Council, Private Bag 3010, Hamilton 3240. Ph (07) 838 6699. For information on the Waikato Building Consent Group visit Build Waikato website.

PS 03 Template Version 2016-08-11

This information is provided by the Waikato District Council

PLUMBCRAFT GROUP

Plumbcraft Group
189 Great South Road, Takanini
Auckland
info@plumbcraft.co.nz
0800 475 8622
www.plumbcraft.co.nz

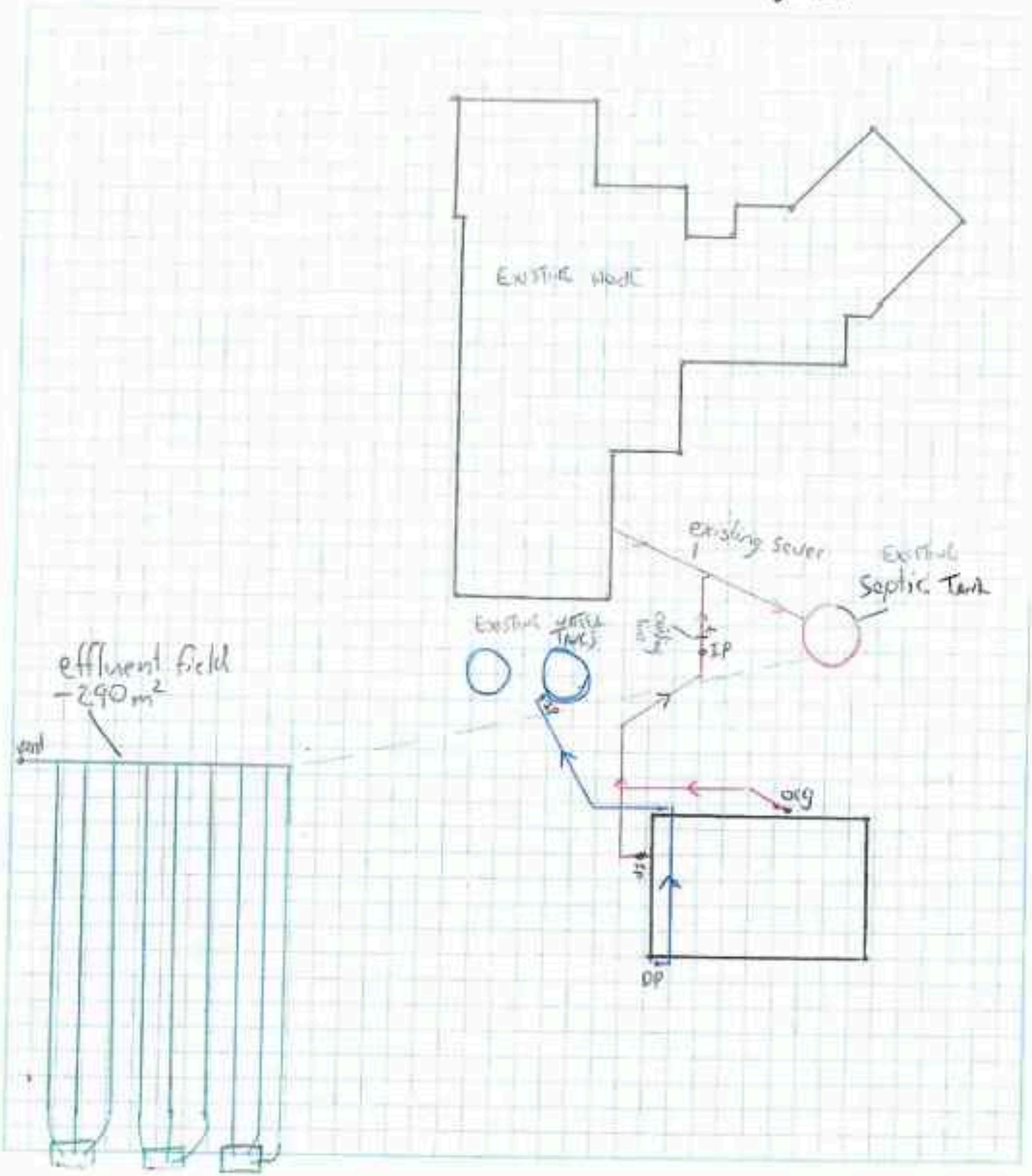
Sean Stephens

PGDB No: 10973

Lot No: 1 DP 1413 DP NO: 458718

BC No: BLD1107/25

Owners Name: Bruce gasson



Document Set ID: 8858090
Version: 1, Version Date: 08/09/2025

This information is provided by the Waikato District Council

VIP Frames & Trusses
CHRISTCHURCH | AUCKLAND

Christchurch (Head Office)
65-67 Wickham Street, Bromley, Christchurch
T: 03-389-6200

Auckland
9-11 Aebra Place, Henderson, Auckland
T: 09-838-0719

TIMBER TREATMENT CERTIFICATE

VIP Frames & Trusses Auckland Limited have constructed the Pre-nailed Frames & Roof Trusses supplied to the above address in accordance with the NZS 3604 Building Code.

The Wall Frames are constructed using minimum SG 8 Machine Stress-Graded Kiln-Dried Radiata Pine with all of the Wall Frames being treated minimum H1.2.

Ceiling Framing and Trusses are also manufactured from minimum SG8 Machine Stress –Graded Kiln Dried Radiata Pine also treated to H1.2 standard, as supplied from Certified Treatment Plants in accordance with the NZS 3604 - 2003, B1 & B2 / AS1 code.

Yours faithfully,

Daniel Caldwell

Director – VIP Frames & Trusses Auckland Limited

Document Set ID: 8858090
Version: 1, Version Date: 08/09/2025

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

COLORSTEEL. MAXAM

Residential Warranty and Maintenance Requirements

SUPPLY DATE: JULY 2025

PROPERTY OWNER	Bruce Casson
SITE ADDRESS	360 Churchill East Road, Ranginin 3782, New Zealand
SITE ENVIRONMENT	Mild
BUILDING TYPE	Residential
ROLLFORMER	Roofing Industries (Franklin) Ltd

WARRANTY THAT PRODUCT:	ROOFING	WALL CLADDING	GUTTERS/DOWNPIPES	FLASHINGS	FASCIA/SOFFIT
Paint will not flake, peel or excessively fade	10 Years	15 Years	-	-	- -
Will not perforate through corrosion	50 Years	30 Years	-	-	- -

The product manufactured from **COLORSTEEL® MAXAM®** is subject to normal wear and tear, which may include uniform fading, chalking and dirt collection. Minor white corrosion, which may appear at unwashed tension bends or cut edges, is a natural weathering phenomenon of **COLORSTEEL® MAXAM®** and does not constitute a failure of the coating system. Testing to determine coating performance will be in accordance with the methods described in Australian Standard AS1580.

This warranty is issued by New Zealand Steel Limited and is subject to the following terms and conditions:
(Note: all New Zealand Steel literature referred to in this warranty is that which is current at the time of installation and is available from the rollformer or www.colorsteel.co.nz)

1. The maintenance programme specified on the reverse **BEING STRICTLY ADHERED TO and documented.**
2. The warranty periods stated above start from the date the material is supplied to site.
3. The installed pitch of the roof is equal to or greater than 3°, or the minimum recommended for the profile, whichever is greater.
4. The product is only used in the environments and applications as recommended in the *Environmental Categories, Warranty & Product Maintenance Recommendations* brochure (or on-line *Guidelines for Use*).
5. The product is designed, formed, stored, handled and installed in accordance with recommendations given in *Specifiers and Builders Guide* (on-line *Guidelines for Use*), Information Bulletins and *NZ Metal Roof and Wall Cladding Code of Practice*.
6. This warranty covers the **COLORSTEEL® MAXAM®** material only and no accessories supplied which include, without limitation, fasteners, soft edge and building wrap.
7. All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed in law. In particular, where the product is supplied for the purpose of business, the guarantees contained in the Consumer Guarantees Act 1993 do not apply.
8. Failure of the material or the coating partially or wholly due to one or more of the following causes is not covered by this warranty:
   - Use of the product within 25m of the high water mark on the East Coast or 50m of the high water mark on the West Coast.
   - Physical damage during or after installation, including scratching, contact with other metal items, incorrect installation of external objects such as air-conditioning units, PV/Solar energy systems, and failure to remove swarf.
   - Contact or immersion in soil, ash, fertilizer, moisture retaining substances, sunscreen or water (of any type).
   - Contact with or runoff from lead or copper and other dissimilar metals, chemical agents, green or wet timber or treated timber.
   - Water entrapment or ponding for any reason.
   - Mechanical damage, chemical attack, corrosion or other damage sustained during transport, handling, storage, installation or subsequent to installation.
   - Attack from chemical or other agents, fumes, solids or liquids other than direct rain or run-off falling onto the product under warranty.
   - Application of post paint treatments or systems.
   - Failure to install, use and maintain the product in accordance with NZ Steel's guidelines and applicable industry standards.
   - Underside corrosion as a result of high humidity, condensation or pollution generated within a building.
   - Failure to replace corroded fasteners, or use of incorrect fasteners.
   - Corrosion arising from lapped areas of end-lapped sheets.
   - The product having been inappropriately stored prior to installation.
   - Causes beyond the control of New Zealand Steel or the roofing manufacturer, including earthquakes, fires, cyclones, tornadoes, storms, hurricanes, lightning, hail, volcanic activity and other similar extreme "Acts of God".
   - Actions by other persons.

If **COLORSTEEL® MAXAM®** pre-painted steel has failed to perform as warranted, then a claim, in writing, specifying in what respect the **COLORSTEEL® MAXAM®** has failed to perform, must be made within the applicable warranty period, to New Zealand Steel who will at its sole option repair or replace (including labour) the affected material or provide a refund equal to the cash value based on New Zealand Steel's estimate of the cost of the then current New Zealand Steel equivalent product. All claims must be accompanied by this original warranty document. A new warranty will be issued to cover the balance of the original warranty offer for both the paint coating and perforation protection where repair or replacement is made, this period is not extended in case of replacement. Neither the roofing manufacturer named below nor New Zealand Steel will be liable for any consequential loss or damage except as may be required under any mandatory statutory provisions. Nothing in this warranty is intended to exclude or limit any rights consumers may have under the Consumer Guarantees Act 1993.

New Zealand Steel and/or the roofing manufacturer reserve the right to inspect a building prior to issuing of the warranty and/or to inspect and conduct tests as necessary at any time after a claim is made under this warranty and accordingly have access to the property.

Warranty ID: 140104
For information relating to your warranty certificate please call 0800 697 833,
or you can write to us at nzs.warranty@bluescopesteel.com

New Zealand Steel

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PRODUCT USAGES

Roofing with a Trimrib profile and a pitch of 25 degrees
- Paint will not flake, peel or excessively fade for: **15 years**
- Will not perforate through corrosion for: **50 years**

Coil References: P633607: Ironsand, 0.4mm

Wall Cladding with a Trimrib profile
- Paint will not flake, peel or excessively fade for: **15 years**
- Will not perforate through corrosion for: **30 years**

Coil References: P637362: Ironsand, 0.4mm

MANUFACTURING

COLORSTEEL® MAXAM® manufactured by New Zealand Steel Limited.

Rollformed by Roofing Industries (Franklin) Ltd.

Installed by Nils McGee Roofing Limited .

APPROVAL

This Warranty is issued by (the manufacturer), New Zealand Steel Limited.

Date: 18 September, 2025

MAINTENANCE PROGRAMME

All roofing and cladding products are subject to the cumulative effects of weather, dust and other deposits. Normal rain-washing will remove accumulated atmospheric contaminants from roofs. Gutters must be regularly inspected to remove debris, which may cause ponding.

ENVIRONMENT	MODERATE ISO CATEGORY 3	SEVERE ISO CATEGORY 4	VERY SEVERE ISO CATEGORY 5
Roof	Rain washing	Rain washing	Rain washing
Wall Cladding	Manual washing every year	Manual washing every 6 months	Manual washing every 3 months
Gutters, fascias and unwashed or **high risk** areas	Manual washing every 6 months	Manual washing every 3 months	Manual washing every month

Environment zones are described in detail in the *Environmental Categories, Warranty & Product Maintenance Recommendations* brochure. If your building is within 1000 metres of the sea or in an area with a corrosive environment you should check these Categories.

Regular washing of **COLORSTEEL® MAXAM®** products increases the durability by reducing attack from airborne salts and pollutants. **COLORSTEEL® MAXAM®** surfaces should be manually washed with water and a sponge or a soft nylon-bristled brush. For large areas it may be appropriate to use water blasting at pressures up to 20 MPa. Regular inspection for, and removal of lichen should be carried out as per Information Bulletin - *Removal of Lichen*.

Note: **high risk** areas include areas around flues, chimneys and extractor vents, under television aerials and trees and sites prone to mould, lichen, bird droppings or debris. External objects such as walkways and platforms, air conditioning units, solar hot water and solar photovoltaic systems, all have the potential to create areas on the roof that are sheltered from the rain (unwashed areas) and, as such, additional maintenance of the roof areas affected is required as highlighted in the above table.

COLORSTEEL® and **COLORSTEEL® MAXAM®** are registered trademarks of New Zealand Steel Limited.

Warranty ID: 140104
For information relating to your warranty certificate please call 0800 697 833,
or you can write to us at nzs.warranty@bluescopesteel.com

New Zealand Steel

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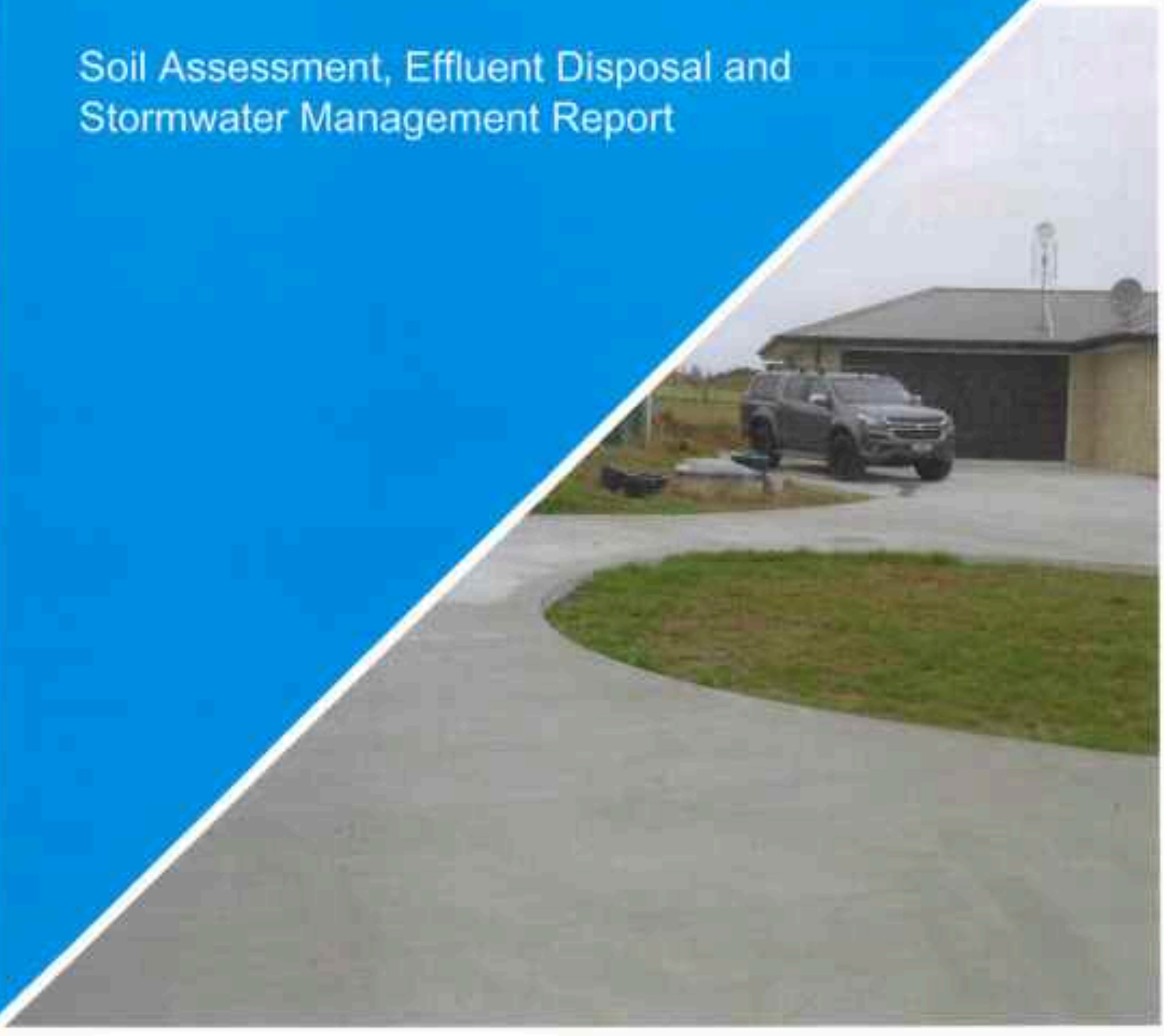
380 Churchill East Road, Rangiriri

Soil Assessment, Effluent Disposal and Stormwater Management Report



Bruce Gasson

BD 26827-1

23/06/2025

TILSLEY ENGINEERING LTD

CONSULTING ENGINEERS AND ENVIRONMENTAL CONSULTANTS

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380 Churchill East Road, Rangiriri

Soil Assessment, Effluent Disposal and Stormwater Management Report

Client: Bruce Gasson

Prepared by:

TILSLEY ENGINEERING LTD, NEW ZEALAND
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23/06/2025

Job No: BD 26827-1

Quality Information

Rev	Revision Date	Details	Authorised	
			Prepared by	Reviewed by
0	16/04/2025	Issued to Client		
1	23/06/2025	Recommendations for shallow foundations added, page 7	Bridget Dobbs BEng (Hons) Consulting Engineer	Sig# P222 R Tilsley (CMEngNZ,CPEng) Director

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1. INTRODUCTION

1.1 Project Overview

Tilsley Engineering Ltd has been engaged by the client to assess soil bearing strength and expansivity, design an effluent disposal system and provide stormwater management recommendations for a proposed building site at 380 Churchill East Road, Rangiriri.

The scope of this report encompasses soil bearing strength and expansivity assessment, effluent disposal design and stormwater management recommendations in support of future resource and building consent applications to the Council and for interested parties such as the builder, structural engineer, earthworks, and civil contractors.

This report includes a summary of the investigations undertaken and provides an assessment of:

- Ground conditions
- Soil bearing strength and expansivity
- Groundwater conditions
- Environmental assessment and on-site effluent disposal design
- Stormwater management recommendations
- Other constraints and issues identified with the site.

This report is not a substitute for a geotechnical report.

2. SITE INFORMATION

2.1 Site description

The property is described legally as Lot 13 Deposited Plan 488718 and is approximately 0.7764 ha in area. The site is located on the northern side of Churchill East Road. The Lot is bounded on all sides by similar pasture and lifestyle properties. Site photographs and project location are presented in Appendix A.

This report shall be read in conjunction with the following report.

"Geotechnical Assessment, Effluent Disposal and Stormwater Management Report", reference B5070-0, dated 3 April 2018, prepared by Tilsley Engineering Ltd.

2.2 Proposed site development

The proposal is to construct a 1 bedroom minor dwelling close to the existing dwelling. There is an existing shed, dwelling, metalled driveway and concrete parking and turnaround. The existing effluent disposal system is an improved package plant with disposal via pressure compensating dripper irrigation to the north-east of the existing dwelling.

3. SITE DESCRIPTION

3.1 Topography

The site for the proposed building has a slope angle of less than 5° prior to the cutting of the platform. The slope of the effluent disposal field is up to 8 degrees (1V:7H). The form of the slope

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is waxing planar within the proposed effluent field. The site location with contours and water features is shown in Appendix A.

3.2 Surface water

There are no overland flow paths within 60m of the effluent disposal field. Surface water drains south-west to Waikato River.

3.3 Flood risk

Waikato Regional Hazards Portal shows that the proposed development lies outside the Waipa and Waikato River 1% AEP Flood Extent and the Regional Scale Flood Hazard. The edge of the 1% AEP Flood Extent lies at approximately RL 8.5m on the Waikato Regional Council GIS map.

The edge of the Regional Scale Flood Hazard lies at approximately RL 10m on the Waikato Regional Council GIS map.

The finished floor level of the existing dwelling is RL 10.5m. The finished floor level of the proposed dwelling shall be the same or higher than that of the existing dwelling.

There is some risk of flooding close to the proposed building platform. The 1% AEP event is not expected to enter the building if work is carried out to NZ Building Code E1.

3.4 Published Geology

From the geological map of Waikato (Institute of Geological & Nuclear Sciences Ltd, 1:250,000) in Figure 1 together with our experience of the surrounding areas, we infer the soils of the area are Holocene river deposits of Tauranga Group overlying Pleistocene pumicious river deposits.

Holocene river deposits are described as sand, silt, clay, peat.

Pleistocene pumicious river deposits are described as highly weathered, coarse pumiceous and rhyolitic sands and current-bedded grits, with interbedded peat and local gravels.



Figure 1 Extract from the published GNS geological map

3.5 Geomorphology

According to observation and the topographical and Waikato contour map, the site occupies a low, blunt spur running down to the west. The ground at the proposed development is gently sloping. The ground slopes to the west.

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Aerial photographs available from Google Earth dating from 2008 to 2023 were studied to observe the site over time and assess the geomorphological setting. Based on the review of historical aerial images and the site visit, the property has been permanently grassed. The dwelling was constructed in 2018-2019. There have not been any ground movements or soil instabilities at the location of the proposed development.

4. SITE INVESTIGATION

4.1 Field investigation

On 3 April 2025, Tilsley Engineering Ltd conducted investigations for the project area. This comprised:

- A detailed walkover inspection of the site.
- Drilling of hand auger holes HA01 on the building platform and HAE02 near the effluent disposal field.

Results were consistent with those from the previous report. No further testing was found to be required.

The locations of all field tests were measured from existing site features and inferred boundaries without survey control and are therefore approximate only. Test locations are shown in Appendix A.

Visual-tactile field classification of the soils encountered during drilling was carried out in accordance with "Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes", issued by the New Zealand Geotechnical Society Inc. (2005). Test results are shown in Appendix B.

4.2 Site services

Site-specific searches are not undertaken for the site utilities and services for the purpose of this report. However, at the time of our site investigation, there was no evidence of any buried services in the vicinity of the proposed building site.

5. SOIL BEARING STRENGTH ASSESSMENT

5.1 Findings

Shear strengths of at least 100kPa were reached across the building platform at depths ranging from 0.2m to 1.7m. No topsoil was encountered in any building platform boreholes. Soils were SILT with minor clay, moderately plastic with volcanic inclusions and very stiff. Soils were found to be sensitive with some extra sensitive layers at depths of 0.75m - 0.9m and at 1.2m.

Summary of hand-held vane shear strength

Test Location	Termination Depth	Depth of Topsoil	Peak Shear Strength Range (kPa) Residual Soil	Residual Shear Strength Range (kPa) Residual Soil	Depth to Groundwater
HA01	1.3	0.6	150-200+	9-45	NE
HAE02	1.7	n/a	n/a	n/a	NE

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Recommended geotechnical unit strength

Unit	Material	Peak shear strength (kPa) Typical (min-max)	Residual shear strength (kPa) Typical (min-max)	Soil sensitivity
1	Residual Soil	150 (150 - 200+)	45 (45)	3

Recommended geotechnical design parameters

Unit	Material	Bulk density, γ' (kN/m3)	Design undrained shear strength, Su (kPa)	Drained effective cohesion, c' (kPa)	Drained effective friction, ø' (deg.)
1	Residual Soils	18	60	3	30
Note: The lower bound values have been conservatively used for the design parameters but can be further refined for specific structures with geotechnical data in the vicinity.					

5.2 Expansivity

The building site soil can be classified as Class "M" for the expansiveness of the soil for the foundation based on Table 2.1 of AS2870. Therefore, the soils are not considered to lie within the definition of "good ground" as per NZS3604. Specific engineering design shall be undertaken by a qualified engineer experienced in the design of footing systems.

5.3 Shallow foundations

The design strength of the shallow foundation for the Lot is set out in the table below. Topsoil and non-engineered fill shall be stripped beneath and 1m outside the building footprint if concrete raft foundations are specified.

The building platform / pile holes shall be checked by a Chartered Professional Engineer or their representative who is experienced in geo-mechanics.

Type	Ultimate bearing capacity, q_{ult}	Dependable bearing capacity, q_{dep}	Allowable bearing capacity, q_{abs}
Raft/ Strip/Pad	300kPa	150kPa	100kPa
Notes: Design bearing strength shall be determined using suitable strength reduction factors. Based on B1/VM4 recommendation for shallow foundations.			

5.4 Shallow pile foundations

Shallow piles (anchor piles and braced piles) shall be designed as per NZS 3604 and NZD AS2870. They shall be designed by a suitably qualified person. The minimum embedment of 600mm is required to mitigate the effects of expansivity.

6. ENVIRONMENTAL ASSESSMENT AND WASTEWATER DESIGN

The proposed wastewater disposal system comprises an improved package plant with disposal via pressure compensating dripper irrigation.

The proposed wastewater field is at least 10m from any trees. There are no embankments or retaining walls within 3m of the disposal field. A minimum 20m separation distance shall be maintained between overland flow paths and the proposed effluent disposal field.

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Ground water was not encountered in any of the boreholes and it is anticipated that ground water will be at least 2 metres below ground level during wet winter conditions. The nearest overland flow path is approximately 60m from the effluent disposal field.

As such any impact on the environment is considered to be minor.

6.1 Wastewater design

The proposal is to construct a 1 bedroom minor dwelling. The floor plan is shown in the appendices.

Domestic water shall be supplied by stormwater tanks. Standard water reduction fixtures shall be installed including dual flush toilet cisterns; aerated taps and automatic washing machine.

The wastewater disposal system for the existing dwelling comprises an improved package plant with disposal via pressure compensating dripper irrigation. It appears to be working adequately. The existing system may be retained if a competent drainlayer inspects it and finds it is of adequate capacity and condition. The dripper irrigation field may be retained and extended if a competent drainlayer inspects it and finds it is in adequate condition.

The enclosed calculation sheet in Appendices is in accordance with AS/NZS1547 and a checklist is enclosed in Appendices.

To accommodate the existing dwelling and the proposed minor dwelling, the improved package plant with disposal via sub-surface pressure compensating dripper irrigation such as Hynds Lifestyle or equivalent shall have a minimum daily flow capacity of 1,015 litres.

Onsite investigation confirmed the soils as category 4 SILT LOAM with moderate to slow drainage rates. A loading rate of 3.5mm/day will be used. Disposal shall be to at least 290m of sub-surface pressure compensating dripper irrigation. A reserve area of 145m^2 (50%) shall be retained on site.

Further information regarding location and other details are shown on the wastewater and stormwater site plan.

7. STORMWATER MANAGEMENT

The calculation sheet (see Appendix C) shows that detention built into the 2 existing water tanks for the development on the Lot will allow for the 10% AEP rainfall over a 10 minute rain event of 20.0mm, including climate change allowance. Stormwater volumes have been calculated in accordance with Waikato District Plan WWS-R1.

No infrastructure on the Lot or neighbouring Lots will be adversely impacted by the proposed stormwater management design.

7.1 Roof – proposed and existing dwellings

Water from the roof of the existing dwelling is piped to two existing 25,000 litre tanks.

The proposed minor dwelling will have a roof area of approximately 66m^2. The existing dwelling has a roof area of approximately 290m^2.

The volume of stormwater attenuation required is 5.22m^3. This can be achieved by using the existing two linked 25,000L stormwater tanks for settling, domestic use and detention. Detention shall be provided by a 25mm diameter orifice pipe fixed to the manufacturer's outlet point of the tank. The overflow from the tanks shall be directed to a controlled outfall.

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7.2 Controlled Outfall

The overflow pipe from the water tank will be connected to a level spreader located as shown on the wastewater and stormwater plan.

7.3 Driveway

The existing driveway is permeable metal. There is a concrete parking and turnaround area near the existing and proposed dwellings. Should a further sealed driveway be added in the future, further stormwater controls will be necessary.

7.4 Construction of stormwater system

The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and consequences of soil saturation. The stormwater system shall comply with NZBC clause E1.

8. SYSTEM MAINTENANCE

The equipment suppliers will offer training and maintenance support for the system. However, it is the owner's responsibility to carry out all general maintenance procedures for the system to function as designed. We recommend that a maintenance contract be entered into with a recognized wastewater maintenance company. Attached in Appendix F are the operation and maintenance forms for both the wastewater and stormwater.

9. SAFETY IN CONSTRUCTION

We stress that any and all works shall be undertaken in a careful and safe manner so that Health & Safety is not compromised, and that suitable Erosion & Sediment control measures should be put in place. Any stockpiles placed shall be done so in an appropriate manner so that land stability and/or adjacent structures are not compromised. Furthermore:

- All works must be undertaken in accordance with the Health and Safety at Work Act 2015.
- Any open excavations should be fenced off or covered, and/or access restricted as appropriate.
- The location of all services shall be verified at the site prior to the commencement of construction.
- The Contractor is responsible at all times for ensuring that all necessary precautions are taken to protect all aspects of the works, as well as adjacent properties, buildings and services.

Should the client or contractor have any site-specific concerns with regards to safe construction methodologies of any Tilsley Engineering Limited designs and recommendations, please contact us before any work is undertaken.

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10. RECOMMENDATIONS

Soil Assessment

- The building platform is safe and stable in its current condition and is suitable for development with either concrete slab or piled foundations.
- Recommended undrained shear strength 60kPa. Refer to Section 5 for further soil parameters.
- The building platform soil is classified as Class "M" for expansivity.

Effluent Disposal

- Install an improved package plant system such as Hynds Lifestyle or equivalent. The system shall have a minimum daily flow capacity of 1,015 litres.
- Install a minimum of 290m of sub-surface dripper irrigation in the location shown on the wastewater and stormwater site plan.
- Effluent disposal shall be at least 3m from buildings and 1.5m from boundaries and 10m from stormwater discharge. A 50% reserve area of 145m^2 is required. Further information on attached wastewater and stormwater site plan and in Section 5 of this report.
- The existing wastewater system may be retained at the discretion of a competent drainlayer if it is of adequate capacity and condition. The dripper irrigation field may be retained and extended if a competent drainlayer inspects it and finds it is in adequate condition.

Stormwater

- Direct stormwater from the dwelling roof to the existing two linked 25,000L water tanks. The stormwater detention volume (for both dwellings) of 5.22m^3 shall be provided by a 25mm diameter orifice, 271mm below the overflow level, allowing water to flow into the overflow pipe.
- Direct overflow from the rainwater tanks to a 14m level spreader. See Section 6 and appendices for more details.
- The existing driveway is permeable metal with a concrete parking and turnaround area. Should a further sealed driveway be added in the future, further stormwater controls will be necessary.
- Water shall not be discharged in any way that may have a detrimental effect on the building foundations or effluent disposal field.
- The stormwater system for the building shall be operational as soon as the roof is in place. This is to ensure that the ground within the vicinity of the building is not compromised by the negative effects and potential consequences of soil saturation.

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11. LIMITATIONS

This report has been prepared solely for the benefit of our client with respect to a particular brief given to us, and data or opinions in it may not be used in other contexts, by any other party or for any other purposes. To the maximum extent permitted by law, Tilsley Engineering Ltd disclaims all liability and responsibility (in contract or tort, including negligence, or otherwise) for any loss or damage whatsoever which may be suffered as a result of any reliance by any third party on this report, whether that loss is caused by any fault or negligence on the part of Tilsley Engineering Ltd or otherwise.

Council is able to rely on this report for processing the resource or building consent only for the site mentioned within this report. It may not be used for any other use or purpose without permission from Tilsley Engineering Ltd.

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Notice to Reader/ User of this document

Should you be in any doubt as to the applicability of this report and/or its recommendations for the proposed development as described herein, and/or encounter materials on site that differ from those described herein, it is essential that you discuss these issues with the authors before proceeding with any work based on this document.

The recommendations and opinions contained in this report are based upon site observations of the investigation area. Inferences about ground conditions over the site are made using geological principles and engineering judgment, however, it is possible that conditions over the site may vary and therefore it is not possible to guarantee the continuity of ground conditions away from investigation locations and visible areas.

Furthermore, the logs are provided presenting descriptions of the soils and geology based on field observations of the samples recovered in the fieldwork and may not be truly representative of the actual underlying conditions.

Recommendations and opinions in this report are based on data obtained from the investigations and site observations as detailed in this report. The nature and continuity of subsoil conditions at locations other than the investigation bores and tests are inferred and it shall be appreciated that actual conditions could vary from the assumed model.

It is recommended that construction activity shall be undertaken in the dry season. If construction activities are undertaken in wet seasons there is a potential risk of reduction of soil strength. Tilsley Engineering Ltd is not responsible for the reduction in soil strength due to construction activities.

Ground conditions can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions that existed at the time of subsurface exploration, decisions shall not be based on a report whose adequacy may have been affected by time. Tilsley Engineering Ltd to be advised how time may have impacted on the project.

This report is based on the assumption that the site conditions as revealed through investigation stages are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore this report recommendations can only be regarded as preliminary. Only Tilsley Engineering Ltd, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes shall be considered as the project develops. If another party undertakes the implementation of the recommendations of this report, there is a risk that the report will be misinterpreted and Tilsley Engineering Ltd cannot be held responsible for such misinterpretation.

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APPENDIX A - BACKGROUND INFORMATION



Site and project location with 1m contours and borehole locations



Waipa and Waikato River 1% AEP Flood Extent and Regional Scale flood hazard: Churchill East Drainage District from Extract of Waikato Regional Hazards Portal

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Typical picture of subsoil



View of proposed building platform (replacing temporary cabin) - looking north east

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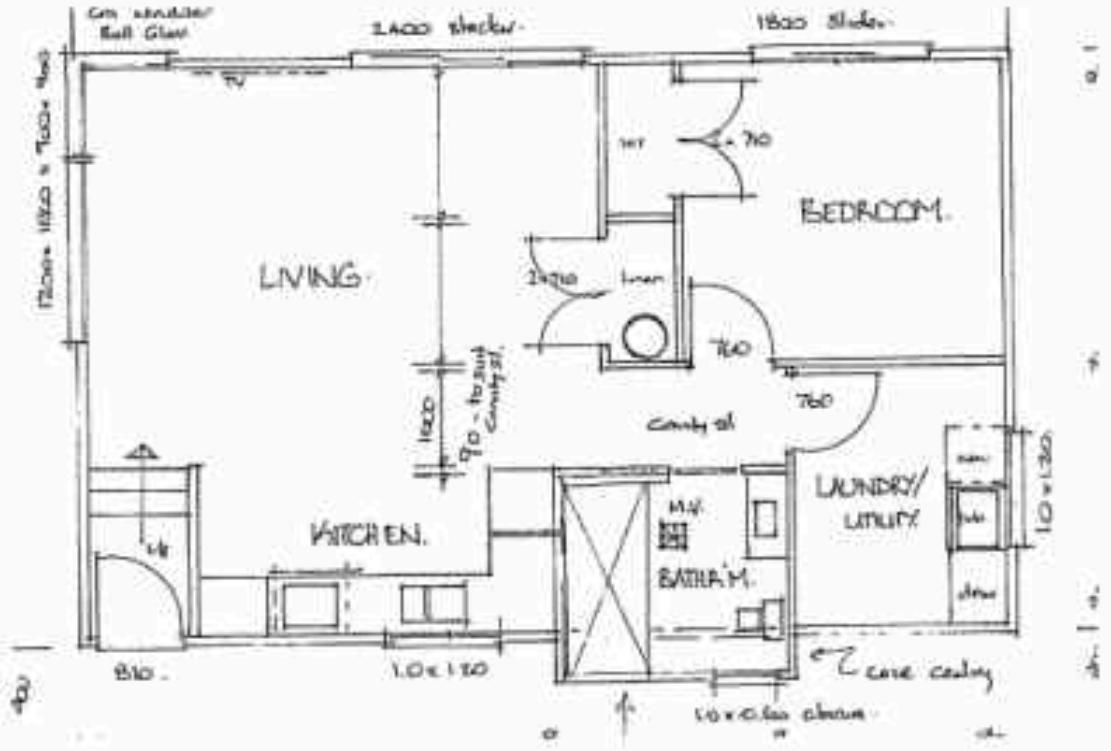

Floor Plan

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APPENDIX B - INVESTIGATION BORE LOGS

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BORE LOG

TILSLEY ENGINEERING LIMITED
37 Bowdon Street, Pukekohe
info@tilsley.co.nz
PO Box 392, Pukekohe
Phone: 09 238 3245

Job number: 8C225827
Client: Bruce Gasson
Location: 380 Churchill East Road, Rangiriri

Date: 03/04/2025
Time: 10am
Augered by: BD
Logged by: BD
Bore No: HA01

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/150mm - kPa)	Shear Vane Test / Reform (kPa)
0.1	SILT / CLAY, compacted			dry			
0.2							113/9
0.3	TOPSOIL, weathered, grey, light and friable						
0.4							
0.5							77/15
0.6							
0.7	SILT, yellow / brown, friable						200+
0.8				moist			200+
0.9	SAND / SILT / CLAY structured loam, volcanic inclusions including pumiceous and silica, moderately plastic, firm						
1							200+
1.1							
1.2							
1.3							150/45
1.4	EOB						
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole.

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BORE LOG

TILSLEY ENGINEERING LIMITED
37 Bowdler Street, Pukekohe
info@tileng.co.nz
PO Box 382, Pukekohe
Phone: 09 238 3246

Job number: BD26827
Client: Bruce Gasson
Location: 380 Churchill East Road, Rangiriri

Date: 03/04/2018
Time: 10am
Augered by: BD
Logged by: BD
Bore No: HAE02

COMMENTS

Depth (m)	Material Description	Soil Symbol	Munsell Chart Number	Moisture	Water	Scala Penetrometer Test (blows/150mm - kPa)	Shear Vane Test / Reform (kPa)
0.1	TOPSOIL, light, friable, grey			dry			
0.2	SILT, brown, with silica						
0.3							
0.4	SILT with clay, light brown, friable, moderately firm, lapilli and silica						
0.5							
0.6							
0.7	SAND/ SILT/ CLAY loam, structured, volcanic inclusions including pumiceous and silica, orange streaks			moist			
0.8							
0.9							
1							
1.1	SAND / SILT with clay, yellow / grey, moderately plastic						
1.2	EOB						
1.3							
1.4							
1.5							
1.6							
1.7							
1.8							
1.9							

Disclaimer: Soil type and strength only applicable at location of bore hole

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APPENDIX C - CALCULATIONS

Stormwater Management - 10% AEP allowance

Client	Gasson
Location	380 Churchill East Road, Rangiriri
Date	11/04/2025

Development Area - all roofs	356	m^2
10% AEP 10min Rainfall Depth (HIRDS)	15.3	mm
cc 2.3° Temperature increase	20.0	mm

Pre Development

Soil Name and Classification	Cover Description (cover type, treatment, and hydrologic condition)	Curve Number CN*
Group B Soil (alluvial)	Pasture, lightly grazed, good grass cover	61
* from table 3.3	CN Override	

CN = 61
Ia = 5 mm

S = 162.39 mm

Post Development

Cover Description	Curve Number CN*
Impervious (Connected)	98

CN = 98
Ia = 0 mm

S = 5.18 mm

	Pre	Post
Runoff depth, Q (mm)	1.28	15.92
Runoff volume (m^3)	0.45	5.67

Detention volume	5.22	m^3
	5215	l

Number of tanks	2	
Tank diameter - D(tank)	3.5	m
Tank base area - A(tank)	19.24	m^2
Depth of Attenuation	0.271	m

Average discharge rate (post-development)	0.00006	m^3/s
Hydraulic head	0.14	m
Velocity	1.63	m/s
Minimum area of orifice	0.0000597	m^2
Minimum diameter of orifice	0.0087	m
Minimum orifice size	9	mm
Recommended orifice size	25	mm

Average discharge rate (pre-development)	0.00357	m^3/s
Hydraulic head	0.14	m
Velocity	1.63	m/s
Maximum area of orifice	0.0035290	m^2
Maximum diameter of orifice	0.0670	m
Maximum orifice size	67	mm

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APPENDIX D - DIAGRAMS AND DETAILS

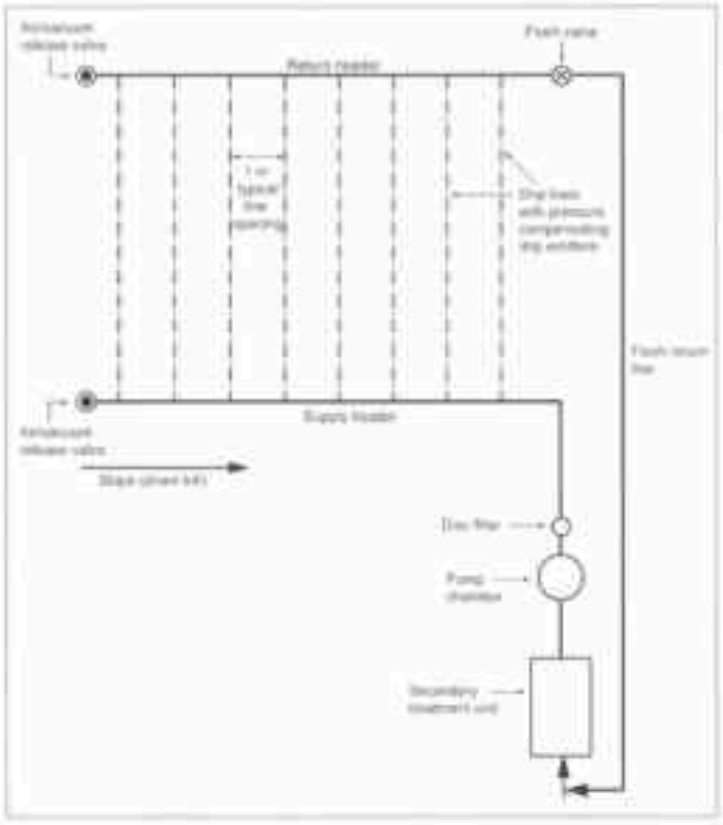
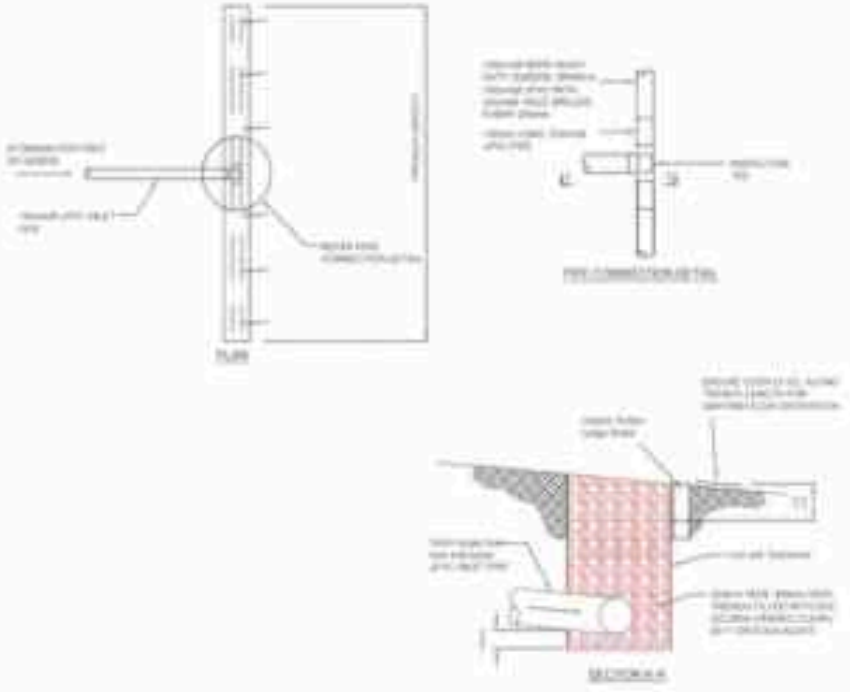


FIGURE M1 DRIP IRRIGATION SYSTEM – EXAMPLE LAYOUT OF COMPONENTS



Level spreader detail

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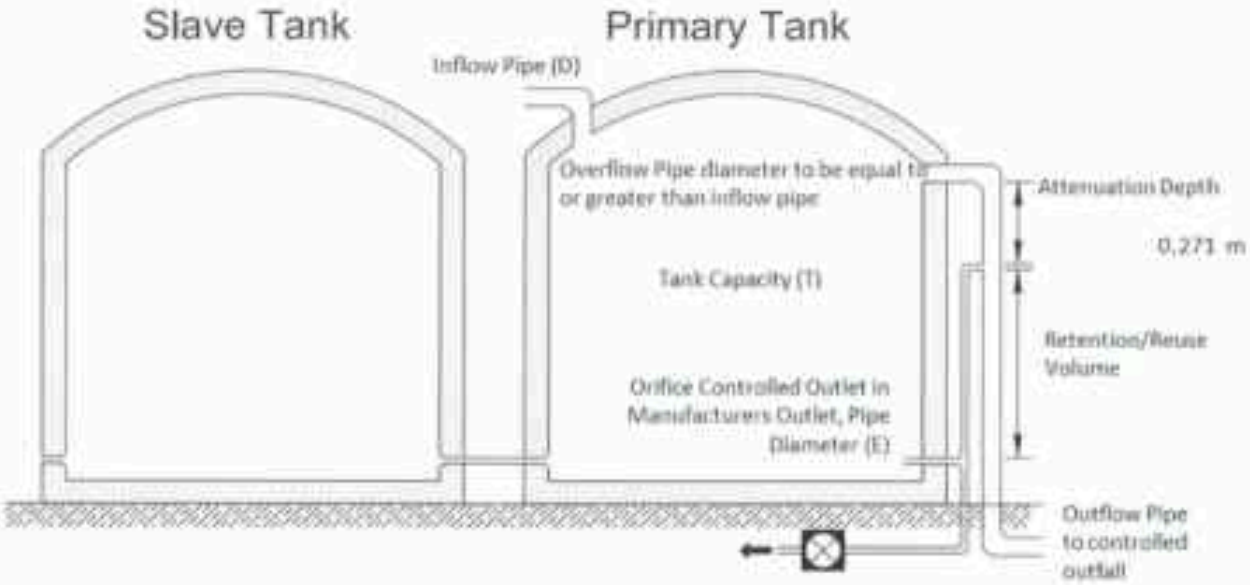
Tank design - attenuation

Client Gasson

Address 380 Churchill East Road, Rangiriri

Date 11/04/2025

Detention Tank Detail



Note: Minimum orifice diameter is 20mm. Screening is required for orifice smaller than 25mm

D= 90 to 120 mm
T= 25000 litres (x 2 tanks)
E= 25 mm
F= Overflow pipe size to be larger than inflow pipe/s

Capacity to be used for attenuation 5.2 m^3

Notes:

1. Orifice controlled outlet 'E' is to use an approved manufacturer's outlet point. This may require an internal PVC pipe connected to a base point
2. If different tank dimensions are used than those specified, the orifice controlled overflow must allow for a minimum attenuation below the overflow pipe of 5.2 m^3
3. First flush diverter recommended but not required.
4. Any number of tanks may be used. However, if they are linked attenuation can only be achieved if no valve is placed between the tanks

BD 26827-1

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APPENDIX E - AS/NZS1547 CHECKLIST

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Appendix E

Australian/New Zealand Standard®

On-site Wastewater Disposal Site Evaluation Investigation Checklist

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ON-SITE WASTEWATER DISPOSAL SITE EVALUATION INVESTIGATION CHECKLIST

AS/NZS 1547 2012 STANDARDS

1.0 COUNCIL OR AUTHORITY

1.1 Location details

Locality			Rangiriri		
Applicant name, company and address			Bruce Gasson		
Land owner name and address			Mark Bruce Gasson and Lisa Maria Gasson 380 Churchill East Road		
Lot no#	13	DP no#	488718	CT no#	711534
Site plan ref. no. or description			BD26827		

1.2 Consultant/ Site evaluator

Consultant	Tilsley Engineering Ltd
Site evaluator name	Bridget Dobbs
Postal address	27 Roulston Street Pukekohe PO BOX 392
Phone number	09 238 3245
Name of contact person	Bridget Dobbs
E-mail address	info@teng.co.nz

2.0 EXISTING CONDITION OF SITE

Site and soil check (SSC)

2.1 Climate

Annual rainfall (as per NIWA rainfall)	1,200 – 1,400mm

2.2 Water supply

Public Supply		Rainwater	✓	Bore/well/dam	

2.3 Desk study

Has a desk study been undertaken for this property	Yes
If yes, specify findings	Neighbouring properties' systems working well

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3.4 Slope Stability or geotechnical investigation

Yes	✓	No	

If yes

Author of report	Bridget Dobbs
Company	Tilsley Engineering Ltd
Brief overview of findings	Avoid effluent disposal to south of proposed dwelling

3.0 CONDITIONS DURING ASSESSMENT

3.1 Soil and terrain

Type of terrain	Gentle
Current land use	Residential, lifestyle
Existing structures onsite	Dwelling
Geology	Holocene river deposits
Soil and landscape drainage	West
Slope	< 8 degrees
Geomorphology (as per figure C2, slope configuration and surface drainage)	Linear divergent
Ground cover	English grasses
Overland flow path present	Not within 60m

3.2 Site constraints (show details on the site plan)

Property boundary	>1.5m
Distances to watercourses, water bodies, wells, bores, or drainable lines downhill	Surface water minimum 20m horizontally
High water table (permanent, seasonal, episodic)	Ground water >1.5m
Downstream embankments, barriers or other impendences to drainage	>3m
Buildings	>3m
Unstable soils	>3m
Recreational areas (children's play areas, swimming pools, etc)	>5m
In-ground water tank	5m
Other (specific)	

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4.0 SOIL INVESTIGATION

4.1 Soil profile determination

Test Pit		Depth(m)		No. of test pits	
Bore Hole	✓	Depth(m)	1.2	No. of bore holes	1

4.2 Soil Category (as per table 5.1, Determination of soil category)

Soil category	Soil texture	Structure	Indicative permeability (K_{sat}) (m/d)	
1	Gravels and sands	Structureless (Massive)	>3.0	
2	Sandy loams	Weakly structured Massive	>3.0 1.4 – 3.0	
3	Loams	High/Moderate structured Weakly structured or massive	1.5 – 3.0 0.5 – 1.5	
4	Clay loams	High/moderate structured Weakly structured Massive	0.5 – 1.5 0.12 – 0.5 0.06 – 0.12	✓
5	Light clays	Strongly structured Moderately structured Weakly structured or massive	0.12 – 0.5 0.06 – 0.12 <0.06	
6	Medium to heavy clays	Strongly structured Moderately structured Weakly structured or massive	0.06 – 0.5 <0.06 <0.06	

4.3 Wastewater discharge calculations (As per table J1, All-waste septic tank operational capacities)

Number of bedrooms	3+1	
Design Occupancy	5+2	(Number of people)
Per capita wastewater production (as per Table H3)	145	(Litres per person per day)
Total daily wastewater production	1,015	(Litres per day)

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4.4 Is total daily waste production greater than 1300L

Yes		No	✓

If yes, is discharge consent required?

Yes		No	✓

If no, why?

4.5 Recommended land application system (using table K2 as a guide)

Type of tank	Improved system – Hynds Lifestyle or equivalent
Capacity of tank	4,000 litres minimum
Special features (tertiary treatment, pump chamber etc.)	Pump chamber, minimum 1,015 litres

4.6 Recommendations for future monitoring

As per report, system maintenance

4.7 Recommended land disposal method (As per appendix L of AS/NZS 1547:2012)

Surface Dripper Irrigation	
Sub-surface Dripper Irrigation	✓
Standard Trench	
Mound	
Evapo-transpiration Beds	

4.8 Please identify the loading rate you propose for the recommended land disposal method.

Loading rate (table M1)		3.5	mm/day
Disposal area	Areal	290	m^2
	Lineal	290	m
Explanation			

4.9 What is the available reserve area for wastewater disposal area

Reserve disposal area (m^2)	145
Percentage of Primary Disposal area	50

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5.0 ENVIRONMENTAL FACTORS

Is nitrogen, phosphorous or E.coli contamination to tributaries likely?	No
Does the system present any environmental, cultural economic or public risk?	No
If yes, clarify and explain steps taken to minimize or mitigate risk.	

6.0 DECLARATION

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true, complete and adheres to the requirements of AS/NZS 1547 2012.

Name	Robert Tilsley	Signature	Sig # P222
Position	Principal	Date	15/04/2025

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TILSLEY ENGINEERING LTD

PRODUCER STATEMENT PS1

Building Code Clause(s): E1 & G13

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: Tilsley Engineering Ltd (27 Roulston St, Pukekohe)
(Design Firm)

TO: Bruce Gasson
(Owner/Developer)

TO BE SUPPLIED TO: Waikato District Council
(Building Consent Authority)

IN RESPECT OF: On-site stormwater and effluent treatment and disposal system
(Description of Building Work)

AT: 380 Churchill East Road
(Address)

Town/City: Rangiriri (Address) **LOT** 13 **DP** 458718 **SO**

We have been engaged by the owner/developer referred to above to provide:

Design of on-site stormwater and effluent treatment & disposal system according to Tilsley Engineering Ltd calculations

(Extent of Engagement)

services in respect of the requirements of Clause(s) G13 and E1 of the Building Code for:

☐ All or ■ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☐ Compliance Documents issued by the Ministry of Business, Innovation & Employment G13/AS2/VM4 and E1/VM1 or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled:

WW & SW Plan and numbered BD26827-1

together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions N/A
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ■ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, Robert Tilsley (Name of Design Professional) am: ■ CPEng 85675 # ☐ Reg Arch # ____

I am a member of: ■ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE (Civil) CMEngNZ

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.

The Design Firm is a member of ACENZ: ☐

SIGNED BY Robert Tilsley (Name of Design Professional) (Signature) Sig # 2222

ON BEHALF OF Tilsley Engineering Ltd (27 Roulston St, Pukekohe) (Design Firm) Date 23/06/2025

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

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA

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APPENDIX F - WASTEWATER OPERATION AND MAINTENANCE FORMS

Operational & Maintenance form

On-site Wastewater System Management Procedure

(As per ARC Technical Sheet H1)

Property Owner: _____

Date: _____

Property Address: _____

System Designer
Firm Tilsley Engineering phone 09 2383245

Installation
Supplier/installer _____ phone _____

Drainlayer _____ phone _____

Electrician _____ phone _____

Building Consent No: _____

Date Approved _____

Date Installed _____

Territorial Authority _____

Expiry date _____

Max discharge Vol _____

Other conditions (if any) ----------

_____

_____

_____

_____

_____

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STORMWATER OPERATION AND MAINTENANCE FORMS

Site Address:_____

Owners Name:_____

Device(s):

Ref. No	Type	Size (eg m2 or m3)	Date installed

(B) MAINTENANCE CONTRACTOR'S DETAILS:

Firms Name:

Firms Address: _____

Name of Serviceperson:_____

Date(s) of Service:_____

(C) SERVICE DETAILS:

Device Ref. No	Checklist Completed	MAINTENANCE ACTION	
		Item	**Action (describe, eg "pipe replaced")**
	1	(a)	
		(b)	
		(c)	
		(d)	
	2	(a)	
		(b)	
		(c)	
		(d)	
	3	etc...(continue on a separate sheet)	

* on attached form "Device-Specific O&M Details"

(D) CERTIFICATION:

BD 26827-1

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- The OSM device inspection and maintenance programme has been undertaken in accordance with the provision of Section 11 of the City's "OSM Manual" dated 2002
- The details above and on the attached form(s) are a full and correct record of the work performed
- The OSM device(s) are in sound working order
- The owner has been advised of the problems found (if any) and alerted as to the need to inspect for any recurrences and rectify such promptly

_____ _____

Signed Date

ACE Office Use:

Reference No. _____

Checked by: _____ Date:_____

Entered by: _____ Date: _____

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Version: 8, Version Date: 03/01/2006

Print Date: 6 November 2026, 1:26 pm

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Building Consent Number
BLD1107/25

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Client
Address

ROUTINE MAINTENANCE CHECKLIST - ONSITE WASTEWATER

Annually	2- yearly	5- yearly	Action
	N/A		**Grease Trap** - pump out frequency
	NA		**Septic Tank** - visual check for leaks & rectify - pump out frequency
X			**Filter** - visual check, hose of any solids
X			**Pump & Alarm**: Check is see if functioning by electrician
	NA		**Trench System** - Vegetation maintenance, inspect vent, check irrigation area for wet ground
	NA		**ET S Beds / Mounds** - inspect vents, maintain plant growth, remove weeds, surface water diversion in place
X			**Implevia package plant system** - specific maintenance contract by supplier
			Any ongoing maintenance to be carried out by the owner and suitably qualified maintenance contractor

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APPENDIX G - PROPOSED WASTEWATER AND STORMWATER SITE PLAN

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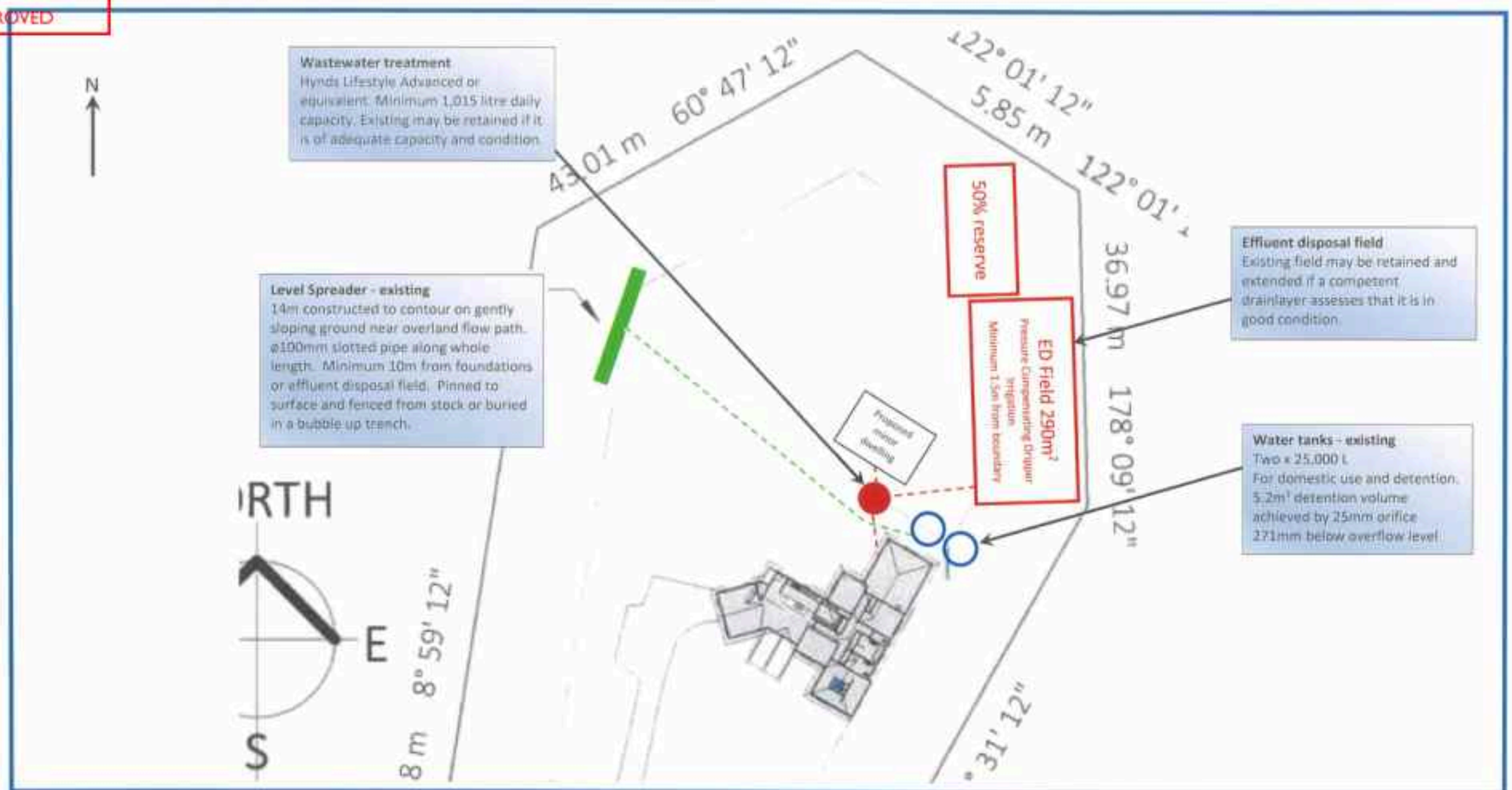

	WW & SW Plan 380 Churchill East Road, Rangiriri Reference: BD26827-1 Date: 14/04/2025 Scale 1:500 @ A3	Reviewed and approved by: R Tilsley Sig # P222	Drawn by: Bridget Dobbs TILSLEY ENGINEERING LIMITED 27 Roulston Street, Pukekohe PO Box 392, Pukekohe Tel: 09 238 3245 info@teng.co.nz

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Building Consent Authority
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External Moisture Risk Matrix

Project Name / Facade ID: MINOR DWELLING 380 CHURCHILL RC

Wall type: ○ Parapet or enclosed balustrade ◉ Other

Risk Scores	Low	Medium	High	Very High
A. Wind Zone:	○ Low = 0	○ Medium = 0	◉ High = 1	○ Very High = 2 ○ Extra High = 2
B. Number of Storeys:	◉ Low = 0	○ Medium = 1	○ High = 2	○ Very High = 4
C. Roof/Wall Intersection Design:	◉ Low = 0	○ Medium = 1	○ High = 3	○ Very High = 5
D. Eaves Width:	○ Low = 0	◉ Medium = 1	○ High = 2	○ Very High = 5
E. Envelope Complexity:	◉ Low = 0	○ Medium = 1	○ High = 3	○ Very High = 6
F. Deck Design:	◉ Low = 0	○ Medium = 2	○ High = 4	○ Very High = 6

Total Risk Score: **2**

low risk 0 up to 6	medium risk 7 up to 12	high risk 13 up to 20	very high risk over 20

this wall

Display Results Table | Download Results Table (HTML)

This wall can use any of the wall cladding types which have a green tick ☑. Claddings with red crosses ☒ are not permitted under the Acceptable Solution E2/AS1.

Direct fixed to framing	Over nominal 20 mm drained cavity
☑ Timber weatherboard - all types	☑ Masonry veneer
☑ Timber weatherboard - bevel backed	☑ Stucco
☑ Fibre cement weatherboards	☑ Horizontal profiled metal - corrugated and trapezoidal only
☑ Vertical profiled metal - corrugated and symmetrical trapezoidal	☑ Rusticated weatherboards
☑ Vertical profiled metal - corrugated only	☑ Fibre cement weatherboards
☑ Vertical timber board and batten	☑ Fibre cement sheet - flush finish
☑ Fibre cement sheet jointed finish (except stucco over fibre cement backing)	☑ Fibre cement sheet - jointed finish
☑ Plywood sheet	☑ Plywood sheet
☒ EIFS	☑ EIFS
	☑ Bevel backed weatherboards

This table is based on Table 3 of E2/AS1. The claddings which have not received a green tick should not be used in this situation.

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Building Consent Number
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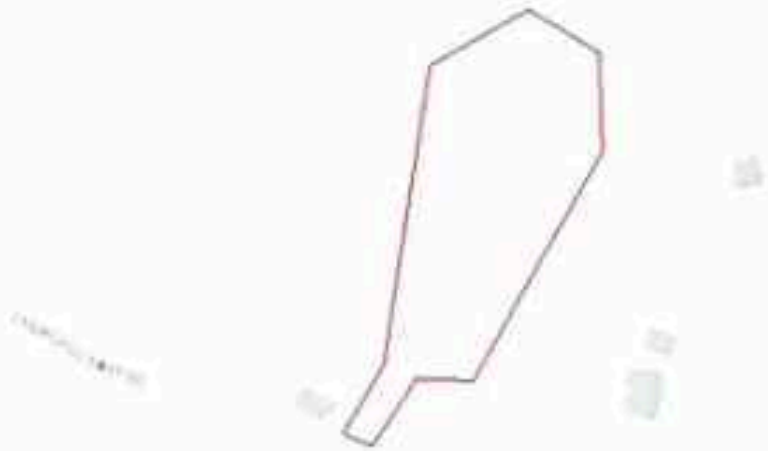
BRANZ Property Report

Date: Monday 10 March 2025
Address:
Parcel ID: 7753650
Appellation: Lot 13 DP 488718
Location:
TLA: Waikato District



LINZ Stats NZ Esri, HERE Garmin, USGS

Scale: 1:2066

Climate Zone: 2
Earthquake Zone: Zone 1
Exposure Zone: Zone B
Lee Zone: No

BRANZ does not recommend using BRANZ Maps as the primary source of wind zone data for making bracing calculations or preparing building consent application documents if other more reliable data (such as an up-to-date council map) is available.

Industry Technical 0800 80 80 85

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Rainfall Range: 80 - 90
Wind Region: A
Wind Zone: High

BRANZ does not recommend using BRANZ Maps as the primary source of wind zone data for making bracing calculations or preparing building consent application documents if other more reliable data (such as an up-to-date council map) is available.

Industry Technical: 0800 80 80 85

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GIB EzyBrace® 2011 Software

Demand Calculation Sheet — single storey — V1.1/14a

Job Details

Name	BRUCE GASSON
Street and Number	380 CHURCHILL EAST ROAD
Lot and DP Number	LOT 13
City/Town/District	RANGIRIRI
Designer	BENNETT DRAUGHTING
Company Name	BENNETT DRAUGHTING
Date	10.03.2025

BRANZ Appraised
Appraisal No.294 [2011]

Select Lining Option **10 or 13 mm GIB® Plasterboard**

Building Specification

		Single Floor
Number of storeys	single	
Floor Loading	2 kPa	
Foundation Type	subfloor	
Cladding Weight (subfloor)	light	
Cladding Weight	light	
Roof Weight	light	
Room in Roof Space	no	
Roof Pitch (degrees)	20	
Roof height above eaves (m)	1.3	
Building height to apex (m)	4.4	
Ground to lower floor level (m)	0.6	
Stud Height (m)	2.4	
Building Length (m)	9.6	
Building Width (m)	6.0	
Building Plan Area (m2)	58	

Building Location

Wind Zone	*High*	Earthquake Zone	Soil Type
Select by Building Consent Authority Map		1	D&E (deep to very soft)
or Preference	High	Annual exceedance probability	
		1/500 (NZS3604:2011 default)	

Bracing Units required for Wind

Demand W (BU)

	subfloor	Walls single
along	452	254
across	672	340

Bracing Units required for Earthquake

Demand along / across E (BU)

	Walls
subfloor	single
395	307

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Waikato District Council
Building Consent Number
BLD1107/25

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GIB EzyBrace® 2011 Software

Single Storey Walls Along

v11/14a

Lines		Bracing Elements							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved	
								W	E
184	A	1	1.7		2.4	GS1-N	GIB®	117	102
		2	0.7		2.4	GS1-N	GIB®	41	41
		3	0.7		2.4	GS1-N	GIB®	41	41
126	B	1	2.1		2.4	GS1-N	GIB®	145	126
234	C	1	1.8		2.4	GS1-N	GIB®	124	108
		2	2.1		2.4	GS1-N	GIB®	145	126

					Wind	Earthq
Totals Achieved	W	241%	EQ	177%	614	544
Timber Floor design limit of 120 BUs			**accepted**		OK	OK
Totals Required (from Demand)					254	307

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Building Consent Number
BLD1107/25

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GIB EzyBrace® 2011 Software

Single Storey Walls Across

Lines		Bracing Elements							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved W	Bracing Units Achieved E
125	M	1	1.2		2.4	BL1-H	GIB®	144	125
144	N	1	1.2		2.4	GS1-N	GIB®	83	72
		2	1.2		2.4	GS1-N	GIB®	83	72
174	O	1	2.8		2.4	GS1-N	GIB®	200	174

					Wind	Earthq
Totals Achieved	W	150%	EQ	144%	510	443
Timber Floor, design limit of 120 BUlm			accepted		OK	OK
Totals Required (from Demand)					340	307

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Subfloor Bracing Calculation Sheet					Subfloor Along		V11/14a
Along							
Bracing Line		*Bracing Elements provided*				*Wind*	*Earthq.*
1	2	3	4	5	6	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Number or Length L (m)	BUs Achieved	BUs Achieved
a	*line totals*	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
b	*line totals*	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
c	*line totals*	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
d	*line totals*	1					
W		2					
EQ		3					
e	*line totals*	1					
W		2					
EQ		3					
f	*line totals*	1					
W		2					
EQ		3					
g	*line totals*	1					
W		2					
EQ		3					
h	*line totals*	1					
W		2					
EQ		3					
i	*line totals*	1					
W		2					
EQ		3					
j	*line totals*	1					
W		2					
EQ		3					
						Wind	Earthq.
Totals Achieved						960	720
						OK	OK
Totals Required (from Sheet A)						462	395

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GIB EzyBrace® 2011 Software

Subfloor Bracing Calculation Sheet					Subfloor Across		V11/14a
Across							
Bracing Line		*Bracing Elements provided*				*Wind*	*Earthq.*
1	2	3	4	5	6	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Number or Length L (m)	BUs Achieved	BUs Achieved
m	line totals	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
n	line totals	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
o	line totals	1	NZS3604	anchor pile	2	320	240
W	320	2					
EQ	240	3					
p	line totals	1					
W		2					
EQ		3					
q	line totals	1					
W		2					
EQ		3					
r	line totals	1					
W		2					
EQ		3					
s	line totals	1					
W		2					
EQ		3					
t	line totals	1					
W		2					
EQ		3					
u	line totals	1					
W		2					
EQ		3					
v	line totals	1					
W		2					
EQ		3					
						Wind	Earthq.
Totals Achieved						960	720
						OK	OK
Totals Required (from Sheet A)						672	395

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H1/AS1 5th Edition Calculation Method Spreadsheet

Client	BRUCE GASSON
Project name	MINOR DWELLING
Address	380 CHURCHILL EAST ROAD RANGIRIRI
Designer	BENNETT DRAUGHTING
Date	10.09.2025
Territorial Authority	Waikato District
Climate Zone	2
When submitted	After 2 November 2023
Application	Housing

Proposed Building

Element		Area (m²)	Proposed Building Heat Loss (W/K)
Slab-on-ground_Floors		0.0	0.0
Other_Floors		59.0	36.2
Roof		59.0	11.3
Skylights		0.0	0.0
Walls		60.1	25.9
Glazing (in walls & doors)	(21.3% of total wall area)	16.3	35.4
Doors (opaque)		0.0	0.0
			Total 108.9

Reference Building

Element	Area (m²)	Reference Building Heat Loss (W/K)
Slab-on-ground Floors	0.0	0.0
Other_Floors	59.0	23.6
Total Roof (includes skylight area)	59.0	8.9
Walls (70% of total wall area)	53.5	26.7
Glazing allowance (30% of total wall area)	22.9	49.8
		Total 109.1

Comparison of proposed building against the reference building — **PASS**

Element type	Description	ID	Embed heating?	Area (m²)	Construction R-value (m².K/W)	Heat Loss (W/K)	Errors
Other_Floors	NZS3604 SUB FLOOR		No	59.0	1.6	36.2	
Other_Floors			No				
Roof	flat ceiling		No	59.0	5.2	11.3	
Walls	nett area		No	60.1	2.3	25.9	
Glazing (in walls & doors)	windows		No	16.3	0.46	35.4	
			No				
			No				
			No				
			No				
			No				
			No				
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			No				

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Construction R-value Calculator

This webpage calculates the R-value of walls, roofs and suspended floors for most insulation material R-values. It uses the "isothermal planes" method, the same method as used in NZS4214:2006.

Some of the possible material combinations may not be suitable for actual constructions, i.e. EPS based claddings directly fixed on timber framing. Please make sure to select only appropriate material combinations.

If your construction is not listed, please send an e-mail to designnavigator@gmail.com with a description and a detail drawing (pdf) of it.

Please select the element type. Then choose the construction details and enter the R-value of the insulation either directly in the text box or by choosing a product from the right panel.

- Floors (●)
- Walls ( )
- Roofs ( )

Date: 10/03/2025

FLOOR 1.63 m²°C/W

Type: Floor: Suspended Floor (no Lining)

Suspended Floor (no Lining) view detail

internal surface 0.09

Flooring : generic - Particle Board 20mm
R-value: 0.17

Timber Frame & Cavity : 140mm joists @ 450mm

Floor Frame Area: 10.0% *Cavity Area: 90.0%*

Framing :
R-value: 1.16

Expol Underfloor R-1.4 Wooden Floor (60mm) 1.4

Insulation value of the subfloor space

Suspended floor area [m²]:	58
Perimeter length [m]:	31.20
Perimeter height [m]:	0.6
Perimeter type:	Continuous perimeter wall (exposed)

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Building Consent Number
BCD-1107/25
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Construction R-value Calculator

This webpage calculates the R-value of walls, roofs and suspended floors for most insulation material R-values. It uses the "isothermal planes" method, the same method as used in NZS4214:2006.

Some of the possible material combinations may not be suitable for actual constructions, i.e. EPS based claddings directly fixed on timber framing. Please make sure to select only appropriate material combinations.

If your construction is not listed, please send an e-mail to designnavigator@gmail.com with a description and a detail drawing (pdf) of it.

Please select the element type. Then choose the construction details and enter the R-value of the insulation either directly in the text box or by choosing a product from the right panel.

- Floors ○
- Walls ◉
- Roofs ○

Date: 10/03/2025

EXT WALLS — 2.32 m²°C/W

Type: Wall: Timber Frame with vented Cavity

Timber Frame with vented Cavity [view detail]

external surface 0.03

Cladding : generic - Metal sheet (corr. iron)
R-value: 0.08

Air Barrier : generic - Building paper
R-value: 0.01

Timber Frame & Cavity : 90mm, studs @ 600mm, dwangs @ 800mm

Wall Frame Area: 14.4%	*Cavity Area: 85.6%*
15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08	15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08
Framing : *R-value: 0.75*	Pink(c)Batts(c) Ultra R2.8 90mm Wall 2.8
	still Airgap: none *R-value: 0.00*

Wall Lining : generic - gypsum Plasterboard 10mm
R-value: 0.04

internal surface 0.09

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Construction R-value Calculator

This calculator calculates the R-value of walls, roofs and suspended floors for most insulation material R-values. It uses the "isothermal planes" method, the same method as used in NZS4214:2006.

Some of the possible material combinations may not be suitable for actual constructions, i.e. EPS based claddings directly fixed on timber framing. Please make sure to select only appropriate material combinations.

If your construction is not listed, please send an e-mail to designnavigator@gmail.com with a description and a detail drawing (pdf) of it.

Please select the element type. Then choose the construction details and enter the R-value of the insulation either directly in the text box or by choosing a product from the right panel [?]

Floors ○
Walls ○
Roofs ◉

Date: 10/03/2025

CEILING 5.18 m²°C/W

Type: Roof: Timber framed truss Roof, direct fixed or battened flat Ceiling

Timber framed truss Roof, direct fixed or battened flat Ceiling view detail

external surface 0.03

Roofing : generic - Metal corrugate iron with building paper
R-value: 0.01

Insulation :

Timber Frame & Cavity : 90mm rafters or joists @ 900mm, battens covered with insulation

Roof Frame Area: 3.0%
Roof space (still air) 0.11
Framing :
R-value: 2.73

Cavity Area: 97.0%
Roof space (still air) 0.11
Pink(c)Batts(c) Superbatts R7.0 Ceiling 7
notched to cover bottom chord ☐

Ceiling Lining : generic - gypsum Plasterboard 10mm
R-value: 0.04

internal surface 0.09

Non-IC-rated recessed downlights
Ceiling Area (m²): 88 Number of downlights: 16 Clearance from lamp holder side (m): [?]

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Waikato District Council
Building Consent Number
BLD-2025-107725
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Producer Statement - PS1 - Design

Issued by:	Carter Holt Harvey LVL Limited
To:	BRUCE GASSON
To be supplied to:	Waikato District Council
Site address:	380 CHURCHILL EAST ROAD RANGIRIRI
In respect of	Member structural design using designIT for houses - Series 7.1

This Producer Statement covers the structural design of Futurebuild Laminated Veneer Lumber (LVL) and Structural Grade timber SG8 members determined using designIT® for houses in respect of the requirements of Clauses B1 and B2 of the Building Code for the proposed work identified in the Design Certificate and drawings. designIT® for houses is provided to designers, architects and engineers to assist in the specification of our Engineered and sawn timber products, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604:2011, Timber-framed buildings (NZS 3604). In conjunction with a site specific Design Certificate, this Producer Statement may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code (NZBC).

designIT® for houses software has been prepared in accordance with soundly based and widely recognised structural engineering principles. The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 series and with timber structural design in accordance with NZS 3603:1993, Timber Structures Standard (NZS 3603), including Amendment 4 (Verification method B1/VM1, 6.1). This design methodology uses the most up to date information available from joint Australian/New Zealand standards to determine specified performance levels.

Futurebuild LVL and SG8 members, when used and treated to the required treatment levels prescribed in NZS 3602, Timber and Wood-based Products for Use in Building (NZS 3602), and NZS 3604, will form part of an Acceptable Solution and comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

On behalf of Carter Holt Harvey LVL Limited, and subject to:

- All proprietary products meeting their performance specification requirements;
- The designer having knowledge of common building practice and terminology applied in NZS3604 and using designIT® for houses in accordance with the terms of the software licence;
- Correct and accurate input of span and loading information by the designer;
- Adequate overall building stability and robustness; and
- Products being treated to the requirements of NZS 3602 and/or Acceptable Solution B2/AS1.

I believe on reasonable grounds that, provided installation is in accordance with the installation requirements provided in the Design Certificate and/or relevant product literature, NZS 3604 or specific engineering design, the product and/or product stress grade and size given by designIT® for houses will comply with the requirements of the New Zealand Building Code, specified above.

Carter Holt Harvey LVL Limited holds a current policy of Professional Indemnity Insurance of no less than $ 200,000.

For and on behalf of Carter Holt Harvey LVL Limited, Date: 27/02/2025

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD-107/25
HOUSES
APPROVED



Signed by: Cameron Rodger, BE(Hons), MIEAust, CMEngNZ, IntPE, CPEng (Registration Number: 1017839)

Note: The total maximum amount of damages payable arising from this statement, whether in contract, tort or otherwise (including negligence) is limited to the sum of $200,000.

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DESIGN CERTIFICATE

Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey LVL Limited (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code (NZBC), provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, or specific engineering design, as appropriate.

Futurebuild LVL and SG8 components, when used and treated to the required treatment levels prescribed in NZS 3602 and NZS 3604, as modified by Acceptable Solution B2/AS1, will comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

References:
1. NZS 3603:1993 Timber Structures Standard.
2. NZS 3604:2011 Timber-framed buildings.
3. AS/NZS 1170.0 - 2002 Structural design actions, Part 0: General principles.
4. AS/NZS 1170.1 - 2002 Structural design actions, Part 1: Permanent, imposed and other actions.
5. AS/NZS 1170.2 - 2021 Structural design actions, Part 2: Wind actions.
6. AS/NZS 1170.3 - 2003 Structural design actions, Part 3: Snow and ice actions.
7. AS 1720.1 - 2010 Timber structures. Part 1: Design methods.
8. AS 1720.3:2016 Timber structures. Part 3: Design criteria for timber-framed residential buildings.

This Design Certificate, and any associated warranty/certification, is void where there has been substitution of alternate products not detailed within the Member Specification.

Version date: 27/02/2025

For further information or advice contact:
Carter Holt Harvey LVL Limited,
173 Captain Springs Road, Onehunga, Auckland
Telephone: 0800 808 131
Email: designit@futurebuild.co.nz
Web: https://futurebuild.co.nz/

Specifier details:

Specifier:	Rob Bennett
Business name:	Bennett Draughting
Address:	116 RED HILL ROAD PAPAKURA AUCKLAND 2110
Email:	rhbennett@xtra.co.nz
Contact:	Phone: 092966369, Mobile: 0272746127

Project and site details:

Project:	Untitled Project 1
Site address:	380 CHURCHILL EAST ROAD RANGIRIRI
For (owner/s):	BRUCE GASSON
Design wind zone:	High
Snow loading	Design snow zone: N0

MEMBER DESIGN DETAILS

Member 1

1) Member code and description — L1 - Cantilevered lintels - Supporting gable roof corner

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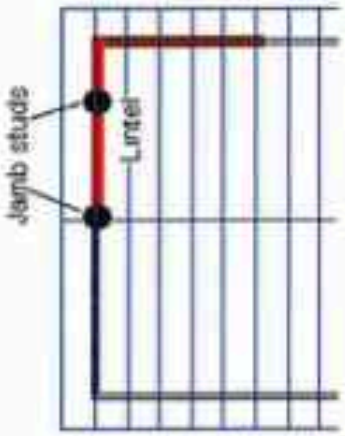

Gable end cantilevered lintel supporting gable end corner

2) Date prepared	20 March 2025
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Roof type	Light roof and ceiling - 40 kg/m²
Roof pitch	20.0 °
Truss span	6000 mm
Truss spacing	900 mm
Eaves overhang	600 mm
Verge overhang	600 mm
Lintel opening width	1800 mm
Lintel overhang	800 mm
Supported lintel span	800 mm
Nominal wall thickness	90 mm
5) Member specification	
Size, stress grade/product	Use 240 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit[1] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio*
Long term load - G + ΨLQ*	6.0 mm	0.2 mm (long term)	29.4
Live load - ΨsQ	7.2 mm	0.1 mm	107.1
Wind load - Ws	9.0 mm	0.2 mm	44.4
Overhang		-	
Long term load - G + ΨLQ	5.0 mm	1.0 mm (long term)	5.0
Live load - ΨsQ	4.4 mm	0.3 mm	14.1
Wind load - Ws*	4.0 mm	1.0 mm	4.2

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

		Limit States Design Reaction[3,4]	
Load case	kl[1]	End kN*	Intermediate kN
1.35G	0.60	-0.1	-2.5
1.2G + 1.5Q	0.80	-0.2	-3.8
1.2G + W + ΨcQ	1.00	-0.2	-5.4

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0.9G + W	1.00	0.1	3.3

B) Installation requirements

- Cantilevered lintels installed in accordance with Detail H23

Notes for interpretation of serviceability data
1. 'average deflection' is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS 1170 and AS 1720.

2. Deflection is the flexural response to load 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
SG grades - mechanically graded to AS/NZS 1748	Average + 43%
GL grades for gluiam to AS 1328	Average + 33%
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)	Average +18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!
3. The limits referred are those specified in AS 1720.3 for the stated load case.

4. 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements detailed.

Notes for interpretation of reaction data

1. Duration of load factor 'k1' for strength as per NZS 3603:1993
2. Negative (-) reactions relate to the 'gravity' or 'downwards' force on the support
3. Positive reactions relate to the 'upwards' forces or 'tie-down' requirement on the support
4. End reaction includes allowance for overhang/cantilever where one has been designed

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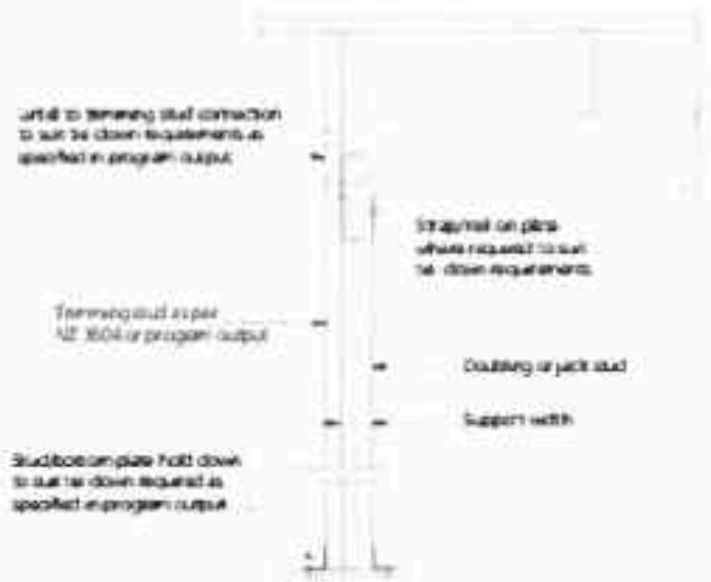
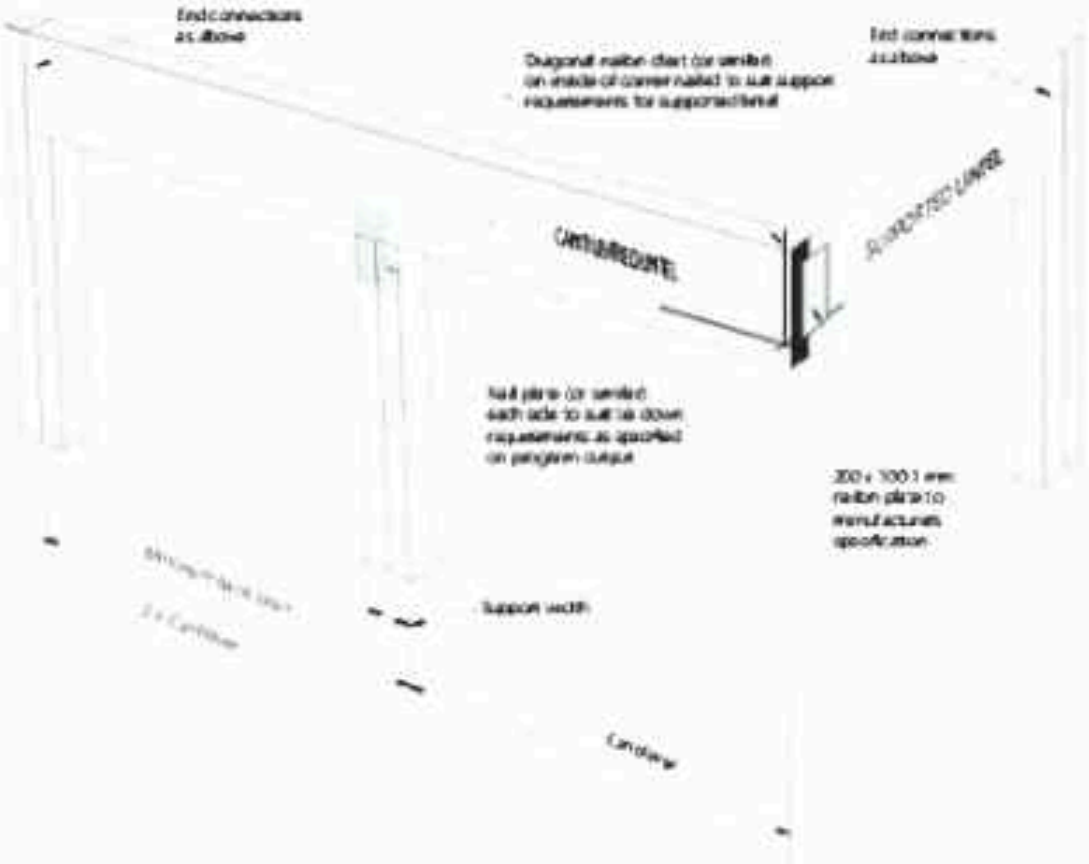
Detail H23: Cantilever Lintel End Connections

Cantilever Lintel End Connections



Cantilevered lintel connections



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Print Date: 6 November 2026, 1:26 pm

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MiTek New Zealand Limited

Correspondence from : **AUCKLAND**
40 Neales Road, East Tamaki 2013
PO Box 58-014, Botany 2163
Phone: 09 274 7109
Fax: 09 274 7100

CHRISTCHURCH
14 Pilkington Way, Wigram 8042
PO Box 6387, Riccarton 8440
Phone: 03 348 8691
Fax: 03 348 0314

www.miteknz.co.nz

PRODUCER STATEMENT for MiTek 20/20® TRUSS DESIGN - Version 4.7

ISSUED BY: **MiTek New Zealand Limited**

TO: **Riviera Prenail Ltd**

IN RESPECT OF: **MiTek® Truss Designs**

This producer statement covers the MiTek 20/20® truss design and the structural performance of the GANG-NAIL® connector plate for the job reference **IDS25047** and may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

The MiTek 20/20® truss design program has been developed by MiTek New Zealand Limited for the design of MiTek® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MiTek 20/20 ® are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution, to satisfy the requirements of Clause B1 of the New Zealand Building Code.

On behalf of MiTek New Zealand Limited, and subject to:

i) All proprietary products meeting their performance specification requirements
ii) The provision of adequate roof bracing and overall building stability
iii) Correct selection and placement of GANG-NAIL connector plates
iv) Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
v) The design being undertaken by the accredited fabricator under the terms of the software licence
vi) Timber is graded to the requirements of NZS 3603:1993
vii) Minimum timber treatment for these MiTek® trusses shall be in accordance with B2/AS1 Table 1A and the relevant sections of NZS 3602:2003

I believe on reasonable grounds that the trusses, if constructed in accordance with the MiTek 20/20® truss design and shop drawings, will comply with the relevant provisions of the New Zealand Building Code.

MiTek New Zealand Limited holds a current policy of Professional Indemnity Insurance no less than $500,000.

On behalf of MiTek New Zealand Limited, **Date: Monday, 14 April 2025**

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Limited

This information is provided by the Waikato District Council

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BLD1107/25
APPROVED

Client: BENNETT DRAUGHTING
Phone:
Site: BRUCE GASSON
360 CHURCHILL RD EAST
RANGIRIRI
Phone:

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MiTek accredited fabricator **Riviera Prenail Ltd**, being licensed to use the MiTek 20/20® software, to the client listed above and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

MiTek 20/20® TRUSS DESIGN DATA

The MiTek 20/20® computer design for this job is based on the following design parameters entered into the program. The Fabricator shall ensure that these job details are current and relevant to the project for the design of the MiTek ® trusses.

Job Details

		Importance Level:	2	Design Working Life:	50 years
Roof Truss					
Timber Group:	Truss	Pitch:	20.000 deg	Nominal Overhang:	450 mm
Roof		**Ceiling**		**Wind**	
Material:	Galv Iron .5mm	Material:	Gib 10mm/Timber Battens	Area:	High (44.0 m/s)
Dead Load:	0.210 kPa	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Restraints:	900 mm centres	Restraints:	400 mm centres		
Live Load:	Qur = 0.250 kPa Qc = 1.100 kN	Live Load:	Qc = 1.400 kN		

The minimum timber treatment for these MiTek® trusses shall be in accordance with B2/AS1 Table 1A and the relevant sections of NZS 3602:2003. The timber for these MiTek® trusses shall be graded to the requirements of NZS 3603:1993. Proprietary fixings and timber connectors shall be selected in accordance with NZS3604:2011 Section 4 - Durability.

MiTek® Truss List

Legend: * = detail only, ? = input only, Fee = failed design, Ø = non certified. Unmarked trusses = designed successfully. LB = lateral bracing required GB = gable brace required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
T1	1	6000	20.000	900
T1A	1	6000	20.000	900
T1B	1	6000	20.000	900
ET1	3D	6000	20.000	900
T1C	7	6000	20.000	900

Total quantity : 12

The computer design input has been carried out by:

Signed: _____

Date: ...Monday, 14 April 2025...

Name of Detailer: Standard

Qualifications and Title:

On behalf of: Riviera Prenail Ltd



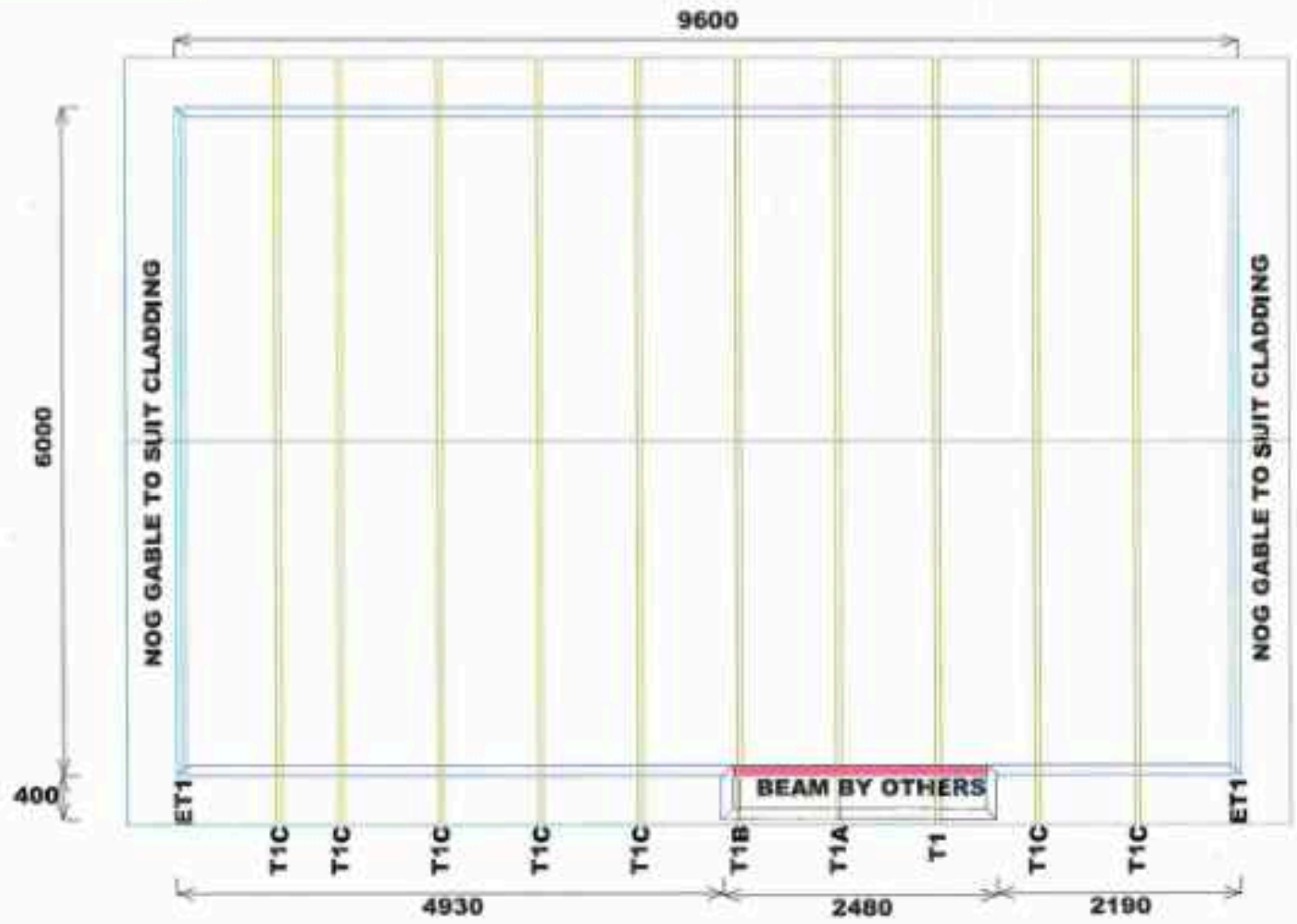
90B Foundry Road, Silverdale, Auckland 0932, New Zealand
Phone:

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Document Set ID: 6173808
Version: 1, Version Date: 12/05/2025



RIVIERA TRUSS
FTMA NEW ZEALAND

90 Foundry Road, Silverdale Ph 027-403-1540

General Notes
Do not cut or alter any frames on site prior to approval from Riviera Precut Ltd
Builder to check all openings and layout before ordering
All framing to H1.2 treated unless otherwise noted
All other fixing by others
All other trades by others

Truss Layout

MiTek

14 Apr 2025

Roofing	:	Galv Iron .0mm
Pitch	:	20.0deg
Spacing	:	900
Wind Area	:	High

Notes:

ALL TRUSSES TREATED TO H1.2

For Fixing Application Details also see MiTek On Site Guide

FIXINGS SUPPLIED FOR TRUSSES ONLY

All Trusses are to be fixed with
2x 90mm skew nails and
2x Wire Dogs to each wall or beam support
(unless noted otherwise)

Creeper / Jack Truss to Hip Truss:
3x 90mm skew nails to Top and Bottom Chords

Valley Truss over Truss supports:
2x 90mm skew nails at each support
(unless noted otherwise)

Screws for CPC type hangs:
14g x 70mm screws into all top plates and where double (2x45mm) laminate trusses

Outriggers pre-cut to suit first truss setback dim
All gable end truss bottom chords are to be skew nailed to the wall with 3x 90mm nails @ each vertical web

FIT JOIST HANGERS TO JACK TRUSSES BEFORE STANDING HIP TRUSSES

Client	:	BENNETT DRAUGHTING
Address	:	380 CHURCHILL RD EAST RANGIRIRI
Detailer	:	Standard

Job Ref: **IDS25047**

Document Set ID: 9258850
Version: 8, Version Date: 03/01/2026

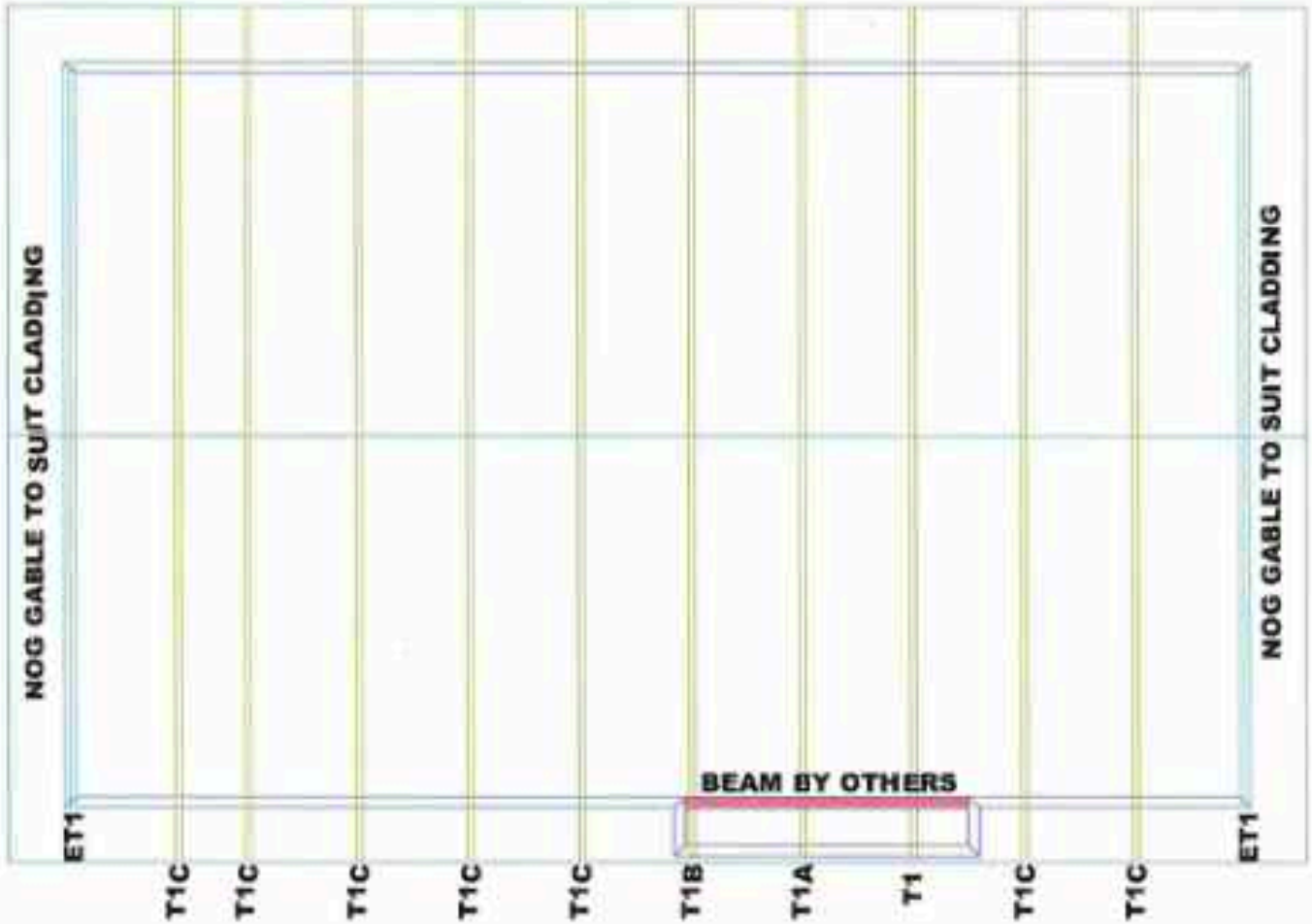
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Document Set ID: 6173808
Version: 1, Version Date: 12/05/2025



RIVIERA FRAMES

FTMA NEW ZEALAND

98 Foundry Road, Silverdale Ph 027-465-1540

Ownership
Do not use or alter any frames on site prior to approval from Riviera Frames Ltd.
Builder to check all openings and brace before erecting.
All bracing to H1.2 treated timber unless noted.
All other fixing by others.
All other details by others.

Truss Fixings

MiTek

14 Apr 2025

Roofing	:	Galv iron .5mm
Pitch	:	20 Deg
Spacing	:	900
Wind Area	:	High

FIXINGS

A = 47x90 Joist Hanger
B = 47x120 Joist Hanger
C = 47x190 Joist Hanger
D = 95x165 Joist Hanger
G = SH-140 Split Hanger
H = SH-180 Split Hanger
K = SH-220 Split Hanger
M = Multigrip (pair)
N = Multigrip (single)
E = CT200 (pair)
F = CT200 (single)
P = CT400
Q = CT600
T = CPC40 (single)
X = CPC40 (pair)
L = CPC80 (single)
J = 200x110 Nailon Plate
Y = 5kN Pack
Z = 15kN Pack

All truss fixings not indicated as above must have two wire dogs.

Client	:	BENNETT DRAUGHTING
Address	:	380 CHURCHILL RD EAST RANGIRIRI
Detailer	:	Standard

Job Ref: **IDS25047**

Document Set ID: 9258850
Version: 8, Version Date: 03/01/2026

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Waikato District Council
Building Consent Number
BLD1107/25

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8.32
302°01'20" 25.25
240°47'00" 43.01
8.49
9.00
10.00
8.71
9.00
358°09'30" 36.97
10.98
11.00
10.55
10.90
10.37
11.32
11.23
9.57
10.63
10.01
11.38
12.03
10.00
9.88
10.34
10.94
11.93
9.80
10.13
10.16
11.42
10.41
9.83
11.84
9.36
10.57
10.25
9.59
9.72
10.96
11.72
8°58'55" 114.17
9.55
10.16
9.30
9.27
10.57
11.42
10.83
9.94
11.00
11.07
9.02
9.00
10.30
10.76
10.00
29°31'00" 99.05
8.39
9.00
8.06
8.19
8.00
7.79
7.74
7.85
7.75
7.81
7.71
9.00
8.05
272°44'00"
21.69
8.03
211°07'00" 29.67
213°30'00" 30.38
8.43
293°28'10"
12.00
8.35
8.21
8.22

MADSEN LAWRIE CONSULTANTS LTD 14 HALL STREET, PUKEKOHE PH: 09 238 6369 FAX: 09 238 2448 web: www.madsen-lawrie.co.nz email: office@madsen-lawrie.co.nz		PREPARED FOR
		SCALE / DATE
		FILE NO. / SHEET NO.

Document Set ID: 6238845
Version: 1, Version Date: 03/05/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

PROPOSED MINOR DWELLING FOR

BRUCE GASSON at

380 CHURCHILL EAST ROAD

RANGIRIRI.

Sheet 1:	Risk Matrix & BRANZ site information.
Sheets 2 to 4:	Overall site layout plumbing & drainage information.
Sheet 4A:	Wastewater & Stormwater by Tilsley engineering.
Sheet 5:	Project Notes and information.
Sheet 6:	Floor Plan dimensions and Notes.
Sheet 7:	Floor Plan Bracing; Lintels etc.
Sheet 8:	Elevations.
Sheets 9-12:	Foundations and details.
Sheet 13:	Roof plan.
Sheet 14:	Cross sections
Sheets 15 to 17:	Lumberlok fixing details.
Sheets 18-19:	Bracing details.
Sheets 20-25:	Cladding details.
Sheet 26:	Roof details.
Sheet 27:	HWC details.
Sheet 28:	Wet Area details.
Sheet 29:	Insulation details.
Sheet 30:	Smoke Alarms.

Additional Pages
Specific Mitek design for trusses.
TOPO PLAN BY MADSEN LAWRIE.

IMPORTANT:
THIS ISSUE 12.04.2025 – Updated 30.04.2025.

This project has been designed to comply with the New Zealand Building Code and related documents.
It is the responsibility of the contractors and workmen employed in this contract to make themselves familiar with the related documents pertaining to their respective trades.

All work must comply with the New Zealand Building Code.

BENNETT DRAUGHTING
LBP: 100433 DESIGN.2.
116 Red Hill Road, Papakura.
(09) 2966369.

IMPORTANT :

A NUMBER OF ADDITIONAL INSPECTIONS ARE REQUIRED IN ADDITION TO COUNCIL INSPECTIONS.

GEOTECHNICAL CONDITIONS MUST BE CONFIRMED.

ALL ASPECTS OF THE EFFLUENT SYSTEM UPGRADE MUST BE CONFIRMED BY THE ENGINEER.

Any other specific conditions in the Building Consent requiring inspection.

- Provide a slip resistant surface to D1/AS1
To entry areas.
Concrete surfaces to be exposed aggregate
With a class 5 or broom finish.
Internal tiles to have a profiled or grit finish.

The site must have compliant safety fencing
and barriers installed prior to any works on site.
These must comply with F5.3.2 preventing site
Hazards from harming others & F5.3.3 restricting access
By children.

Noted 15 Oct 25

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Document Set ID: 8238840
Version: 8, Version Date: 03/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

External Moisture Risk Matrix

Project Name / Facade ID: MINOR DWELLING 380 CHURCHILL RC

Wall type: ○ Parapet or enclosed balustrade ◉ Other

Risk Scores	Low	Medium	High	Very High
A. Wind Zone:	○ Low = 0	○ Medium = 0	◉ High = 1	○ Very High = 2 ○ Extra High = 2
B. Number of Storeys:	◉ Low = 0	○ Medium = 1	○ High = 2	○ Very High = 4
C. Roof/Wall Intersection Design:	◉ Low = 0	○ Medium = 1	○ High = 3	○ Very High = 5
D. Eaves Width:	○ Low = 0	◉ Medium = 1	○ High = 2	○ Very High = 5
E. Envelope Complexity:	◉ Low = 0	○ Medium = 1	○ High = 3	○ Very High = 6
F. Deck Design:	◉ Low = 0	○ Medium = 2	○ High = 4	○ Very High = 6

Total Risk Score: 2

low risk	medium risk	high risk	very high risk
0 up to 6	7 up to 12	13 up to 20	over 20

this wall

Display Results Table | Download Results Table (HTML)

This wall can use any of the wall cladding types which have a green tick ☑. Claddings with red crosses ☒ are not permitted under the Acceptable Solution E2/AS1.

Direct fixed to framing	Over nominal 20 mm drained cavity
☑ Timber weatherboard - all types	☑ Masonry veneer
☑ Timber weatherboard - bevel backed	☑ Stucco
☑ Fibre cement weatherboards	☑ Horizontal profiled metal - corrugated and trapezoidal only
☑ Vertical profiled metal - corrugated and symmetrical trapezoidal	☑ Rusticated weatherboards
☑ Vertical profiled metal - corrugated only	☑ Fibre cement weatherboards
☑ Vertical timber board and batten	☑ Fibre cement sheet - flush finish
☑ Fibre cement sheet jointed finish (except stucco over fibre cement backing)	☑ Fibre cement sheet - jointed finish
☑ Plywood sheet	☑ Plywood sheet
☒ EIFS	☑ EIFS
	☑ Bevel backed weatherboards

This table is based on Table 3 of E2/AS1. The claddings which have not received a green tick should not be used in this situation.

BRANZ Property Report

Date: Monday 10 March 2025
Address:
Parcel ID: 7753650
Appellation: Lot 13 DP 488718
Location:
TLA: Waikato District

Waikato District Council
Building Consent Number
BLD1107/25

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Scale: 1:2066

Climate Zone: 2
Earthquake Zone: Zone 1
Exposure Zone: Zone B
Lee Zone: No

BRANZ does not recommend using BRANZ Maps as the primary source of wind zone data for making bracing calculations or preparing

Rainfall Range: 80 - 90
Wind Region: A
Wind Zone: High

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 1

This information is provided by the Waikato District Council

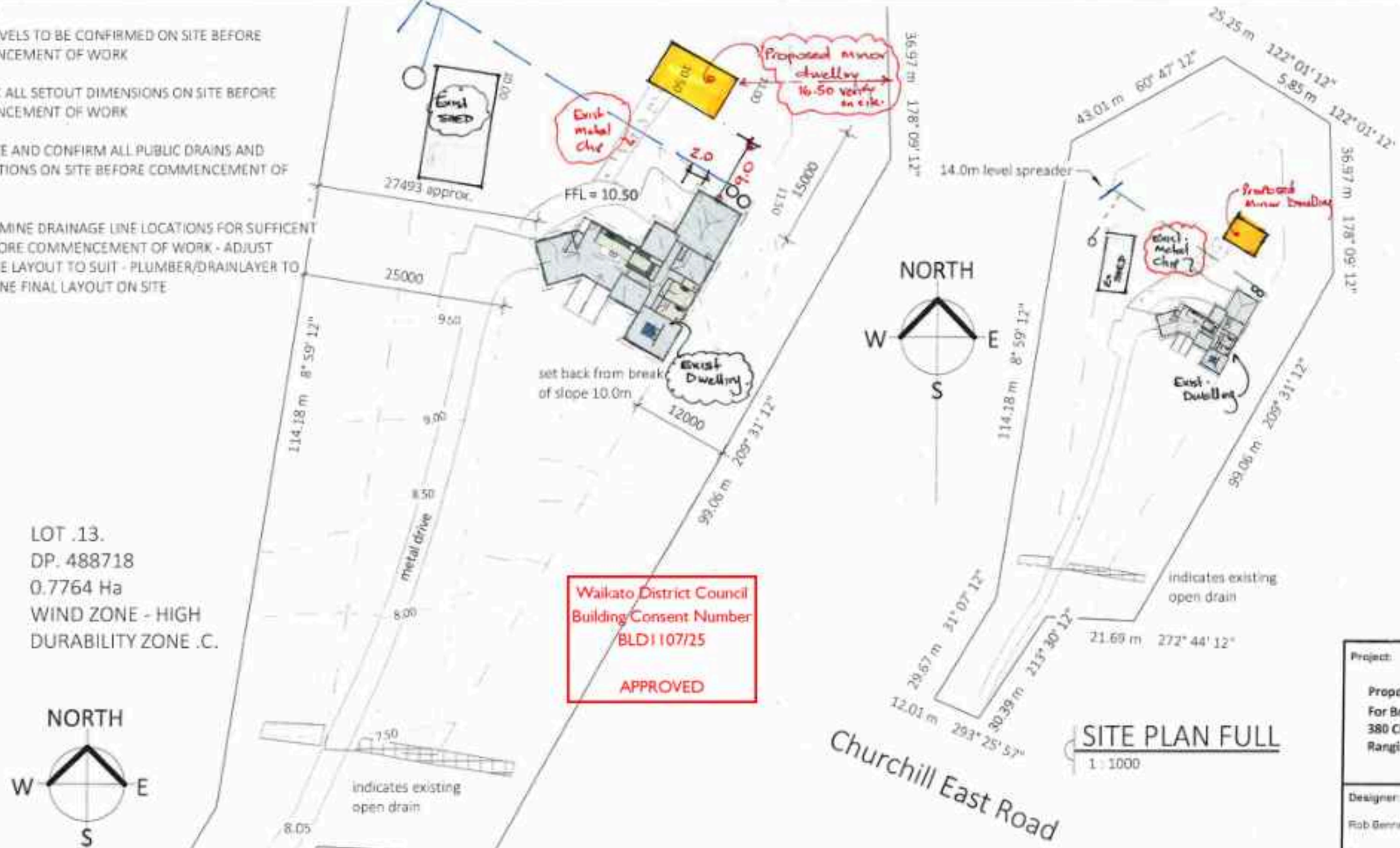
NOTES -
1) ALL LEVELS TO BE CONFIRMED ON SITE BEFORE COMMENCEMENT OF WORK

2) CHECK ALL SETOUT DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORK

3) LOCATE AND CONFIRM ALL PUBLIC DRAINS AND CONNECTIONS ON SITE BEFORE COMMENCEMENT OF WORK

4) DETERMINE DRAINAGE LINE LOCATIONS FOR SUFFICENT FALL BEFORE COMMENCEMENT OF WORK - ADJUST DRAINAGE LAYOUT TO SUIT - PLUMBER/DRAINLAYER TO DETERMINE FINAL LAYOUT ON SITE

LOT .13.
DP. 488718
0.7764 Ha
WIND ZONE - HIGH
DURABILITY ZONE .C.



SITE PLAN.
1 : 500

SITE PLAN FULL
1 : 1000

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

TO BE READ IN CONJUNCTION WITH ATTACHED TILSLEY ENGINEERING LTD REPORT

1. A suitably qualified Chartered Professional Engineer or their representative shall confirm the finished building platform meets the required bearing strength of 100kPa
2. Any cut/fill under and around the foundations to be inspected by a qualified Engineer.
3. If any structure or infrastructure is relocated outside of the area shown on the site plan, then additional analysis will be required prior to any works being undertaken.
4. All cut/fill over 1.0m in height must be supervised by a suitably qualified Chartered Professional Engineer or their representative.
5. No water shall be discharged into the ground within 5.0m of the foundations
6. Install an approved wastewater system such as Hynds Lifestyle.

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision: updated 15.06.25

Sheet Number: 2 of

Document Set ID: 9258849
Version: 8, Version Date: 03/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

NOTES -

1) INSTALL ALL FLASHINGS TO MANUFACTURES SPECIFICATIONS AND TO LOCAL BODY REQUIREMENTS.

2) ALL MATERIAL TO BE SUITABLE FOR DURABILITY ZONE B

3) ALL CONNECTING BRACKETS/FIXINGS TO BE APPROVED FOR SITUATION AS PER MANUFACTURES RECOMMENDATIONS AND LOCAL BODY REQUIREMENTS ALL EXPOSED FIXINGS TO BE TYPE 304 STAINLESS STEEL MINIMUM.

4) ALL DRAINAGE AND WASTE PIPES TO COMPLY WITH AS/NZS3500.2. 2015

5) LOCATE ALL PUBLIC SERVICES AND CONNECTIONS BEFORE EXCAVATION - USE EXISTING CONNECTIONS WHERE POSSIBLE

114.18 m 8° 59' 12"

NORTH

W

S

E

LOT .13.
DP. 488718
0.7764 Ha

25000

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

install approved sedimentation control fencing, to remain until completion of project

Exist. Metal shed

9.6 x 6.0 Minor dwelling

deck

approved wastewater system to be confirmed - See design by Tilsley Engineers

DP

FFL = 10.50

cesspit

kitchen sink to run into ORG

ORG

max. 50m2 sealed drive area - fall to cesspit

FFL: 11.20

TV

100 ø PVC

9.0

2.0

Ø100 sealed SW line to level spreader

Existing Water Tanks
provide orifice controlled outlet

vent

EXIST. DWELLING REMAINS INTACT.

ED FIELD
290m² -
see design by
Tilsley Engineers

16.50 wash ex site

15000

12000

DRAINAGE PLAN
1:200

99.06 m 209° 31' 12"

GENERAL NOTES

- All details shown are as per the site plan provided.
- **Verify all details on site before commencing.**
- All levels shown are to LINZ datum Per the topo provided.
- The works involve a new 58 m2 Minor Unit.
- The building platform to the Proposal will only need minor clearing to achieve the required building platform.
  This involves topsoil only to a depth of around 200mm. 12m3 approx. total.
- Sewer to the existing dwelling run to an existing Effluent system.
  and new private drains will be connected to existing.
  An updated report is provided by Tilsley Engineering for any upgrades required.
- The existing water tanks will provide the potable supply to the new minor dwelling

THE MINOR DWELLING WILL HAVE A MINIMUM FFL OF 11.20.

BUILDING COVER = 397 M2 = 5.1 %
(Existing House = 227 m2, exist Shed 112m2,
Minor Unit = 58 m2)
DRIVES, PATIO, All existing etc = 342 M2 = 4.4 %
TOTAL IMPERMEABLE = 9.5 %
PERMEABLE = 90.5 % Bal.

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

Sheet Number:
3 of

Document Set ID: 9238840
Version: 8, Version Date: 03/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

PLUMBING & DRAINAGE:

- All work must be carried out to the latest and best trade practice by experienced and competent tradesman, familiar with all necessary installation techniques.
  It is the building contractors responsibility to ensure that all restricted building work is carried out by or under the direct supervision of a registered tradesperson or Licensed Building Practitioner.

Plumber / Drainlayer is to provide an "As Built" to the main contractor upon completion of all works.
Ensure that all sanitary sewer plumbing and drainage including pipes, junctions, sleeves, fixings, flashings etc are correctly installed and incorporated into the structure to comply with the NZBC G13/AS1/AS2 Local Territorial By-laws and statutory authority regulations as required to leave the works in correct working order.
- Ensure that all stormwater drainage including pipes, junctions, fixings etc are correctly installed and incorporated into the structure to comply with the NZBC E1, Local Territorial By-laws and statutory authority regulations as required to leave the works in correct working order.

- **The drainlayer must locate and confirm the position of existing Effluent system and irrigation field prior to commencing work & check all specified pipe diameters & gradients to ensure the required falls can be achieved.**
  Stormwater runs to existing water tanks which will provide the potable water supply to the minor dwelling.
  THESE MUST BE CONFIRMED BEFORE ANY WORK COMMENCES.
  THE WORK MUST ALSO COMPLY WITH THE NEW REPORTS BY TILSLEY ENGINEERING.

- Commence drain laying at the low end of even fall sections of drains and proceed in a continuous sequence to the fitting's connections.

- Internal water reticulation pipes (hot & cold) are to be polybutylene installed to the manufacturers specification and arranged and fixed so that all joints are in a fully relaxed condition without any stress or tension.

- The HWC hot water supply must be insulated to comply with the min standards in NZS 4305 & H1/AS1 5.0 All aspects of installation must comply with NZBC G12. Install a Tempering Valve to to control the HW temperature at any sanitary fixture used per personal hygiene at not more than 55 degrees. Install pressure relief valves, cold water expansion valves, flow control valves, pressure limit valves & non-return / isolating valves as required to leave the HW system in full operational order. Provide Seismic Strapping & Equipotential Bonding.

- All systems shall be fully tested before being covered in with any defects rectified and then re-tested.

SANITARY SEWER DRAINAGE:

- 100Ø U-PVC SS lines will run to the existing @ 1:60 min fall.
- All sanitary sewer plumbing and drainage pipes are to be U-PVC and must comply with standards AS/NZS 1260 or AS/NZS 1254.

Fixture	DIA	Grade
Kitchen Sink	65Ø	1:40
Laundry Tub	65Ø	1:40
Basin	65Ø	1:40
Shower	65Ø	1:40
WC	80Ø	1:60
TV	50Ø	

NOTE all under floor wastes are to be 65Ø minimum.

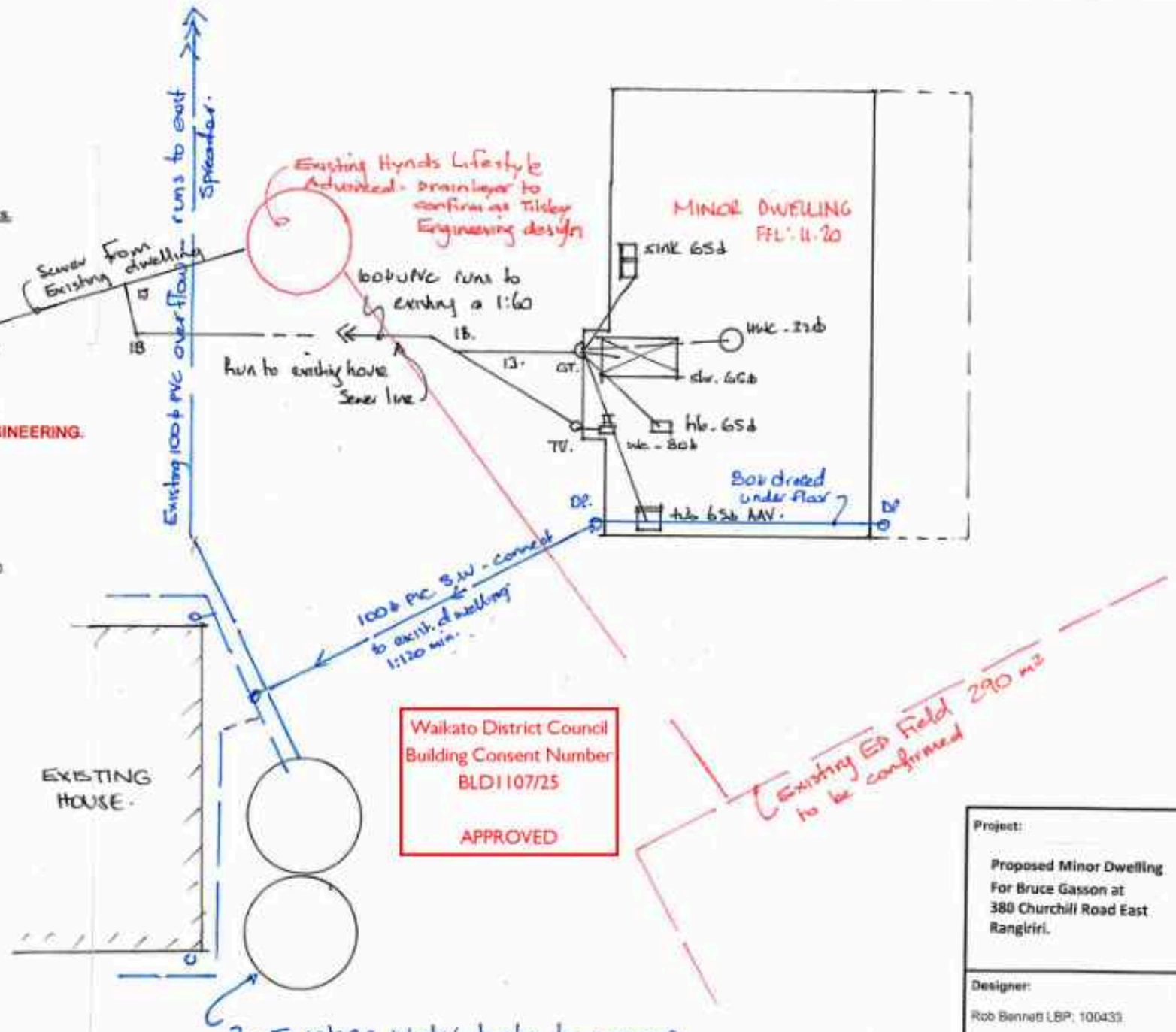
STORMWATER DRAINAGE:

- 100Ø U-PVC SW lines for the minor dwelling will run to the Existing water tanks @ 1:120 min fall. The existing SW lines may need alteration to connect the existing downpipes to the new water tanks. Thereafter overflow via an existing overflow system/ stormwater connection.100Ø U-PVC @ 1:120 minimum.

- Downpipes are to be 80Ø.

- All stormwater pipes are to be U-PVC and must comply with standards AS/NZS 1260

The EXISTING water tanks will provide the potable water supply for the dwelling and minor dwelling.
Provide an in-line leaf & debris diverter or Gutter screens.
Provide a first flush diverter pipe and screwed end cap with 3mm hole.
A suitable filtration system must be installed before the building is occupied.
This is to be a UV Filtration system by Healthy Water tanks approved under NZDWS 2008 standards for residential water treatment.



Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

4 PLUMBING + DRAINS
Scale: 1:100

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025.
Revision:

Sheet Number: 4 of

Document Set ID: 8238846
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Print Date: 6 November 2026, 1:26 pm

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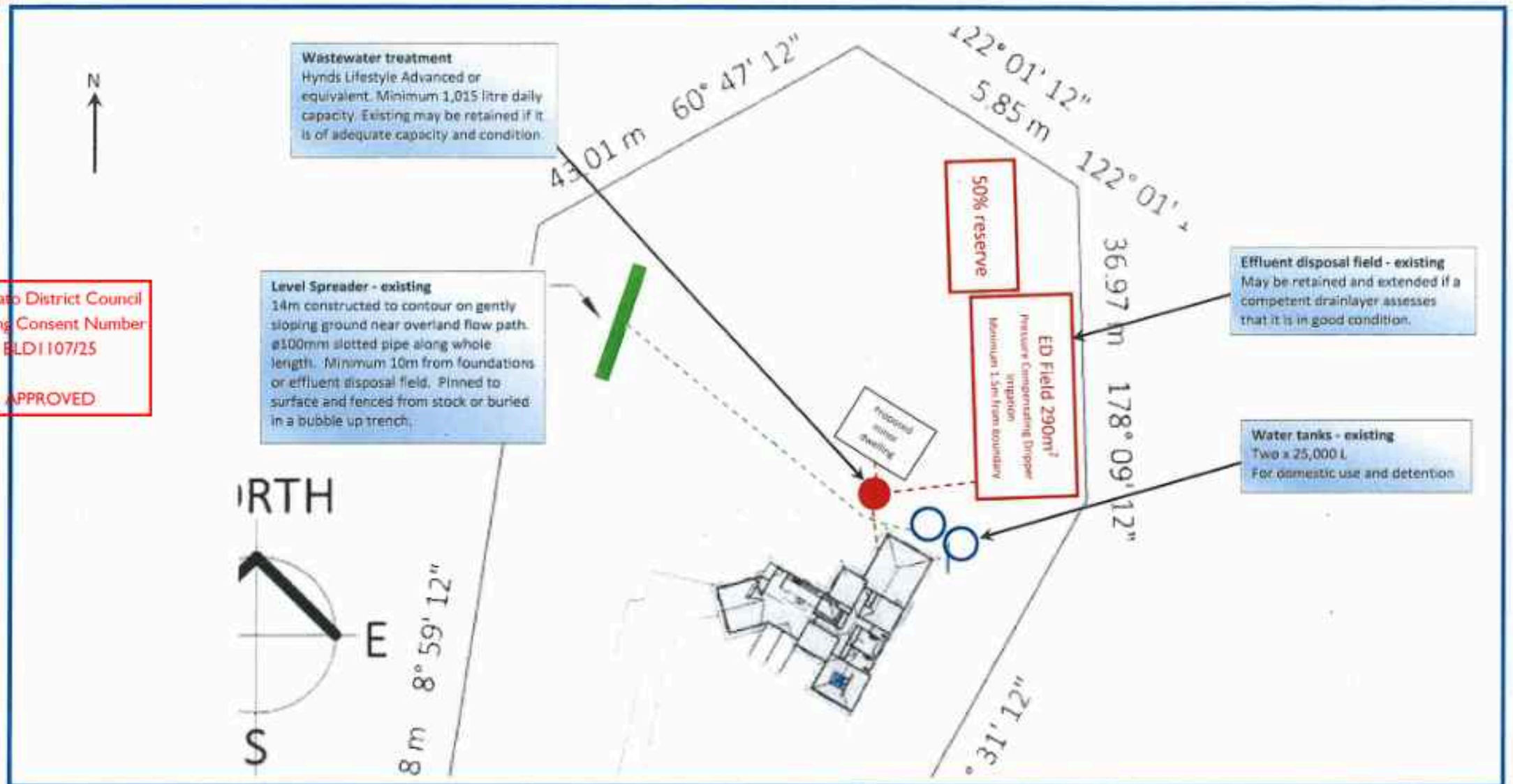

	WW & SW Plan 380 Churchill East Road, Rangiriri Reference: BD26827 Date: 14/04/2025 Scale 1:500 @ A3	Reviewed and approved by: R Tilsley Sig # P222	Drawn by: Bridget Dobbs TILSLEY ENGINEERING LIMITED 27 Roulston Street, Pukekohe PO Box 392, Pukekohe Tel: 09 238 3245 info@teng.co.nz

ADDITIONAL SHEET: 4A.

Document Set ID: 8238840
Version: 8, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

GENERAL NOTES:

Work must comply with the NZBC & current compliance documents including NZS 3604.2011.
Check & confirm all site details including the proposed Setout & levels prior to commencing work.
Any discrepancies or variations from that shown, or any other concerns, must be addressed to the Designer or Engineer prior to commencing any work.

INTERIOR

Ceiling Height:	2420 stud height throughout the minor dwelling.
Linings:	10mm Winstone Gib Board, fixed as specified in the Gib Fixing Guide & finished to Level 4. Use Aqualine in all wet areas and Braceline where specified for BL bracing elements. Use Standard Gib Board in all other applications. Ceiling lining installed over timber ceiling battens.
Skirting:	Gib Cove to all wall/ceiling junctions. 60 or 90 x 10mm skirting to all wall/floor junctions. 60 or 90 x 10mm architraves or rebated jambs for Gib lining.
Doors:	1980 high timber internal doors with enamel paint finish & standard single lever hardware.
Access Hatch:	Flush mounted ceiling access hatch to roof space.
Paint:	Acrylic paint finish to all internal wall & ceiling surface and acrylic enamel paint finish to all timber finishing lines and wet areas.

ELECTRICAL

All electrical works must comply with G9/VM1 (AS/NZS 3000, NZECP 34, NZECP 36 & NZECP 54) & G9/AS1 (NZECP 51) & be carried out by or under the direct supervision of a registered Electrician.
Test all fittings and issue a Certificate of Compliance on completion of work to the Main Contractor.
CONFIRM ALL DETAILS WITH THE CLIENT.

Meter box:	Sheet metal meter box surface mounted at eye level on external wall.
Fuse board:	Flush mounted fuse board containing main isolating switches, circuit breakers & RCD's.
Earthing:	Earth wires connected to external earth peg.
Wiring:	6mm T&E TPS to stove, 2.5mm T&E to power points, 1.5mm T&E TPS to lights & light switches, 6mm PVC conduit earth wire. (Electrician to confirm prior to installation).
Power:	Double power outlets throughout - final layout to be as per clients instruction. Kitchen x 3, Living/Dining x 4, Master Bed x 3, Other Bedroom x 2, Bathrooms x 1, Garage x 2, plus dedicated outlets for fridge, stove/hob, rangehood, washing machine & heated towel rail.
Television:	Television outlet points located in living rooms and bedrooms.
Telephone:	One telephone/internet outlet located in living room, main bedroom.
Security:	Alarm system installation to client's instruction.
Lighting:	Down lights throughout the dwelling to clients' instructions. Exterior light at the front and back of the house with motion sensor. Confirm all details with the owners on site. **LIGHTING MUST COMPLY WITH G8.3 with Illuminance at the floor level of no less than 20 LUX.**
Fire Safety:	**Smoke alarms installed within 3.0m of each bedroom and in the escape routes of the dwelling. Install & test smoke alarms on or near the ceiling as per AS1670.6 and the manufacturers spec.**
Extraction:	**Rangehood to be installed above the hob ducted to the exterior with min air flow 50l/s, extraction fans to be installed in the bathroom ducted to the exterior soffits (where possible). Min vent rate of 25L per second.**

KITCHEN

Kitchen facilities are to comply with NZBC G3/AS1.
CONFIRM ALL DETAILS WITH THE CLIENT.

Flooring:	Nonslip Vinyl or tiles.
Bench Top:	To client's choice.
Cabinetry:	To client's choice.
Splash Back:	Tile finish.
Sink Unit:	Stainless steel over-mount sink.
Tapware:	Single lever mixer with swivel spout.
Appliances:	Hob with under bench oven. Rangehood to hob ducted to the exterior with protection cowl min flow 50l/ s. Kitchen joinery is to allow for fridge & dishwasher space.

BATHROOM

All "wet" areas to comply with NZBC E3/AS1.
CONFIRM ALL DETAILS WITH THE CLIENT.

Extraction:	Extraction fan to be installed in the bathroom and laundry ducted to the exterior soffits. Min vent rate of 25L per second.
Flooring:	Nonslip tile or vinyl flooring.
Walls & Ceilings:	10mm Gib Aqualine to walls & ceilings with level 4 stopping.
Splash Back:	Tile finish to splash backs behind basins.
Fittings:	To client's choice.
Coat Hooks:	Robe hook to the rear of the bathroom door.
Towel Rail:	Wall mounted rail.
Hardware:	Privacy lock to door.
Vanity Unit:	Wall or floor mounted vanity with built in overflow & integrated drawers. Single lever mixer.
Shower:	Tiled shower with toughened safety glass in stainless steel trim. Slide rail shower set with single lever mixer.
Toilet:	Soft close seat and low flow dual flush capability 6/3 flush. Wall mounted toilet roll holder.

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LAUNDRY

Laundry Facilities to comply with NZBC G2/AS1.

Extraction:	Extraction fan to be installed & ducted to the exterior soffits. Min vent rate of 25L per second.
Flooring:	Nonslip ceramic tiles or vinyl.
Appliances:	Super tub with built in overflow installed with washing machine connection and to include a shelf in the cupboard. Seal the unit to avoid moisture getting in behind it.

INSULATION **All to comply with H1/AS1.**

External Walls:	R2.8 ULTRA minimum (including the internal wall separating the garage and the dwelling).
Ceiling:	R 7.0 SUPER BATTS- Use an Insulations shield as required.
Floor:	Timber subfloor and foundation. Use R 1.4 EXPOL minimum.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46

HOT WATER

- The HWC hot water supply must be insulated to comply with the min standards in NZS 4305 & H1/AS1 5.0.
All aspects of installation must comply with NZBC G12. Install a Tempering Valve to control the HW temperature at any sanitary fixture used per personal hygiene at not more than 55 degrees.
Install pressure relief valves, cold water expansion valves, flow control valves, pressure limit valves & non-return / isolating valves as required to leave the HW system in full operational order.
Provide Seismic Strapping & Equipotential Bonding.

EXTERNAL CLADDING

Ext Walls:	Selected metal cladding on cavity all over. Thermakraft Watergate wall wrap.
Roofing:	Selected Metal Corrugate profile roofing installed over Thermakraft self-supporting roofing underlay on H1.2 timber purlins. External Timber fascia / 125mm gutter system with 80mm downpipes.
Soffit Lining:	4.5mm fibre cement soffit lining with a paint finish.

JOINERY Joinery must be to NZ standards for manufacture and installation.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.**NOTE**: If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.

STRUCTURE

Concrete Floor:	Rib raft concrete foundation system to SED. By Tilley Engineering Ltd. Call 09 2383245 for an inspection - NO INSPECTION EQUALS NO PS4. **A MINIMUM FLOOR LEVEL APPLIES SEE SPECIFIC NOTATIONS.**
External Walls:	90mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 + 140x35 top plate, 90x45 bottom plate. **Loadbearing Walls** 2.42m stud height - 90x45 @ 400 c/c Note 3 stud in entry 90x45 studs @ 300 cts.
Internal Walls:	90mm & 70mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 top & bottom plate. 140x35 over top plates. **Internal Non Loadbearing Walls** 2.42m stud height - 90x45 or 70x45 @ 600 c/c
Window Head:	All external doors and windows at 2020 nominal head to suit 2.42 nominal stud.
Roof Trusses:	SG8 H1.2 treated timber. All timber must comply with NZBC B2. Gangnail/Mitek truss system. All trusses @ 900 max c/c.
Exterior Use Timber:	SG8 H3.2 treated timber.
Timber in Ground Contact:	SG8 H5 treated timber.

TIMBER: All timber must comply with the requirements of B2/AS1.
- **Wall Framing**: H1.2 SG8
- **Roof Framing**: H1.2 SG8
- **Exterior Use Timber**: H3.2 SG8
- **Ground Contact Timber**: H5 SG8

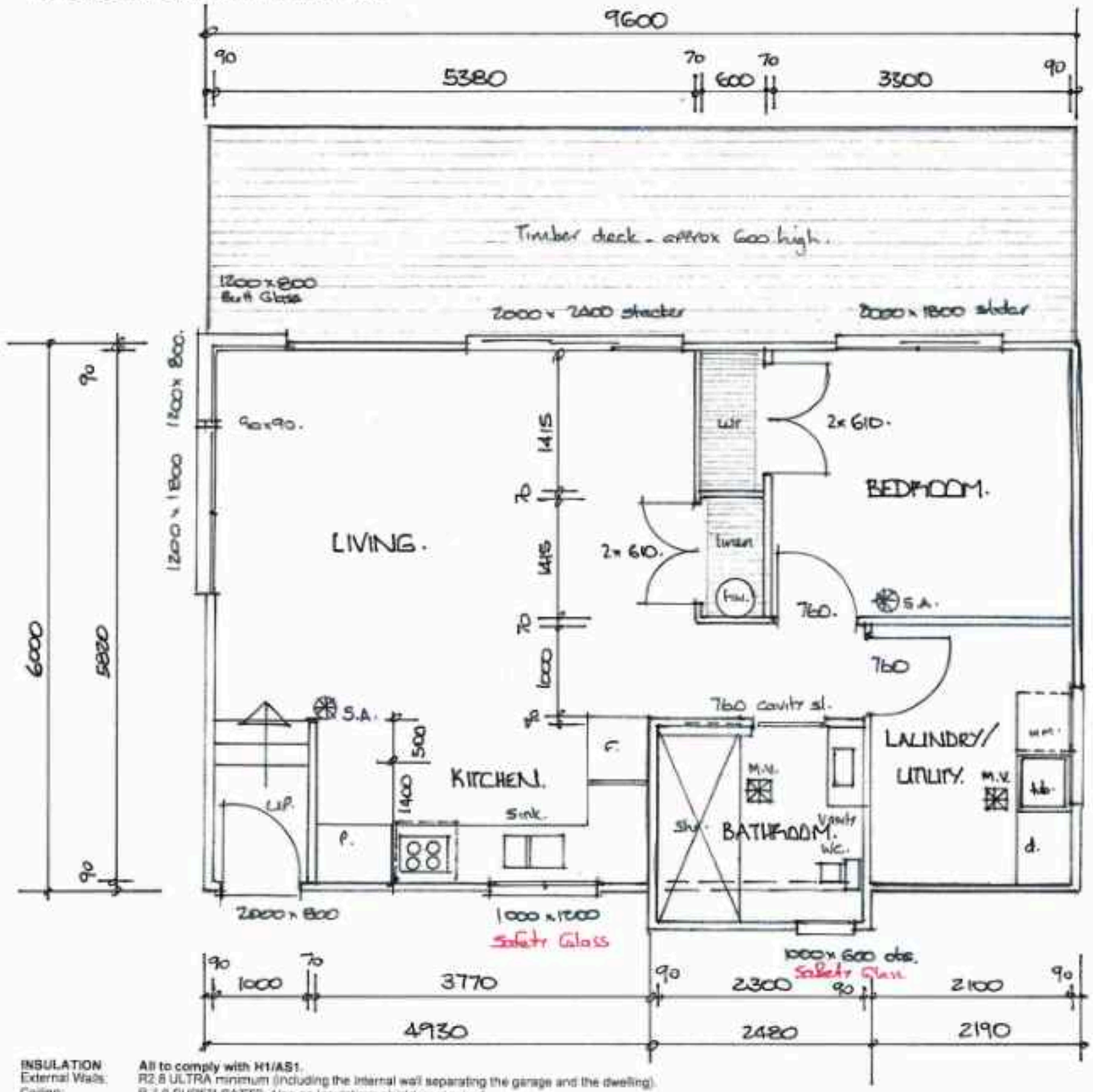
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

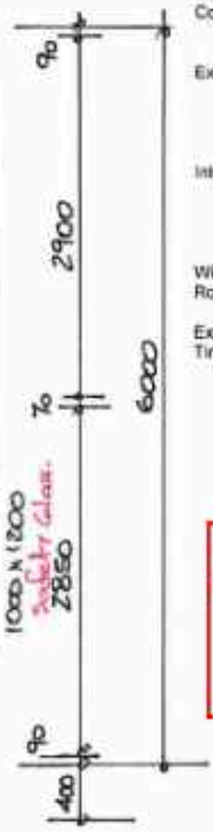
SHEET: 5

This information provided by the Waikato District Council

Fire Safety
Domestic Smoke alarms installed within 3.0m of each bedroom
and in the escape routes of the dwelling.
Install & test smoke alarms on or near the ceiling as per AS1670.5 and
the manufacturers specification.

Extraction:
Rangehood to be installed above the hob ducted to the exterior
with min air flow 55l/s.
Extraction fans to be installed in the bathroom & Laundry ducted to the exterior
soffits (where possible). Min vent rate of 25L per second.





INSULATION All to comply with H1/AS1.
External Walls: R2.8 ULTRA minimum (including the internal wall separating the garage and the dwelling).
Ceiling: R 7.0 SUPER BATTS- Use an insulations shield as required.
Floor: Timber subfloor and foundation. Use R 1.4 EXPOL minimum.
All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46

Work must comply with the NZBC & current compliance documents including NZS 3604.2011.
Check & confirm all site details including the proposed Setout & levels prior to commencing work.
Any discrepancies or variations from that shown, or any other concerns, must be addressed to the Designer or Engineer prior to commencing any work.

EXTERNAL CLADDING

Ext Walls:	Selected metal cladding on cavity all over Thermakraft Watergate wall wrap.
Roofing:	Selected Metal Corrugate profile roofing installed over Thermakraft self-supporting roofing underlay on H1.2 timber purlins. External Timber fascia / 125mm gutter system with 80mm downpipes.
Soffit Lining:	4.5mm fibre cement soffit lining with a paint finish.

JOINERY Joinery must be to NZ standards for manufacture and installation.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.
NOTE: If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.

STRUCTURE

Concrete Floor:	Timber subfloor to SED. By Tilsley Engineering Ltd. Call 09 2383245 for an inspection - NO INSPECTION EQUALS NO PS4. **A MINIMUM FLOOR LEVEL APPLIES SEE SPECIFIC NOTATIONS.**
External Walls:	90mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 + 140x35 top plate, 90x45 bottom plate. **Loadbearing Walls** 2.42m stud height - 90x45 @ 400 c/c Note 3.0m stud in entry 90x45 studs @ 300 cts.
Internal Walls:	90mm & 70mm SG8 H1.2 treated framing. All timber must comply with NZBC B2. Nog all walls @ 800 max c/c. 90x45 top & bottom plate. 140x35 over top plates. **Internal Non Loadbearing Walls** 2.42m stud height - 90x45 or 70x45 @ 600 c/c
Window Head:	All external doors and windows at 2020 nominal head to suit 2.42 nominal stud.
Roof Trusses:	SG8 H1.2 treated timber. All timber must comply with NZBC B2. Gangnail/Mitek truss system. All trusses @ 900 max c/c.
Exterior Use Timber:	SG8 H3.2 treated timber.
Timber in Ground Contact:	SG8 H5 treated timber.

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(6) FLOOR PLAN. 1:50
58.8 m²

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

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Document Set ID: 8238866
Version: 8, Version Date: 02/05/2026

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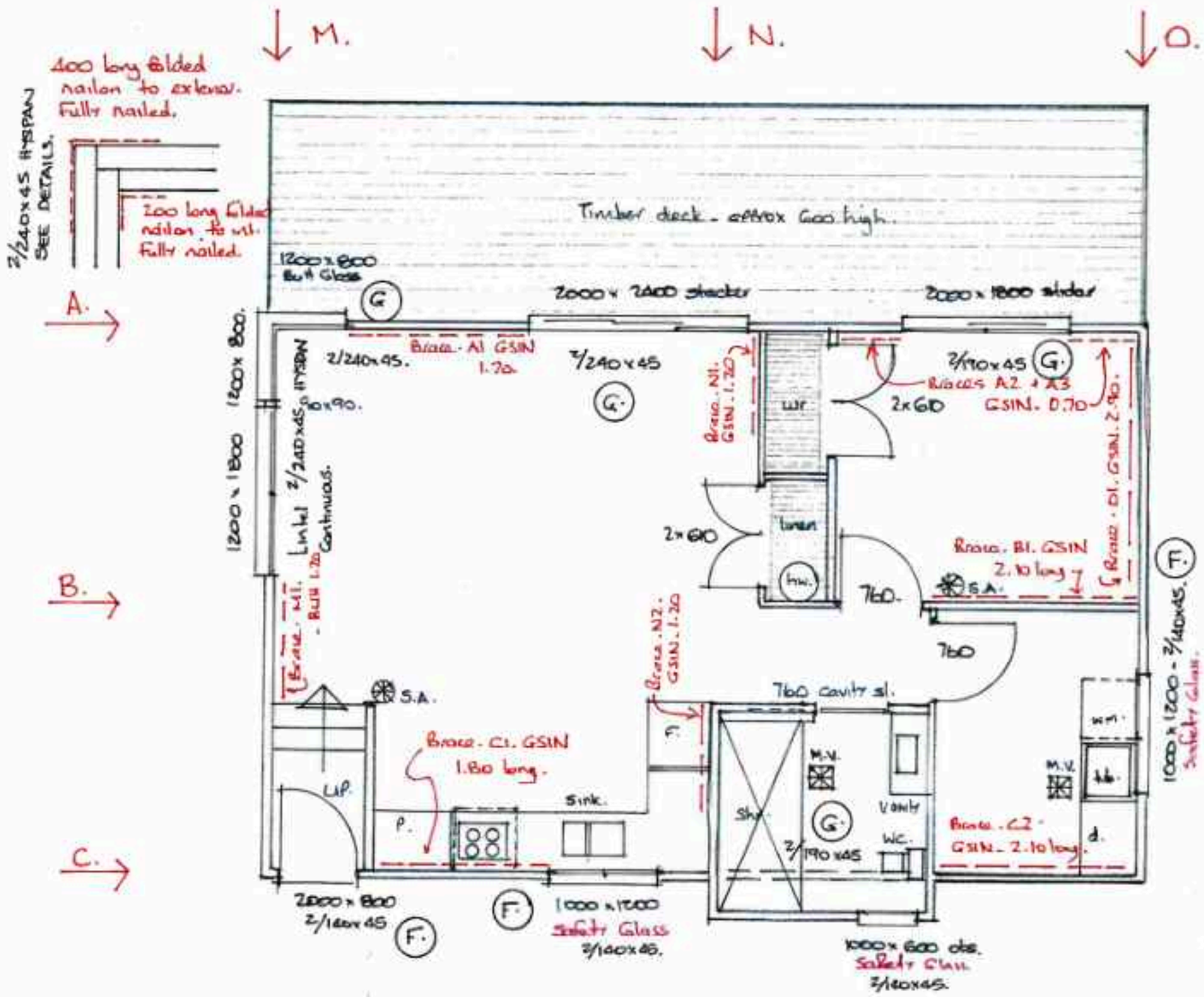
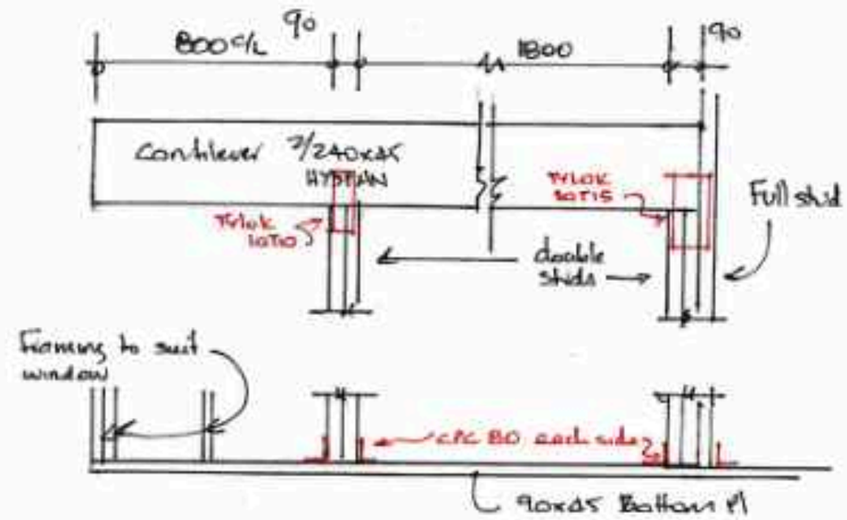
Domestic Smoke alarms installed within 3.0m of each bedroom and in the escape routes of the dwelling.
Install & test smoke alarms on or near the ceiling as per AS1670.6 and the manufacturers specification.

Extraction:
Rangehood to be installed above the hob ducted to the exterior with min air flow 55l/s.
Extraction fans to be installed in the bathroom & Laundry ducted to the exterior soffits (where possible). Min vent rate of 25L per second.





REFER TO CONSTRUCTION NOTES FOR ALL CONSTRUCTION DETAILS.

- Work must comply with the NZ Building Code & approved documents including NZS 3604.2011.
- All External walls to have Lumberlok type B top plate/ stud fixings.
- All Internal walls to have Lumberlok type A top plate/ stud fixings.
- All lintels to have Lumberlok uplift fixings TO DETAILS.
-All bracing is to the GIB EZY BRACE system.

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7 BRACING & LINTELS 1:50

INSULATION	**All to comply with H1/AS1.**
External Walls:	R2.8 ULTRA minimum (including the internal wall separating the garage and the dwelling).
Ceiling:	R 7.0 SUPER BATTS. Use an insulations shield as required.
Floor:	Timber subfloor and foundation. Use R 1.4 EXPOL minimum.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

Sheet Number: 7 of

Document Set ID: 8238868
Version: 8, Version Date: 03/05/2026

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ELEVATION NOTES

- Roofing to be select long run Coloursteel Roofing at 20 degrees.
- Double Glazed Thermally Broken powder coated aluminium Joinery Low E to provide R 0.46.
- Selected Metal cladding over thermakraft wrap on cavity to exterior.
- Selected Fascia with Colorsteel Gutter system.
- Colorsteel downpipes to match.

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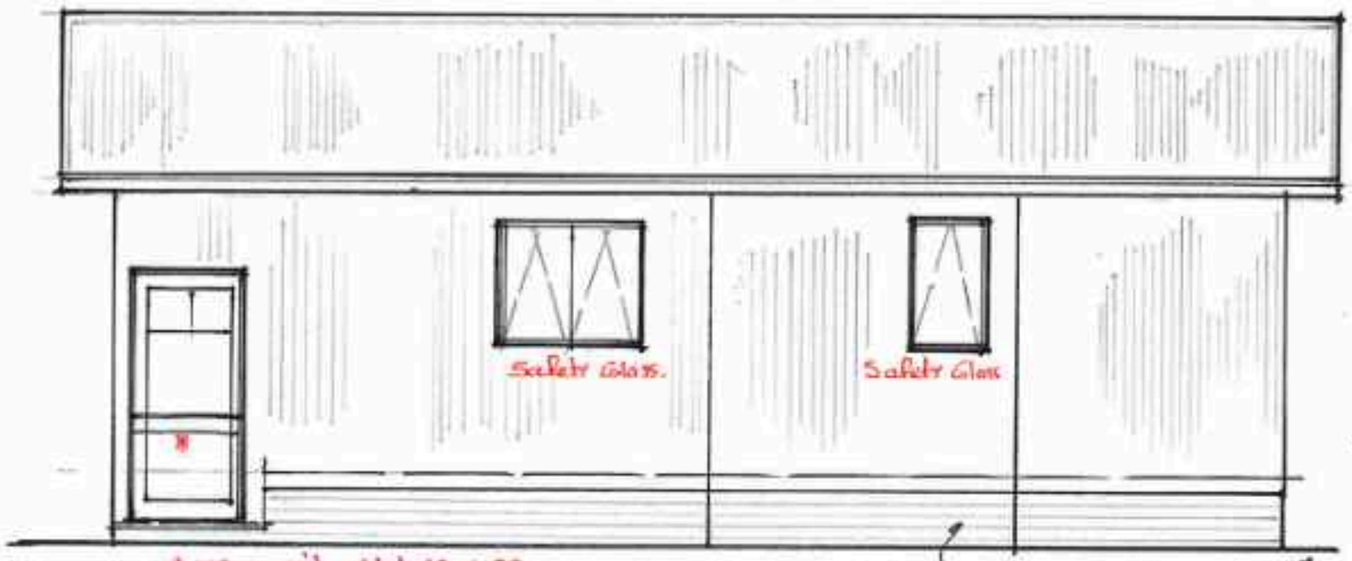
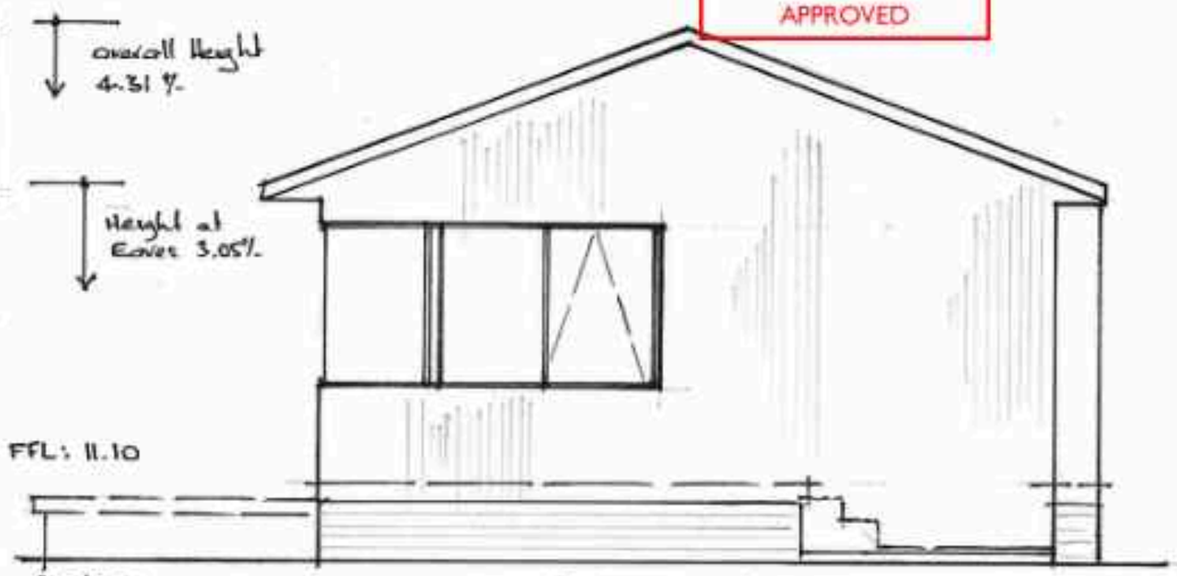
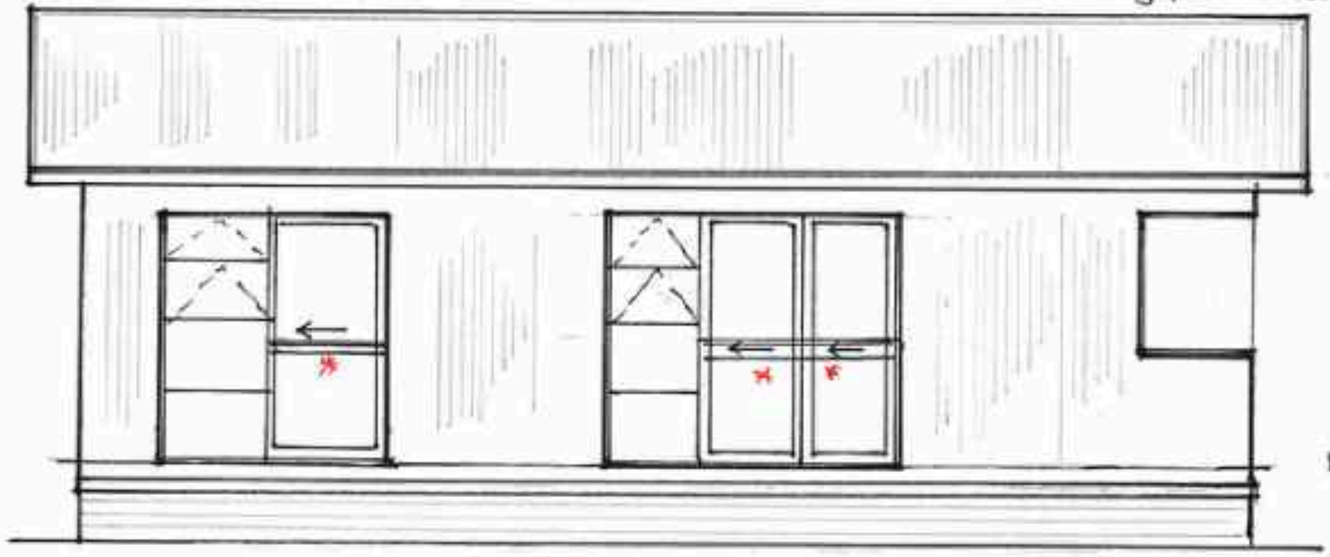


ELEVATION. 1.

Timber base boards with 20mm vent gaps to NZS 3604.

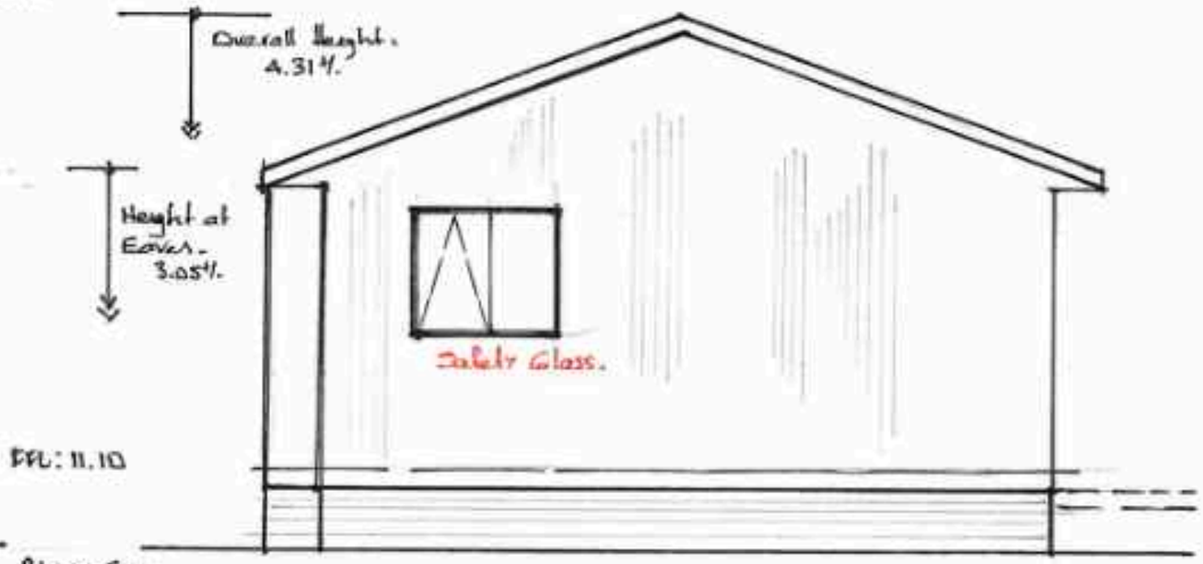


ELEVATION. 2



* vision rails added 15.06.25

ELEVATION. 3.



ELEVATION. 4.

JOINERY Joinery must be to NZ standards for manufacture and installation.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.**NOTE:** If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.

Project: **Proposed Minor Dwelling** **For Bruce Gasson at** **380 Churchill Road East** **Rangiriri.**	Designer: Rob Bennett LBP: 100433 **BENNETT DRAUGHTING** 116 RED HILL ROAD PAPAKURA (09) 296 6369	Date: April 2025. Revision: Updated for MV 15.06.25. Sheet Number: 8 of

Document Set ID: 9238840
Version: 8, Version Date: 03/01/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

DECK BRACING .

TO NZS 3604 new deck 22.1 m2.

22 x 15/2 = 165 BU'S required in each direction.

Provide 2 Anchor piles = 240 units.

Provide slip resistance to all access and entry point surfaces to D1/AS1.

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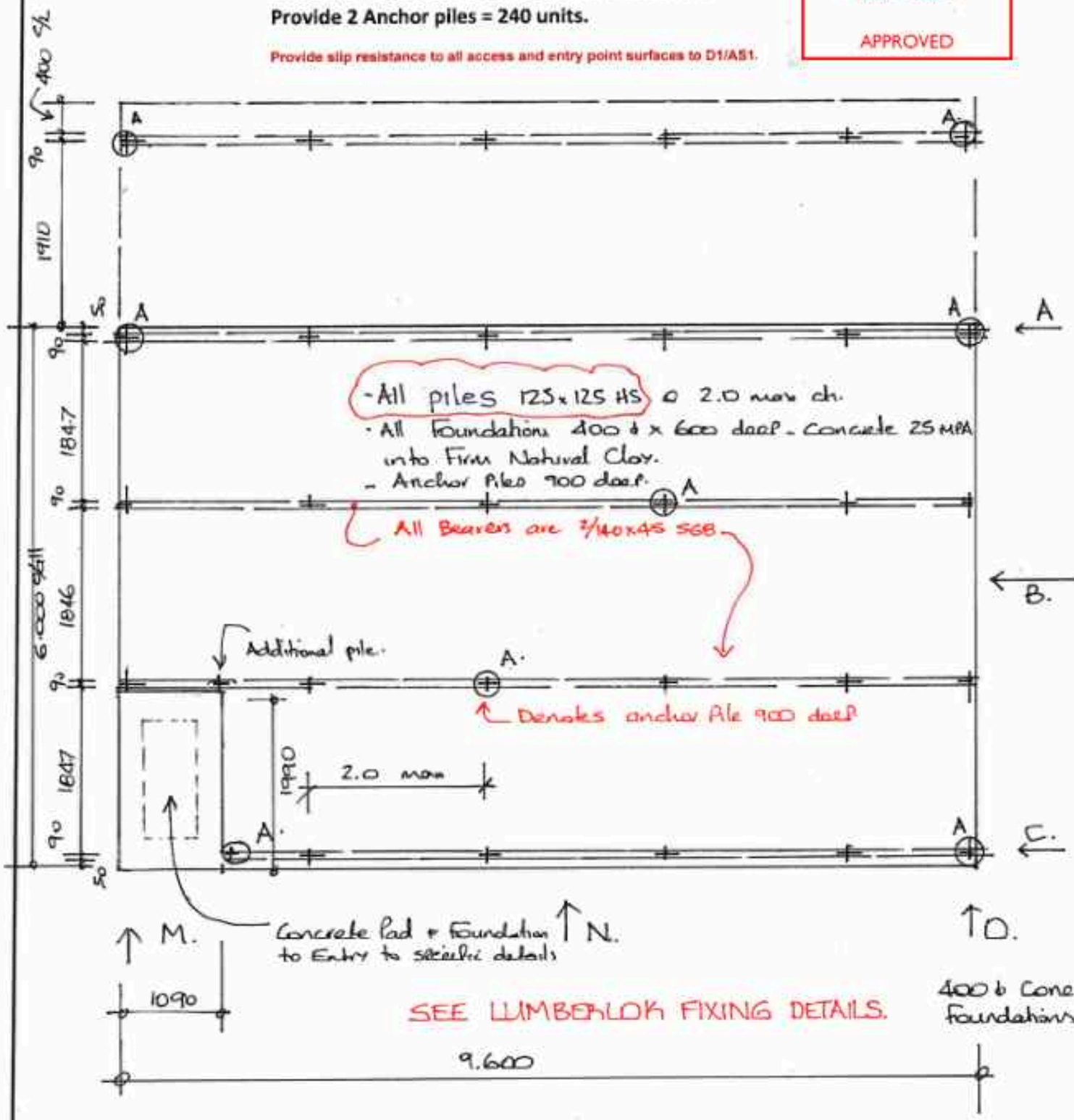


SUB FLOOR NOTES:

ALL DETAILS MUST BE CONFIRMED ON SITE BEFORE COMMENCING.

FLOOR LEVELS ARE AS ADVISED AND SHOULD BE VERIFIED

All floor joists 140 x 45 H1.2 SG8 floor joists @ 600 max c/c.
Solid block all joists @ 1800 cts at Bearer lines. 140x45 Boundary joists at each end.
- 20mm HD particle Board flooring
- wet area flooring is to be 20mm H3.2 plywood sealed with Superflex by ARDEX or approved vinyl.
Provide Hardies Tile & Slate underlay if tiling floor.

- Provide Base ventilation to SUB FLOOR to NZS 3604. **Base boards with 20mm ventilation gaps.**

Bearers 2/140 x45 SG8 AS SHOWN
If the pile height is less than 300mm to FGL then DPC must be placed between the pile & the bearer to reduce the pile height to 150mm minimum.
450mm min crawl space must be provided from FGL to the underside of the joists.

=THE DECK WILL HAVE
140X45 JOISTS @ 450CTS SG8 H3.2 minimum.
2/140 x 45 Bearers SG8 H3.2.
Selected Timber decking.

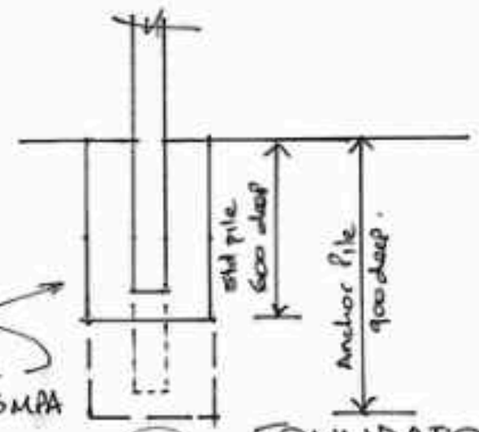
ALL PILES 125 X 125 H5 @ 2.0M MAX CTS.
400 DIS. X 600 DEEP CONRETE FOUNDATIONS INTO FIRM NATURAL GROUND.
Anchor piles 900mm deep.

ALL FIXINGS BELOW 600MM HIGH MUST BE TYPE 304 STAINLESS STEEL MIN.

MIN FIXING REQUIREMENTS: IF ALTERED.

- **Joist to Bearer:** 3 skewed 90x3.15 power driven nails.
- **Bearer to Std Pile:** 1 90x3.15 power driven nail & 1 wire dog each side.
- **Bearer to Anchor / Braced Pile:** Lumberlok 12kN connection.
- **Boundary Joist to end of each Joist:** 2 end nailed 90x3.15 power driven nails.
- **Solid blocking to Joist:** 2 end nailed or 4 skewed 90x3.15 power driven nail.
- **Sheet Flooring:** 60x2.8 ring shanked galv @ 150mm c/c @ sheet edges & 300mm c/c @ intermediate supports.
Wet area flooring - 10g x 50mm stainless steel countersunk head screws at 150mm c/c @ sheet edges & 200mm c/c @ intermediate supports.
- **Bottom Plate to Floor Framing:**
External Walls - 3 90x3.15 power driven nails @ 600 c/c.
Internal Walls - 1 90x3.15 power driven nail @ 600 c/c.

ALL DECK FIXINGS STAINLESS STEEL.



400 ø Concrete Foundations - 25 MPA

9 FOUNDATIONS.

Scale:

Project:

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:

Rob Bennett LBP: 100433

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025

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Waikato District Council
Building Consent Number
BLD1107/25

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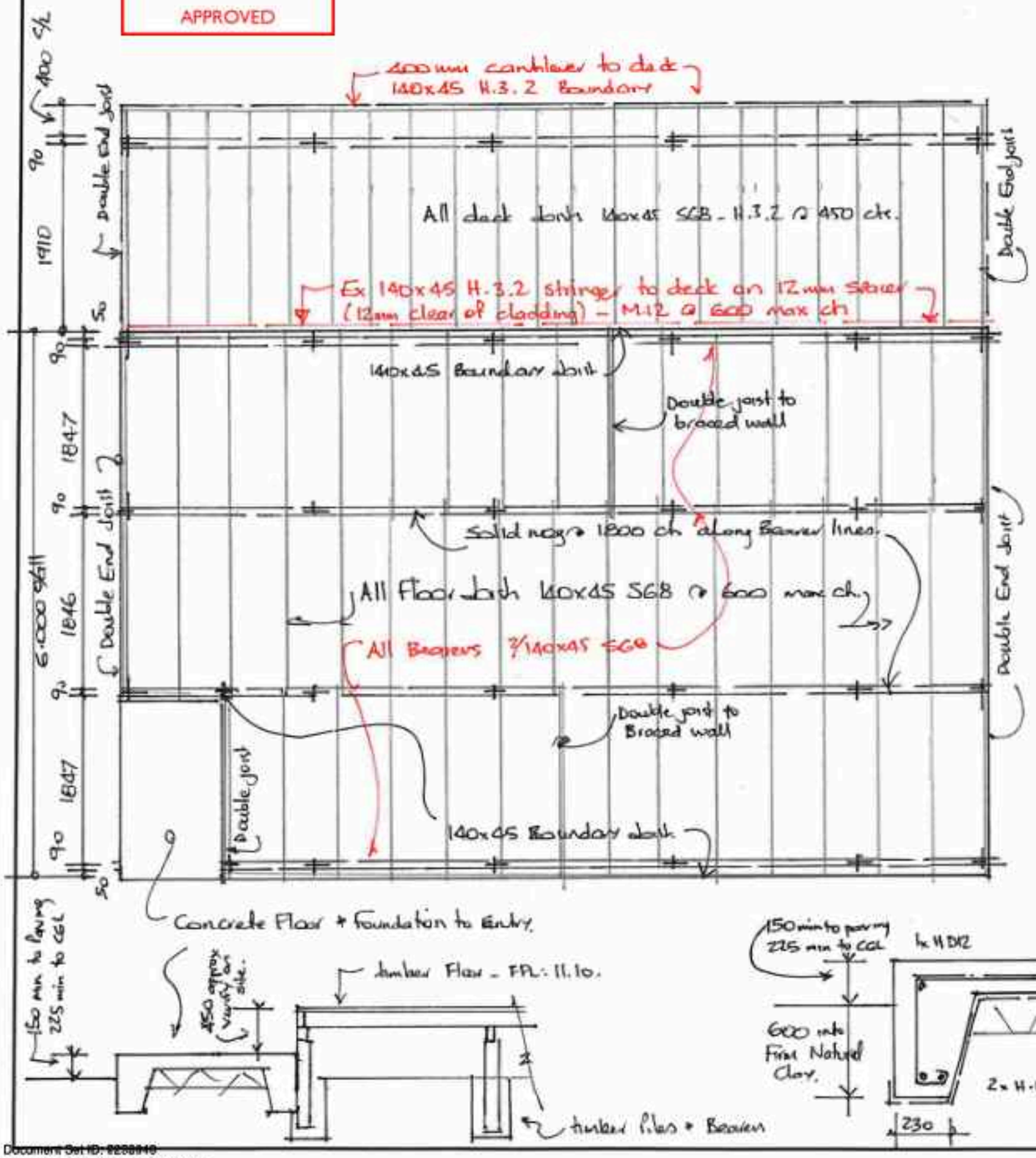

SUB FLOOR NOTES:

ALL DETAILS MUST BE CONFIRMED ON SITE BEFORE COMMENCING.

FLOOR LEVELS ARE AS ADVISED AND SHOULD BE VERIFIED

All floor joists 140 x 45 H1.2 SG8 floor joists @ 600 max c/c.
Solid block all joists @ 1800 cts at Bearer lines. 140x45 Boundary joists at each end.
- 20mm HD particle Board flooring
- wet area flooring is to be 20mm H3.2 plywood sealed with Superflex by ARDEX or approved vinyl.
Provide Hardies Tile & Slate underlay if tiling floor.

- Provide Base ventilation to SUB FLOOR to NZS 3604. **Base boards with 20mm ventilation gaps.**

Bearers 2/140 x45 SG8 AS SHOWN.
If the pile height is less than 300mm to FGL then DPC must be placed between the pile & the bearer to reduce the pile height to 150mm minimum.
450mm min crawl space must be provided from FGL to the underside of the joists.

=THE DECK WILL HAVE
140X45 JOISTS @ 450CTS SG8 H3.2 minimum.
2/140 x 45 Bearers SG8 H3.2.
Selected Timber decking.

ALL PILES 125 X 125 H5 @ 2.0M MAX CTS.
400 DIS. X 600 DEEP CONRETE FOUNDATIONS INTO FIRM NATURAL GROUND.
Anchor piles 900mm deep.

ALL FIXINGS BELOW 600MM HIGH MUST BE TYPE 304 STAINLESS STEEL MIN.

MIN FIXING REQUIREMENTS: IF ALTERED.

- **Joist to Bearer:** 3 skewed 90x3.15 power driven nails.
- **Bearer to Std Pile:** 1 90x3.15 power driven nail & 1 wire dog each side.
- **Bearer to Anchor / Braced Pile:** Lumberlok 12kN connection.
- **Boundary Joist to end of each Joist:** 2 end nailed 90x3.15 power driven nails.
- **Solid Blocking to Joist:** 2 end nailed or 4 skewed 90x3.15 power driven nail.
- **Sheet Flooring:** 60x2.8 ring shanked galv @ 150mm c/c @ sheet edges & 300mm c/c @ intermediate supports.
Wet area flooring - 10g x 50mm stainless steel countersunk head screws at 150mm c/c @ sheet edges & 200mm c/c @ intermediate supports.
- **Bottom Plate to Floor Framing:**
External Walls - 3 90x3.15 power driven nails @ 600 c/c
Internal Walls - 1 90x3.15 power driven nail @ 600 c/c.

ALL DECK FIXINGS STAINLESS STEEL.

Project:

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:
Updated 15.06.25.

Sheet Number:
10 of

10 JOIST LAYOUT & ENTRY DETAIL.
Scale:

Document Set ID: 8238840
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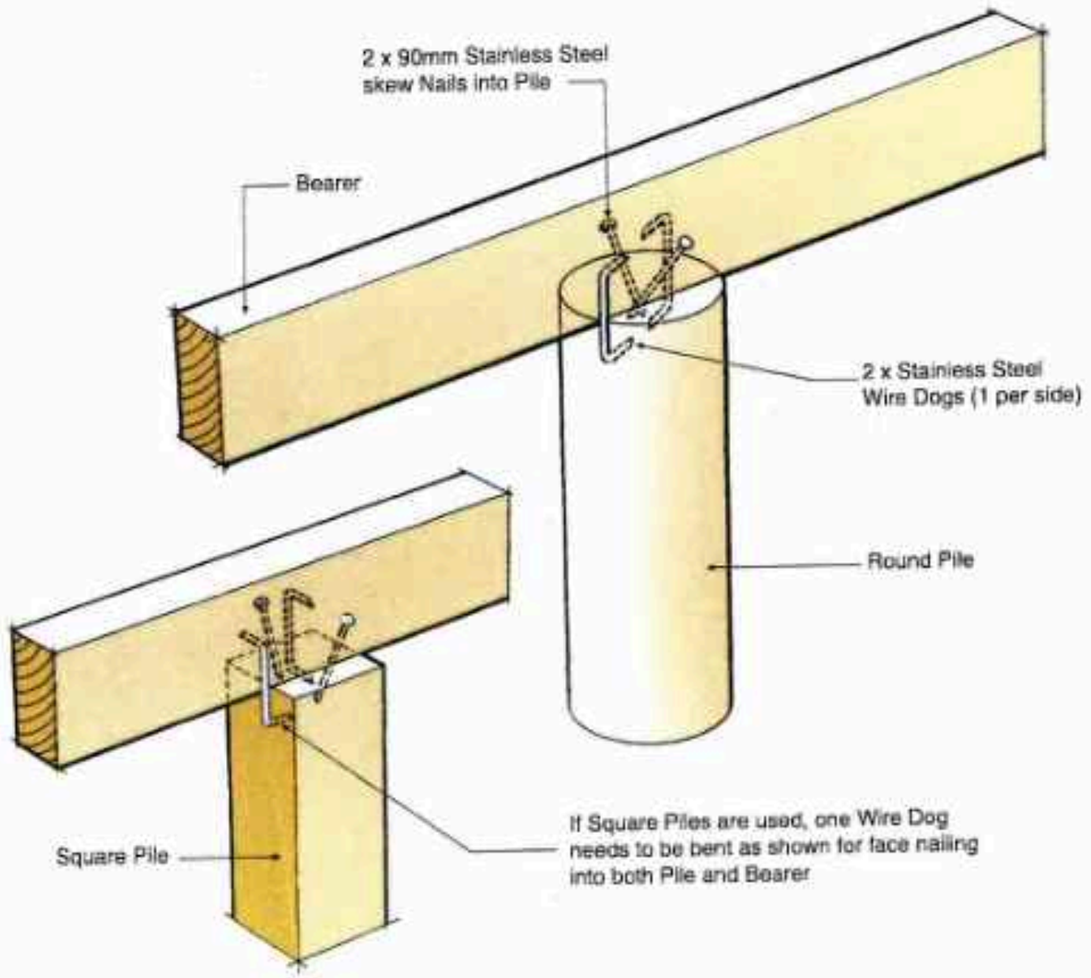
Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

MiTek LUMBERLOK

ORDINARY PILE FIXING

- Complies with NZS 3604:2011
- All Fixings Stainless Steel
- For all Ordinary Piles (Refer Figure 6.3 NZS 3604:2011)



Code: OPF
Packed: 20 x Stainless Steel Wire Dog Staples
20 x Stainless Steel Nails 90mm x 4 dia.

Available from leading Builders Supply Merchants throughout New Zealand

SUB FLOOR NOTES:

ALL DETAILS MUST BE CONFIRMED ON SITE BEFORE COMMENCING.

FLOOR LEVELS ARE AS ADVISED AND SHOULD BE VERIFIED

All floor joists 140 x 45 H1.2 SG8 floor joists @ 600 max c/c.
Solid block all joists @ 1800 cts at Bearer lines. 140x45 Boundary joists at each end.
- 20mm HD particle Board flooring
- wet area flooring is to be 20mm H3.2 plywood sealed with Superflex by ARDEX or approved vinyl.
Provide Hardies Tile & Slate underlay if tiling floor.

- Provide Base ventilation to SUB FLOOR to NZS 3604. **Base boards with 20mm ventilation gaps.**

Bearers 2/140 x45 SG8 AS SHOWN.
If the pile height is less than 300mm to FGL then DPC must be placed between the pile & the bearer to reduce the pile height to 150mm minimum.
450mm min crawl space must be provided from FGL to the underside of the joists.

*THE DECK WILL HAVE
140X45 JOISTS @ 450CTS SG8 H3.2 minimum.
2/140 x 45 Bearers SG8 H3.2.
Selected Timber decking

ALL PILES 125 X 125 H5 @ 2.0M MAX CTS.
400 DIS. X 600 DEEP CONRETE FOUNDATIONS INTO FIRM NATURAL GROUND.
Anchor piles 900mm deep.

ALL FIXINGS BELOW 600MM HIGH MUST BE TYPE 304 STAINLESS STEEL MIN.

MIN FIXING REQUIREMENTS: IF ALTERED.

- **Joist to Bearer:** 3 skewed 90x3.15 power driven nails.
- **Bearer to Std Pile:** 1 90x3.15 power driven nail & 1 wire dog each side.
- **Bearer to Anchor / Braced Pile:** Lumberlok 12kN connection.
- **Boundary Joist to end of each Joist:** 2 end nailed 90x3.15 power driven nails.
- **Solid blocking to Joist:** 2 end nailed or 4 skewed 90x3.15 power driven nail.
- **Sheet Flooring:** 60x2.8 ring shanked galv @ 150mm c/c @ sheet edges & 300mm c/c @ intermediate supports.
Wet area flooring - 10g x 50mm stainless steel countersunk head screws at 150mm c/c @ sheet edges & 200mm c/c @ intermediate supports.
- **Bottom Plate to Floor Framing:**
External Walls - 3 90x3.15 power driven nails @ 600 c/c.
Internal Walls - 1 90x3.15 power driven nail @ 800 c/c.

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 11

Document Set ID: 8238848
Version: 1, Version Date: 03/05/2026

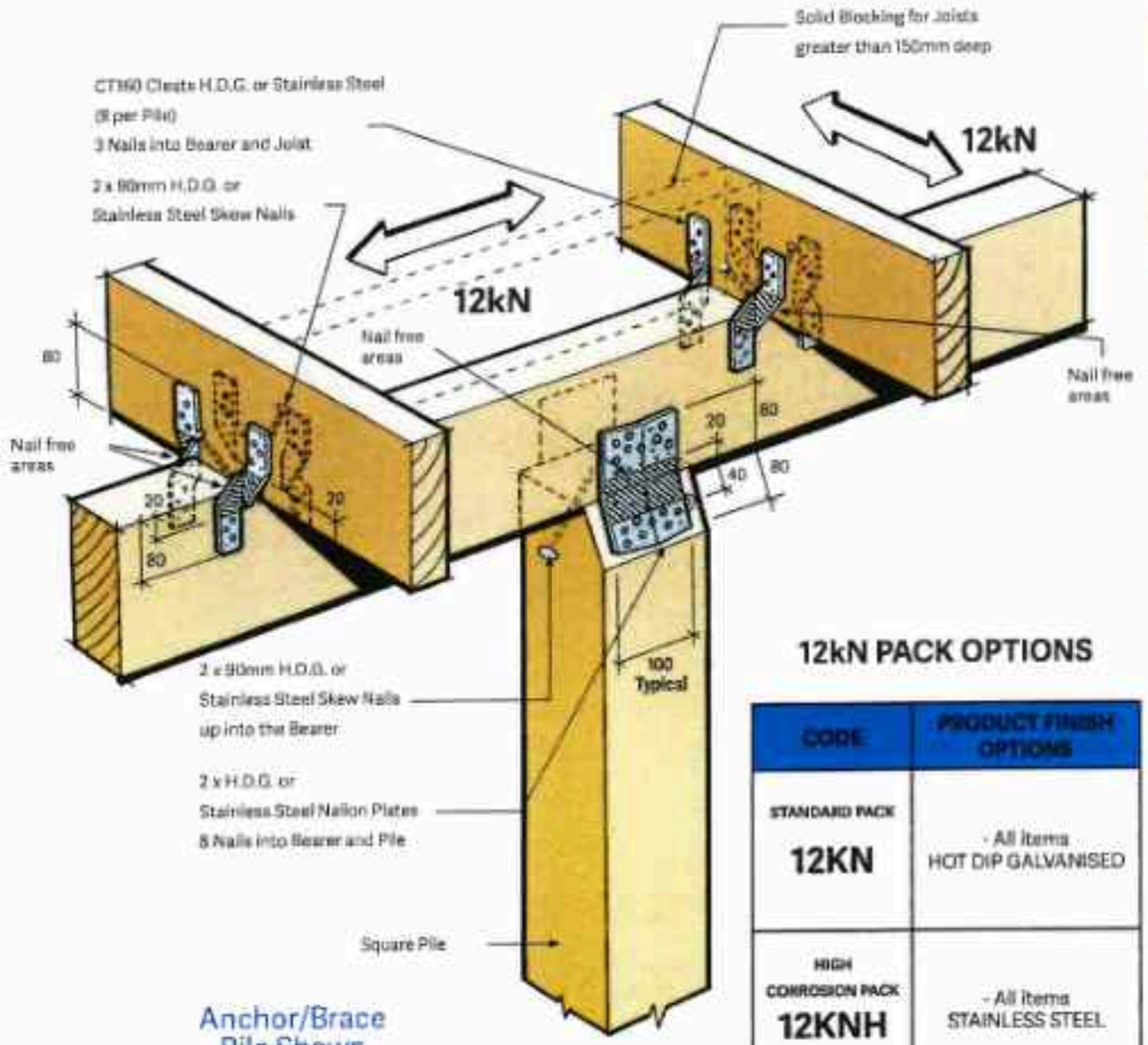
This information is provided by the Waikato District Council

MiTek LUMBERLOK

12kN PILE FIXING

FOR BRACED PILES OR ANCHOR PILES

- The 12kN Pile Fixing must be installed in accordance with this brochure
- Auckland University Tested. Test Ref. 4613
- All subfloor construction must be in accordance with NZS 3604:2011
- NZS 3604 requires lines of lateral support to floor joists within 300mm of bearer or bracing lines, refer to Clause 7.1.2
- Joists deeper than 150mm require solid blocking over braced or anchor pile



Anchor/Brace Pile Shown
(on internal bracing line)

12kN PACK OPTIONS

CODE	PRODUCT FINISH OPTIONS
STANDARD PACK **12KN**	- All items HOT DIP GALVANISED
HIGH CORROSION PACK **12KNH**	- All items STAINLESS STEEL

→ See next page for Corrosion Table

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Version: 8, Version Date: 03/05/2026

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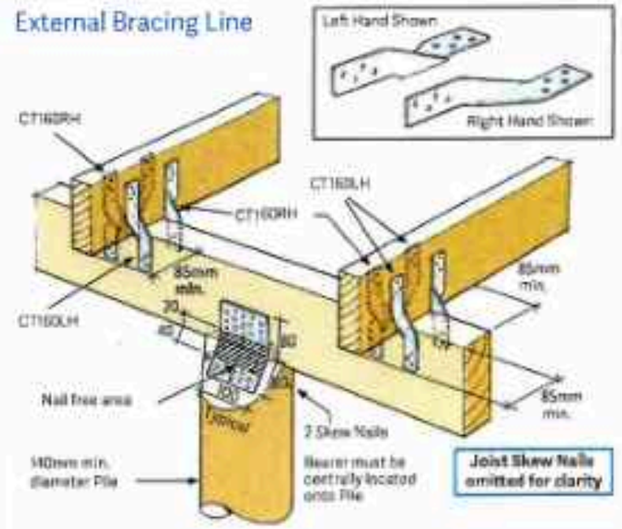
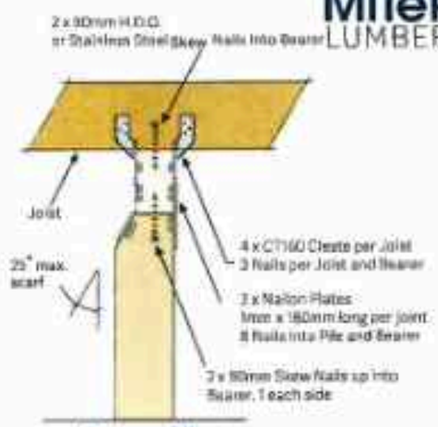
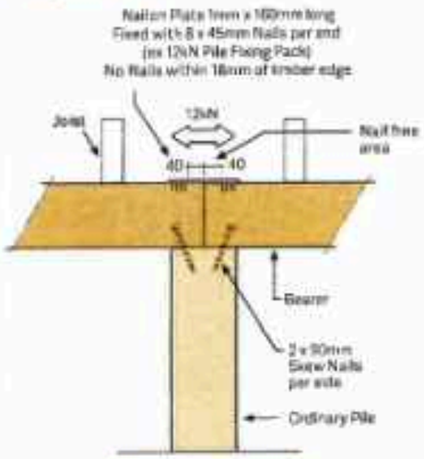
External Bracing Line



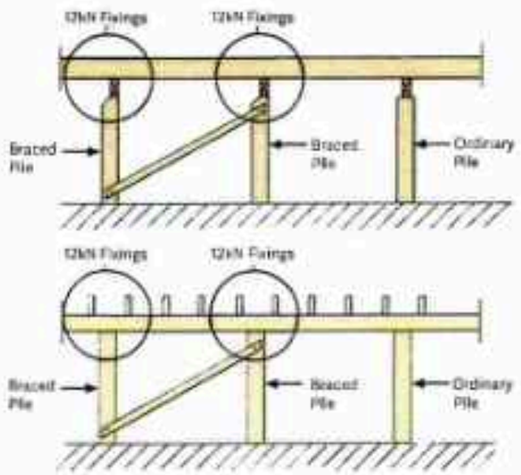


Square Pile

CORROSION HAZARD USE TABLE	
Standard Pack (12KN) - Zones B & C - All Fixings ABOVE 600mm from Ground level	All Items Hot Dip Galvanised.
High Corrosion Pack (12KNH) - Zone D - All Fixings BELOW 600mm from Ground level	All Items Stainless Steel (304).



12kN Bearer Splice
Clause 6.12.7.2
NZS 3604:2011



Sample Subfloor Elevations
12kN Fixing - Pile to Bearer
- Joists to Bearer

12kN Joint Fixing Schedule

PILE TO BEARER	- Nailon Plate (2 per joint) 1mm x 100mm x 160mm long - 8 Nails per Plate into Pile - 8 Nails per Plate into Bearer - 2 skew Nails 90mm (1 per face)
JOIST TO BEARER	- CT160 Cleats (4 per Joist) 160mm long - 3 Nails per Cleat into Joist - 3 Nails per Cleat into Bearer - 2 skew Nails 90mm (1 per side)
NAILS	- 80 x 45mm x 3.55 dia. Spiral Nails - 6 x 90mm x 4 dia. Stainless Steel Nails (12KNH Pack only)

12kN Pile Set Contents

Each set represents 1 x 12kN Pile Fixing
(packed 4 sets per carton)
2 x Nailon Plates 160mm long
8 x CT160 Cleats
80 x 45mm x 3.55 dia. Spiral Nails
6 x 90mm x 4 dia. Stainless Steel Annular Groove Nails - 12KNH Pack

} Refer front page for Product Finish Options

90mm H.D.G. Nails not included.

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 12

Print Date: 6 November 2026, 1:26 pm

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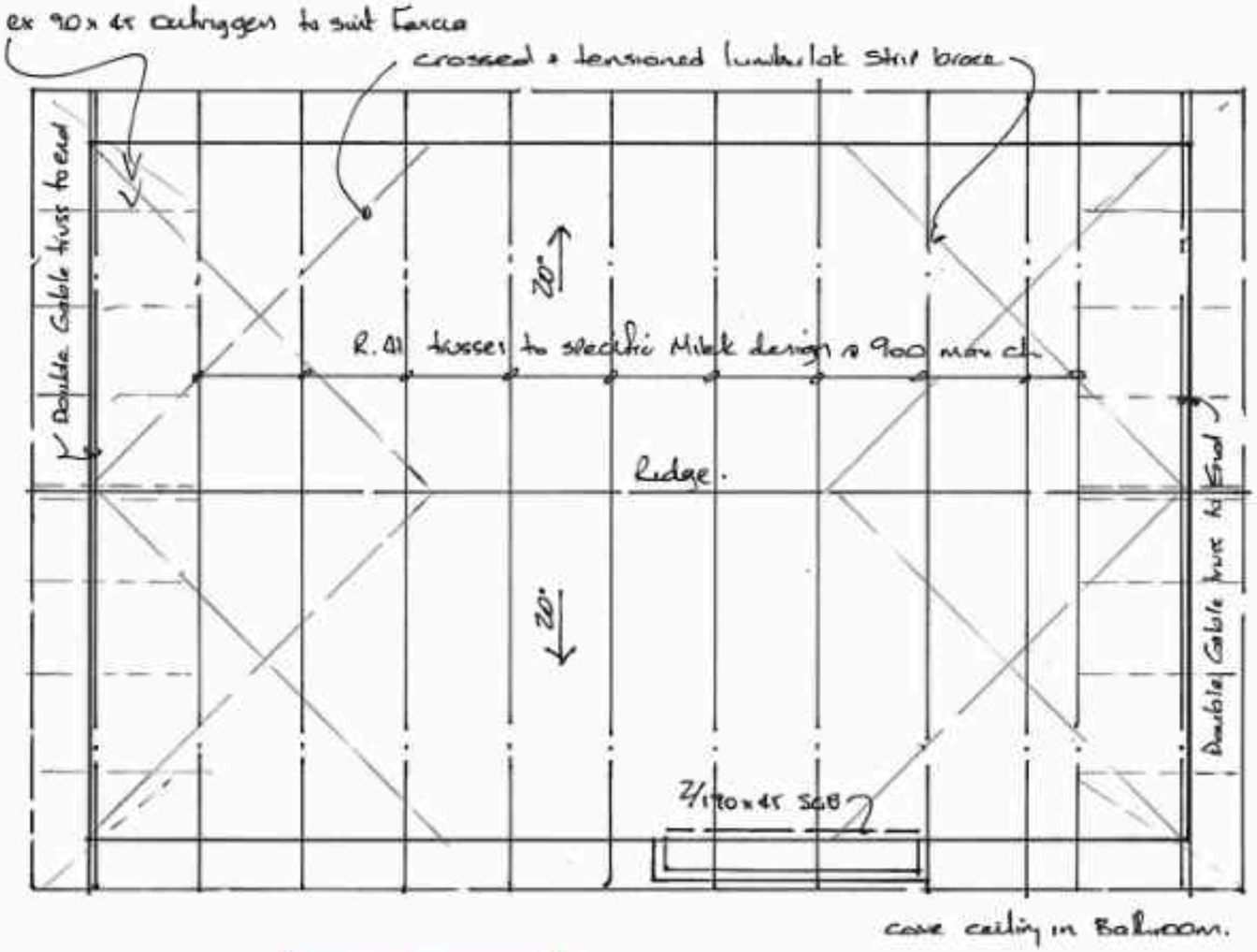

Waikato District Council
Building Consent Number
BLD1107/25

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- All work must be carried out to the latest and best trade practice by experienced and competent tradesman, familiar with all necessary installation techniques. It is the building contractor's responsibility to ensure that all restricted building work is carried out by or under the direct supervision of a registered tradesperson or Licensed Building Practitioner.

- 20° pitch roof as noted.
Selected Colorsteel Corrugated Roofing installed over Thermakraft Covertek or similar self-supporting underlay.

- All roofing material including all required flashings etc must be installed strictly to comply with the manufacturer's specification & E2/AS1.

- All roofing timber must be SG8 min grade - H1.2 min treatment.

- Gang nail/ Mitek truss system - All trusses @ 900 max c/c.
Truss & Rafter Fixings - Subject to verification by fabricator.
To External Top Plate: 2 90x3.15 power driven nails & Strap fixing.
To Internal Top Plate: 2 90x3.15 power driven nails.
All trusses must be manufactured by an approved fabricator.
The fabricator must provide a PS1 covering all trusses & fixings.
- 450 mm overhang ex frame

- Form Gable End overhangs with 90x45 outriggers @ 900 max c/c
Fix outriggers to gable top chord with 2 90x3.15 skew nails & 2 wire dogs.
Fix outriggers to truss with 3 end nailed 90x3.15 power driven nails.
Fix fly rafter to outriggers with 3 end nailed 90x3.15 power driven nails.
Fix outrigger blocking to gable top chord with 4 skewed 90x3.15 nails.

Line soffits with 4.5mm HardieFlex.
Selected external fascia & gutter system - 125mm gutter.
- 75x50 purlins @ 900 max c/c.
Fix with 1 / 10g self-drilling screw 80mm long @ each crossing.

- Roof Bracing to NZS 3604 -
Install Lumberlok strip brace (crossed & tensioned) to the lumberlok spec

Project:

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:

Rob Bennett LBP: 100435

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April 2025
Revision:

13 ROOF PLAN - 1:50.
Scale:

Sheet Number:
13 of

Document Set ID: 8238846
Version: 1, Version Date: 02/05/2026
Print Date: 6 November 2026, 1:26 pm

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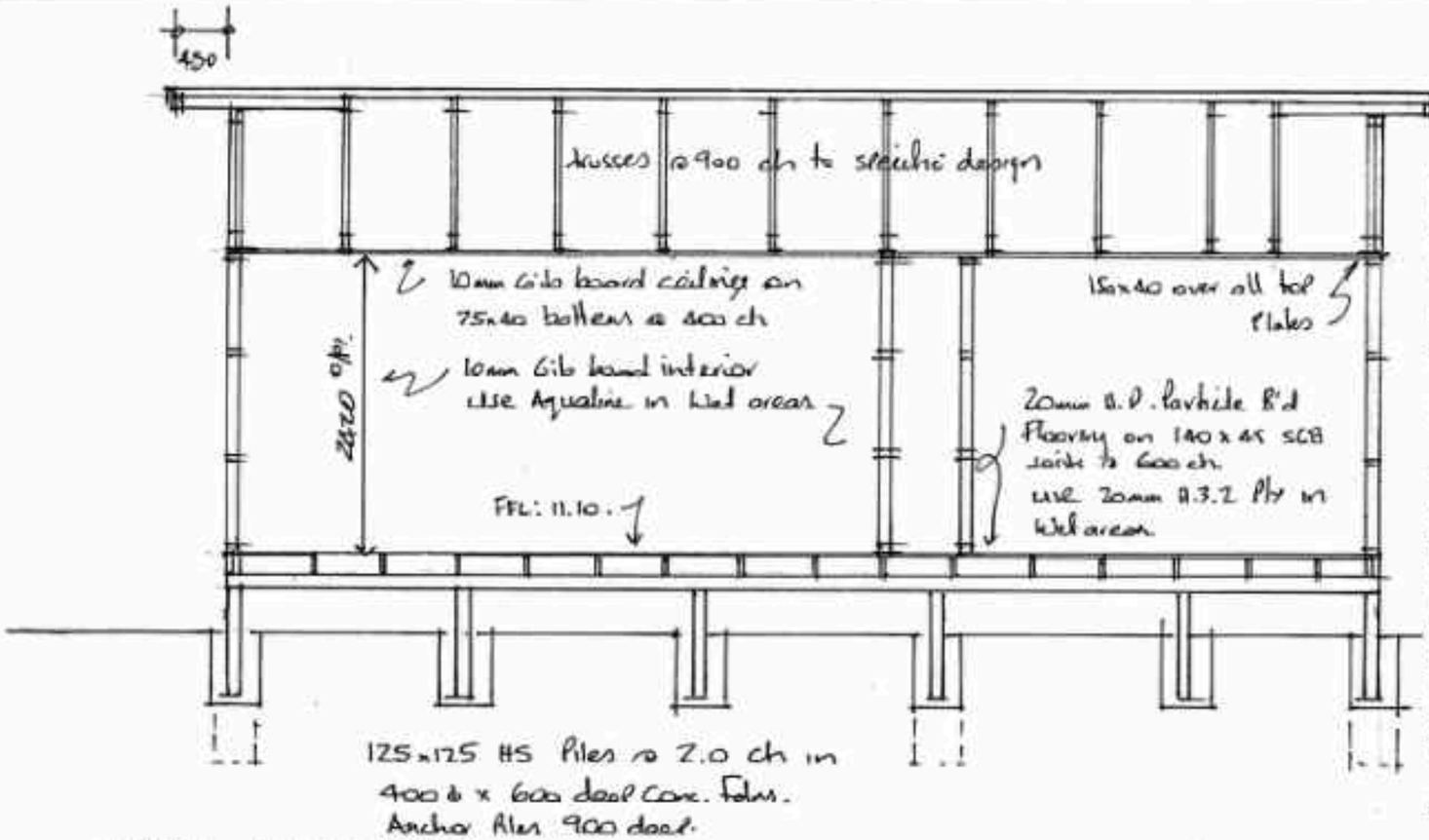
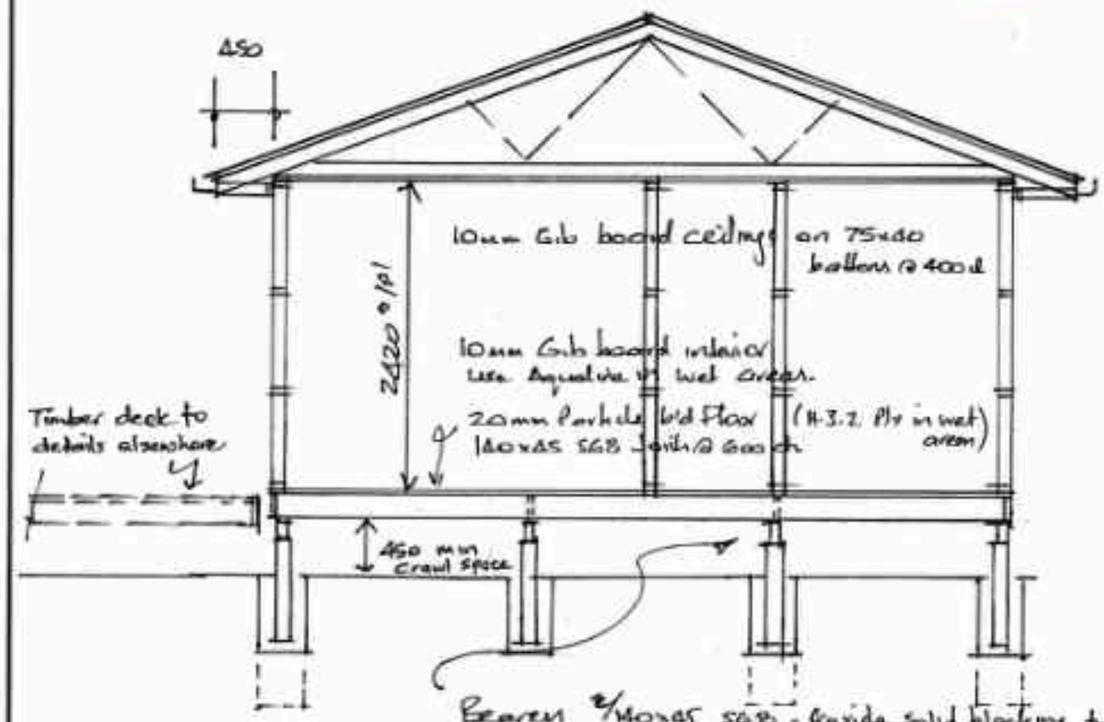


INSULATION All to comply with H1/AS1.
External Walls: R2.8 ULTRA minimum (including the internal wall separating the garage and the dwelling).
Ceiling: R 7.0 SUPER BATTS- Use an insulations shield as required
Floor: Timber subfloor and foundation. Use R 1.4 EXPOL minimum.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46



Work must comply with the NZBC & current compliance documents including NZS 3604.2011.
Check & confirm all site details including the proposed Setout & levels prior to commencing work.
Any discrepancies or variations from that shown, or any other concerns, must be addressed to the Designer or Engineer prior to commencing any work.

EXTERNAL CLADDING

Ext Walls: Selected metal cladding on cavity all over
Thermakraft Watergate wall wrap.
Roofing: Selected Metal Corrugate profile roofing installed over
Thermakraft self-supporting roofing underlay on H1.2 timber purlins.
External Timber fascia / 125mm gutter system with 80mm downpipes.
Soffit Lining: 4.5mm fibre cement soffit lining with a paint finish.

JOINERY Joinery must be to NZ standards for manufacture and installation.

All joinery will be Thermally Broken Double-Glazed joinery with LOW E glass to provide R 0.46.
All glazing to comply with NZBC F2/AS1 & NZS 4223: Part 3: 2016.
Provide safety glass to all wet area glazing within 2000mm above the abutting FFL or standing area of a bath or shower & to any framed shower screens or enclosures. Provide safety glass to all door glazing and window glazing within 800mm above the FFL unless a horizontal fixed glazing bar with a min face width of 40mm is installed with the bottom edge located no further than 1000mm above the FFL. Use Grade A Safety Glazing Material in accordance with NZS 4223: Part 3: 2016 Clause 308.
All joinery must be site measured prior to manufacture. Provide all appropriate flashings to comply with E2/AS1.
Install restrictor stays to all windows where the FFL exceeds 1000mm above GL & the sill levels are 760mm or less above the FFL.**NOTE:** If any sanitary fixture is located within 500mm horizontal of a window in a wet area then the 760mm sill dimension for restrictor stays must be measured vertically from the top of the sanitary fixture.

STRUCTURE
Concrete Floor: Timber subfloor to SED. By Tilsley Engineering Ltd.
Call 09 2383245 for an inspection - NO INSPECTION EQUALS NO PS4.
A MINIMUM FLOOR LEVEL APPLIES SEE SPECIFIC NOTATIONS.
External Walls: 90mm SG8 H1.2 treated framing. All timber must comply with NZBC B2.
Nog all walls @ 800 max c/c. 90x45 + 140x35 top plate. 90x45 bottom plate.
Loadbearing Walls
2.42m stud height - 90x45 @ 400 c/c
Note 3.0m stud in entry 90x45 studs @ 300 ctrs.
Internal Walls: 90mm & 70mm SG8 H1.2 treated framing. All timber must comply with NZBC B2.
Nog all walls @ 800 max c/c. 90x45 top & bottom plate
140x35 over top plates.
Internal Non Loadbearing Walls
2.42m stud height - 90x45 or 70x45 @ 600 c/c
Window Head: All external doors and windows at 2020 nominal head to suit 2.42 nominal stud.
Roof Trusses: SG8 H1.2 treated timber. All timber must comply with NZBC B2.
Gangnail/Mitek truss system. All trusses @ 900 max c/c.
Exterior Use Timber: SG8 H3.2 treated timber.
Timber in Ground Contact: SG8 H5 treated timber.

TIMBER: All timber must comply with the requirements of B2/AS1
- **Wall Framing**: H1.2 SG8
- **Roof Framing**: H1.2 SG8
- **Exterior Use Timber**: H3.2 SG8
- **Ground Contact Timber**: H5 SG8

Waikato District Council
Building Consent Number
BLD1107/25
APPROVED

14 SECTIONS.
Scale:

Project:	Designer:	Date: April 2025
Proposed Minor Dwelling **For Bruce Gasson at** **380 Churchill Road East** **Rangiriri.**	Rob Bennett LBP: 100433 **BENNETT DRAUGHTING** 116 RED HILL ROAD PAPAKURA (09) 296 6369	Revision: Sheet Number: 14 of

Document Set ID: 8238848
Version: 8, Version Date: 02/09/2025
Print Date: 6 November 2025, 1:20 pm

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MiTek LUMBERLOK

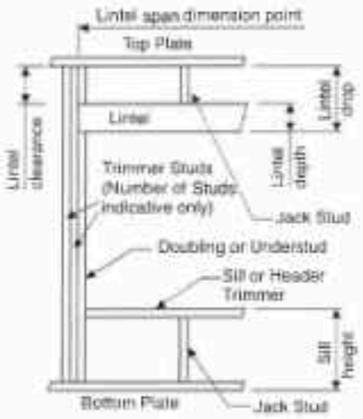
LINTEL FIXING SCHEDULE

ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

NOTE:

- All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20kPa
- Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist horizontal loads
- These fixings assume the correct choice of rafter/truss to top plate connections have been made
- All fixings assume bottom plate thickness of 45mm maximum Note: TYLOK options on timber species
- Wall framing arrangements under girder trusses are not covered in this schedule
- All timber selections are as per NZS 3604:2011

DEFINITIONS



Lintel Supporting Girder Trusses

Roof Tributary Area	Light Roof Wind Zone			Heavy Roof Wind Zone		
	L, M, H	VH	EH	L, M, H	VH	EH
8.6m²	G	G	H	G	G	H
11.8m²	G	H	H	G	G	H
12.1m²	G	H	H	G	H	H
15.3m²	H	H	-	G	H	H
19.1m²	H	-	-	G	H	-
20.9m²	H	-	-	H	H	-
21.8m²	H	-	-	H	-	-
34.3m²	-	-	-	H	-	-

NOTES:
1. Roof Tributary Area = approx. 1/2 x (Total roof area on girder and rafter trusses supported by lintel)
2. Assumed girder truss is at mid-span or middle third span of lintel
3. Use similar fixings for both ends of lintel
4. All other cases require specific engineering design

Selection Chart for Lintel Fixing

Lintel Span (m)	Loaded Dimension (m) (See Fig. 1.3 NZS 3604:2011)	Light Roof Wind Zone					Heavy Roof Wind Zone				
		L	M	H	VH	EH	L	M	H	VH	EH
1.0	2.0	E	E	E	F	F	E	E	E	F	F
	3.0	E	E	E	F	F	E	E	E	F	F
	4.0	E	F	F	F	G	E	E	F	F	F
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	F	F	F	G	G	E	E	F	F	G
1.2	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	E	F	F	F	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	F	F	F	G	G	E	E	F	F	G
	6.0	F	F	G	G	H	E	E	F	G	G
1.5	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	F	F	F	G	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	F	F	G	G	H	E	E	F	G	G
	6.0	F	F	G	H	H	E	E	F	G	H
2.0	2.0	E	F	F	F	G	E	E	F	F	F
	3.0	E	F	F	G	G	E	F	F	F	G
	4.0	F	F	G	G	H	E	E	F	G	G
	5.0	F	F	G	H	H	E	E	F	G	H
	6.0	F	G	G	H	H	E	F	G	H	H
2.4	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	G	H	E	E	F	G	G
	4.0	F	F	G	H	H	E	E	F	G	H
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	3.0	F	G	H	H	H	E	F	G	H	H
	3.2	F	G	H	H	-	E	F	G	H	H
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	3.0	F	G	H	H	-	E	F	G	H	H
	4.0	G	H	H	H	-	E	F	H	H	-
	5.0	G	H	H	-	-	E	F	H	-	-
	6.0	G	H	H	-	-	E	G	H	-	-

DURABILITY ZONE B:
Refer Tables 4.1 & 4.3 (NZS 3604:2011)

Steel fixings & fastenings including nails & screws in contact with timber treated with copper based timber preservatives (H-3.2 or higher) shall be minimum of Type 304 Stainless Steel where used in exposed & sheltered locations or Hot-Dipped Galv for all other locations.

Table 4.1 - Steel fixings & fastenings excl nails & screws.

- **Nail Plates (closed & roof spaces):** cont. coated galv steel.
- **Wire Dogs & Bolts (closed & roof spaces):** hot dipped galv steel.
- **All other structural fixings (closed):** mild steel - uncoated non galv.
- **Treated timber pile connections within 600mm of the ground ALL SUBFLOOR FIXINGS** WITHIN 600MM OF GROUND & ALL DECK FIXINGS **(sheltered & exposed) type 304 stainless steel.**
- **All other structural fixings, except fabricated brackets:**
  (sheltered) hot-dipped galv steel.
  (exposed) type 304 stainless steel

Table 4.2 - Steel fixings such as nails & screws

- **Cladding that acts as bracing (50 years):** galv steel
- **Non-structural cladding (15 years):** galv steel
- **Framing in "closed" areas incl roof space:** mild steel
- **Framing in "sheltered" areas:** galv steel
- **Framing in "exposed" areas:** galv steel

MINIMUM FIXINGS: All 90x3.15 nails are to be POWER DRIVEN.

- **Purlin to Truss**
  1 / 10g self-drilling screw 80mm long @ each crossing
- **Truss to Plate - Subject to confirmation by Fabricator:**
  Ext Top Plate: 2 / 90x3.15 nails & strap fixing for VH wind.
  Int Top Plate: 2 / 90x3.15 nails.
- **Truss to Truss - Subject to confirmation by Fabricator:**
  LL 47x90 or 95x165 joist hangers
- **Ceiling Battens to Truss:**
  2 / 90x3.15 nails @ each crossing
- **Top Plate to Stud - Refer to Lumberlok Top Plate Fixing Chart:**
  External Loadbearing Walls: Lumberlok Type B as specified
  140x35 to 90x45 top plate: 3 / 90x3.15 nails @ 500 o/c
  Non-Loadbearing Walls: 2 / 90x3.15 nails vert into stud (LL Type A)
- **Lintel Fixings - Refer to Lumberlok Lintel Fixing Chart:**
  Lumberlok Type E, F, G or H Lintel Fixings as specified.
- **Bottom Plate to Stud:**
  Loadbearing & Non-Loadbearing Walls: 3 / 90x3.15 end nailed.
  For bracing element hold down requirements refer to Gib specification.
- **Bottom Plate Fixing:**
  Conc Floor
  Use Lumberlok Bottom Plate Fixing Anchors set within 150mm of each end of plate @ 900mm c/c max or 600mm c/c max when slab edge is formed by a masonry header block.
  Anchors to be fixed specifically to the Lumberlok requirements / specification.
  Refer to the Gib specification for all bracing element hold down requirements.
  For bracing element requirements refer to Gib Bracing spec.
  Timber Floor
  3 90x3.15 power driven nails @ 600 o/c or
  2 100x3.75 hand driven nails @ 600 o/c
  For bracing element requirements refer to Gib Bracing spec.
- **Gib Board Wall & Ceiling Fixing: 10mm Board**
  Refer to Gib specification for all fixing details

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 15

Document Set ID: 8238840
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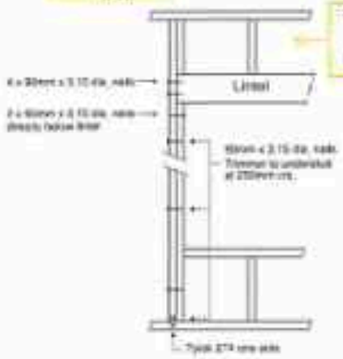
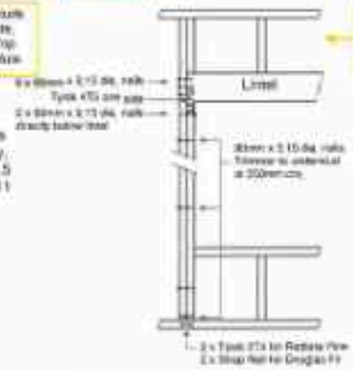
LINTEL FIXING OPTIONS

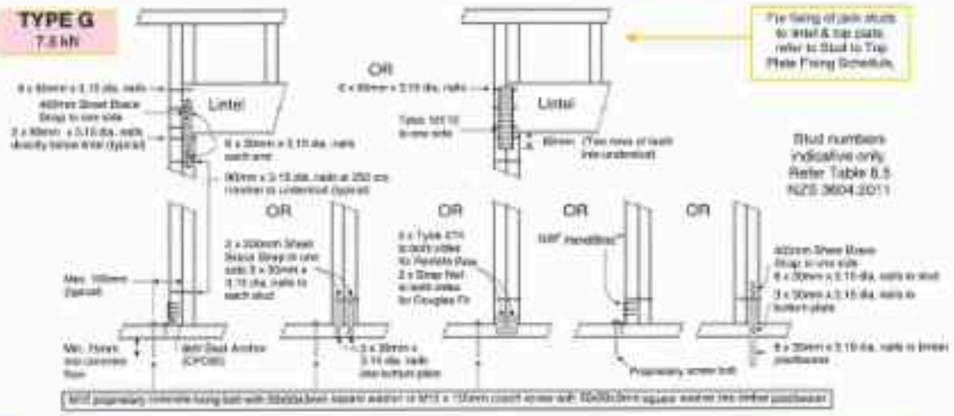
TYPE E
1.4 kN



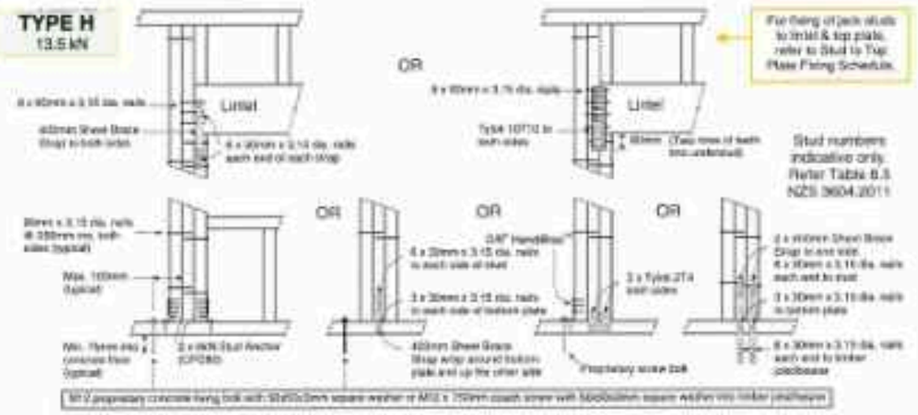
TYPE F
4.0 kN



TYPE G
7.8 kN



TYPE H
13.5 kN

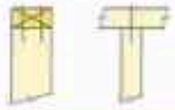


1 Lintel Fixing Details

FIXING OPTIONS

FIXING TYPE A
0.7 kN

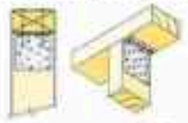
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



FIXING TYPE B
4.7 kN

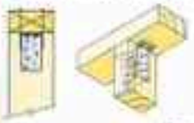
CHOOSE ANY OF THE 3 OPTIONS BELOW

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
6kN Stud Anchor
(CPC60)

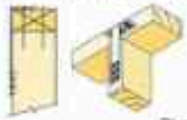
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
2 x LUMBERLOK
CPC40

Recommended for internal wall options to avoid lining issues

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
Stud Strap
(one face only)

Note:
To calculate the number of B type fixings required, divide the wall length by the stud centres, add 1 to this figure and locate this number of fixings as evenly as possible along the wall length. This figure includes the start and end studs in each wall length.

2 Top Plate Fixing Details

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

16 Lumberlok Fixing Details

Project:

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:

Rob Bennett LBP: 100433

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April '25

Revision:

Sheet Number: 16 of

Document Set ID: 8238866
Version: 8, Version Date: 02/05/2026

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MiTek LUMBERLOK

Waikato District Council
Building Consent Number
BLD1107/25
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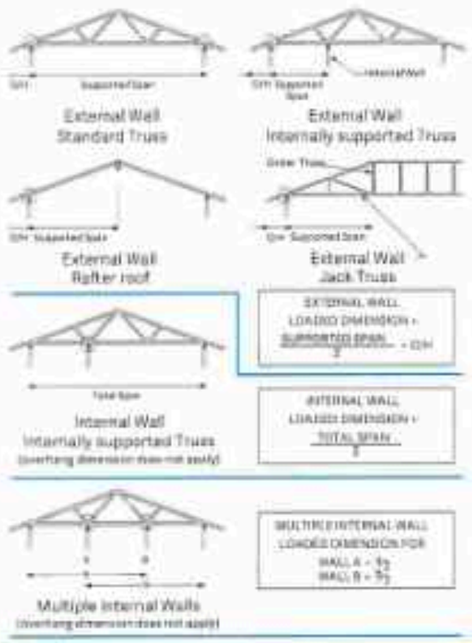
STUD TO TOP PLATE FIXING SCHEDULE

ALTERNATIVE TO TABLE 8.18 NZS 3604:2011

NOTE:

- All fixings are designed to resist vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20kPa
- Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist lateral loads
- These fixings assume the correct choice of rafter/truss to top plate connections have been made
- For gable end walls where the adjacent rafter/truss is located within 1200mm and with a maximum verge overhang of 750mm, select stud to top plate fixing using a loaded dimension of 1.5m
- All fixings assume top plate thickness of 45mm maximum
- Wall framing arrangements under girder trusses are not covered in this schedule
- All timber selections are as per NZS 3604:2011

LOADED DIMENSION DEFINITION



FIXING SELECTION CHART

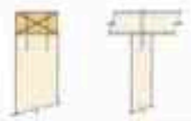
(Suitable for walls supporting roof members at 600, 900 or 1200mm crs.)
Wind Zones L, M, H, VH, EH, as per NZS 3604:2011

Loaded Dimension (m) Stud Centres			Light Roof Wind Zone					Heavy Roof Wind Zone				
300mm	400mm	600mm	L	M	H	VH	EH	L	M	H	VH	EH
3.0	2.3	1.5	A	A	B	B	B	A	A	B	B	B
4.0	3.0	2.0	A	A	B	B	B	A	A	B	B	B
5.0	3.8	2.5	A	B	B	B	B	A	A	B	B	B
6.0	4.5	3.0	A	B	B	B	B	A	A	B	B	B
7.0	5.3	3.5	A	B	B	B	B	A	A	B	B	B
8.0	6.0	4.0	A	B	B	B	B	A	A	B	B	B
9.0	6.8	4.5	B	B	B	B	B	A	A	B	B	B
10.0	7.5	5.0	B	B	B	B	B	A	A	B	B	B
11.0	8.3	5.5	B	B	B	B	B	A	A	B	B	B
12.0	9.0	6.0	B	B	B	B	B	A	A	B	B	B

FIXING OPTIONS

FIXING TYPE A
0.7kN

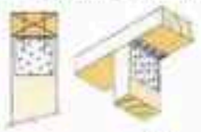
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



FIXING TYPE B
4.7kN

CHOOSE ANY OF THE 3 OPTIONS BELOW

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
6kN Stud Anchor
(CPC90)

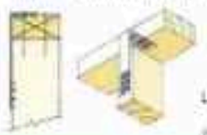
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
2 x LUMBERLOK
CPC40

Recommended for internal wall options to avoid lining issues

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



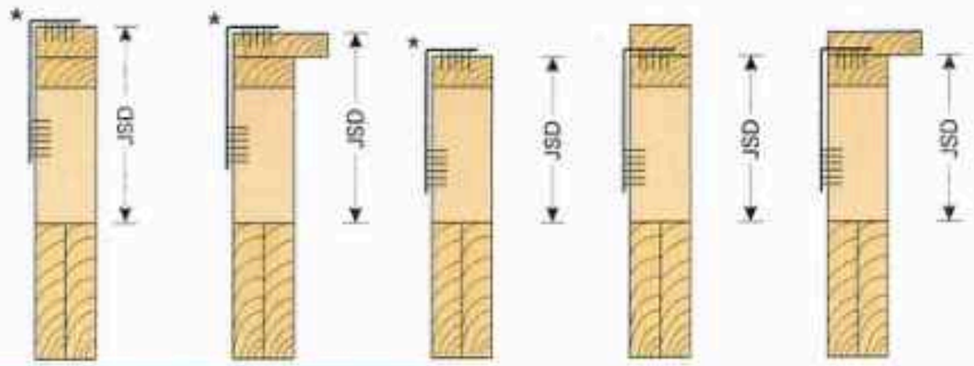
Plus
LUMBERLOK
Stud Strap
(one face only)

NOTE:
To calculate the number of B type fixings required divide the wall length by the stud centres, add 1 to this figure and locate this number of fixings as evenly as possible along the wall length. This figure includes the start and end studs in each wall length.

MiTek LUMBERLOK

FRAMING ARRANGEMENTS

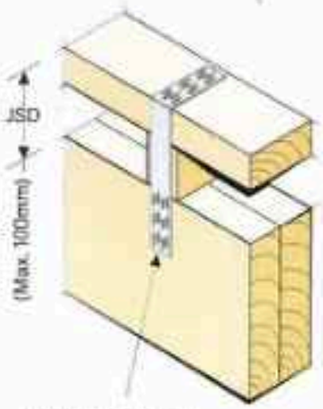
Jack Stud Dimension Definition **(JSD)**



★Note: It is preferable for the top fixing to be located on the uppermost top plate or top plate packer to provide better fixing options for the truss connections.

FIXING OPTIONS

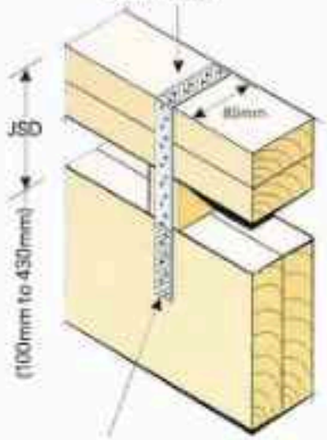
FIXING 1
Jack Stud Dimension **(JSD)** up to a maximum of 100mm. Includes top Plate fixed directly onto Lintel i.e. no Jack Stud used.



LUMBERLOK Stud Strap on one face

Note:
Fix Jack Stud with 2/ 90mm x 3.15 dia. nails from top plate and 2/ 90mm x 3.15 dia. skew nails to Lintel (typical)

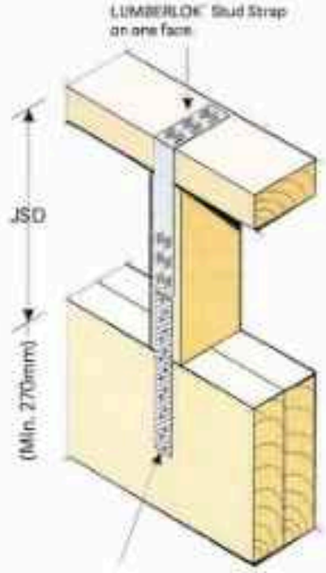
FIXING 2
Jack Stud Dimension **(JSD)** from a minimum of 100mm to a maximum of 430mm.



LUMBERLOK Sheet Brace Strap on one face.
Fill 6 holes in shaded area with LUMBERLOK Product Nails 30mm x 3.15 dia.

Note:
- JSD up to 230mm use Sheet Brace Strap 400mm.
- JSD from 230mm to 430mm use Sheet Brace Strap 600mm.

FIXING 3
Jack Stud Dimension **(JSD)** from a minimum of 270mm. No maximum dimension.



LUMBERLOK Sheet Brace Strap 200mm on one face.
Fill 6 holes in both shaded areas of Jack Stud and Lintel with LUMBERLOK Product Nails 30mm x 3.15 dia.

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 17

Document Set ID: 8238846
Version: 8, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

This information is provided by the Waikato District Council

GIB EzyBrace® Systems specification GS1-N

Specification code	Minimum length (m)	Lining requirement
GS1-N	0.4	Any 10mm or 13mm GIB® Standard plasterboard to one side only

WALL FRAMING

Wall framing to comply with:

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC E2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor

Pairs of hand driven 100 x 3.75mm nails at 600mm centres, or three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor

Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

External Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for external wall bottom plate fixing.

WALL LINING

- Any 10mm or 13mm GIB® plasterboard lining.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES

For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING

Fasteners

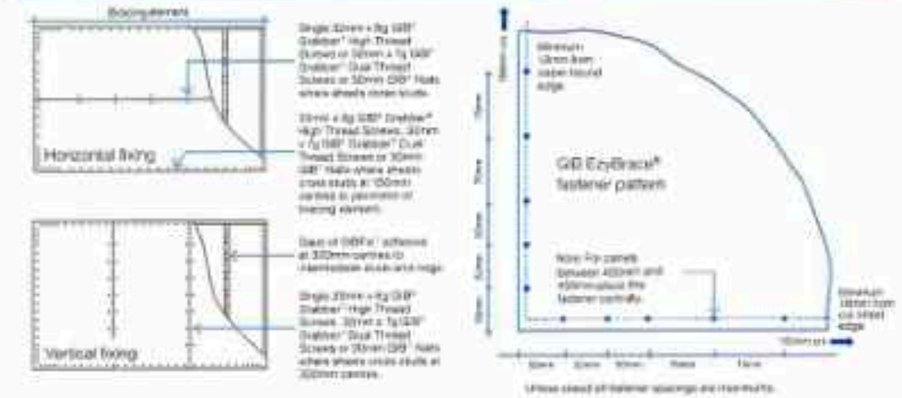
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Angle use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres

50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as stated, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems.

GIB EzyBrace® Systems specification BL1-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BL1-H	0.4	10mm or 13mm GIB Braceline® to one side only	Hold downs

WALL FRAMING

Wall framing to comply with:

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC E2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor

Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide.

Pairs of hand driven 100 x 3.75mm nails at 600mm centres, or Three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor

Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

WALL LINING

- A layer of 10mm or 13mm GIB Braceline®
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES

For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING

Fasteners

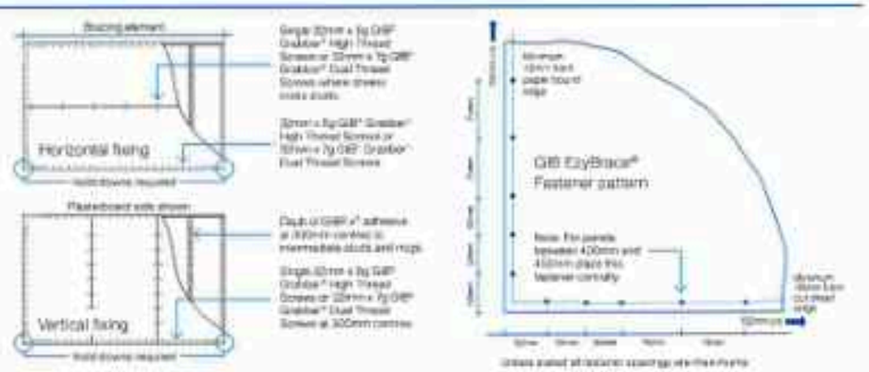
32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws. If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres

50,100,150, 225, 300mm from maximum each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to the sheet joint. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as stated, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems.

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

18 Gib GS1-N & BL1-H Bracing Spec

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April '25

Revision:

Sheet Number: 18 of

Document Set ID: 8238886
Version: 8, Version Date: 02/05/2026

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Building Consent Number
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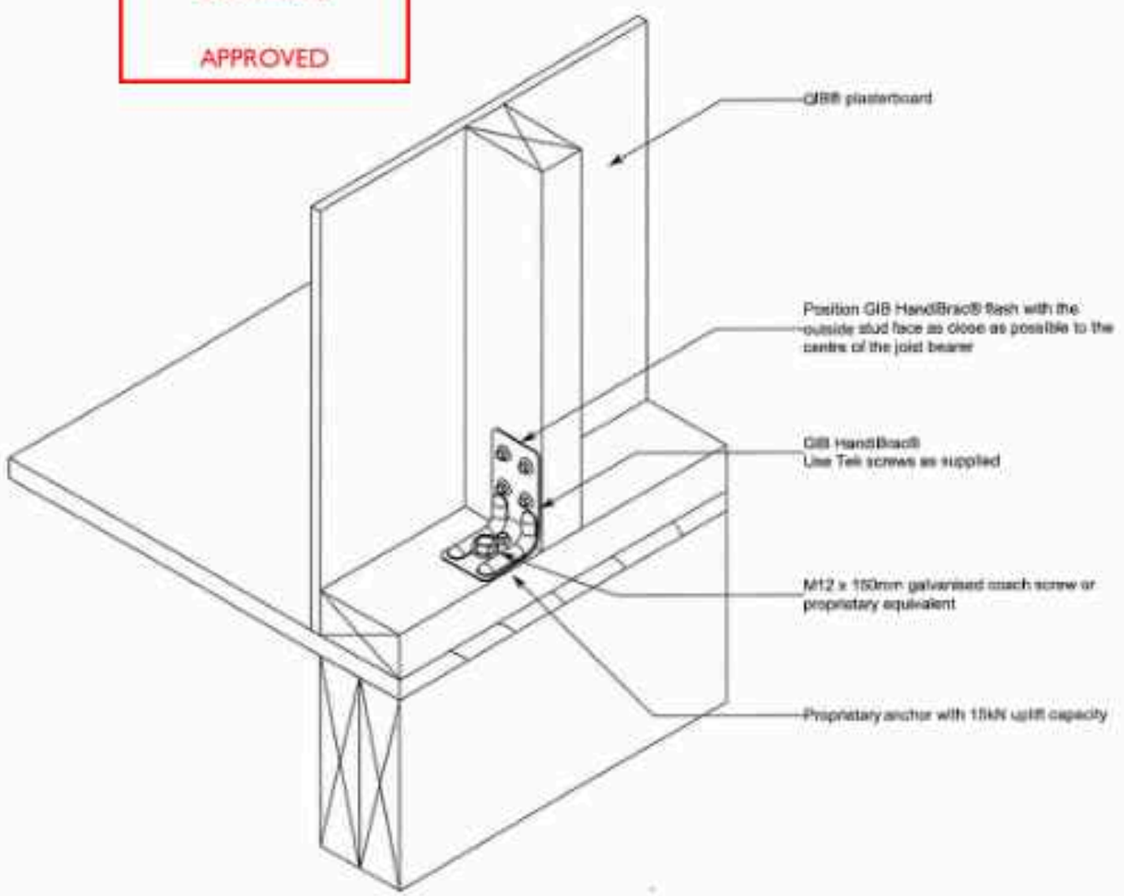
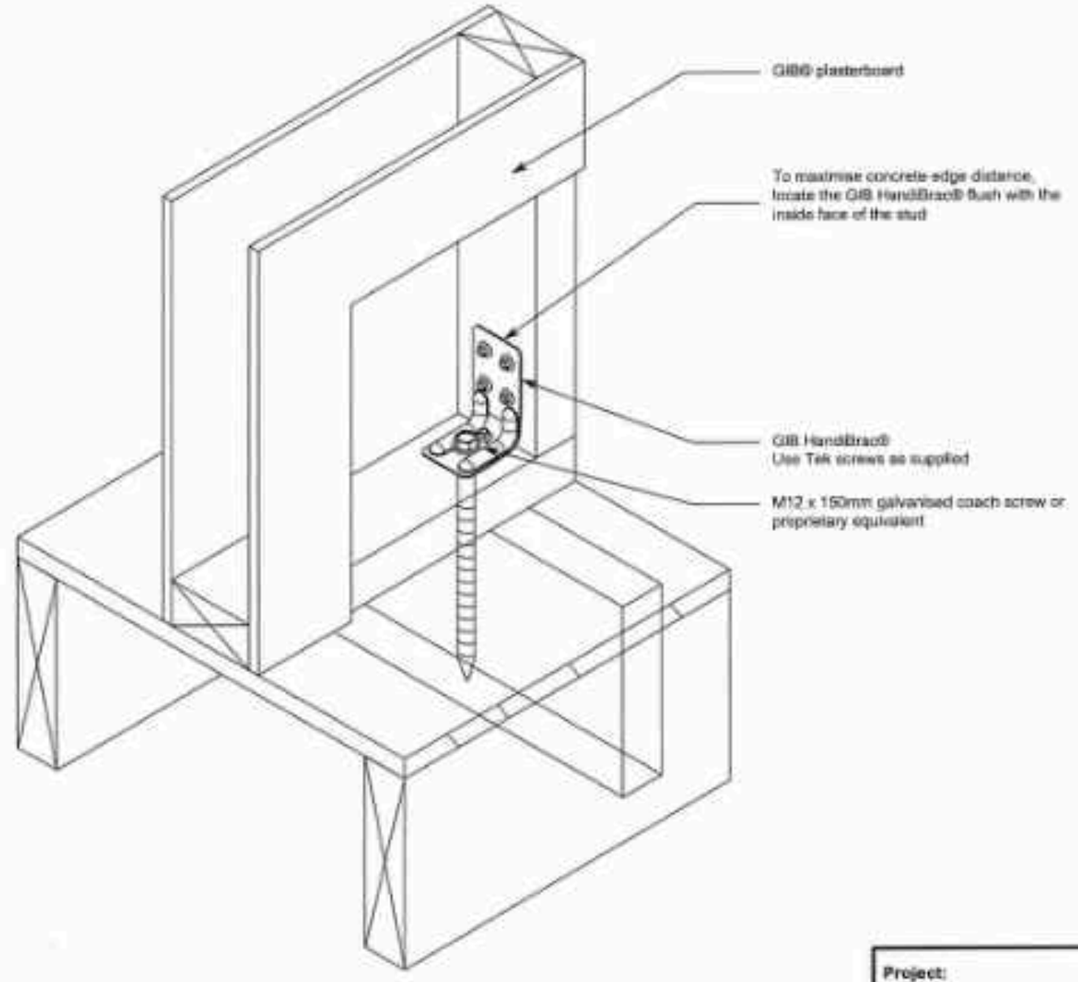


External Wall

1 HandiBrac @ Timber Floor
Scale: 1:5



Internal Wall

5 HandiBrac Installation
Scale: 1:5

Project:

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:

Rob Bennett LBP: 100433

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116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April '25

Revision:

Sheet Number:
19 of

Document Set ID: 9238868
Version: 8, Version Date: 02/05/2026

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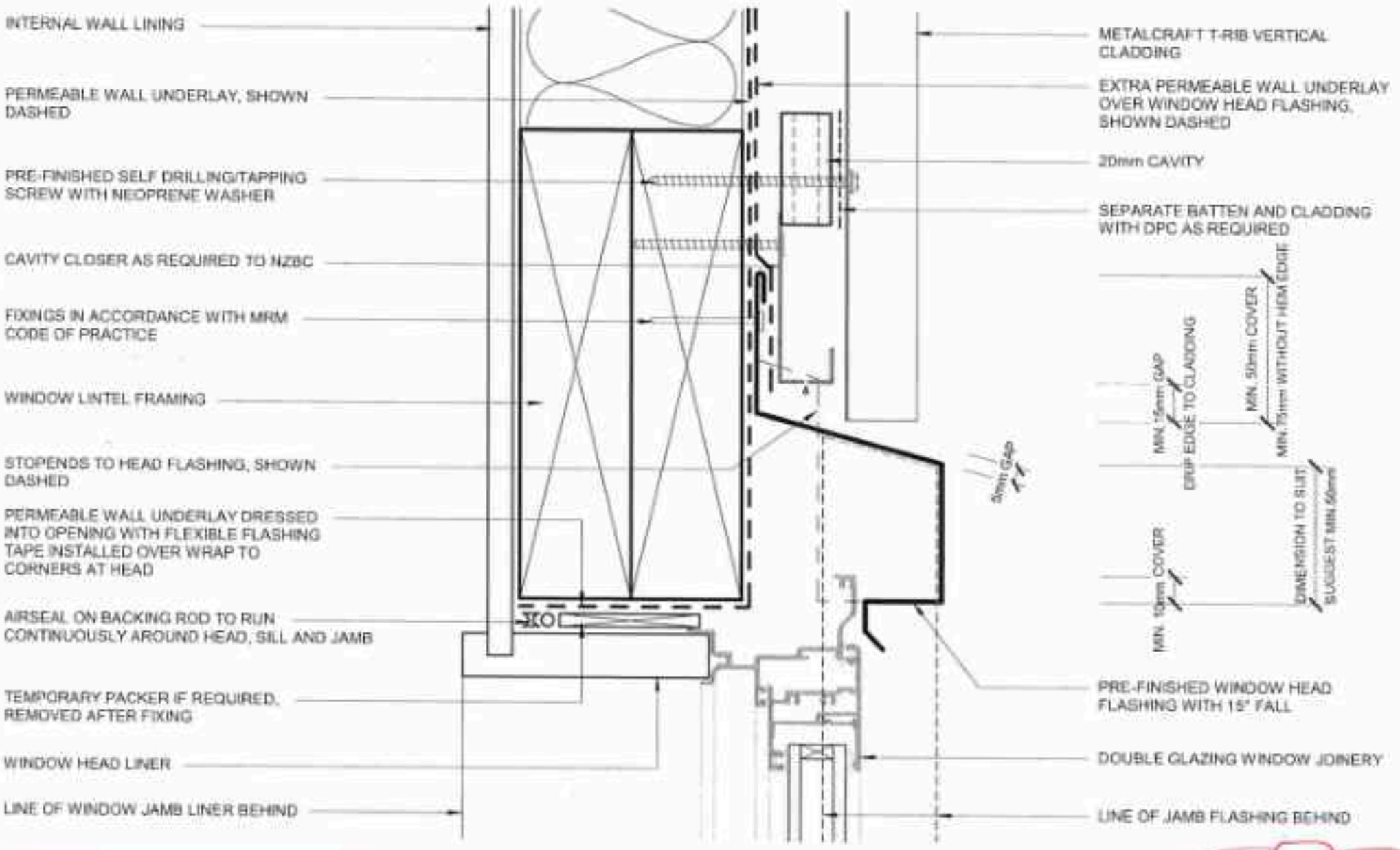

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DISCLAIMER:
All details are to be used for indicative purposes only and the designer should consult both the NZBC code of practice version 3.0 / 2022, E2 and all other relevant building codes.
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

T - Rib | Rev: 1.0 | WINDOW HEAD
RESIDENTIAL VERTICAL CLADDING
Reference: RVTRI | Date: JAN 2023 | Scale: 1 : 2 | Sheet: B 04 / 18

Waikato District Council
Building Consent Number
BLD1107/25

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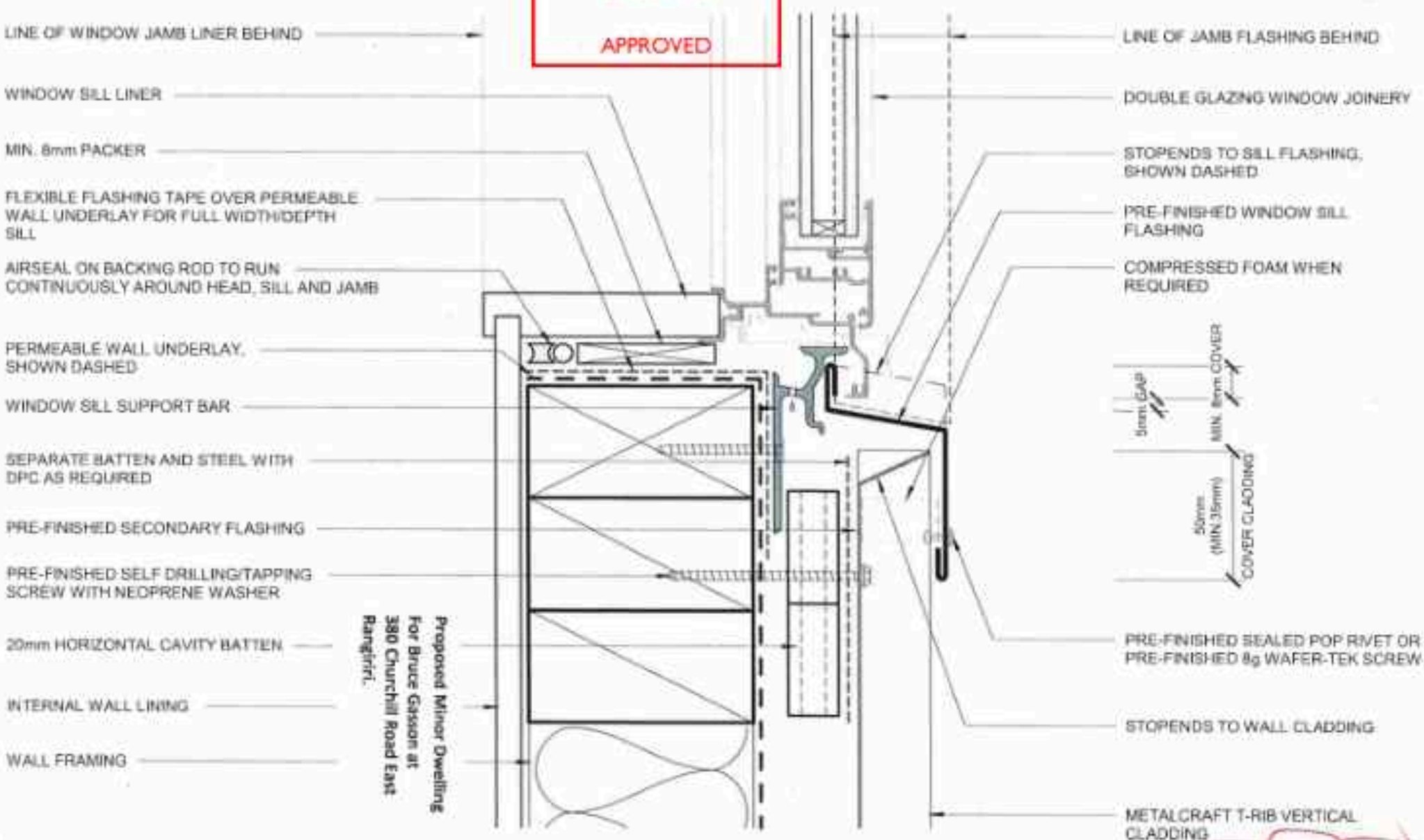

SHEET: 2

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T - Rib | Rev: 1.0 | WINDOW SILL
RESIDENTIAL VERTICAL CLADDING
Reference: RVTRI | Date: JAN 2023 | Scale: 1 : 2 | Sheet: B 05 / 18

Document Set ID: 6279886
Version: 1, Version Date: 03/05/2026

Print Date: 6 November 2026, 1:26 pm

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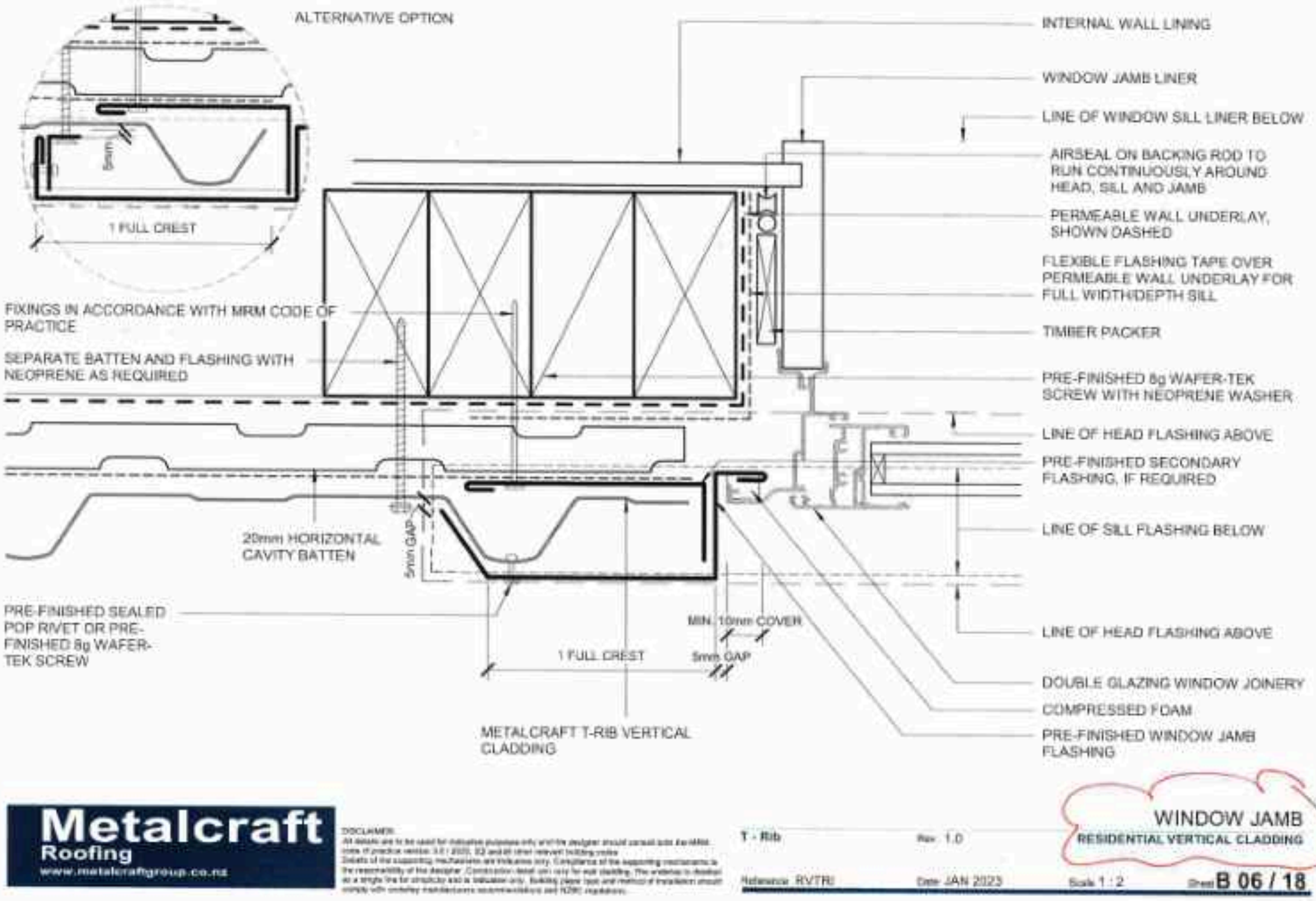

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WINDOW JAMB
RESIDENTIAL VERTICAL CLADDING

Waikato District Council
Building Consent Number
BLD1107/25
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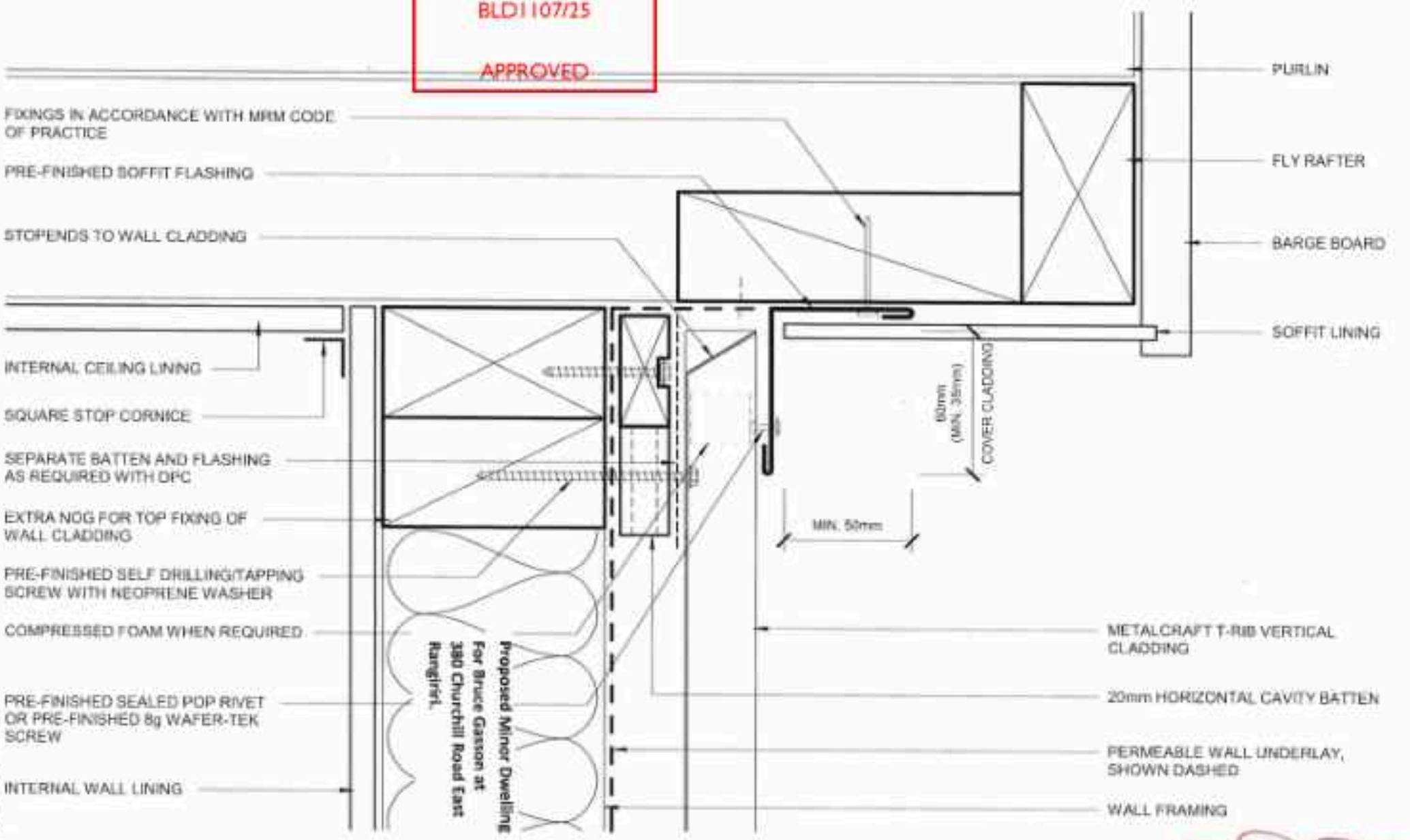

Sheet: 21

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SOFFIT
RESIDENTIAL VERTICAL CLADDING

Document Set ID: 6279846
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Print Date: 6 November 2026, 1:26 pm

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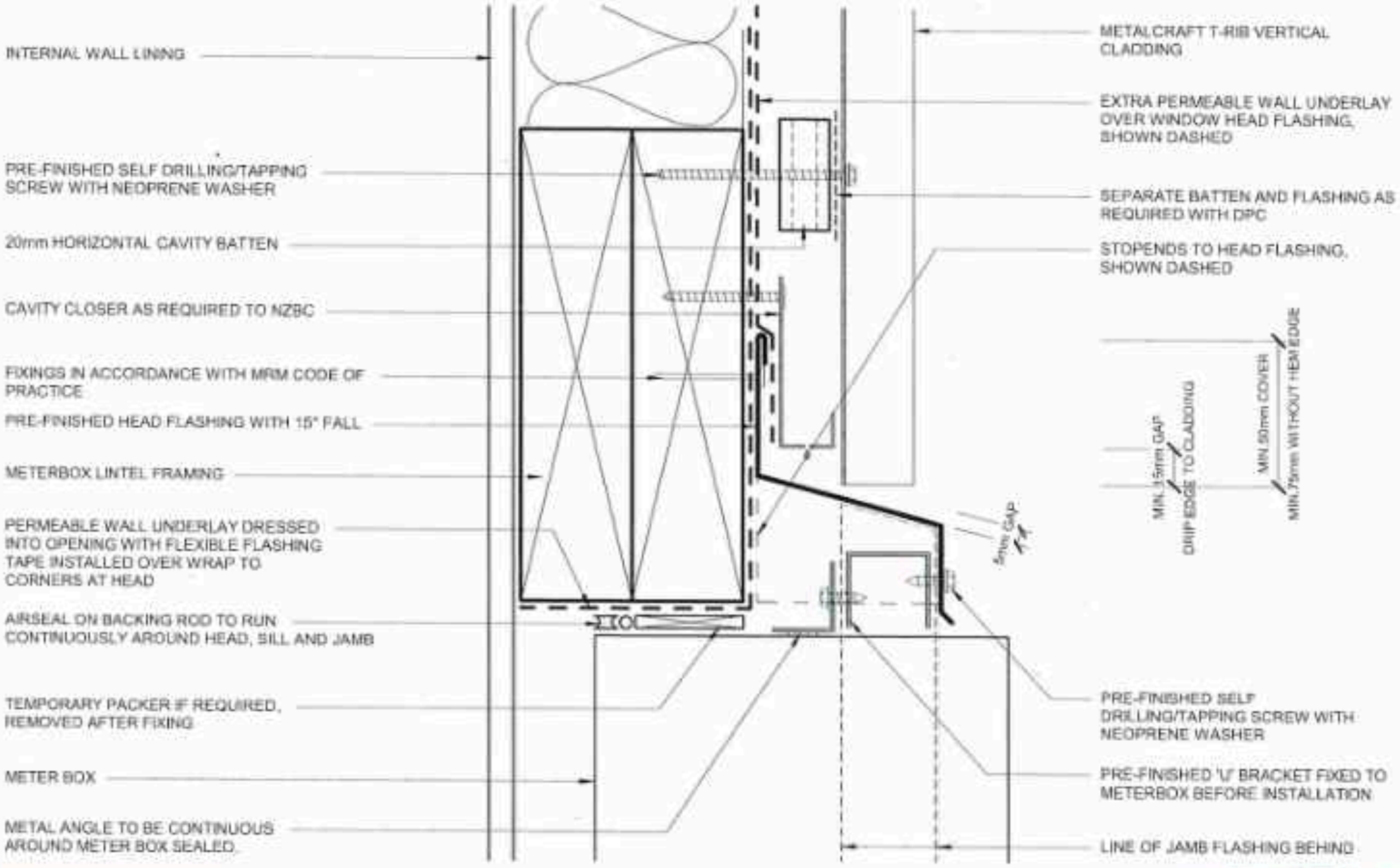

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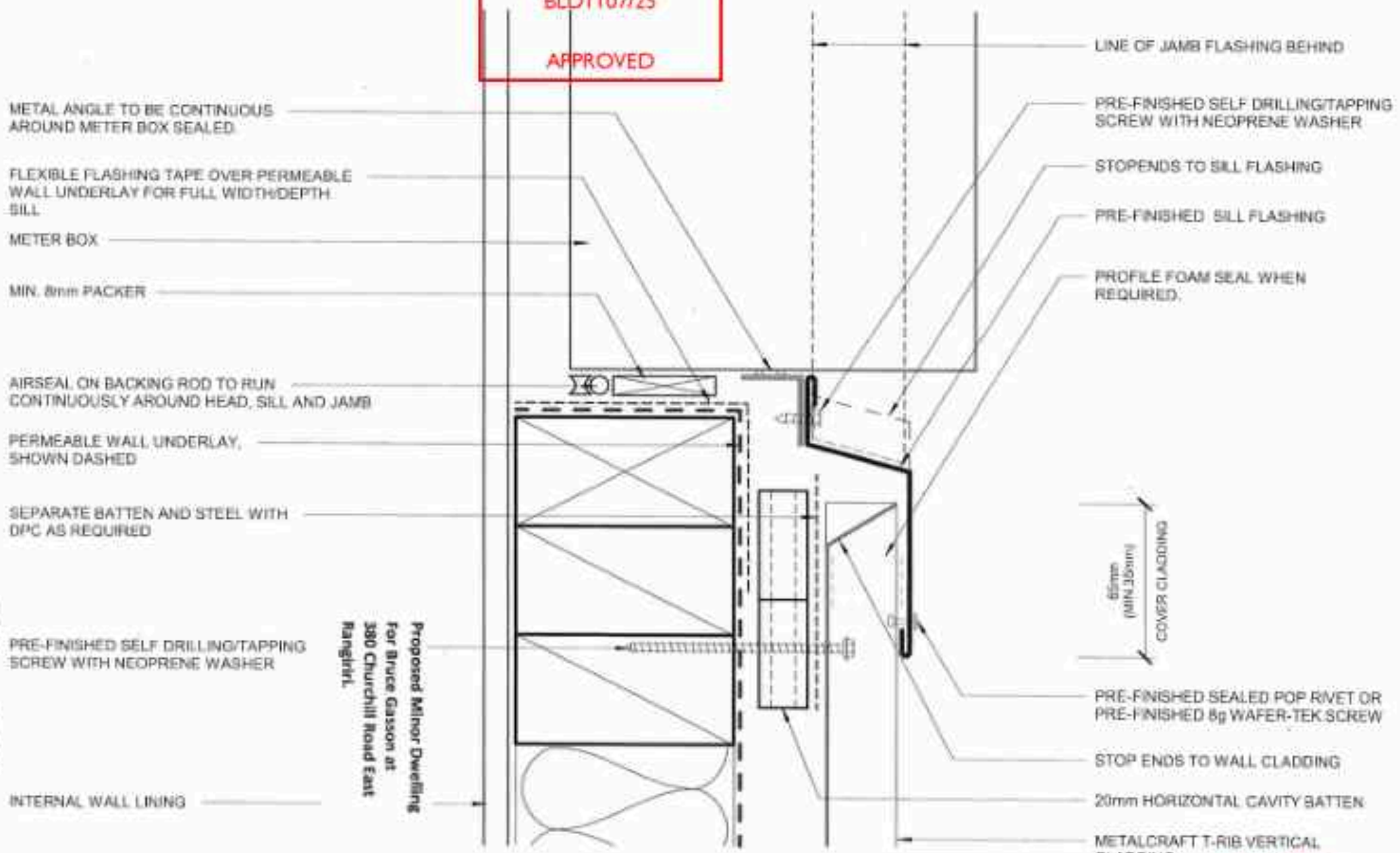
METERBOX HEAD
RESIDENTIAL VERTICAL CLADDING
Sheet B 07 / 18

Waikato District Council
Building Consent Number
BLD1107/25
APPROVED



Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 22

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METERBOX SILL
RESIDENTIAL VERTICAL CLADDING
Sheet B 08 / 18

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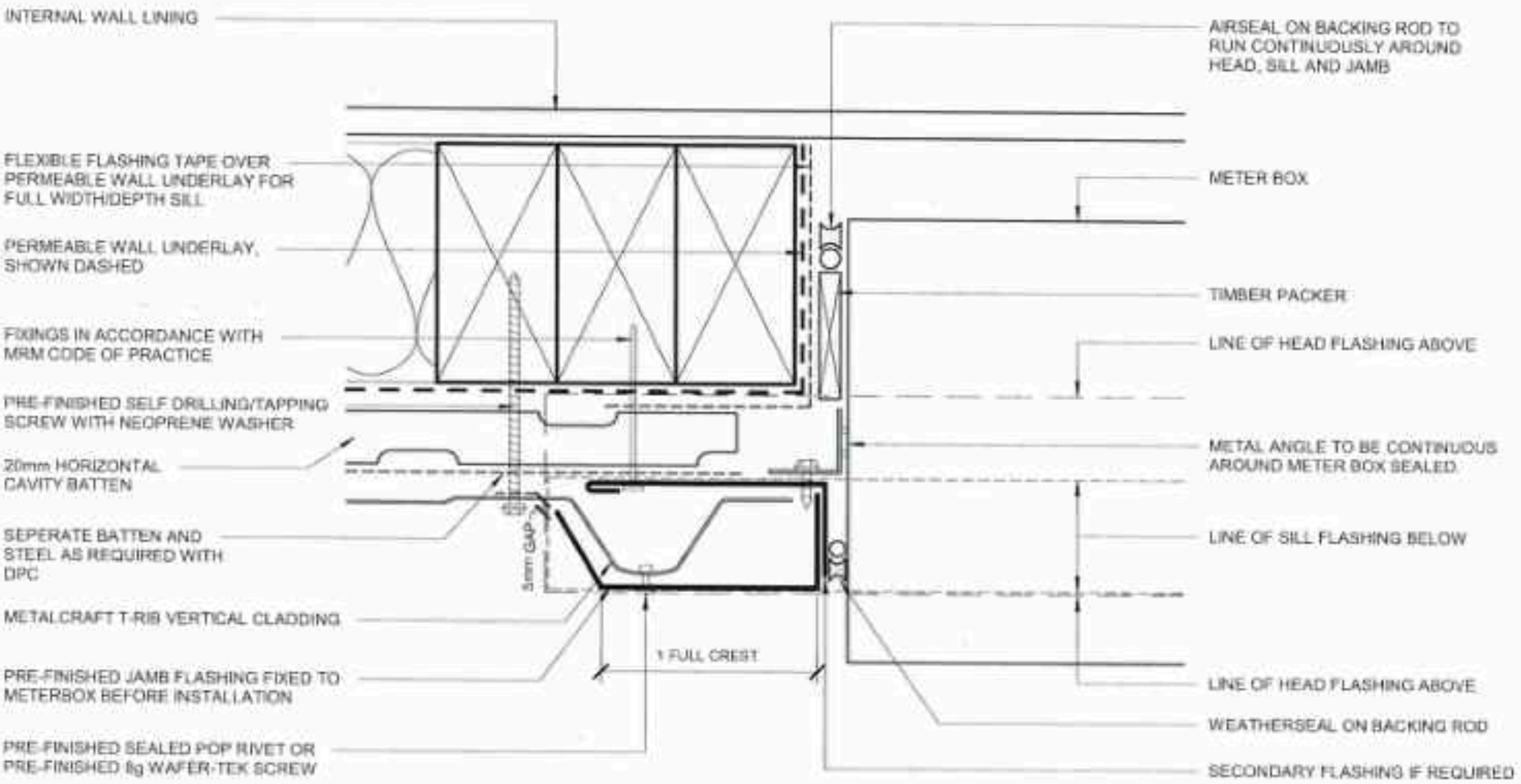

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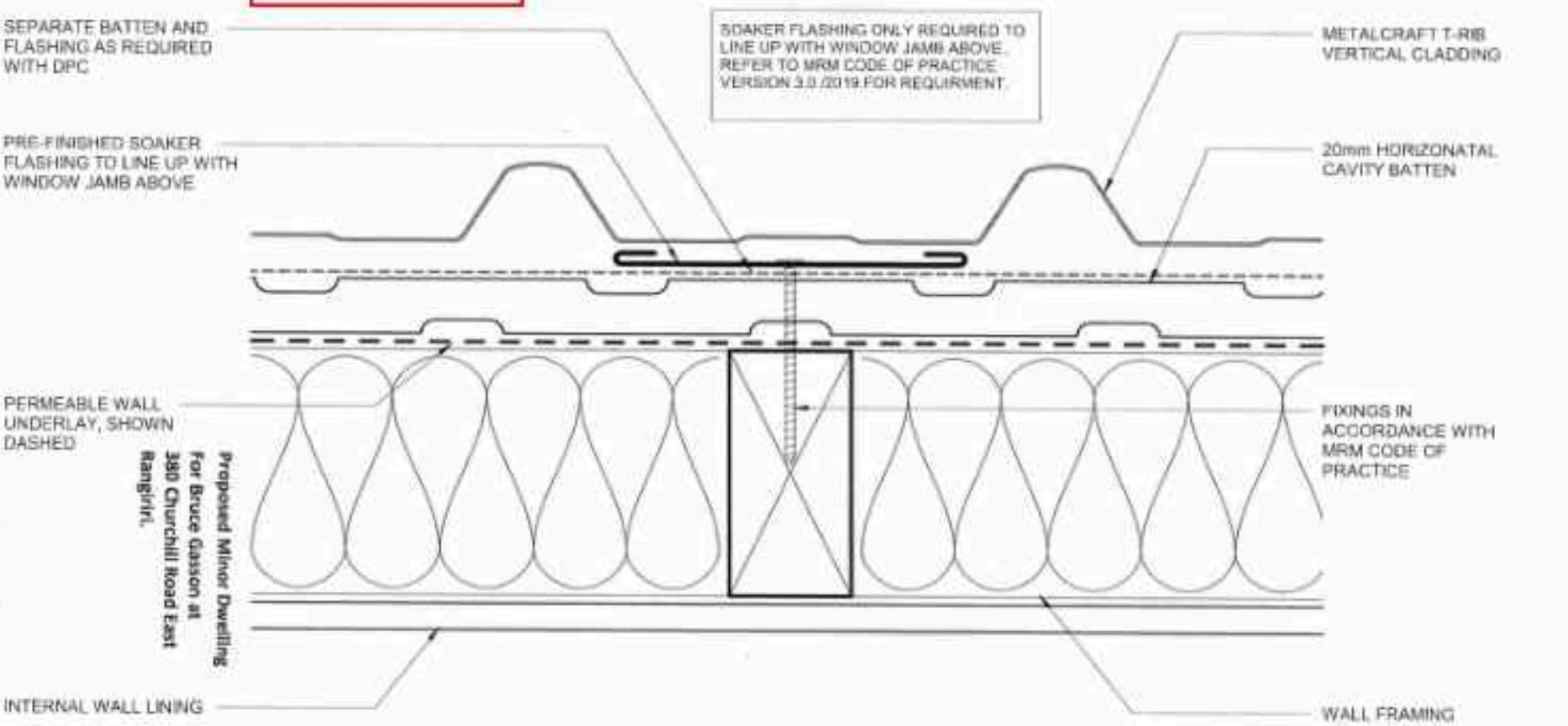
T - Rib | Rev. 1.0 | Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet B 09 / 18

METERBOX JAMB
RESIDENTIAL VERTICAL CLADDING

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED



Proposed Minor Dwelling
For Bruce Gasson at
390 Churchill Road East
Rangiriri.

SHEET: 22

Metalcraft Roofing
www.metalcraftgroup.co.nz

DISCLAIMER
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T - Rib | Rev. 1.0 | Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet B 12 / 18

SOAKER FLASHING
RESIDENTIAL VERTICAL CLADDING

Document Set ID: 6278849
Version: 1, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

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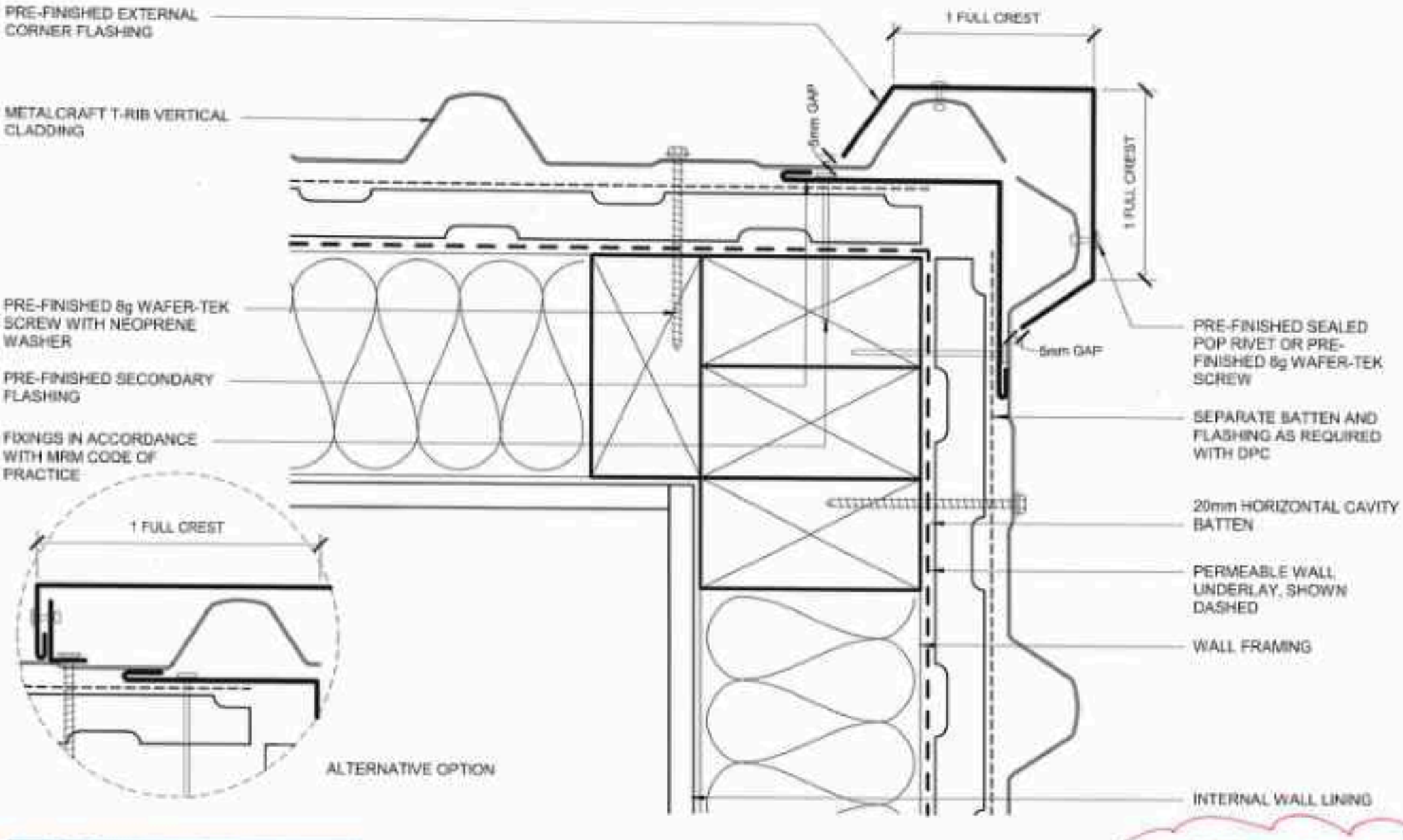

Metalcraft Roofing
www.metalcraftgroup.co.nz

DISCLAIMER
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 3.0 / 2022, B2 and all other relevant building codes.
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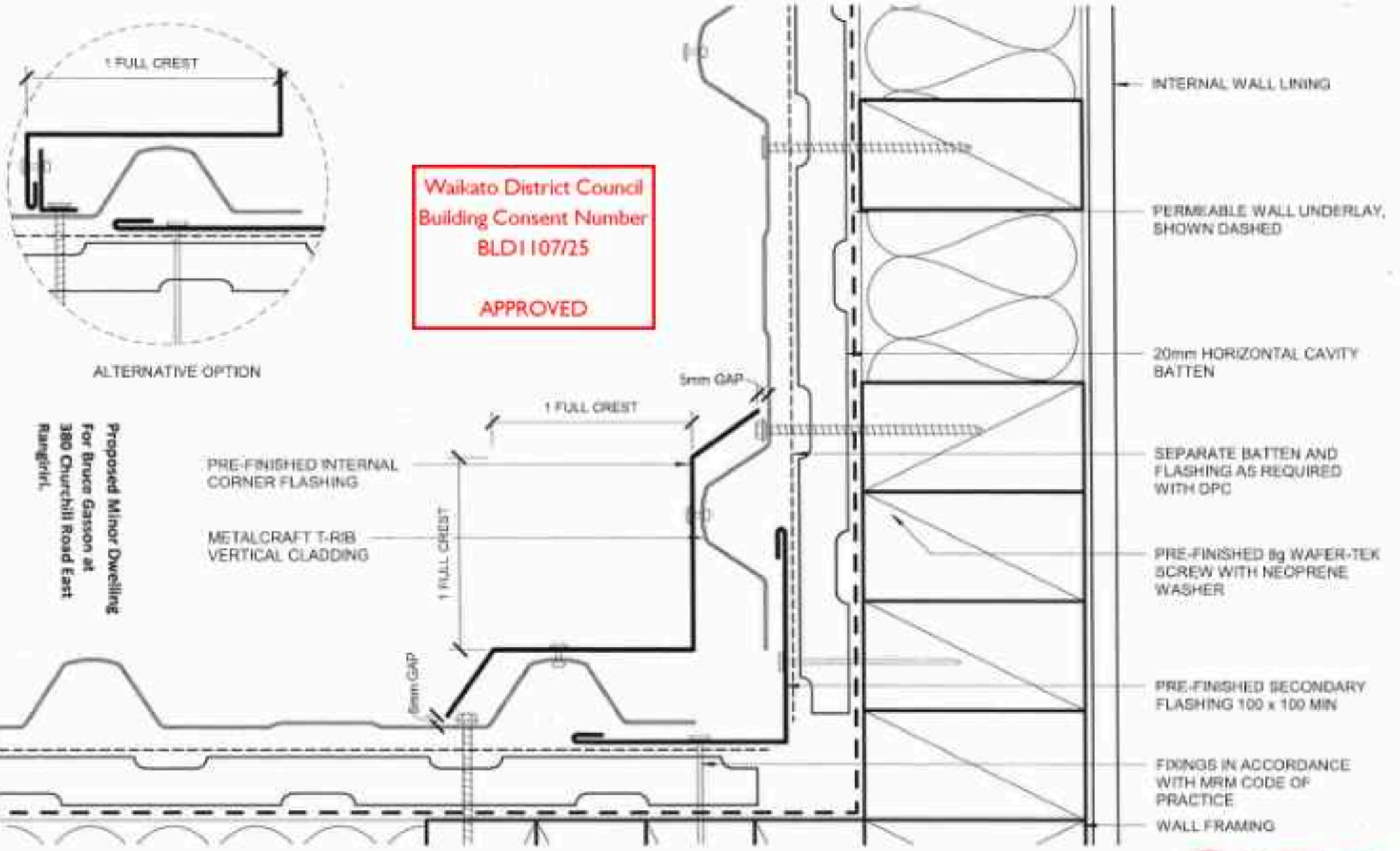
T - Rib | Rev. 1.0 | Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet B 11 / 18

EXTERNAL CORNER
RESIDENTIAL VERTICAL CLADDING



Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET : 24

Metalcraft Roofing
www.metalcraftgroup.co.nz

DISCLAIMER
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T - Rib | Rev. 1.0 | Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet B 10 / 18

INTERNAL CORNER
RESIDENTIAL VERTICAL CLADDING

Document Set ID: 6238849
Version: 1, Version Date: 02/05/2026
Print Date: 6 November 2026, 1:26 pm

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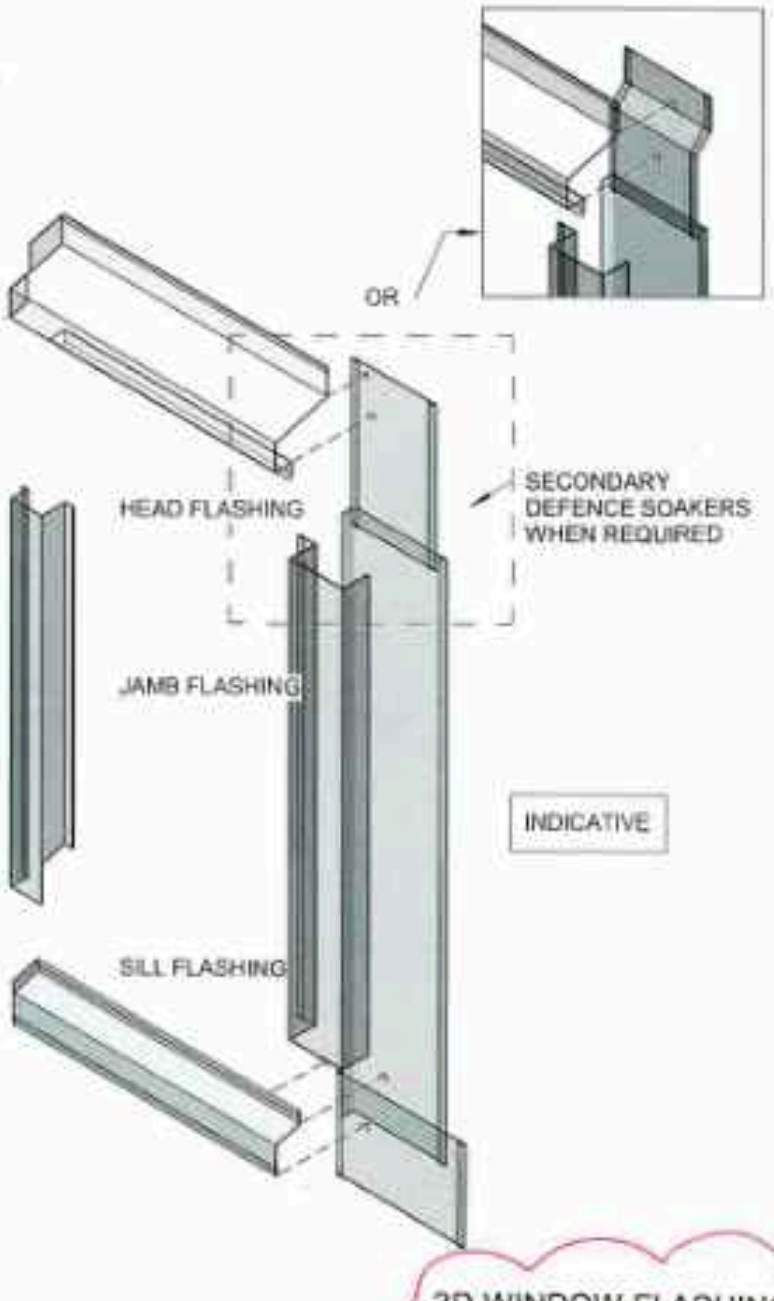
Waikato District Council
Building Consent Number
BLD1107/25

APPROVED





Metalcraft
Roofing
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DISCLAIMER:
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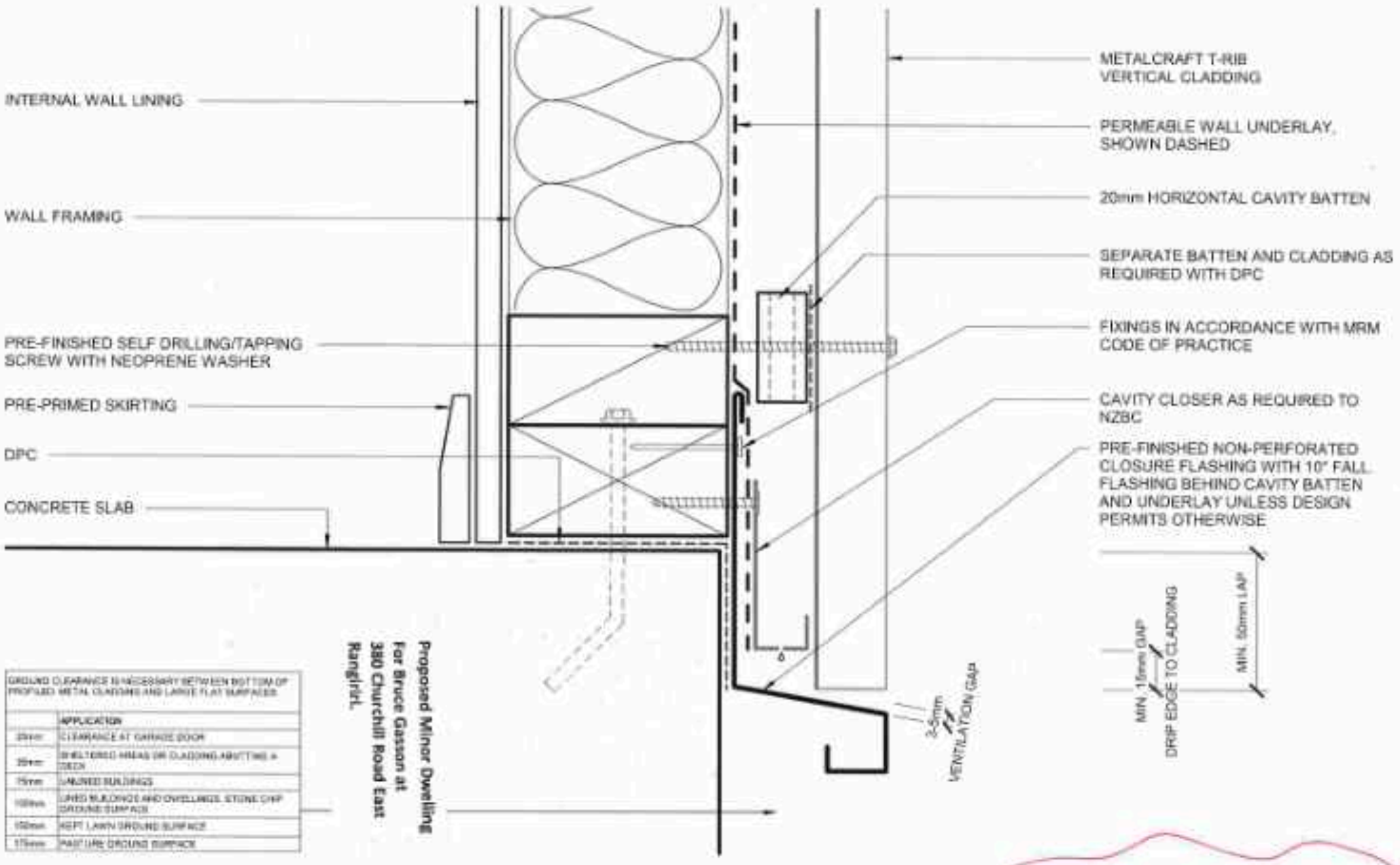
T - Rib | Rev. 1.0 | 3D WINDOW FLASHINGS
RESIDENTIAL VERTICAL CLADDING
Reference RVTRI | Date JAN 2023 | Scale | Sheet B 17 / 18



GROUND CLEARANCE IS NECESSARY BETWEEN BOTTOM OF PROFILED METAL CLADDING AND LARGE FLAT SURFACES

	APPLICATION
25mm	CLEARANCE AT GARAGE DOOR
35mm	SHELTERED AREAS OR CLADDING ABUTTING A DECK
75mm	UNUSED BUILDINGS
100mm	LINED BUILDINGS AND DWELLINGS, STONE CHIP GROUND SURFACE
150mm	KEPT LAWN GROUND SURFACE
175mm	PASTURE GROUND SURFACE

SHEET: 25

Metalcraft
Roofing
www.metalcraftgroup.co.nz

DISCLAIMER:
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T - Rib | Rev. 1.0 | BOTTOM OF CLADDING (FLUSH)
RESIDENTIAL VERTICAL CLADDING
Reference RVTRI | Date JAN 2023 | Scale 1 : 2 | Sheet B 15 / 18

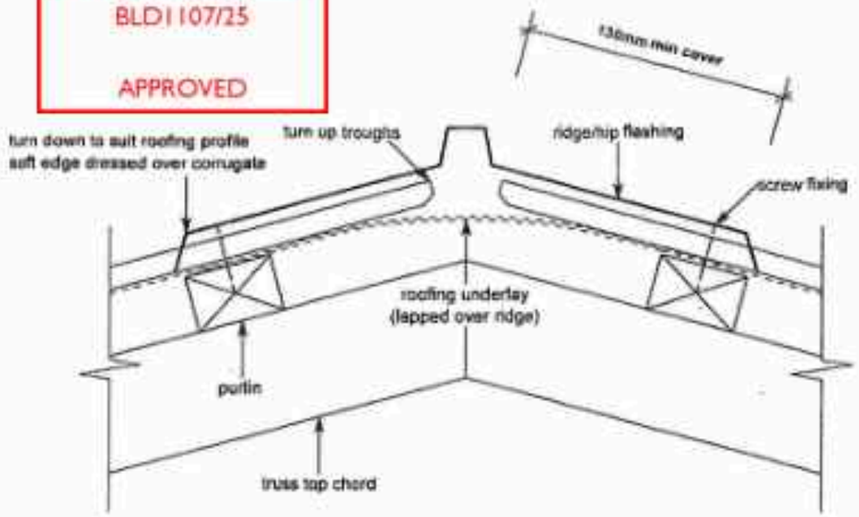
Document Set ID: 6279846
Version: 1, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

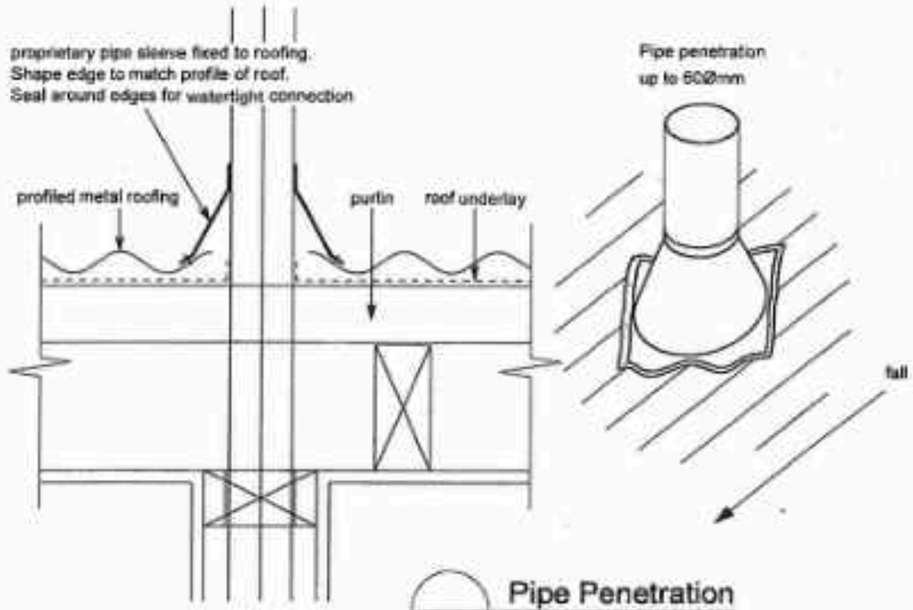
This information is provided by the Waikato District Council

Waikato District Council
Building Consent Number
BLD1107/25

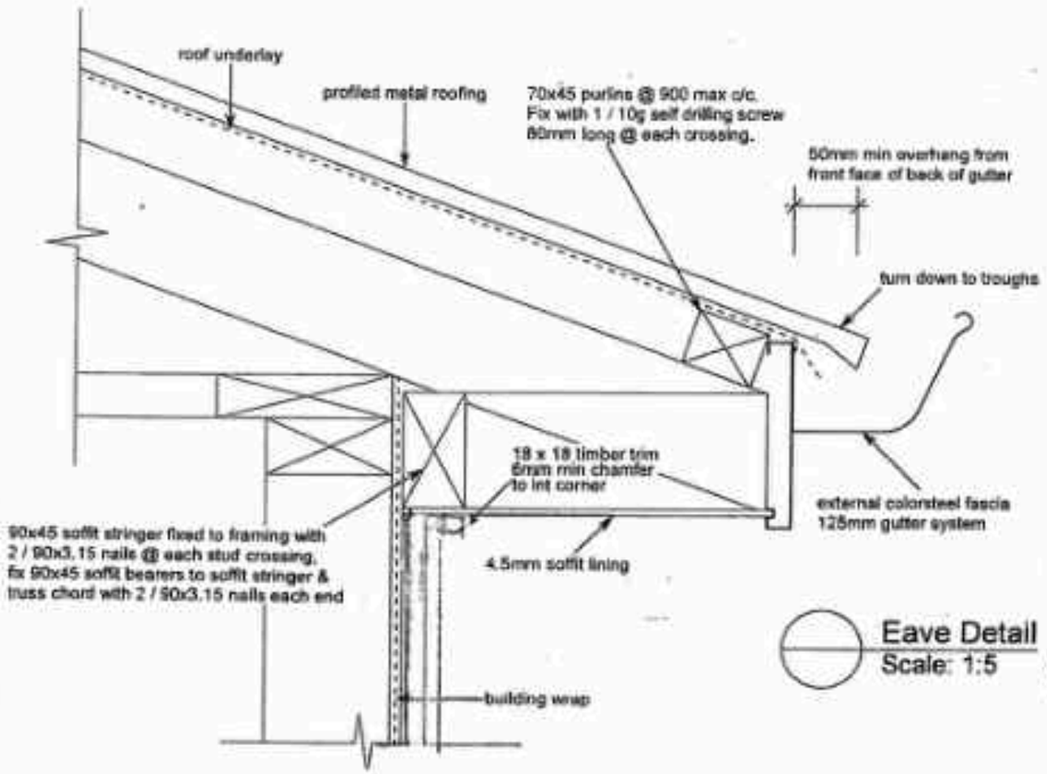
APPROVED



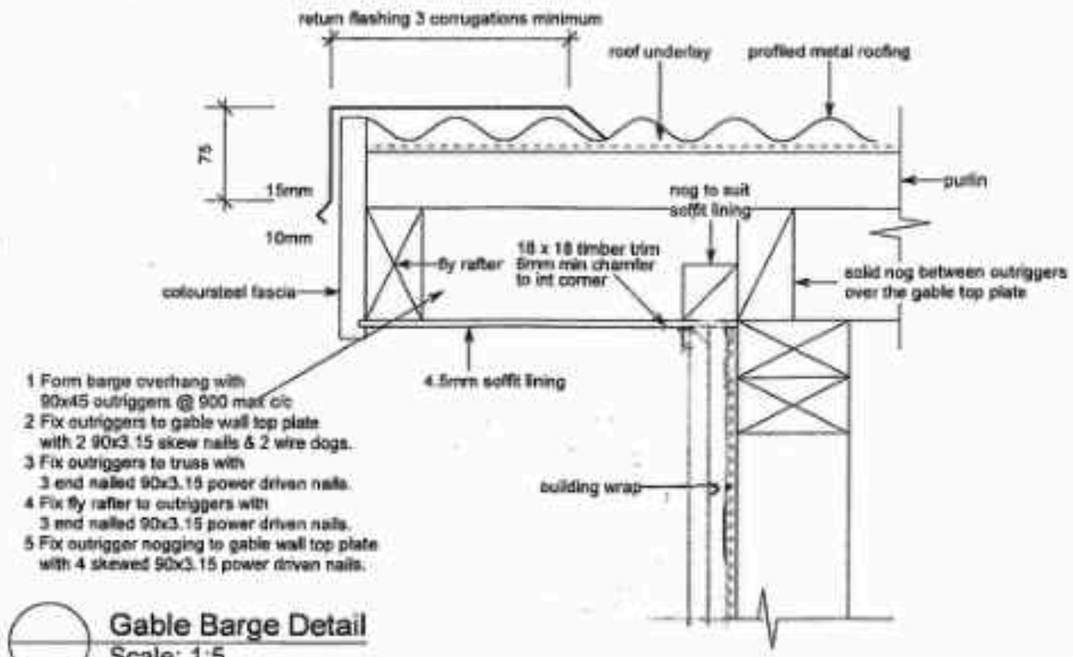
Ridge Detail
Scale: 1:5



Pipe Penetration
Scale: 1:5



Eave Detail
Scale: 1:5



Gable Barge Detail
Scale: 1:5

26 Profiled Metal Roofing Details
Scale: 1:5

Project Title

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Date
April '25

Revison **Date**

Designer
Rob Bennett - LBP# BP100433

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Plan Number 26

Total Pages

Document Set ID: 8288696
Version: 8, Version Date: 03/05/2026

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Waikato District Council
Building Consent Number
BLD1107/25

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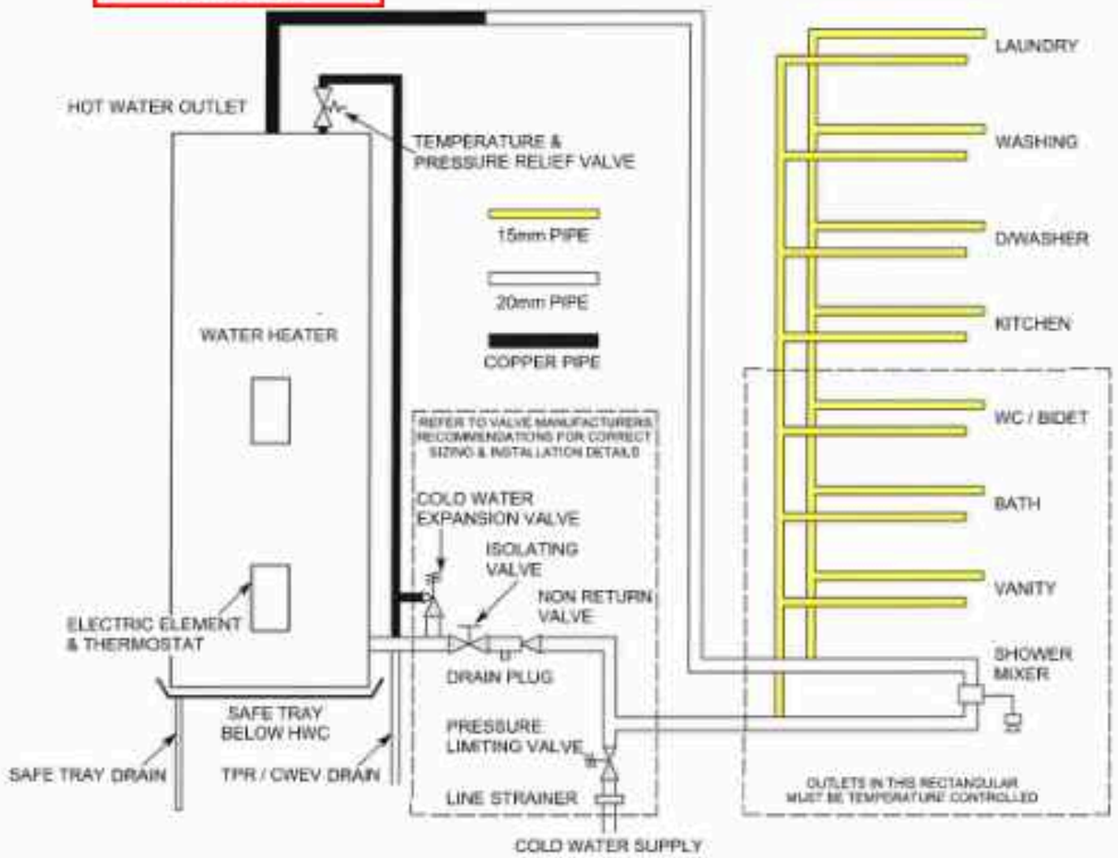
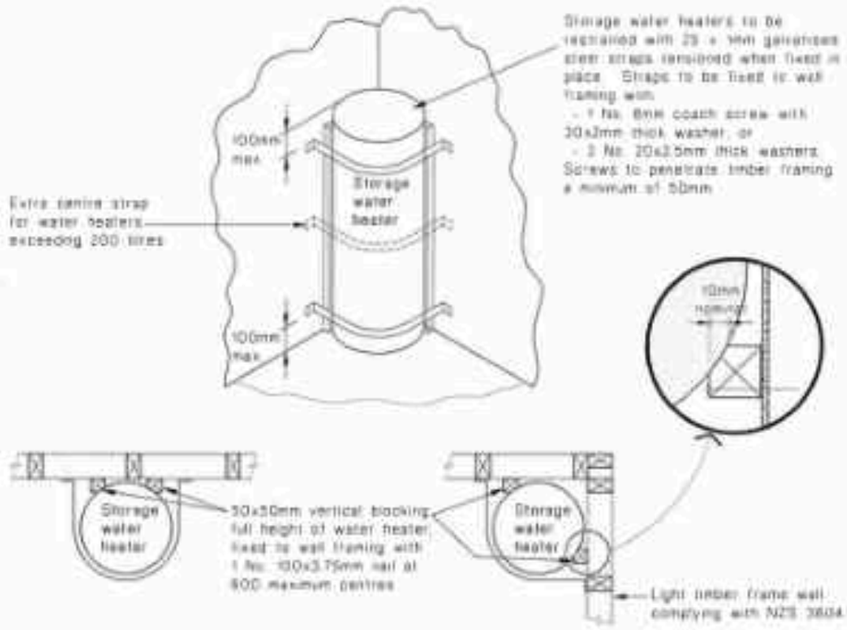


HWC Schematic
NTS



HWC Seismic Restraint
NTS

27 HWC Details

Project:
Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Designer:
Rob Bennett LBP: 100433
BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April '25
Revision:

Sheet Number:
27 of

Document Set ID: 8238806
Version: 8, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

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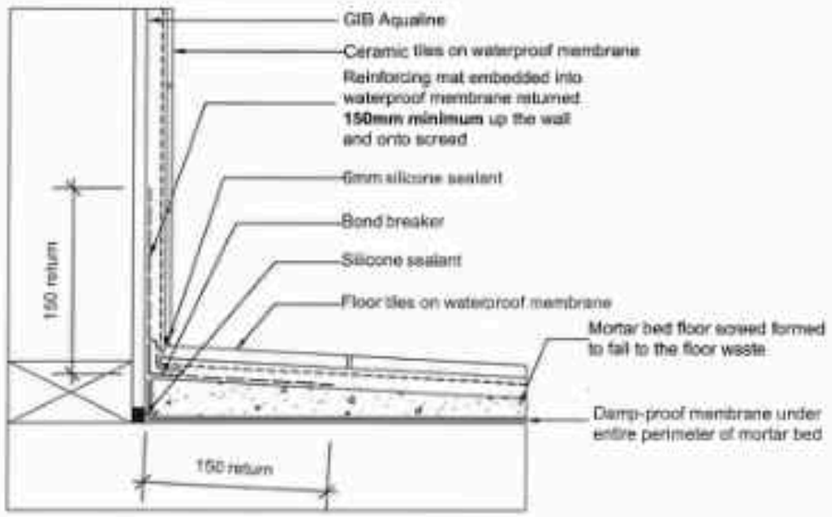
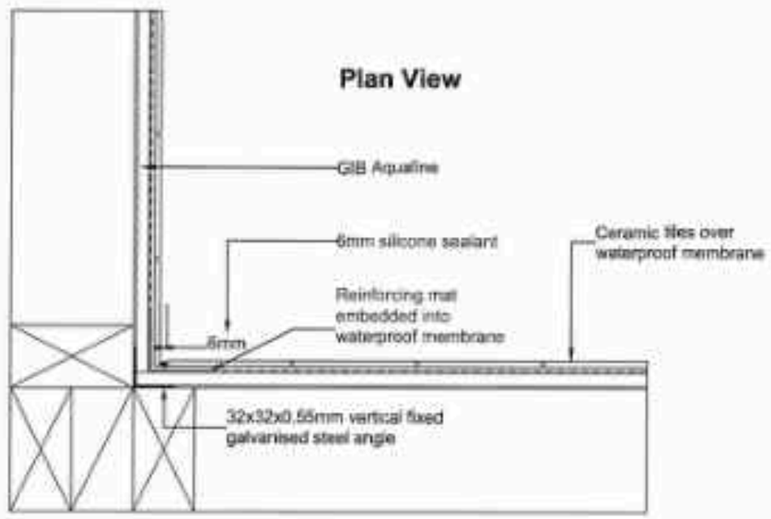
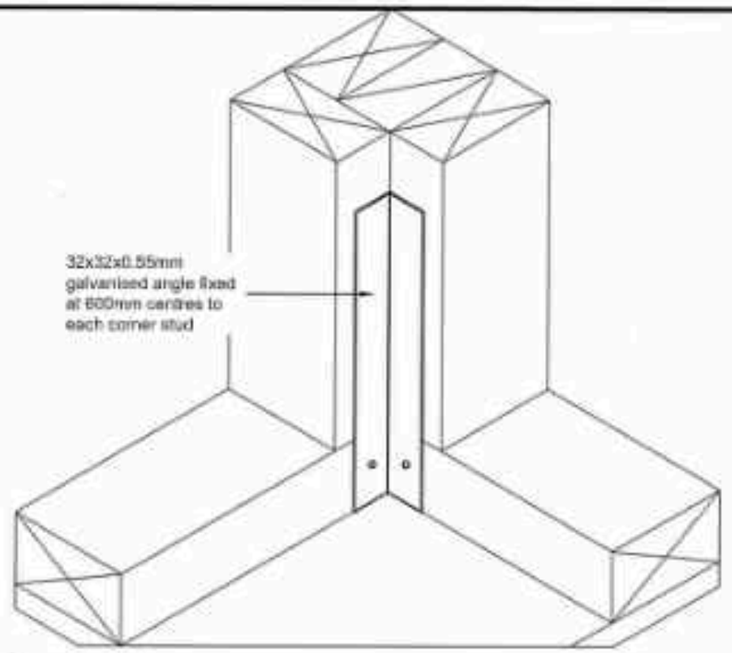


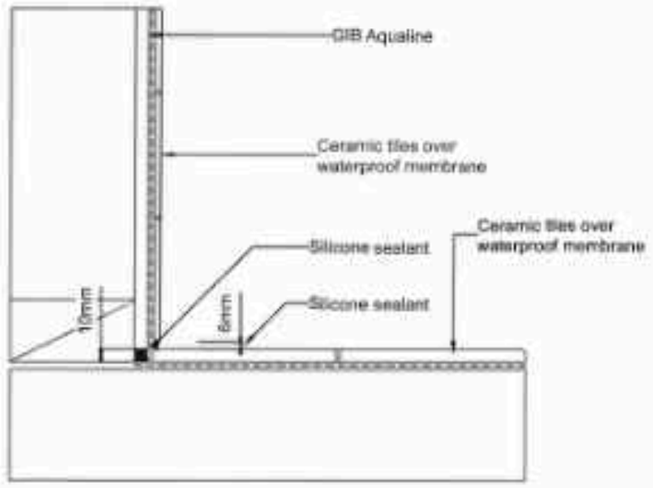
Shower Wall/Floor Detail - Tiled Walls & Base
Scale: 1:5



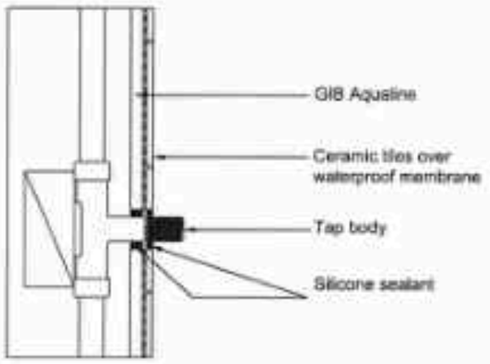
Shower Corner Detail - Tiled Walls & Base
Scale: 1:5



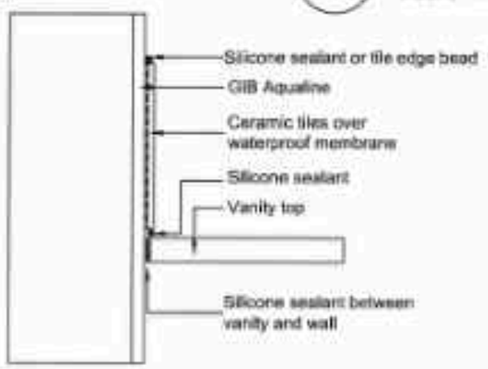
Shower Corner Angle Detail - Tiled Walls & Base
Scale: 1:5



Wall/Floor Detail - Tiled Walls & Floor
Scale: 1:5



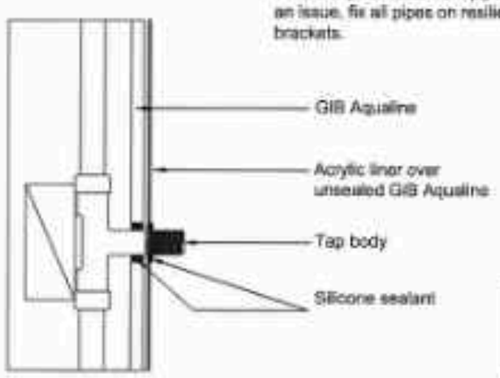
Pipe Penetration - Tiled Wall
Scale: 1:5



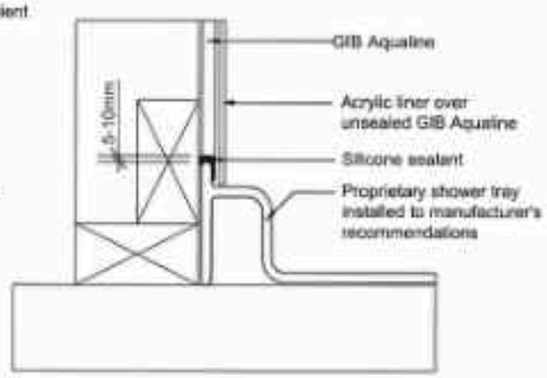
Vanity Top Detail
Scale: 1:5

Note:

Where impact noise from pipes is an issue, fix all pipes on resilient brackets.



Pipe Penetration - Acrylic Liner
Scale: 1:5



Acrylic Shower Tray Detail
Scale: 1:5

Waikato District Council
Building Consent Number
BLD1107/25

APPROVED

28 Wet Area Details
Scale: 1:5

Project:

Proposed Minor Dwelling For Bruce Gasson at 380 Churchill Road East Rangiriri.

Designer:

Rob Bennett LBP: 100433

BENNETT DRAUGHTING
116 RED HILL ROAD
PAPAKURA
(09) 296 6369

Date: April '25

Revision:

Sheet Number:
28 of

Document Set ID: 6238866
Version: 8, Version Date: 02/05/2026

Print Date: 6 November 2026, 1:26 pm

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H1. Done.

WE'VE GOT YOUR INSULATION SOLUTIONS COVERED.

The new insulation changes for small and large buildings might seem daunting, but at Comfortech® we've got all your H1 solutions sorted.

MBIE has made changes to roof, window, wall and underfloor insulation requirements and issuing a new edition of H1/AS1 and H1/VM1 for small buildings.

AS1/VM1 must be applied to all small buildings ***and*** *to housing of* ***any*** *size.*
AS2/VM2 must be applied to all large buildings.

The new R-values aim to [illegible] over minimum previous status quo requirements.

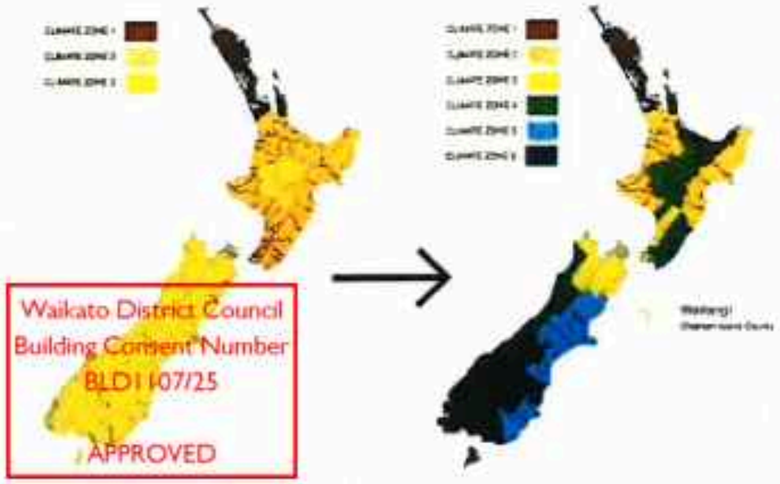
MBIE has also proceeded with changes to roof, window, wall and underfloor insulation requirements and issuing the new H1/AS2 and H1/VM2 for large buildings.

This aims to reduce the energy needed for heating and cooling 23% on average across new large buildings over previous minimum status quo requirements.

Our team at Comfortech® has designed solutions in partnership with the building industry that are flexible enough to cover a range of different building requirements.

Changes to climate zones

Previously New Zealand was divided into three climate zones. To better reflect regional climate differences those zones have now changed to six.



Construction R-values for all residential and small buildings
(under 300m²)

There have been significant changes to construction R-values for houses and small buildings (under 300m²) with significant increases in ceiling R-values across the country.

Floors have now been broken out into concrete and raised timber floors, whilst walls have not changed significantly yet.

BUILDING ELEMENT	CLIMATE ZONE					
	1	2	3	4	5	6
ROOF	R6.6 (from 2.9 or 3.2)					
WINDOWS*	R0.37 (from R0.28)		R0.46		R0.50	
WALL	R2.0 (from R1.9)					
SLAB-ON-GROUND FLOORS	R1.5			R1.5	R1.6	R1.7
OTHER FLOORS	R2.5 (from R1.9)			R2.8	R3.0	

*The R-values for windows are being phased in, in stages, to the final values stated in the table above.

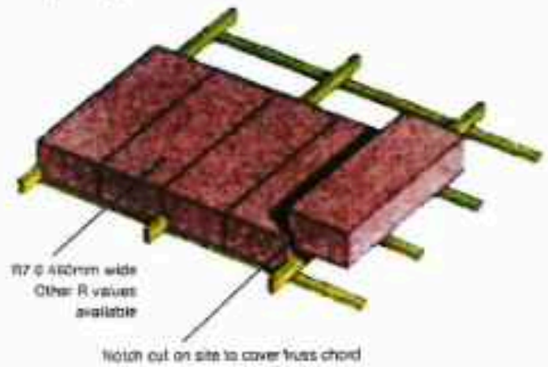
COMFORTECH
BUILDING PERFORMANCE SOLUTIONS

Single Layer Solution

Comfortech® have developed a single layer Pink® Superbatts® R7.0 solution, at a new width of 460mm, segments can be notched and fitted between the truss chord to seal the thermal bridge.

For compliance using the:
- Schedule method
  Use Pink® Superbatts® R7.0
- Calculation and Modelling methods
  May determine a lower R-value is required. Comfortech® has a range of other R-values including Pink® Superbatts® R4.5, R5.0, R6.0 which will all be at the new width of 460mm

Single Layer solution

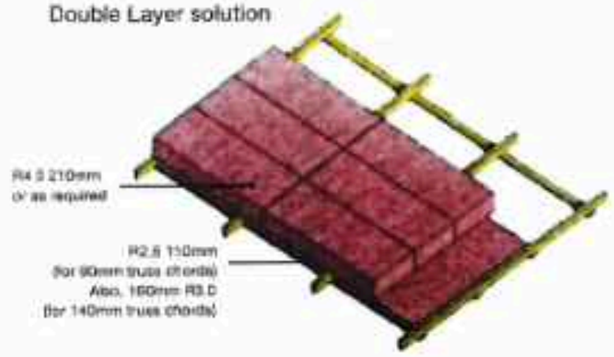


Double Layer Solution

The Comfortech® two layer solution uses a:

- First layer of Pink® Batts® insulation that is the combined height of the truss chord and the gap to the top of the ceiling batten. This layer would be either 110mm for a 90mm truss chord, or 160mm for a 140mm truss chord.
- Second layer of over-width (460mm wide) Pink® Superbatts® insulation. When the two layers are installed, the thermal bridge is completely closed, and the insulation performs as modelled

Double Layer solution



Insulation Guard for both solutions

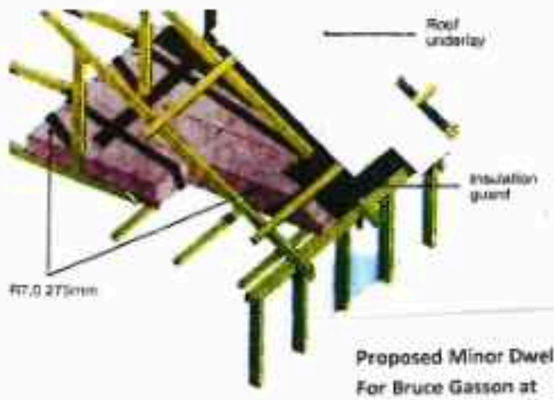
As roof insulation increases in thickness to meet the new building code, there is a greater differential in the surface temperature of the ceiling versus that of the top of the insulation. Warm air can escape the warm interior through leakage and entering the roof cavity will likely condense, creating condensation.

Under the new H1, the last 500mm of the perimeter of the roof insulation can be reduced to R3.3; this allows the insulation to carried out over the top plates of the wall, while reducing the barrier to air flow from the eave edges.

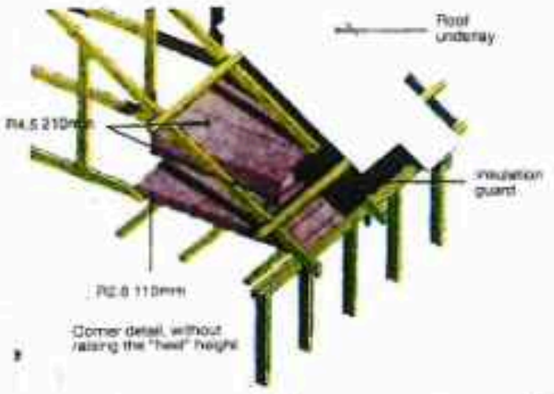
There is still a high risk of the insulation touching the underside of the roof underlay, preventing ventilation of the roof space and creating a condensation and mould risk. We recommend the installation of a insulation guard over the trusses, under the underlay, to maintain this critical ventilation pathway. Rather than the expense of a Raised Heel Truss, Comfortech® have solutions that can avoid unnecessary extra cost.

Note: It is important to note that the insulation guard needs to be installed before the roof goes on, not at the same time as the insulation installation

Single Layer solution with guard



Double Layer solution with guard



Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

SHEET: 29

COMFORTEC
BUILDING PERFORMANCE SOLUTIONS

Document Set ID: 8238868
Version: 8, Version Date: 03/05/2026

This information is provided by the Waikato District Council

NZ Building Code - Smoke Alarm Requirements.

From November 2023 the Building Code Acceptable Solutions for Protection from Fire (C/AS1 and C/AS2) will be amended to make interconnected smoke alarms the minimum fire safety system for new built homes and substantial renovations, citing NZS 4514:2021 – *Interconnected smoke alarms for Houses*. The standard allows for wirelessly or hard-wired interconnection, using either 10 year long-life battery-powered or 240v mains powered alarms. The changes will have a 12-month transition period ending in November 2024

Below are the key points of the changes to the acceptable solutions but it is important that you read the details in the Standards New Zealand – NZS 4514:2021 interconnected smoke alarms for houses document, click here to download
KEY POINTS:

- Equipment required must be either 10 year long-life battery-operated (non-removable/sealed) or 240v mains powered, interconnected smoke alarms
- All smoke alarms must meet compliance standards such as BS EN 14604, AS3786, UL 217, CAN/ULC S531 or ISO 12239.
- Where more than one smoke alarm is needed to meet the requirements of this standard, these alarms shall be interconnected so that when one activates, all smoke alarm devices in the household unit will sound. The interconnection between alarms may be wired or wireless.
- Smoke alarms shall be located in all bedrooms, living spaces, hallways and landings within the building.
- In a multi-level household, there shall be at least one smoke alarm on each level.
- All smoke alarms must have a hush and test button.
- Smoke alarms shall be located on or near the ceiling.
- Where a kitchen or scullery is separated from the living spaces and hallways by doors that can be closed, an alarm specified by its manufacturer as suitable for a kitchen shall be located in the kitchen. This may be a heat alarm to avoid nuisance activations.

The information above is designed as a guide only. There is more information contained in the NZS 4514:2021 Interconnected smoke alarms for houses standard.

INTERCONNECTED SMOKE ALARM STANDARDS

Waikato District Council
Building Consent Number
BLD1107/25

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Alarm Locations

The best location for any smoke alarm is in the centre of a room, taking into consideration fans, beams or any other fixtures that can cause delayed or nuisance alarms. Placing smoke alarms by heat pumps, air vents or HVAC systems could also cause nuisance alarms. It is important to read the manufacturers installation instructions and the locations information contained in the Building Code Document.



Building Code Compliant Alarms

The CAVIUS Wireless Family range of smoke alarms are fully compliant with the changes to the New Zealand Building code.
We offer both 10 year battery operated and 240v mains powered smoke alarms along with our thermal heat alarm and smart remote control.

SHEET: 30

Proposed Minor Dwelling
For Bruce Gasson at
380 Churchill Road East
Rangiriri.

Document Set ID: 8238868
Version: 8, Version Date: 03/05/2026

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Waikato District Council
Building Consent Number
BLD1107/25

APPROVED



RIVIERA PREMIUM

FTMA NEW ZEALAND

90 Foundry Road, Silverdale Ph 027-403-1540

General Notes:
Do not cut or alter any frames on site prior to approval from Riviera Premium Ltd.
Builder to check all openings and braces before enclosing.
All framing in H1.2 treated unless otherwise noted.
All other fixing by others.
All other braces by others.

Truss Fixings

MiTek

14 Apr,2025

Roofing	:	Galv Iron .5mm
Pitch	:	20.0deg
Spacing	:	900
Wind Area	:	High

FIXINGS

A = 47x90 Joist Hanger
B = 47x120 Joist Hanger
C = 47x190 Joist Hanger
D = 95x165 Joist Hanger
G = SH-140 Split Hanger
H = SH-180 Split Hanger
K = SH-220 Split Hanger
M = Multigrip (pair)
N = Multigrip (single)
E = CT200 (pair)
F = CT200 (single)
P = CT400
Q = CT600
T = CPC40 (single)
X = CPC40 (pair)
L = CPC80 (single)
J = 200x110 Nailon Plate
Y = 9kN Pack
Z = 16kN Pack

All truss fixings not indicated as above must have two wire dogs.

Client	:	BENNETT DRAUGHTING
Address	:	380 CHURCHILL RD EAST RANGIRIRI
Detailer	:	Standard

Job Ref: **IDS25047**

This information is provided by the Waikato District Council

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Waikato DISTRICT COUNCIL

Your Ref	In reply please quote	If calling, please ask for
	HAIL0408/18	Alan Parkes

Postal Address
Private Bag 544, Ngaruawahia 3742
New Zealand

0800 492 452
www.waikatodistrict.govt.nz

15 May 2018

Dear Sir/Madam

Property Enquiry - HAIL report

Further to your request for details of whether or not council records indicate that an activity or industry described in the Ministry for the Environment Hazardous Activities and Industries List (HAIL) is being, has been or is more likely than not to have been undertaken on a piece of land I can advise the following:

Property address: **380 Churchill East Road TE KAUWHATA**
VNZ Property ID: **04390/284.06**
Legal description: **LOT 13 DP 488718 INT IN ESMTS**

No record of a HAIL activity has been found on Council records. **NOTE:** please see comments below for clarification required in respect of some matters found on the records if development on the property is proposed.

Comments:

The site has been used for pastoral farming activities including dairy farming. Prolonged application of superphosphate fertiliser has the potential to elevate cadmium in soil above the rural-residential soil contaminant standard of 0.8 mg/kg. If residential activities are proposed, information should be supplied on superphosphate fertiliser use on the property using Council's site history checklist to determine if any investigation in respect of cadmium in soil is required. Where consistent application of fertiliser over time is identified or there is limited information available a screening sample for cadmium should be provided to determine if soil has been impacted by cadmium such that it could be considered a HAIL activity. This sample need not be taken by a contaminated land specialist but should be taken by an independent person with experience in soil analysis such as a fertiliser company representative or soil scientist. A composite sample across the proposed residential area of the site would be appropriate. Soil pH should also be recorded as the soil contaminant standard for cadmium is pH dependent. A soil sample should also be taken for pH if possible from an area on the property with similar soil characteristics where the soil has not been modified by application of superphosphate fertiliser and liming to give an indication of the natural soil. Such an area may include gardens of existing older homesteads, roadside berms, under troughs etc. The location and description of this sample site should be clearly identified.

A plan of the site should be provided showing the area where the soil cores comprising the composite sample were taken. If the sample shows cadmium levels well below the soil contaminant standard then no further action would be necessary. If the sample however indicates cadmium at or very close to the standard then we would conclude that a HAIL class I has occurred and a site investigation and

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report carried out by a suitably qualified and experienced practitioner in contaminated land, prepared in accordance with the Ministry for the Environment Contaminated Land Management Guidelines would be required.

Please be advised that the review identified structures on the property present in 1942. These structures are likely to have used asbestos containing materials (ACM) and/or lead based paint given the era of construction. Whilst such activities are not specifically identified on the HAIL, the use of lead based paint and presence of ACM can result in the presence of such contaminants at elevated concentrations in the surrounding soil.

The following records (where applicable) were reviewed in this assessment:

Property file including any parent property file from which the property was developed
Waikato District Council Land Use Register
Waikato Regional Council Selected Land Use Register
Subdivision Consent files
Land Use Consent files
Building Consent files
Aerial Photography:

1942, 1949, 1957, 1963, 1973, 1977, 1983, 2002	Site is pastoral with a structure present at the entranceway

Disclaimer:

This information is based on records held by the Council and/or Waikato Regional Council and reflects the council's current understanding of the site. The council does not accept any liability for any inaccuracy of this information or liability for any loss or damage suffered by any person acting or refraining from acting on this information.

If this information indicates that no record of a HAIL activity has been identified on council records, this does not imply that no HAIL activity has been undertaken on the site. This simply means that the council holds no record of a HAIL activity being undertaken on the property at this point in time. However, council records may be incomplete. Similarly, if one HAIL activity is identified, this does not preclude another HAIL activity having been undertaken of which no record is held. If an activity is proposed to be undertaken on the site that is covered by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES), council retains the right to seek further information on the site history of the subject property. Where pastoral farming activities have been identified, Council may seek information in respect of cadmium in soil resulting from application of superphosphate fertiliser if residential activities are proposed.

If you have any queries please feel free to call me.

Yours faithfully

Alan Parkes
Contaminated Land Specialist

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1942



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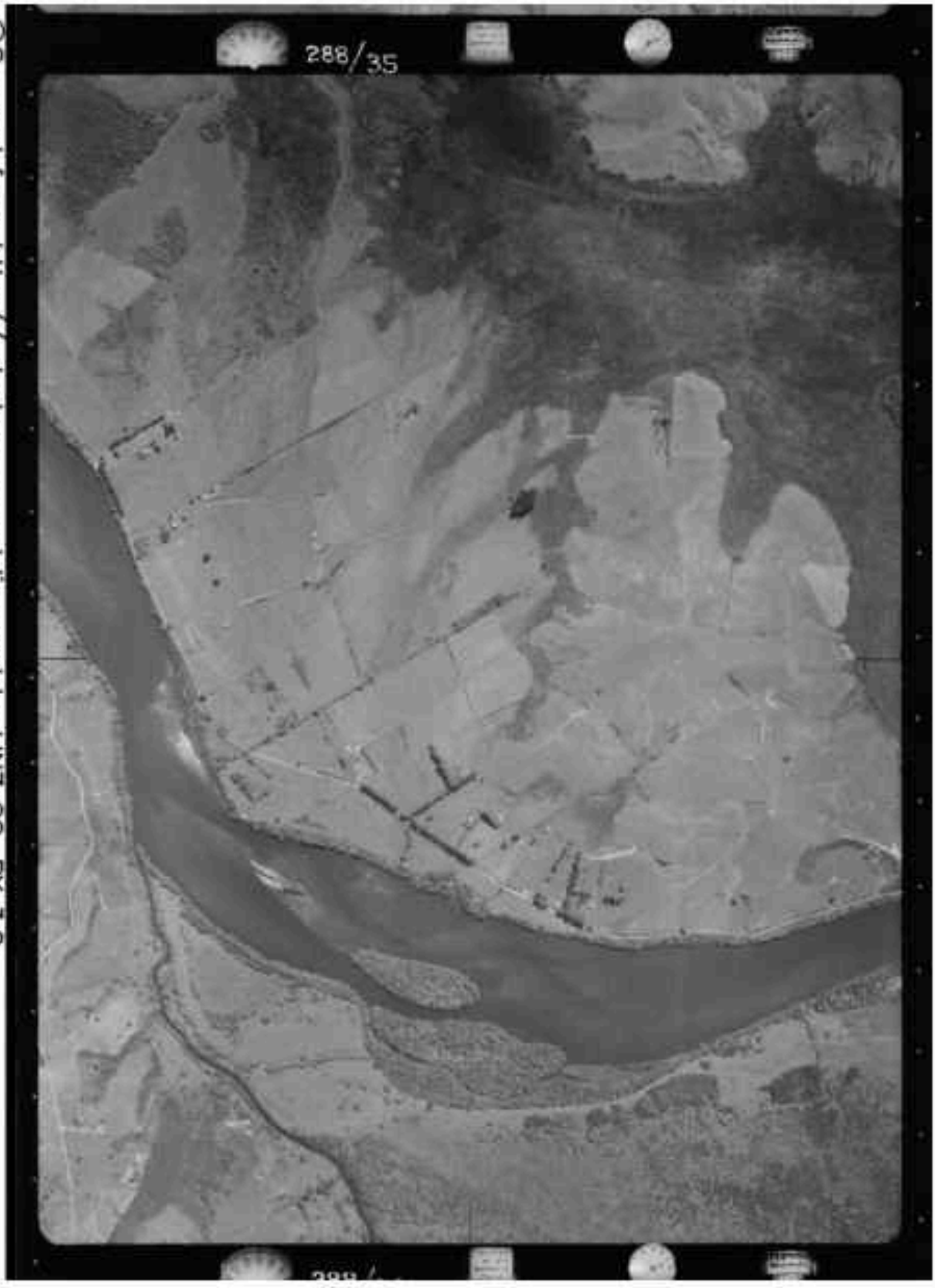
1949



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1957



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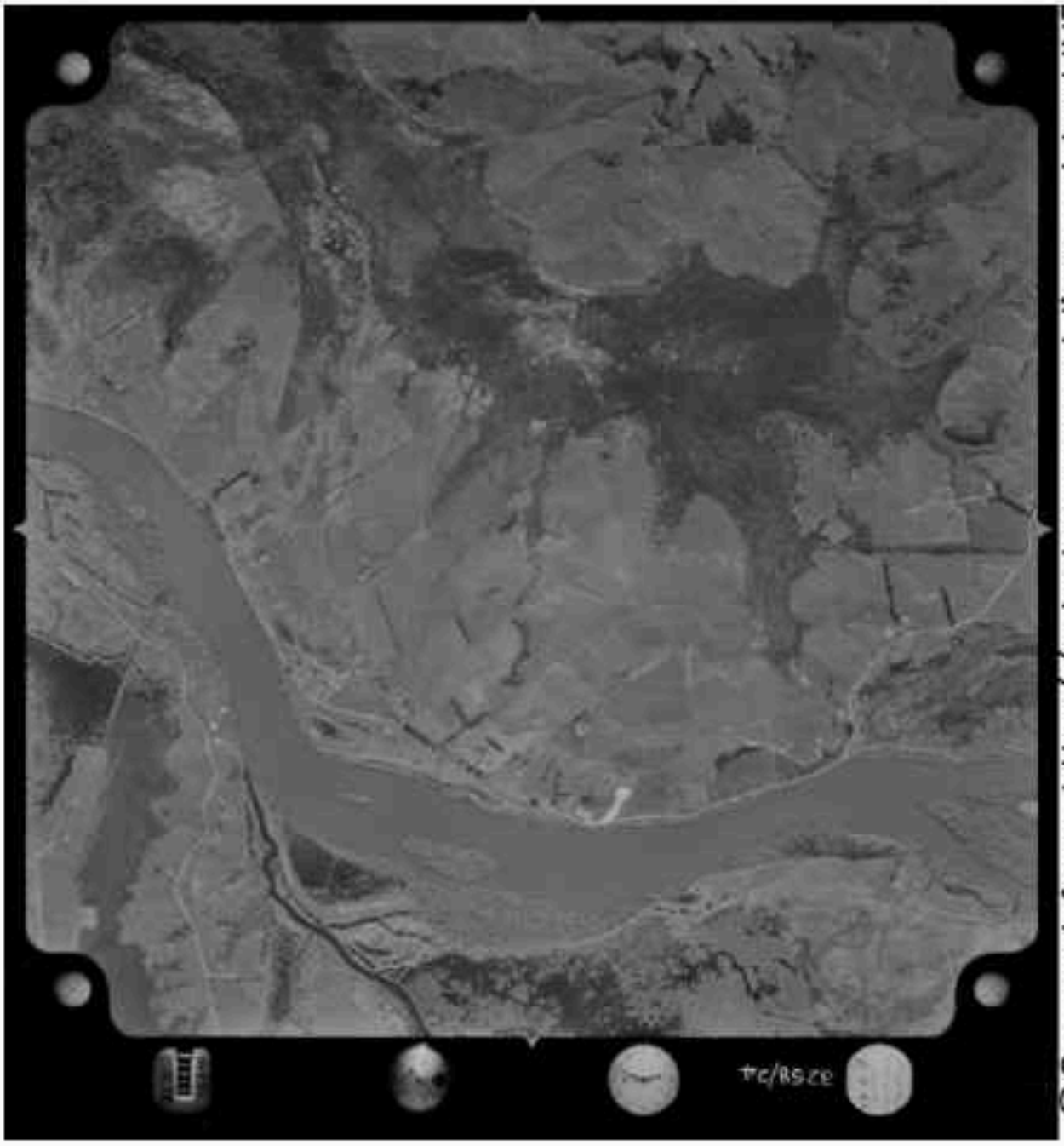
1963



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1973



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1977



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1983



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2002



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Version: 1, Version Date: 05/05/2026

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Waikato District Council
Te Kaunihera aa Takiwaa o Waikato

P 07 824 8633 F 07 824 8091
Call Free 0800 492 45
Private Bag 544, Ngaruawahia
www.waikatodc.govt.nz

Land Information Memorandum
Property Maps

380 Churchill East Road TE KAUWHATA

Created:
Tuesday 03 November 2026 07:20:43



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LAND INFORMATION

Land Information	
Land No	616544
Linz No /Parcel ID	7753650
Legal Desc	LOT 13 DP 488718 INT IN ESMTS
Land Area	0.776400

LAND RESOURCE MAP

LEGEND

- Subdivisions
- Subdivision Status
  - 1
  - 2 - Clearance
  - 3 - 223
  - 4 - 224
  - 5 - Declined
- River Environment
- Easement
- Natural Hazard Register
  - Alluvion
  - Erosion
  - Falling Debris
  - Fill
  - Inundation
  - Slippage
  - Subsidence
  - Waikato Coal Measures
- Land Hazards
  - Advisory HAIL
  - Advisory
  - Contamination

MAP



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Land Resource Information			
Property No	2018152	Assessment	04390/284.06
Property Address	380 Churchill East Road TE KAUWHATA		
Land Hazard HAIL Register			
Hazard Type			
Description			

No data available

Land Cover – Slope	C
Land Cover - Rock	(Mo)/Us

MAP



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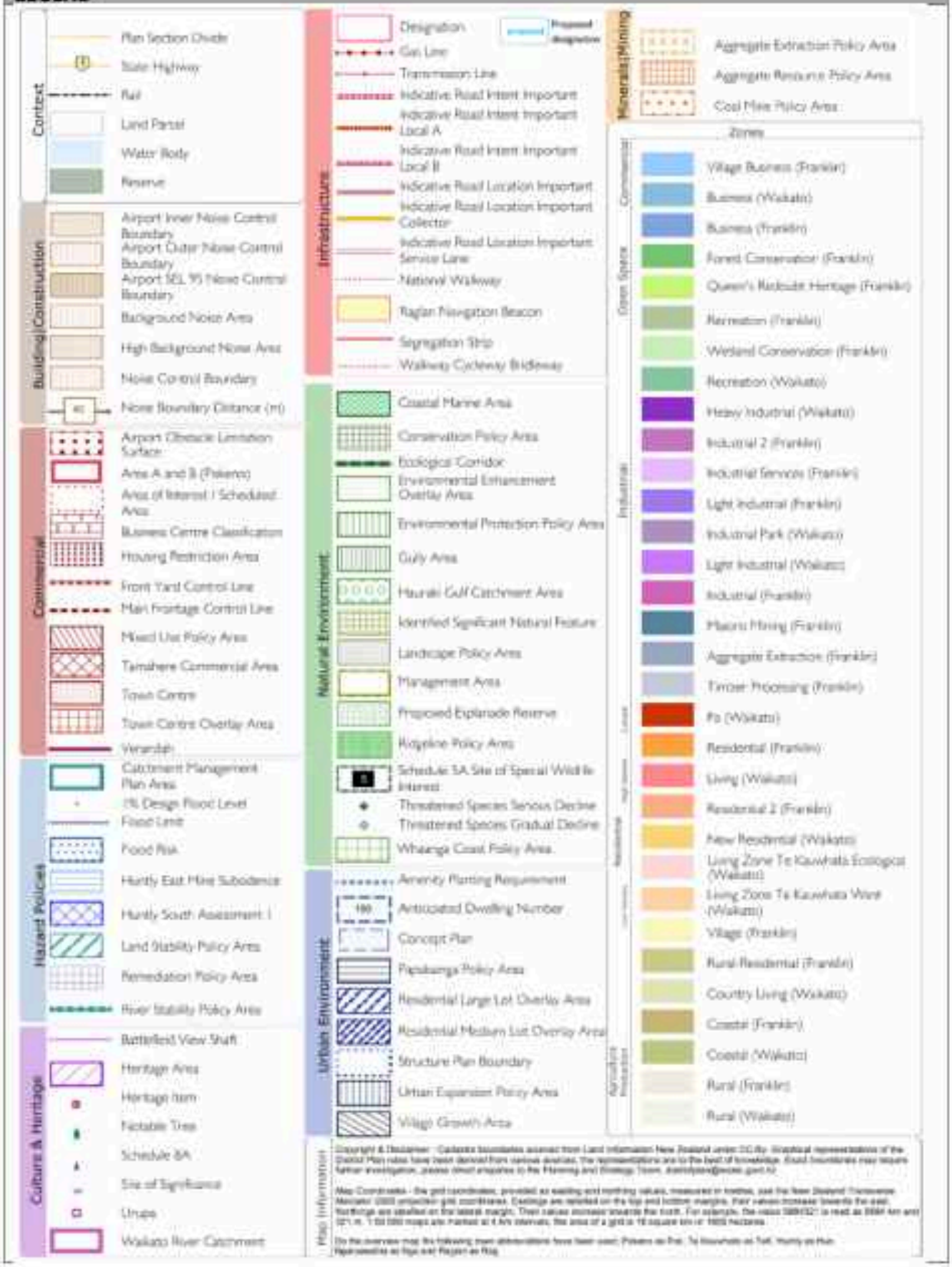
Operative District Plan Information			
Property No	2018152	Assessment	04390/284.06
Property Address	380 Churchill East Road TE KAUWHATA		
Zone	Rural,		
Policy/Special Control	Waikato River Catchment,		

This information is provided by the Waikato District Council

OPERATIVE DISTRICT PLAN MAP

LEGEND



Document Set ID: 7256410
Version: 1, Version Date: 03/11/2026

Print Date: 6 November 2026, 1:26 pm

WAIKATO DISTRICT PLAN – OPERATIVE IN PART MAP

LEGEND

Refer Separate Legend

MAP



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Waikato District Plan – Operative in Part Information			
Property No	2018152	Assessment	04390/284.06
Property Address	380 Churchill East Road TE KAUWHATA		
Zone	GRUZ - General rural zone,		
Overlay	Flood plain management area, Waikato River catchment,		

This information is provided by the Waikato District Council

Waikato District Plan - Operative in Part

Map Legend

OPERATIVE

ZONES

Zones

- MRZ2 - Medium density residential zone 2
- GRZ - General residential zone
- OHI - Ohinewai zone

OVERLAYS

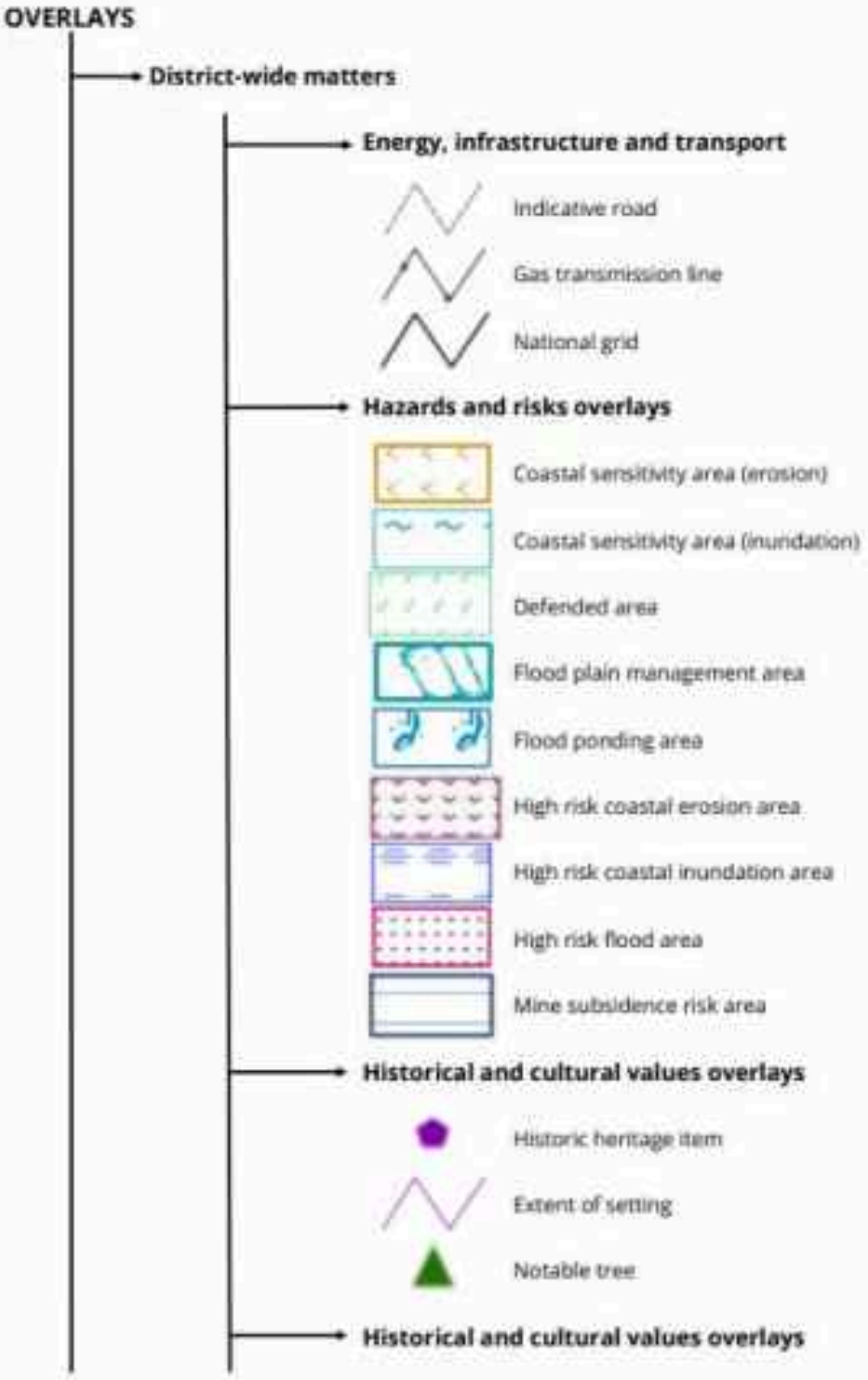
Precincts

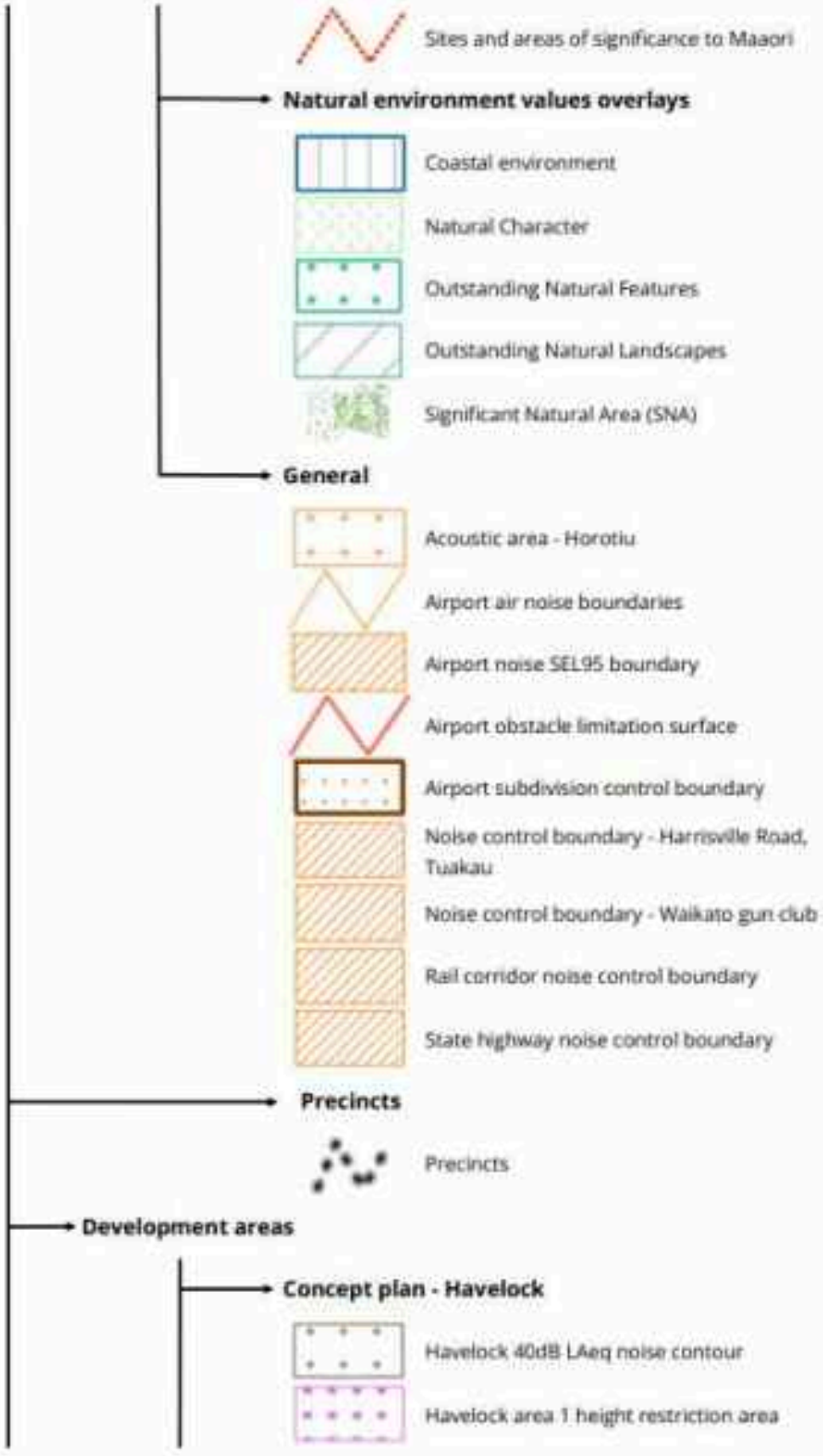
- Precincts

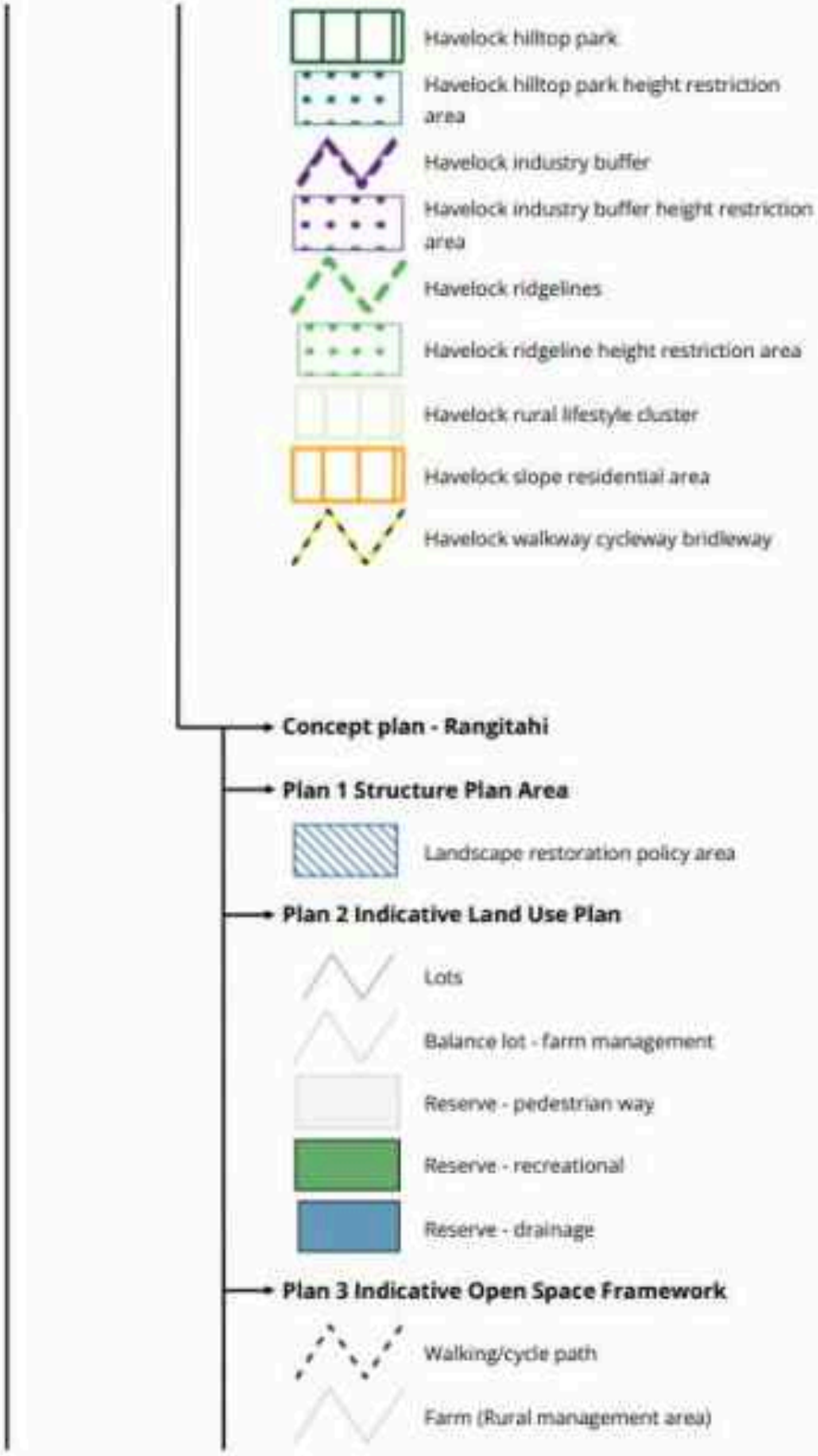
Specific controls Residential zones

- Geotechnical limitation area
- Tuurangawaewae Marae surrounds
- Tuurangawaewae Marae Outlook High Potential Effects Area
- Tuurangawaewae Marae building Height Assessment Overlay
- Outer intensification area

OPERATIVE IN PART




Sites and areas of significance to Maaori
Natural environment values overlays
Coastal environment
Natural Character
Outstanding Natural Features
Outstanding Natural Landscapes
Significant Natural Area (SNA)
General
Acoustic area - Horotiu
Airport air noise boundaries
Airport noise SEL95 boundary
Airport obstacle limitation surface
Airport subdivision control boundary
Noise control boundary - Harrisville Road, Tuakau
Noise control boundary - Waikato gun club
Rail corridor noise control boundary
State highway noise control boundary
Precincts
Precincts
Development areas
Concept plan - Havelock
Havelock 40dB LAeq noise contour
Havelock area 1 height restriction area


Havelock hilltop park
Havelock hilltop park height restriction area
Havelock industry buffer
Havelock industry buffer height restriction area
Havelock ridgelines
Havelock ridgeline height restriction area
Havelock rural lifestyle cluster
Havelock slope residential area
Havelock walkway cycleway bridleway
Concept plan - Rangitahi
Plan 1 Structure Plan Area
Landscape restoration policy area
Plan 2 Indicative Land Use Plan
Lots
Balance lot - farm management
Reserve - pedestrian way
Reserve - recreational
Reserve - drainage
Plan 3 Indicative Open Space Framework
Walking/cycle path
Farm (Rural management area)

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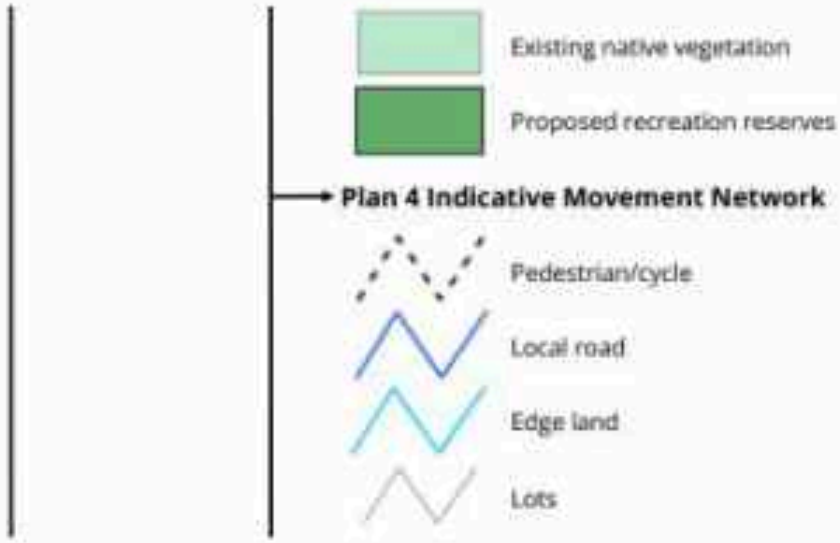

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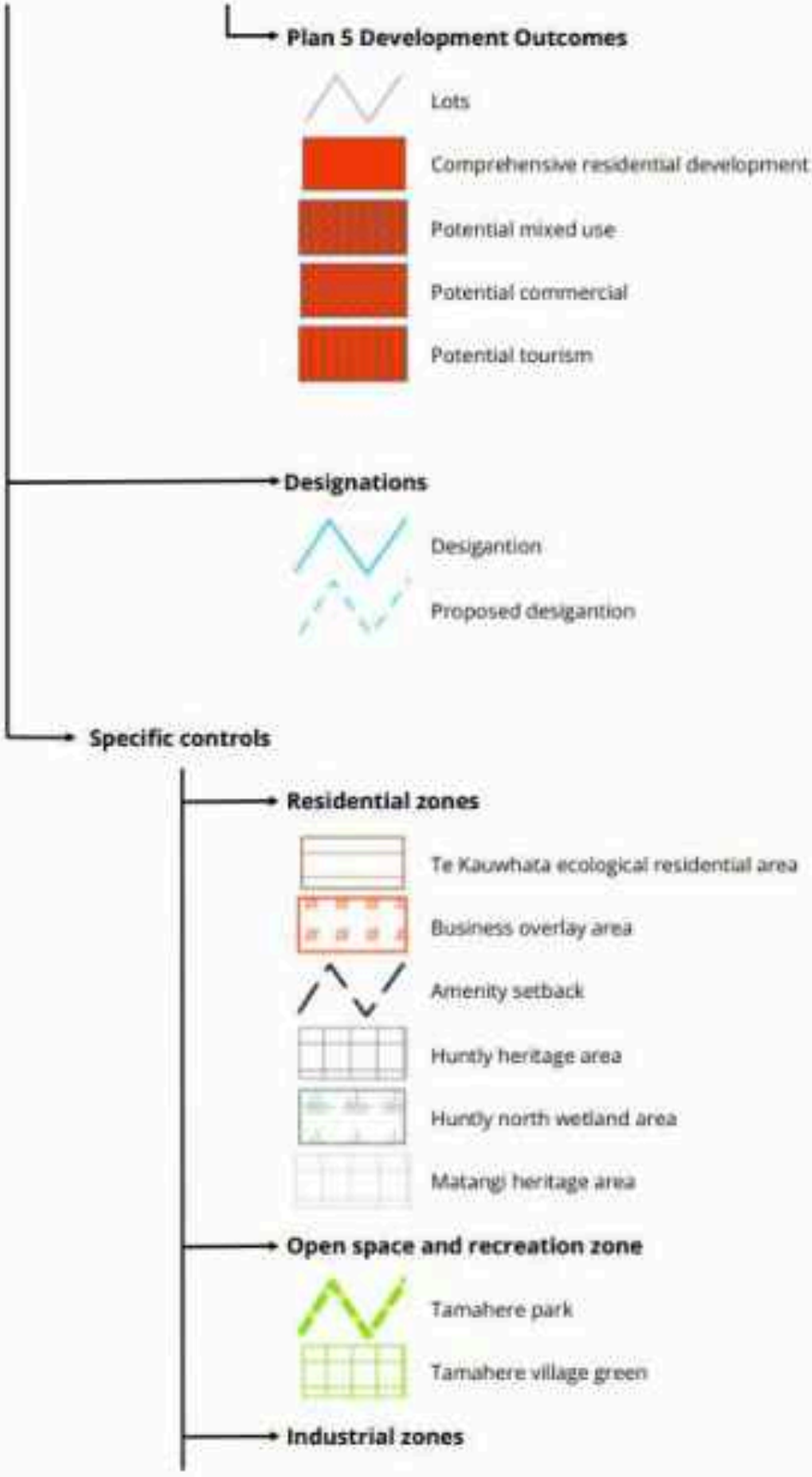
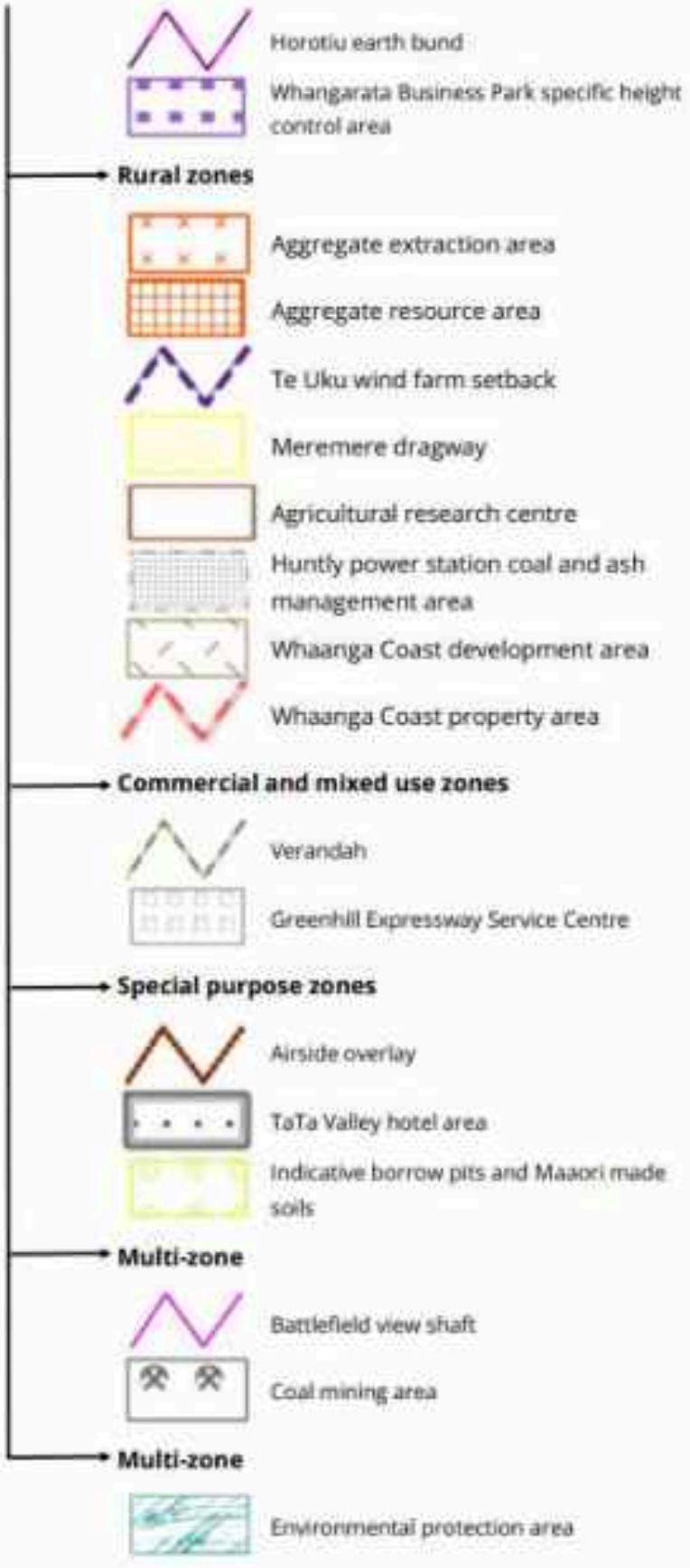
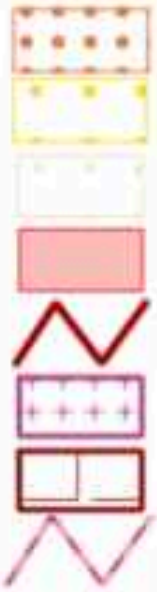



Horotiu earth bund
Whangarata Business Park specific height control area
Rural zones
Aggregate extraction area
Aggregate resource area
Te Uku wind farm setback
Meremere dragway
Agricultural research centre
Huntly power station coal and ash management area
Whaanga Coast development area
Whaanga Coast property area
Commercial and mixed use zones
Verandah
Greenhill Expressway Service Centre
Special purpose zones
Airside overlay
TaTa Valley hotel area
Indicative borrow pits and Maaori made soils
Multi-zone
Battlefield view shaft
Coal mining area
Multi-zone
Environmental protection area



Lakeside high density area

Lakeside medium density area

Lakeside rural area

Raglan navigation beacon

Segregation strip

Tamahere commercial area

Urban expansion area

Waikato River catchment

ZONES

Zones

COMZ - Commercial zone

TCZ - Town centre zone

LCZ - Local centre zone

GRUZ - General rural zone

RLZ - Rural lifestyle zone

LLRZ - Large lot residential zone

GRZ - General residential zone

MRZ1 - Medium density residential zone 1

SETZ - Settlement zone

Zones

OSZ - Open space zone

HIZ - Heavy industrial zone

GIZ - General industrial zone

Special purpose zones

MAZ - Mercer airport zone

MSRZ - Motorsport and recreation zone

CORZ - Corrections zone

BTZ - Business Tamahere zone

HOPZ - Hopuhopu zone

RPZ - Rangitahi Peninsula zone

TKAZ - Te Kowhai airpark zone

FUZ - Future urban zone

MTZ - Matangi zone

TTZ - TaTa Valley zone

KLZ - Kimihia lakes zone

APPEALS

Appeals

Appeals

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ADDITIONAL INFORMATION

Additional Information



Mystery Creek noise boundary

Fonterra noise control boundary

Rail corridor noise alert area

Rail corridor vibration alert area

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UTILITIES MAP

LEGEND

Storm Water Point
Fitting Other Pipe
Manhole Sump Drain Misc

Waste Water Point
Fitting Other Gravity Main Rising Main
Manhole Valve Other Service

Water Supply Point
Backflow Other Hydrant Main Rider Main
Fitting/Node Valve Meter Raw Water Main Rising Main Service

MAP



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Water Meter Information

Meter	
Route	
Sequence	
Tariff	
Status	
Location	
Meter Install	
DCL Type	

No data available

SOLID WASTE MAP

LEGEND

- Labels
  - Address Label
  - Road Label
- Territorial Authority
  - Waikato District
  - Other Districts
- Rail
- Property
- Parcel

- Solid Waste Charges
  - WstStdNor
  - WstRcyMU
  - WstStdTua
  - WstBusTua
  - WstRaglan
  - WstRcyGLM
  - WstStdCen

MAP



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Solid Waste Information			
Property No	2018152	Assessment	04390/284.06
Property Address	380 Churchill East Road TE KAUWHATA		
Contract Name	Green Gorilla		
Day Name	Friday		